

TOURIST PERCEPTION OF SUSTAINABILITY IN HERITAGE SITES: A CASE STUDY OF SAMARKAND AND BUKHARA*Kholmurodova Mokhzoda**Master degree student, Department of Tourism Management, Silk Road International University of Tourism and Cultural Heritage, Samarkand, 141500, Uzbekistan**E-mail: mohzodaxolmurodova1@gmail.com**ORCID ID: 0009-0009-8434-8832*

Abstract: This study examines tourists' perceptions of sustainable development in Uzbekistan's two main tourist centers – Samarkand and Bukhara. Using mixed methods, including a survey of 210 tourists, 15 stakeholder interviews, and field observations, an analysis was conducted to assess visitors' perceptions of the environmental, sociocultural, and economic aspects of sustainability. The results show that tourists highly value architectural heritage, cultural authenticity, and community-based initiatives, but express concerns about commercialization, waste disposal issues, and a lack of "green" infrastructure. Samarkand is perceived as a city that is rapidly modernizing and offering improved conditions for tourists, but risks losing its authenticity. Bukhara, on the other hand, is considered more authentic but faces limited infrastructure and inadequate management of tourist flows. The results show that visible sustainable practices – such as green infrastructure, support for local crafts, and community participation – increase tourist satisfaction and loyalty. In conclusion, the need for closer cooperation between government bodies, the private sector, and local residents to integrate sustainability principles into the development of cultural tourism is emphasized. Strengthening green infrastructure, digital tourism flow management, and the involvement of local communities will help balance tourism growth with the preservation of cultural heritage. The results can help Central Asia create policies and practices for sustainable tourism, which will make Uzbekistan a more responsible and competitive cultural tourism destination.

Key words: Sustainable tourism, tourist perception, heritage sites, Samarkand, Bukhara, cultural tourism, Uzbekistan, UNESCO World Heritage, community involvement, environmental sustainability.

1. Introduction:

Sustainable tourism has become a world-wide priority in the management of cultural heritage sites, balancing the needs and wants of tourists, local communities, and preservation (UNWTO, 2013). While heritage tourism provides economic, environmental, and education opportunities, poor management on the part of destination managers can lead to a wide variety of issues, including: environmental degradation, over-commercialization of the site, and/or the loss of authenticity (Timothy & Boyd, 2003; Garrod & Fyall, 2000). Since tourist perception directly influences the relationship between the effectiveness of sustainability practices being utilized at heritage destinations for better sustainability and overall environmental sustainability,

it is important to study tourist perceptions to ascertain where these sites rate on the sustainability scale (Sharpley, 2009).

Uzbekistan is located along the Silk Road and has numerous UNESCO World Heritage Sites, of which Samarkand and Bukhara are the most visited. Samarkand and Bukhara attract domestic and international visitors due to their Islamic architecture and vibrant bazaars filled with murals, mosaics, and ceramics of vivid colors (UNESCO, 2020). However, Uzbekistan has been experiencing a rise in tourist flows in recent years and many visitors are starting to question how these cities are managing waste and people flow. Additionally, the preservation of cultural and historical authenticity in Uzbekistan has also come into question (Tashkent State University of Economics, 2022).

The effectiveness of sustainable tourism ultimately hinges on how tourists see, perceive, and consume sustainable tourism (Byrd, 2007; Bramwell, 2011). Tourists who are environmentally conscientious are more likely to invest energy in supporting conservation efforts (Choi & Sirakaya, 2006). Conversely, an attitude of indifference toward sustainability might destabilize management plans altogether. Furthermore, there is considerable literature on the importance of tourist experience in sustainable planning (Mason, 2003; Huh & Vogt, 2008), though to date, there is little research on this subject based in Central Asia. In this context, we review how tourists touring both Samarkand and Bukhara conceptualized sustainability in environmental, socio-cultural, and economic aspects. The study findings will support the development of inclusive tourism strategies that apply sustainability objectives to meet visitor expectations and safeguard the cultural heritage of Uzbekistan.

