



Article

A Conceptual Framework for Sustainable Tourism Service Quality Management

Sayfullayeva Madina Sirojiddinova*¹

1. PhD candidate, Bukhara State University, Uzbekistan
*Correspondence: m.s.sayfullayeva@buxdu.uz

Abstract: This paper proposes a conceptual framework integrating the SERVQUAL service quality model with sustainability principles for the four core tourism segments - accommodation, transport, food service, and guide-excursion services. The framework responds to a recurring disconnect in the tourism literature, where service quality measurement and sustainability assessment have evolved as parallel rather than integrated agendas. Drawing on a structured review of services marketing, sustainability, and tourism certification literatures, the four classical service characteristics are mapped onto the five SERVQUAL dimensions, and each dimension is enriched with sustainability sub-indicators aligned with the UN Sustainable Development Goals. The framework is then operationalised through a four-pillar matrix - resource management, service quality management, partnership, and monitoring - embedded in a Plan-Do-Check-Act cycle. The contribution is threefold: how service characteristics relate to SERVQUAL dimensions, a sustainability extension that avoids constructing a parallel instrument, and a segment-specific operational matrix ready for empirical testing.

Keywords: Tourism service quality; SERVQUAL; sustainable development goals; Triple Bottom Line; ESG; conceptual framework; hospitality industry.

Citation: Sirojiddinova S M. A Conceptual Framework for Sustainable Tourism Service Quality Management. Central Asian Journal of Innovations on Tourism Management and Finance 2026, 7(2), 18-25.

Received: 10th Feb 2026

Revised: 11th Mar 2026

Accepted: 19th Apr 2026

Published: 08th May 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

Tourism is among the most economically significant service industries worldwide. According to the WTTC, the sector contributed about 10 percent of global GDP in 2024 and supported approximately 357 million jobs, accounting for one in ten jobs around the world [1]. The United Nations World Tourism Organization has long projected continued long-term growth, with international tourist arrivals expected to reach 1.8 billion by 2030 [2]. Yet the rapid expansion of the sector also amplifies its environmental footprint, social externalities, and pressure on host communities, making the question of sustainable management increasingly central to both scholarly and policy debates.

Quality in tourism differs fundamentally from quality in manufactured goods. Whereas industrial products are typically inspected before consumption, services are produced and consumed simultaneously, with the customer participating directly in the production process [3]. This basic asymmetry implies that service quality cannot be reduced to technical norms or infrastructural attributes alone; it depends on subjective perception, the everyday performance of front-line staff, and the contextual environment

in which the service is delivered [4]. Such characteristics make conventional product-oriented quality management approaches ill-suited to the service economy, and to tourism in particular.

The dominant analytical instrument for measuring tourism service quality has long been the SERVQUAL model developed by Parasuraman, Zeithaml and Berry [5], which conceptualises quality as the gap between expected and perceived performance across five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. Although the model has been validated extensively in hospitality research, it does not incorporate sustainability considerations. Conversely, sustainability frameworks such as Elkington's Triple Bottom Line (TBL) [6] and the United Nations Sustainable Development Goals [7] are well-established as normative templates for the economic, social, and environmental performance of tourism organisations, but they offer little guidance on how sustainability translates into the lived experience of service quality.

Specifically, the paper develops a conceptual framework that integrates the SERVQUAL model with the TBL and the SDGs across the four core segments of the tourism value chain: accommodation, transport, food service, and guide-excursion services. Three research questions guide the analysis: (i) How can the four classical service characteristics be mapped onto the five SERVQUAL dimensions in a way that exposes their managerial implications? (ii) How can sustainability components be embedded into the SERVQUAL architecture through the TBL and SDG framework? (iii) How can the resulting integrated framework be operationalised across the main tourism service segments through a continuous-improvement cycle?

