



## Article

# Directions for the Development of Sustainable Tourism in the Hospitality Industry: A Model for Implementing International ESG Principles in Uzbekistan

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**Abstract:** The hospitality sector stands at a crossroads where economic imperatives meet environmental responsibilities. The paper explores the conditions of sustainable tourism and its impact on the hospitality industry, using Uzbekistan as an example of a country moving from centuries of strong tradition and hospitality to the development of the hospitality industry based on advanced technology. AbstractWe analyse and discuss the Environmental, Social and Governance (ESG) frameworks and mechanisms for implementation and compliance within hotel and tourism systems, introducing a model for adaptation of these systems to the specific conditions in Central Asia. We conduct bibliometric analysis of 150 academic publications, combined with field data sourced from 45 hotels across four major cities of Uzbekistan. We offer practitioners a measurable approach to monitoring progress as a Sustainability Performance Index that they can use. These findings challenge the perception that green practices come at a sacrifice to profitability by showing that properties that score better on sustainability metrics also indicated greater guest satisfaction and operational savings. Our ESG model takes into consideration regional factors, from the UNESCO sites of Bukhara to the ecological challenges of Karakalpakstan.

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## 1. Introduction

Tourism has transformed economies worldwide, yet this transformation comes with costs that are only now becoming fully apparent. Huge amounts of water and electricity are consumed in hotels [1]. Tour buses clog historic streets. Without work all year long, seasonal workers find it tougher. The industry has long been aware of these realities and has been steered in the direction of what we now refer to as sustainable tourism but that journey from the idea of sustainable tourism to the practice is complex and lacks uniformity.

Uzbekistan presents an especially informative case study for exploring these tensions. It is of a country whose tourism industry has seen dramatic growth since 2017 when visa liberalization was introduced and doors that had remained practically shut since independence began to open [2]. Over that time, international arrivals had surged – from around 2.7m that year to more than 6.7m in 2019. Tour groups from dozens of countries suddenly found themselves in the ancient Silk Road cities of Samarkand,

Bukhara, and Khiva. Local businessmen hurried to construct hotels without caring much about ecology, sustainability and locals benefits.

The grow was taking place amidst wider changes in the world. Sustainability has become an important component to consideration for many logo travelers, particularly the younger generation [3]. Truly eco-friendly accommodations will also see a significantly higher percentage of visitors willing to pay them even more anyhow, as industry surveys consistently show. At the same time, investment frameworks have permeated ESG (Environmental, Social and Governance) standards, standards that began in finance but now dictate expectations in all industries.

The hospitality industry operates at this intersection. While some can produce as much waste as an entire small town, a single large hotel can consume a town's worth of energy as well. But hotels also hire locals, buy local and provide a front door for locals for visitors to a local experience. The question is not if hotels affect their surroundings but more on if that effect can be tailored towards the favorable.

We approach this question using two complementary means. We firstly create a measurement framework, Sustainability Performance Index, to evaluate hotels existing practices and changes overtime. Second, we propose an adaptation model for implementing international ESG standards within the specific context of Uzbekistan, recognizing that frameworks developed for European or North American markets require modification for Central Asian conditions [4].

What makes Uzbekistan's situation distinctive is the combination of exceptional cultural heritage, limited financial resources, and a government actively promoting tourism development. The UNESCO-designated historic centers of Samarkand and Bukhara cannot absorb unlimited visitor numbers without damage [5]. The Aral Sea disaster in Karakalpakstan presents both environmental challenges and opportunities for awareness tourism. Mountain regions offer adventure tourism potential but lack infrastructure. Each context demands different approaches to sustainability.

### **Literature Review**

First of all, sustainable tourism is not something that has emerged overnight. Its roots are in the broader sustainable development discourse framed by the 1987 Brundtland Report, which defined sustainability in terms of fulfilling current generations' needs without compromising the ability of future generations to meet theirs [6]. This was followed by the early tourism research in the 1990s which applied this logic but primarily narrated the environmental protection phases by excluding the economic and social parts of the story.

Overuse and mismanagement of destinations can lead to degradation, which was illustrated years before sustainability was a concept with Butler's (1980) tourism area life cycle model. Declines in visitor numbers occurred once nature / cultural assets were degraded [7]. This also framed sustainability not only as a moral issue, but a practical requirement of long term competitiveness. Share Divvy the economic base of destinations that could not manage growth were in jeopardy of destroying their own economic base.

It began to grow in the early 2000s. Building on Elkington and others, academics asserted that sustainable tourism should weigh equally ecological stewardship, economic benefits to host communities, and social and cultural integrity. The perception of tourism as a system in which ecological limits, local livelihoods and cultural heritage are inseparable became more prominent.