2. Literature review:

The notion of sustainability has undergone notable changes in the tourism literature, evolving from overall environmental concerns to a more holistic consideration of three pressing aspects (economy, environment and socio-culture) (UNWTO, 2013; Bramwell & Lane, 2011). In heritage tourism, sustainability is further complicated, as opposed to other types of tourism, by the fragile nature of the cultural asset, which is often irreplaceable (Garrod & Fyall, 2000; Timothy & Boyd, 2003) and is increasingly susceptible to ruin due to influences as diverse as over tourism, commercialization and neglect.

2.1 Sustainable Heritage Tourism

Sustainable heritage tourism is carefully balanced and managed around cultural and historical tourism areas such that future generations' ability to have value experiences is protected, while the visitor experiences are enhanced, and local communities continue to benefit (UNESCO, 2012). Sustainable heritage tourism combines considerations for environmental protection, socio-cultural tolerance, and economic sustainability when managing and developing attractions that interest visitors to watch, learn, buy and consume (Aas, Ladkin, & Fletcher, 2005; Timothy & Boyd, 2003).

Heritage tourism is clearly different from other forms of tourism, as it examines sites that are mainly cultural, historical, and have architectural significance. Many sites are heritage sites and are recognized as World Heritage either tangible (monuments) or intangible (practices) (Garrod & Fyall, 2000). They are fragile sites that are susceptible to unregulated flows of

visitors from unrestricted management, and commercial exploitation. This pressure is often aggravated by the lack of visits awareness (Pedersen, 2002; McKercher & du Cros, 2002). For this reason, heritage tourism needs to be considered from a sustainability standpoint (the typologies of site, tourism experience, and the well-being of the community). Furthermore, sustainable tourism development and experienced-based development require participation from numerous stakeholder groups—governments, heritage managers, residents, and tourists—with community participation especially observed as necessary for stewardship and to retrieve the socio-economic benefits to tourism development (Bramwell & Lane, 2011; Aas et al, 2005). In this way, heritage tourism has the potential to stimulate cultural rebirth, employment creation, and infrastructure and public facilities creation.

However, practical restrictions to sustainable tourism and heritage tourism include the lack of funding, weak governance, and poor coordination, which can be restrictive in realizing sustainable heritage tourism (Nicholas, Thapa, & Ko, 2009). In Central Asia, where tourism is increasing rapidly, the lack of institutional structures present problems for planning and developing some form of strategic mechanisms to develop heritage preservation and tourism development processes at the same time (Rasulov et al., 2020). In Uzbekistan, where cities like Samarkand and Bukhara remain flagship cultural destinations representing a horizon of multi-tenant and multi-dimensional cultural exchanges over several centuries, and where greater commitment might establish Uzbekistan as the sustainable tourism leader in the region, it makes sense to consider a sustainable heritage tourism approach. Sustainable strategies could make a difference for protecting their unique heritage value tenets, securing a new-kind of tourist experience, and supporting the people.

2.2 Tourism Perception and Sustainable Behavior

The sustainable behavior of a destination is substantially influenced by tourist perception, which encompasses emotional and cognitive processes related to its attributes. According to the Theory of Planned Behavior (Ajzen, 1991), this relationship is influenced by psychological constructs such as attitude, subjective norms, and perceived behavioral control. Empirical research suggests that the selection of environmentally sustainable vacations can be directly influenced by subjective norms and perceptions of environmental issues. However, situational constraints can contribute to the attitude–behavior gap, which occurs when intentions do not translate into action (Juvan & Dolnicar, 2014; Ramchurjee & Suresha, 2020). This gap is being addressed through the integration of sustainability recommendations into digital tools, which is known as digital nudging (Weinmann et al., 2016; Meske & Potthoff, 2017). In addition, behavioral intention and loyalty are influenced by perceived city sustainability, which is a combination of cognitive and affective evaluations (Sánchez-Fernández et al., 2021). Authenticity and cultural identity can also reinforce sustainable behavior by increasing satisfaction and cultivating loyalty in heritage tourism, thereby enhancing perceived value (Zhang et al., 2020; Zhou et al., 2022).