2. Literature Review and Methodology

2.1. Theoretical foundations

The conceptual development reported in this paper rests on four interrelated bodies of literature. The first is the services marketing tradition originating with Parasuraman, Zeithaml and Berry [5] and developed further by Grönroos, who distinguishes between technical quality (what is delivered) and functional quality (how it is delivered) [8]. This tradition yielded the four classical service characteristics - intangibility, simultaneity (inseparability), variability (heterogeneity), and perishability - that distinguish services from goods and that frame much of the subsequent literature [9]. The second stream is the corporate sustainability literature, anchored in Elkington's Triple Bottom Line [6] and complemented by the broader sustainability paradigm articulated in the United Nations 2030 Agenda for Sustainable Development [7]. While the TBL emphasises the simultaneous pursuit of economic, social, and environmental value, the SDG framework translates these principles into seventeen measurable goals, several of which-most directly Goals 8.9, 12.b, and 14.7-relate to tourism. The third stream comprises tourism-specific applications of sustainability, including the work of Buhalis et al. on tourism's contribution to the SDGs by 2030 [10], the GSTC criteria for industry and destinations [11], and ISO 21401:2018, the first international management-system standard dedicated to sustainability in accommodation establishments [12]. These instruments collectively define the operational vocabulary of sustainable tourism today. The fourth stream is the quality-management literature, particularly the contributions of Crosby on conformance and zero defects [13] and Juran on the quality trilogy [14], which together provide the procedural backbone for continuous-improvement approaches such as the Plan-Do-Check-Act (PDCA) cycle. This stream is essential to the present study because it supplies the dynamic mechanism through which quality and sustainability indicators can be jointly monitored and refined over time.

2.2. Method

The study follows a two-stage methodology consistent with conceptual research design in management and tourism studies. The first stage is a structured literature review covering the period 1985-2025. Bibliographic searches were conducted in Scopus, Web of

Science, and Google Scholar using keyword combinations such as “service quality” and “tourism”, “SERVQUAL” and “sustainable”, “Triple Bottom Line” and “SDG”.

The second stage is conceptual modelling. Following the cross-mapping logic used in prior integrative tourism studies, the analysis proceeds through four steps: (i) functional mapping between the four classical service characteristics and the five SERVQUAL dimensions; (ii) augmentation of each SERVQUAL dimension with TBL- and SDG-derived sub-indicators; (iii) operationalisation of the resulting framework across the four core tourism service segments by means of a four-pillar matrix; and (iv) embedding of the matrix in a PDCA continuous-improvement cycle drawing on Crosby [13] and Juran [14].

Because the study is conceptual rather than empirical, no primary data were collected. Validation is instead achieved through theoretical triangulation across the four literature streams and through alignment with established certification frameworks.

3. Results: An Integrated Framework

3.1. Mapping service characteristics onto SERVQUAL dimensions

The four classical service characteristics generate distinct managerial challenges, each of which is addressed by a specific subset of SERVQUAL dimensions. *Intangibility* implies that the service experience is constructed in the customer’s mind from sensory, relational, and reputational cues; in the absence of physical inspectability, customers rely on assurance (the credibility of staff and brand) and empathy (personalised attention) to form quality judgements [15]. Grönroos has shown that, under conditions of intangibility, perceived quality is shaped less by objective attributes than by trust and the cumulative effect of micro-interactions [8]. *Simultaneity* - the fact that production and consumption occur at the same moment-shifts the focus of quality control from pre-delivery inspection to real-time monitoring and immediate recovery. This characteristic places responsiveness at the heart of service management: the speed and adequacy with which customer requests, deviations, and complaints are addressed during service delivery is a primary determinant of perceived quality [16]. *Variability* arises because services are co-produced by human actors operating in heterogeneous contexts; the same hotel front-desk procedure can be delivered very differently by different employees, on different days, and to different guests. The SERVQUAL dimension that addresses variability is reliability, understood as the consistent delivery of the promised service to the agreed standard. Standardised operating procedures, training, and digital scripting are typical instruments for managing variability. *Perishability* reflects the impossibility of inventorying unsold service capacity: an empty hotel room or a vacant excursion seat cannot be stored. This characteristic is managed primarily through the tangibles dimension-the configuration and utilisation of physical infrastructure-reinforced by dynamic pricing and yield-management techniques such as those used by online travel agencies [17]. Figure 1 summarises the resulting functional links between the four service characteristics and the five SERVQUAL dimensions.