But new research shows how the difference between rhetoric and operational change for sustainability continues to be wide. For example, hotels might implement visible initiatives like a towel reuse program and pay little attention to their energy watching and heavy supply chains [8]. Tourism boards may market themselves as green brands and yet, at the same time, grow airport capacity. Such a mismatch has fueled demand for

certification schemes and performance metrics that enable to differentiate real action from greenwashing.

Originally born out of investment community in 2004 after UN Global Compact report, which stated that strong ESG performance supports long term durability and profitability. Though initially applied to heavy industry, ESG has made inroads into hospitality [9]. Today many of the big hotels publish sustainability reports according to standards such as the Global Reporting Initiative, and Green Key and EarthCheck have been great in this area helping to provide at least a third party verification.

However, ESG is encountering particular challenges in hospitality. Hotels are 24/7 high energy and water demand facilities with particularly complex waste streams associated with food service operations and periodic renovation activities. Social impacts include a range of stakeholders from employees to local communities and guests. Governance challenges are just as important, especially in franchise models where sustainability commitments can look quite different depending on ownership structure and geography [10].

International ESG frameworks cannot directly be applied in the emerging markets; there is a need of adaptation. Family run guesthouses in Khiva or new hotels in Samarkand do not operate at all like the multinational companies envisioned by those standards. Uzbekistan has a legacy of traditional architecture that employed passive cooling and local materials, but the tourism sector faces the challenge of limited waste infrastructure, little sustainability training, and outdated building systems.

A five-part adaptation model considering these realities — protection of cultural heritage integrated with climate adaptation, regional differentiation, a stakeholder ecosystem of communication and action, phased implementation in line with capacity and a locally-informed set of key performance indicators and performance indicators customized to local data limitations — is proposed [11]. It does not apply to all cases but the model shows how global sustainability principles can be reframed into the national context such as Uzbekistan and may give inspiration for other Central Asian destinations under similar pressures.

## 2. Materials and Methods

Our investigation combined quantitative and qualitative approaches, recognizing that sustainability performance requires both measurable indicators and contextual understanding. The research proceeded through three main phases: literature synthesis through bibliometric analysis, primary data collection from Uzbek hotels, and index development with validation.

Bibliometric analysis covered 157 academic publications from 2015 through early 2025, identified through systematic searches in Scopus and Web of Science databases using terms related to sustainable tourism and hospitality. Such analysis provides a map of research trends, points to gaps in coverage of Central Asian contexts, and can help inform our selection of indicators [12].

The data were collected from 45 hotels in Tashkent, Samarkand, Bukhara, and Khiva, which were represented by the different types of ownerships, size, and star ratings. We conducted structured questionnaires with general managers or sustainability coordinators when available. The surveys covered operational practices in energy, water and waste management, employment and procurement patterns, and community engagement activities.

In terms of response rates, properties in Tashkent tended to be the most responsive while smaller guesthouses in historic city-centers proved more challenging to engage. In addition to survey data, we visited 12 of the properties, where we were able to see practices

mentioned in the survey and talk informally with staff at various levels [13]. Secondary data sources included government tourism statistics, utility company records where accessible, and published sustainability reports from international chains operating in Uzbekistan. These sources provided context for interpreting primary data and benchmarking against international norms.

The index we developed weights seven indicators across environmental, economic, and social dimensions. Weights reflect both theoretical importance and practical measurability in the Uzbek context (Table 1).

**Table 1.** Index Components and Weightings.

Category	Indicator	Weight	Data Source
Environmental	Energy consumption per guest-night	20%	Utility records, surveys
Environmental	Water usage per guest-night	15%	Utility records, surveys
Environmental	Waste recycling percentage	15%	Management estimates
Economic	Local staff percentage	15%	HR records
Economic	Local procurement share	10%	Purchasing records
Social	Annual training hours per employee	15%	Training logs
Social	Community projects supported	10%	Management reports

Index scores range from 0 to 100, with higher values indicating stronger sustainability performance. We established thresholds through reference to international benchmarks and distribution analysis of our sample, classifying properties as high (75+), medium (50-74), or low (below 50) performers.

### 3. Results and Discussion

The 45 properties in our sample ranged from 12-room guesthouses to 200+ room full-service hotels [14]. Ownership included independent local operators, domestic chains, and international brands. Star ratings spanned from unrated to five-star, though most clustered in the three and four-star categories that dominate Uzbekistan's tourism accommodation supply.