2.3 Challenges in Heritage Site Management

The management of heritage sites is loaded with a myriad of challenges, including overtourism, weak stewardship, inadequate priority in laws and regulations, environmental

threats and risks, and the marginalization of communities, which complicates many management responsibility issues related to cultural heritage.

Among these challenges, overtourism generates an influx of visitors whose numbers exceed the limits of the facility where the heritage site is predominantly located. Potential management challenges associated with overtourism include spoiling physical infrastructure, spoiling heritage assets, and ruining visitors' experiences. An examination of the recent experience of the Alhambra in Spain reveals just how complicated and resource demanding could be the management of carrying capacity over a period of around 30 years and over considerable stakeholder problems the effectiveness of restricting tickets (García-Hernández, et al., 2023). Also in urban centers with heritage value, there are numerous examples where visitor numbers seem to be completely unregulated in combination with increased numbers of visitors driven by social media (e.g., Dubrovnik) as an example of the magnitude of the problem. The proposals include developments like considered back and data gathering in systems that could provide arrangements for measuring flows of visitors towards ameliorating tourism and site preservation of urban locations (Sánchez-Greco et al. 2019).

2.4 The Central Asian Context: Uzbekistan's Heritage Cities

Uzbekistan is ideally located along the Silk Roads and has multiple World Heritage Sites (WHs) that have significant cultural value such as Samarkand and the Historic Centre of Bukhara, which are critical components of the tourism identity and regularly punctuated as flagship destinations in strategies for heritage-led development across central Asia (Juraturgunov et al., 2023; Dayoub et al., 2024). International arrivals have rapidly increased since 2018 following policy reform efforts highlighting visa liberalization, "open skies", and investment programs aligned with national economic interests (CIS Legislation, 2019, 2020), magnifying the potential opportunities and challenges of sustainable heritage implementation.

Samarkand listed on the World Heritage list in 2001 for its Outstanding Universal Value as a "Crossroad of Cultures" and Bukhara listed in 1993 for its urban fabric preserved in an authentic representation of Islamic architecture from the 10th - 17th centuries, must now contend with the pressures associated with an increase in tourism flows, modern urbanization, and commercial redevelopment (UNESCO, n.d.-a; n.d.-b). UNESCO's State of Conservation reports highlighted concerns related to development within buffer zones, construction that interferes with historic skylines, and lack of evidence of integrated management plans (UNESCO, n.d.-c; n.d.-e).

2.5 Gaps in the Literature

Despite an growing scholarship in heritage tourism and sustainability on a global scale, research on Central Asia and to a degree Uzbekistan is still relatively limited. Most of the research that has been conducted is focused on UNESCO World Heritage Designation, site management frameworks, and tourism policies shaping heritage cities (Dayoub et al., 2024; Juraturgunov et al., 2023; UNESCO, 2019a). Nevertheless, this work is important as it highlights how institutions (state and local agencies) respond, as well as the macro-level geographical/tourism position of Samarkand and Bukhara as cultural tourism destinations, as there are still a number of gaps in scholarship.

The first consideration is that there is limited empirical data on tourist perceptions of sustainability in Uzbekistan's heritage cities. At a broader international level, various studies regarding visitor perceptions of authentic experiences, conservation efforts and sustainable tourism in heritage contexts have appeared, albeit work in the context of Uzbekistan has primarily focused on policy reforms, state development initiatives, and conservation reports (CIS Legislative, 2019; 2020; UNESCO n.d.-a; n.d.-b). There are few empirically sound works such as Juraturgunov et al. (2023) that describe tourist behaviours and loyalty, these studies do not address sustainability perceptions, such as how tourists view preservation of authentic experiences, waste management, or community involvement. Furthermore, there is a lack of methodological diversity in the region, particularly in the research with geographical heritage tourism studies and sites designated as either a UNESCO WHS. Research on WHS in Uzbekistan typically consists of either descriptive policy analysis of historical accounts or case study accounts (Makhmudov et al., 2023; Shokirov & Parsi, 2025). There is a significant lack of mixed methods or comparative designs that fused qualitative perceptions with quantitative measures of sustainability awareness and satisfaction. This represents significant limitations in the ability to strengthen theoretical contributions that can engage with more prominent debates on sustainable heritage tourism.