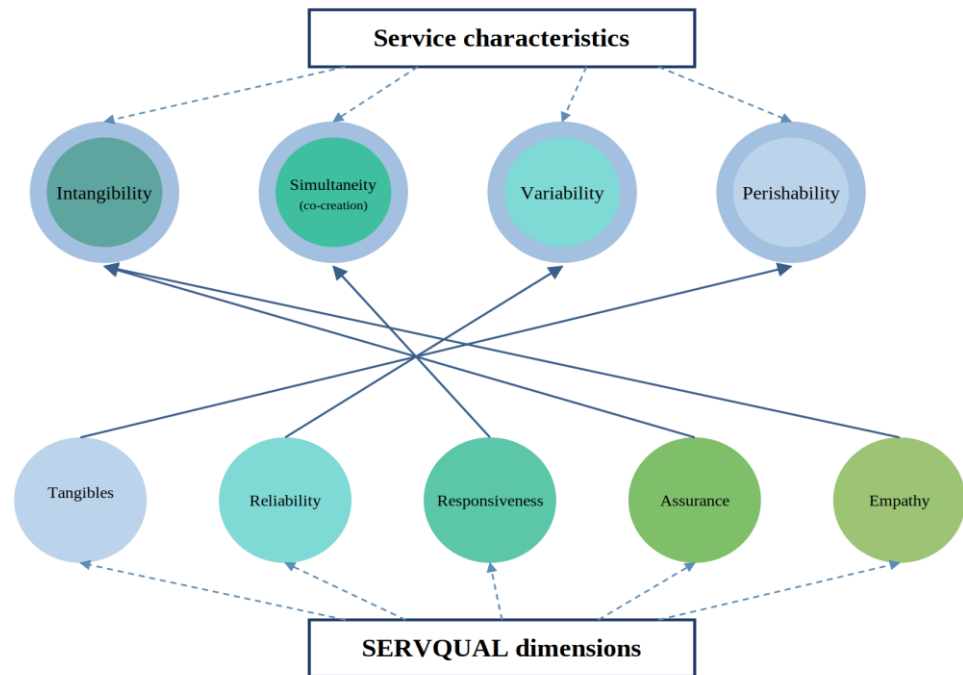


Figure 1. Functional links between service characteristics and SERVQUAL dimensions.

3.2. Embedding sustainability: *SERVQUAL* × *TBL* × *SDG*

Although *SERVQUAL* captures the perceived dimensions of service quality with considerable analytical precision, it is silent on the environmental and societal externalities of service delivery. Three complementary observations motivate the integration developed below. First, an increasing share of international tourists prefers providers that demonstrate environmental and social responsibility, indicating that sustainability is no longer external to the service experience but constitutes part of it [18]. Second, the GSTC criteria explicitly require accommodation and tour operators to track environmental, social, and governance indicators alongside customer-experience metrics [11]. Third, ISO 21401:2018 represents the first international management standard that integrates sustainability requirements into the quality management system of accommodation establishments [12].

Building on these observations, each *SERVQUAL* dimension can be enriched with sustainability sub-indicators drawn from the *TBL* and the *SDGs*. Tangibles can be redefined to include energy- and water-efficient infrastructure (*SDGs* 7 and 12); reliability can be extended to encompass the stability of local supplier networks and fair employment relations (*SDG* 8); responsiveness can incorporate real-time environmental monitoring such as waste streams and carbon emissions (*SDG* 13); and assurance and empathy can be widened to include staff training in sustainability competencies (*SDG* 4) and demonstrable contributions to local community welfare (*SDGs* 5 and 11). The integration is shown schematically in Figure 1.