Index scores are distributed across the full range, with meaningful variation both within and between categories (Table 2).

**Table 2.** Performance Classification Summary.

Performance Level	Score Range	Properties	Share of Sample
High sustainability	75 and above	8	17.8%
Medium sustainability	50 to 74	22	48.9%
Low sustainability	Below 50	15	33.3%

High performers shared several characteristics. Most had implemented formal environmental management systems, whether certified or internal. All had specific sustainability staff, although not full-time. Many were part of international chains with corporate sustainability policies, but some independent properties also scored well due to owner dedication.

The middle category was the most heterogeneous. These vehicles tended to be strong in one or two areas but would fall short in the others. Most often, this looked like good environmental practices, usually motivated by the bottom line to save money through energy efficiency, and little social: no training, no local engagement.

Overall, low performers did not replicate any systematic approaches to any one of the sustainability dimension [15]. We saw operational decisions focused entirely on the cost burden in the short-term without understanding that sustainability tends to lower operational costs over the long-term. Many managers acknowledged the list, but said they needed time and, crucially, direction on how to improve.

Although data in these areas were limited, we explored the relationships between index scores and business metrics, when available.

**Table 3.** Performance Correlations.

Relationship Tested	Correlation	Significance
Overall index vs. guest review scores	$r = 0.68$	$p < 0.001$
Energy efficiency vs. operating costs	$r = -0.54$	$p < 0.01$
Training investment vs. service ratings	$r = 0.61$	$p < 0.001$
Local sourcing vs. community relations	$r = 0.72$	$p < 0.001$

The positive correlation between sustainability scores and guest satisfaction warrants attention. While causation cannot be established from these data alone, the relationship suggests that sustainability investments do not come at the expense of guest experience [16]. Several high-scoring properties reported that sustainability features had become marketing differentiators, particularly with European visitors (Table 3).

Given that the correlation between energy efficiency and operating costs is negative, this finding is in line with expectations and provides a more practical rationale for environmental investment. The report finds that those properties with upgraded LED lighting, occupancy sensors, or better insulation experienced quantifiable utility savings.

The model was underscored by a focus on differentiation, as implementation patterns differed significantly by region. Tashkent hotels have seen the best uptake of environmental technologies, reflecting better availability of skills and equipment [17]. While some Bukhara and Khiva historic center properties showed a stronger cultural heritage orientation, waste management was generally problematic due to infrastructure constraints. Potential to link agritourism to sustainability originating from small sample in Fergana Valley, but limited implementation at present

These findings carry implications at multiple levels. For individual properties, the results suggest that sustainability need not conflict with financial performance and may enhance it. The correlation data, while not establishing causation, indicate that well-managed sustainability programs coexist with, and possibly contribute to, stronger business outcomes.

For policymakers, the regional variation highlights the need for differentiated support [18]. A one-size-fits-all national sustainability program would likely fail. Tashkent hotels need different assistance than Khiva guesthouses. Technical support, training programs, and incentive structures should reflect these differences.

The proposed ESG adaptation model provides a framework for organizing these differentiated approaches [19]. By starting with regional context and stakeholder mapping before moving to indicator selection and implementation phasing, the model acknowledges complexity rather than imposing false uniformity.

Several limitations deserve mention. Our sample, while diverse, cannot claim statistical representativeness of Uzbekistan's full accommodation sector. Self-reported data on practices like recycling rates may overstate actual performance. The correlations observed could reflect confounding factors; better-managed properties may excel on both sustainability and other metrics without direct causal links. Longitudinal data would strengthen causal claims [20].

#### 4. Conclusion

Sustainable tourism in the hospitality sector requires moving beyond aspiration to measurement and implementation. This research contributes tools for that transition: an index adapted to emerging market conditions and an ESG model recognizing regional diversity. The Uzbekistan case will showcase: the challenges experienced by destinations that have grown quickly, and the opportunities that exist to incorporate sustainability in the development process at an earlier stage.

Sustainably focused properties seem to reap the rewards in lower costs, happier guests, and better connections with their communities. These results should inspire the reluctant operators and give ammunition to the sustainability proponents within enterprises.

For destinations such as Uzbekistan, special attention should be paid to the cultural heritage dimension. The Registan in Samarkand and the historic center of Bukhara are one-off. Despite the capitalistic model of tourism, extreme tourism is destroying the core of its foundation. By using sustainable methods, they safeguard the resources that enable tourism to take place.

Future work should follow implementation across time to understand if direct patterns remain, or if they converge. Comparative studies through all Central Asian countries may reveal regional best practices. Stronger causal analysis would bolster the business case for investing in sustainability.

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