The last significant literature gap is that there has been little comparative research about Uzbekistan's important heritage cities. Samarkand and Bukhara are often the subject quotes one at a time on guidelines from UNESCO and in terms of promotional materials around by planners in tourism programs. Few examples of research surveys have also systematically compared both cities in terms of perceptions of tourist sustainability as well. This gap is important because both locations experience overlapping forces (urbanization, overcrowding resulting in congestion and risking authenticity), while also surviving in different size scales, governance systems, and visitor experiences.

All the gaps are indicative that current research does not accurately reflect how tourists view sustainability in these heritage cities. Addressing this gap is important since tourists' perceptions of sustainability will impact satisfaction, loyalty, and sustainability, thus the viability of long-term heritage tourism. The present research seeks to explore the sustainability perceived through tourists' perceived destinations of Samarkand and Bukhara that will fill the existing gaps, and contribute to the academic literature on sustainable heritage tourism, will advance local policy options and contribute to management strategies in the context of Uzbekistan in regards to heritage tourism management.

Methodology:

3.1 Research Design

In this research, a mixed-methods research design will be utilized to collect data. The mixed-methods approach uses both quantitative and qualitative methods to help gain a holistic understanding of tourists' sustainability perceptions in Samarkand and Bukhara. The mixed methods approach is useful for tourism research and likely the best approach to combine credibility with rigor, as it allows for the collection of quantitative, measurable data on patterns and attitudes, combined with the interpretative nature of qualitative research focusing on the tourists' subjective experiences (Creswell & Plano Clark, 2017). The goal will be to combine

surveys with semi-structured interviews to reflect both breadth and depth, and to allow for the complexity of sustainability perceptions in the heritage tourism context.

The quantitative component will involve a structured questionnaire survey. The questionnaire, distributed to domestic and foreign tourists visiting the major heritage sites in Samarkand such as Registan Square and Shah-i-Zinda, and in Bukhara the Ark Fortress and Po-i-Kalyan Complex, was designed to measure tourists awareness, attitudes, and evaluations of sustainability practices divided into environmental, socio-cultural, and economic aspects. The survey included Likert-scale items to measure the tourists' level of satisfaction and perceptions of managers' sustainability strategies and practices, ensuring the results could be statistically analyzed for patterns and correlations.

The qualitative part consisted of semi-structured interviews undertaken with a smaller group of tourists as well as local stakeholders (e.g. tour guides, heritage site managers, business owners in the hospitality industry). Interviews aimed to elicit nuanced views on the challenges and opportunities of sustainable tourism development in Uzbekistan's heritage cities. The qualitative insights offered contextualised knowledge of survey responses and surfaced differences in perspectives among tourists and local stakeholders. This research design is based on a case study methodology, with a consideration of Samarkand and Bukhara as connected case examples of heritage destinations in Central Asia. The case study methodology is useful for nuanced investigations, particularly because it adopts a situated examination of sustainability issues related to the heritage sites in Uzbekistan (Yin, 2018). Also, the use of the two methods in combination improves the study's construct validity and reliability, because the study uses data triangulation to mitigate the effects of using a single

3.2 Study Cities

This research investigates Samarkand and Bukhara, the two most significant heritage sites in Uzbekistan that act as focal points of interest on the ancient Silk Road. Both cities are UNESCO World Heritage sites, making them distinctive cultural landscapes in which tourism development considerations occur with sustainability consideration.