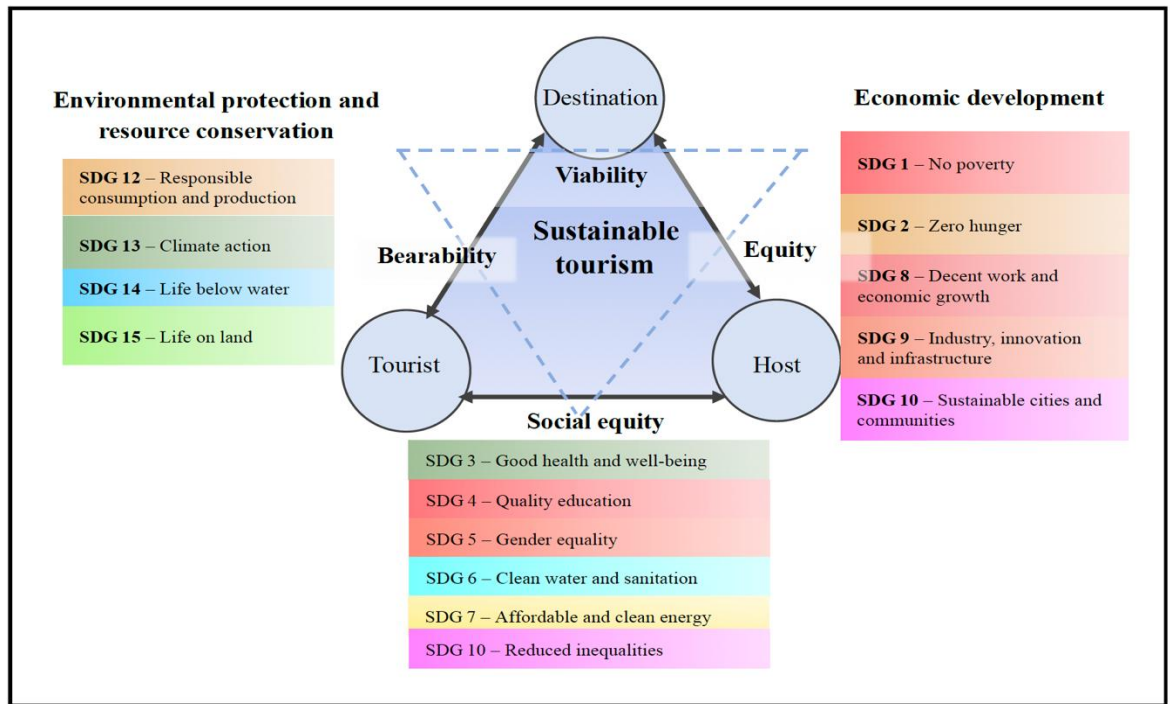


Figure 2. Conceptual integration of SERVQUAL, the Triple Bottom Line, and the Sustainable Development Goals.

The integrated structure provides a conceptual answer to the second research question: rather than positioning quality and sustainability as separate streams, the framework treats sustainability as the deepening of each existing SERVQUAL dimension. This logic is consistent with Buhalis et al.’s argument that the SDGs represent not an additional reporting burden but a re-framing of how tourism value is generated and distributed [10].

3.3. Operationalisation across tourism service segments

To convert the integrated structure into a managerially usable instrument, the framework is operationalised across the four core tourism service segments through four pillars: Resource Management, Service Quality Management, Partnership, Monitoring and Improvement. Each pillar specifies a set of indicators tailored to the segment, while preserving cross-segment comparability. The matrix is presented in Table 1.

Table 1. Sustainable Tourism Service Quality matrix across core tourism segments

Pillar	Accommodation	Transport	Food service & guide-excursion
Resource Management	Waste segregation, zero-waste policies, LED lighting, solar power, grey-water systems [19].	Electric and hybrid fleets, Euro-6+ standards, CO ₂ monitoring with offsetting, GPS-based deadhead minimisation [20].	Local and organic sourcing (≥ 50%), 40-60 % reduction of food waste through composting, induction cooking [21]; low-impact guiding and ecological route design [22].
Service Quality Management	Green branding, “green booking” guarantees, 24/7 customer support, eco-signal monitoring apps,	Branded eco-fleets, vehicle inspection systems, backup-vehicle protocols, QR-ticketing, GPS-tracked online booking.	HACCP-based food safety, mobile menus, halal/vegan/eco-label certification; precise itineraries, WFTGA standards, real-time scheduling.

	eco-penalty systems [23].		
Partnership	≥ 50 % local employment, fair-trade principles, infrastructure grants, volunteer programmes.	Local labour and supplier networks, ecological partners, green compliance indicators.	Cooperation with local farmers and NGOs on food-waste reduction; ≥ 70 % local guides, partnerships with artisan and ecotourism organisations.
Monitoring & Improvement	Sensor-based monitoring, interactive analytics platforms, SDG reporting (Goals 11-12), external certification, PDCA with digital feedback.	Sensor monitoring with live-feedback apps, SDG reporting, ISO 14001 / 39001, PDCA cycle.	Sensors for waste, water, and energy; ISO 22000, “Green Kitchen”; GSTC indicators, post-tour feedback, PDCA-based content updating.

The first pillar, Resource Management, addresses the environmental footprint of service delivery and is therefore most closely aligned with the planet dimension of the TBL [24]. In transport services this is operationalised through fleet electrification, emission monitoring, and route optimisation [20]; in accommodation through waste segregation, zero-waste policies, and grey-water reuse [19], [25]; in food service through local and organic sourcing and composting of organic residuals [21]; and in guide–excursion services through low-impact route design and energy-efficient guiding equipment [22], [26].

The second pillar, Service Quality Management, links the SERVQUAL architecture to sustainability outputs. Branded green identifiers, real-time eco-signal apps, and eco-penalty systems make the sustainability orientation visible to the customer in the accommodation segment [27], while certification labels (halal, vegan, eco) and adherence to international guiding standards perform a similar signalling function in food service and excursions. The third pillar, Partnership, embeds the service in its local economy and community, addressing the people dimension of the TBL through fair employment, supplier diversity, and cooperation with cultural and ecotourism actors[28]. Finally, the fourth pillar, Monitoring and Improvement, anchors the framework in the PDCA cycle: sensor-based monitoring, SDG reporting, third-party certification audits, and digital customer feedback close the loop and feed back into the next planning round [29].

Taken together, the four pillars and four segments produce a matrix of sustainability-enriched quality indicators. The matrix is deliberately compact: it can be expanded into more granular KPIs without altering its underlying logic, and it can be aligned with existing certification regimes by mapping each cell onto specific GSTC criteria or ISO 21401 clauses.

4. Discussion

The framework developed in Section 3 contributes to the literature in three ways. First, it offers a parsimonious account of how the four classical service characteristics relate to the five SERVQUAL dimensions, complementing the more general treatments of Lai et al. [9] and Mokhtaran et al. [16]. Second, it shows that the integration of sustainability into service quality measurement need not require a wholly new instrument; instead, each existing SERVQUAL dimension can be deepened through TBL- and SDG-derived sub-indicators. This incremental strategy lowers the adoption cost for tourism firms that already use SERVQUAL-style customer surveys.

Third, by operationalising the integration across four service segments, the framework enables segment-specific analysis without sacrificing comparability. This is particularly relevant for destination management organisations (DMOs), which typically oversee a portfolio of service providers with heterogeneous business models. Aligning the matrix with the GSTC criteria for industry [11] and with ISO 21401:2018 for accommodation establishments [12] further increases its practical relevance, because both regimes are widely recognised by international markets and by major online travel agencies.