Samarkand was aptly dubbed by many authors as the "Crossroads of Cultures" due to its historical role of a place of trade, religion, and science in the world. The most recent population estimation, which is over approximately 550,000 people (State Committee of Statistics of Uzbekistan, 2024), shows that Samarkand could expect up to 2.5 million domestic tourists, along with international tourists. This makes Samarkand one of the most visited destinations in Central Asia (UNWTO 2023). The main tourism draws are the city's world-class architectural cultural heritage: Registan Square, Bibi-Khanym Mosque, Gur-e-Amir Mausoleum, Shah-i-Zinda necropolis. Most recently, a shift in heritage management in Samarkand from prospected angel to an emphasis on Silk Road tourism; a large investment in the overarching management of the city to upgrade existing tourist infrastructure, including a new Afrosiyob high-speed rail connection to Tashkent. Urbanization, the expansion of tourism accommodation and other facilities, as well as visitor footfall have posed difficult questions in terms of heritage sustenance, visitor experience, local community well-being.

Bukhara (approximately 280,000 residents; State Committee of Statistics of Uzbekistan, 2024) is considered a "living museum," due to its intact urban fabric -- which continues to document over two thousand years of history. With an estimated 1.8 million annual visitors who are drawn to its Old City's madrassahs, mosques, caravanserais, and bazaars (which reflect both Islamic architecture and mercantile culture inspired by the Silk Road; UNESCO, 2022), Bukhara retains a relatively traditional urban quality, with its narrow alleyways and historical residential quarters encouraging a feeling of authenticity. However, mass tourism, commercialization, and infrastructure pressures put pressure on the international co-operation projects concerning preservation of heritages with projects in Bukhara supported by UNESCO and ICOMOS.

Both cities are central to Uzbekistan's Tourism Development Strategy 2030 to double international arrivals and promote sustainable practices. Their selection as case study destinations exemplifies their shared relevance as iconic heritage destinations while both destinations' anticipated impact on sustainable tourism practice is also dissimilar given their different approaches to tourism development and heritage management. Samarkand is characterized by rapid modernization and international tourism branding, while Bukhara represents a living historic city facing a challenge of authentic sustainability. This study aims to use tourist perceptions of sustainability to highlight the diverse experiences and expectations on the future of heritage tourism in Uzbekistan, in both cases.

3.3 Data Collection Methods

This study used mixed methods to gather rich data about tourist perceptions of sustainability in heritage destinations of Samarkand and Bukhara. Mixed methods were used to receive the complete picture of the research problem. Quantitative and qualitative methods were applied to ensure the aim of mixed methods research was achieved. A structured survey questionnaire was the main data collection method, of which the researcher successfully administered to a total of 210 tourists, with 110 in Samarkand, and 100 in Bukhara. Tourists were sampled through convenience sampling at key heritage destinations, including Registan Square, Shah-i-Zinda, Gur-e-Amir in Samarkand and Po-i-Kalyan Complex, Ark Citadel, and Lyabi Hauz in Bukhara. The survey had an overall response rate of 84 percent, with 176 valid and complete questionnaires (100 in Samarkand and 76 in Bukhara) retained for analysis. In addition to the survey, semi-structured interviews were conducted with 15 stakeholders - heritage site managers, local tourist authorities, private tour operators, and licensed tour guides- which allowed for additional insight into current sustainable heritage management practices and the extent to which the challenges and/or restrictions of conserving the heritage asset with sustainable tourism development. Each interview lasted approximately 30-45 min and was audio recorded with the participants consent.

Secondary data were obtained through the analysis of publicly available documents including official publications, reports by the State Committee for Tourism Development of Uzbekistan, documents from the UNESCO World Heritage Centre, and statistics regarding the levels of tourist arrivals between the years 2019 and 2024 and related tourism statistics that fell within the wide timeframe. Some academic articles as well as tourism policy papers were also examined to provide a cross-referencing perspective and strengthen how the findings were interpreted. The inclusion of surveys, interviews, and observations, along with secondary data,

meant that the study was subject to a triangulation of data, which enhanced both reliability and validity of the findings.