The framework also has limitations that should be acknowledged. As a conceptual contribution, it has not yet been validated empirically; the indicator weights, the exact formulation of composite indices, and the relative importance of the four pillars across different national contexts remain open questions. In addition, the framework focuses on supply-side actors and treats demand-side dynamics-such as cross-cultural differences in sustainability expectations [4] - as exogenous. Future research should address both limitations.

5. Conclusion

This paper has developed a conceptual framework that integrates the SERVQUAL service quality model with the Triple Bottom Line and the Sustainable Development Goals across four core tourism service segments: accommodation, transport, food service, and guide-excursion services. The framework is grounded in four mutually reinforcing literatures-services marketing, corporate sustainability, tourism-specific certification, and quality management-and is operationalised through a four-pillar matrix embedded in a Plan-Do-Check-Act cycle.

Three findings have been reported. First, the four classical service characteristics map systematically onto the five SERVQUAL dimensions through identifiable functional mechanisms. Second, sustainability components can be embedded into SERVQUAL by enriching each dimension with TBL- and SDG-derived sub-indicators rather than by constructing a parallel measurement instrument. Third, the resulting framework can be operationalised across the four core tourism service segments through a matrix of indicators that is compact, expandable, and compatible with leading international certification regimes.

Three avenues for further research follow directly from these conclusions. The framework should be tested empirically by means of survey instruments that integrate SERVQUAL items with sustainability sub-indicators; an integrated composite index combining service-quality scores with ESG performance should be specified and validated; and the framework should be applied at the destination level, where multi-actor governance and regional planning generate additional analytical demands. Pursuing these lines of work would convert the conceptual framework presented here into an empirically calibrated tool for sustainable tourism management.

REFERENCES

- [1] World Travel & Tourism Council, *Travel & Tourism Economic Impact 2025: Global Trends*. London, U.K.: WTTC, 2025.
- [2] World Tourism Organization, *Tourism Towards 2030 – Global Overview*. Madrid, Spain: UNWTO, 2011, doi: 10.18111/9789284414024.
- [3] Y. H. Chin, A. Rahman, R. Haque, A. Pang, and G. Connie, "Customer satisfaction in tourism service quality," *Sci. Am.*, vol. 4, pp. 3398–3402, 2019.
- [4] E. Koc, *Cross-Cultural Aspects of Tourism and Hospitality: A Services Marketing and Management Perspective*. London, U.K.: Routledge, 2025.
- [5] A. Parasuraman, V. A. Zeithaml, and L. L. Berry, "SERVQUAL: A multiple-item scale for measuring consumer perceptions of service quality," *J. Retail.*, vol. 64, no. 1, pp. 12–40, 1988.