3.4 Data Analysis

The study used a combination of primary and secondary data sources, in order to study sustainable tourism development in Samarkand and Bukhara. The data were collected through surveys, interviews, and document sources and analyzed in a mixed-method way, using descriptive statistics and qualitative interpretation. The surveys were coded into key thematic categories including environmental management, cultural heritage preservation, infrastructure, and community participation. The quantitative data from the questionnaires were analyzed using descriptive statistics. Simple descriptive statistics were also used in reporting percentages and frequency distributions of the questionnaires which may reveal patterns in tourist evaluations about waste management, green facilities, and preservation of monuments. In terms of qualitative information, stakeholder data and the analysis of open-ended responses and documents were organized thematically, with key issues that emerged around improving infrastructure and environmental regulation and a greater need for community participation in tourism planning. The two cities' comparative analysis demonstrated that Samarkand attracts visitors due to its higher international status, while Bukhara is preferable as an authentic & traditional heritage experience. The perspectives provided a starting point towards best practice identification and adjusting policy. Overall, the use of quantitative and qualitative techniques allowed this study to generate statistical information as well as voice the perspectives of stakeholders and allowed for a fuller understanding of the challenges and opportunities for sustainable tourism development in Uzbekistan's heritage cities.

Result and Discussion:

The study on sustainable tourism in Samarkand and Bukhara revealed that travelers are becoming more concerned about over-commercialization, poor infrastructure, and environmental pressures, while also pursuing cultural authenticity. Visitors acknowledged the sustainable nature of iconic monuments in Samarkand, such as Registan Square and Shah-i-Zinda, but they also identified potential downsides, including over-restoration, poor green infrastructure, and excessive commercialization, which could diminish their authenticity. Nevertheless, travelers responded favorably to the initiatives, which encompassed the development of new pedestrian pathways, the enhancement of waste management systems, and the promotion of artisanal crafts. Tourists recognized Bukhara as a "living heritage city" where community life is perpetually interwoven with history. Tourists perceived a greater sense of authenticity in Bukhara than in Samarkand, despite their continued calls for eco-friendly accommodations, renewable modes of transportation, and improved waste management. Initiatives such as community-based tourism and the promotion of local crafts were viewed favorably by all tourists at each site. However, policies that prioritized short-term revenue-generating activities over long-term heritage conservation were viewed somewhat more critically. The findings are consistent with the global trends observed in UNESCO and UNWTO reports, which recognize that the quality of heritage tourism is not solely determined by policy; it must also be applied in a sustainable manner.

In summary, Uzbekistan has made headway in enacting sustainable tourism policies, but more needs to be done in the area of environmental management, green infrastructure, and involving the community. Sustainable tourism is not just part of heritage tourism for tourists, but a fundamental aspect. As Uzbekistan develops the tourism offerings in areas like Samarkand and Bukhara, it is critical that they continue to explore ways of expanding tourism while protecting the cultural heritage and environment.

Conclusions and Recommendation:

This research was focused on tourist perceptions of sustainability in Samarkand and Bukhara through surveys, interviews and secondary data, which also revealed strengths and weaknesses related to how heritage sites are managed. Our results indicated that tourists appreciated restoration work, conservation initiatives, more sustainable transportation, and improved accessibility; however, our findings also raised several areas of concern for sustainable tourism development such as peak-season tourism and overcrowding; waste management practices; lack of digital tools and resources; and limited levels of engagement from the local population. Although tourists were happy and loyal to a particular site when initiatives of sustainability were easily observable such as vegetation, green infrastructure or community-based tourism. Overall, these insights suggest sustainable development in Uzbekistan goes beyond conserving the monuments but involves social, economic and environmental factors which affect visitor experiences and long-term competitiveness. Both Samarkand and Bukhara appear to be moving in the right direction but the need for more cooperative governance between government, private sectors, and communities must be addressed.

This study recommends that Uzbekistan develop green infrastructure in its heritage cities through the improvement of waste management, transport, and renewable energy use. Increasing community engagement will ensure residents have a voice in tourism planning and can claim direct benefits from the results. Smart platforms and apps can manage visitor flows and provide information to protect fragile sites. Greater regulatory and financial subsidies will encourage the tourism industry to pursue sustainable practices. Closer partnerships with organisations such as UNESCO, UNWTO and relevant international counterparts will provide local knowledge and resources, promoting Uzbekistan to lead in sustainable tourism in Central Asia.

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