- [6] J. Elkington and I. H. Rowlands, *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. Oxford, U.K.: Capstone, 1999.
- [7] United Nations, *Transforming Our World: The 2030 Agenda for Sustainable Development*, Resolution A/RES/70/1. New York, NY, USA: UN General Assembly, 2015.
- [8] C. Grönroos, *Service Management and Marketing: Customer Management in Service Competition*. Hoboken, NJ, USA: John Wiley & Sons, 2007.
- [9] I. K. Lai, M. Hitchcock, T. Yang, and T. W. Lu, "Literature review on service quality in hospitality and tourism (1984–2014): Future directions and trends," *Int. J. Contemp. Hosp. Manag.*, vol. 30, no. 1, pp. 114–159, 2018.
- [10] D. Buhalis *et al.*, "Tourism 2030 and the contribution to the sustainable development goals: The tourism review viewpoint," *Tourism Rev.*, vol. 78, no. 2, pp. 293–313, 2023.
- [11] Global Sustainable Tourism Council, *GSTC Industry Criteria for Hotels (Version 3.0)*. Washington, DC, USA: GSTC, 2023.
- [12] International Organization for Standardization, *ISO 21401:2018 – Tourism and Related Services – Sustainability Management System for Accommodation Establishments – Requirements*. Geneva, Switzerland: ISO, 2018.
- [13] P. B. Crosby, *Quality Is Free: The Art of Making Quality Certain*. New York, NY, USA: McGraw-Hill, 1979.
- [14] J. M. Juran, *Juran on Leadership for Quality*. New York, NY, USA: Simon and Schuster, 2003.
- [15] R. M. Bessom, "Unique aspects of marketing services," *Arizona Business Bulletin*, vol. 9, no. November, pp. 8–15, 1973.
- [16] M. Mokhtaran, M. Fakharyan, M. R. Jalilvand, and M. Mohebi, "The effect of service climate on perceived service value and behavioral intentions: The mediating role of service quality," *Asia Pac. J. Tour. Res.*, vol. 20, no. 4, pp. 472–486, 2015.
- [17] Y. Yang and X. Y. Leung, "A better last-minute hotel deal via app? Cross-channel price disparities between HotelTonight and OTAs," *Tourism Manag.*, vol. 68, pp. 198–209, 2018.
- [18] K. Berbeka, W. Aleziak, and J. Berbeka, "Sustainable development goals of Agenda 2030 in the declarations and aims of international tourism organisations," *J. Travel Tour. Mark.*, vol. 41, no. 1, pp. 142–153, 2024.
- [19] S. Hussain and G. Soni, "Sustainable waste management practices in the hospitality industry: Towards environmental responsibility and economic viability," in *Sustainable Waste Management in the Tourism and Hospitality Sectors*. Hershey, PA, USA: IGI Global Scientific Publishing, 2025, pp. 91–124.
- [20] M. A. I. Malik, M. A. Kalam, A. Ikram, S. Zeeshan, and S. Q. R. Zahidi, "Energy transition towards electric vehicle technology: Recent advancements," *Energy Rep.*, vol. 13, pp. 2958–2996, 2025.
- [21] C. Bux and V. Amicarelli, "Circular economy and sustainable strategies in the hospitality industry: Current trends and empirical implications," *Tourism Hosp. Res.*, vol. 23, no. 4, pp. 624–636, 2023.
- [22] A. Aşçı and D. U. Y. G. U. Yetgin Akgün, "The role of tour guides in sustainable tourism practices," *J. Tourism Gastron. Stud.*, vol. 13, no. 1, 2025.
- [23] U. Akram, R. Lavuri, M. Bilal, I. Hameed, and J. Byun, "Exploring the roles of green marketing tools and green motives on green purchase intention in sustainable tourism destinations: A cross-cultural study," *J. Travel Tour. Mark.*, vol. 41, no. 4, pp. 453–471, 2024.
- [24] S. M. Matiku, J. Zuwarimwe, and N. Tshipala, "Sustainable tourism planning and management for sustainable livelihoods," *Dev. South. Afr.*, vol. 38, no. 4, pp. 524–538, 2021.
- [25] N. Atanasova, M. Dalmau, J. Comas, M. Poch, I. Rodriguez-Roda, and G. Buttiglieri, "Optimized MBR for greywater reuse systems in hotel facilities," *J. Environ. Manage.*, vol. 193, pp. 503–511, 2017.
- [26] European Travel Commission, *Handbook on Encouraging Sustainable Tourism Practices*. Brussels, Belgium: ETC, 2021.
- [27] Y. Hou, P. Guo, D. Kannan, and K. Govindan, "Optimal eco-label choice strategy for environmentally responsible corporations considering government regulations," *J. Cleaner Prod.*, vol. 418, p. 138013, 2023.
- [28] V. Hassan, G. Bellos, and R. Fawaz, "Transportation towards tourism sustainability: Case study of Lebanon," *Athens J. Tour.*, vol. 8, no. 3, pp. 177–192, 2021.
- [29] M. S. Sayfullayeva, "Directions for the practice of sustainable tourism for ecotourism destinations in Uzbekistan," *Am. J. Econ. Bus. Manag.*, vol. 5, no. 12, pp. 98–109, 2022.