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Sustainable tourism indicators for cities from tourists' perspectives: the case of Da Lat, Vietnam

Thi Lan Huong Truong[a1], Thi Thanh Ngan Nguyen[b,]

[a]*Faculty of Tourism and Culinary Arts, Ho Chi Minh City University of Industry and Trade, 140 Le Trong Tan, Tay Thanh Ward, Tan Phu District, Ho Chi Minh City, Vietnam*
[b]*Dalat University, 01 Phu Dong Thien Vuong, Da Lat City, Vietnam*

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Abstract

Urban destinations, housing over half the world's population, are overlooked in sustainable tourism research. Effective management requires selecting sustainable indicators, which are crucial for assessing economic, social, environmental, and governance aspects. However, systematic sustainability appraisal in tourism is still nascent, with previous studies lacking tourist perspectives. This study explores how tourists perceive sustainable tourism indicators in the context of a city destination. The study uses a quantitative approach with an online questionnaire featuring 53 sustainable tourism indicators, surveyed among 305 tourists in Da Lat, a well-known tourism city in the Central Highlands, Vietnam. Descriptive statistics based on mean analyses show that institutional sustainability indicators received the highest score, while environmental indicators were reported with the lowest score in the tourists' view. The exploratory factor analysis of the importance given to sustainability indicators identified seven factors: 1) Institutional sustainability, 2) Socio-cultural sustainability, 3) Environmental sustainability, 4) Negative environmental impacts, 5) Urban Identity, 6) Sustainable labor in tourism, and 7) Negative socio-cultural impacts. The sustainable tourism development in Da Lat needs to consider the city's internal issues concerning the planning and management of urban identity. The results demonstrate tourist awareness of sustainability issues and that, in the long run, this awareness might lead to changes in tourist preferences. Tourists see themselves as contributors, helping to enrich the city instead of contributing to overusing available resources. This research shows a more multidimensional sustainable tourism than the classic concept definition from tourists' perspectives. The findings also highlight sustainability dimensions enhancing tourist experiences.

Keywords: Sustainable tourism indicators, Sustainability indicators, Sustainable tourism, Tourists' perspectives, Tourist city

1. Introduction

Sustainable tourism indicators play a crucial role in assessing and monitoring the sustainability performance of tourism destinations (Gutierrez, Rivera, and Soler 2021), especially for city destinations where the rapid growth of tourism has brought about both opportunities and challenges. These indicators provide valuable information that can guide policy-making, resource allocation, and decision-making processes to ensure the long-term preservation of natural resources and cultural heritage, as well as the overall well-being of local communities (Kristjánsdóttir, Ólafsdóttir, and Ragnarsdóttir 2018). They serve as tools for measuring and evaluating the impact of tourism activities on the environment, economy, and society (World Tourism Organization (UNWTO) 2004).

[1] Corresponding author. Tel.:(84) 937925296; E-mail address: huongttl@huit.edu.vn

By using sustainable tourism indicators, governments and stakeholders can identify prioritize areas for improvement, track progress towards sustainability goals, and make informed decisions to mitigate negative impacts and enhance positive contributions of tourism (Rasoolimanesh et al. 2023). Gutierrez et al. (2021) have summarized existing studies on sustainable indicators, indicating a growing trend in identifying indicators for various countries, destinations, or specific tourism activities. This ever increasing trend reflects a broader recognition of the need for comprehensive and context-specific measures to assess sustainability within the tourism industry. Researchers and practitioners are increasingly focusing on developing indicators tailored to specific geographic locations, tourism destinations, or even particular tourism activities.

Urban destinations are at the forefront of global tourism, attracting millions of visitors annually with their vibrant culture, historical landmarks, and diverse offerings. However, the rapid growth of tourism in cities has raised concerns about sustainability (Diéguez-Castrillón, Gueimonde-Canto, and Rodríguez-López 2022), as increased visitor numbers can strain local resources, infrastructure, and communities. City destinations, where more than 50% of the world's population is concentrated, are rarely mentioned in research on sustainable tourism (Maxim 2016). Therefore, the management of sustainable tourism in urban areas, specifically cities, requires careful analysis to select appropriate sustainable indicators (Diéguez-Castrillón, Gueimonde-Canto, and Rodríguez-López 2022). To address these challenges, there is a growing need for sustainable tourism indicators that provide a comprehensive framework for measuring the impact of tourism on urban environments from the perspective of tourists themselves.

The process of selecting, measuring, monitoring, and evaluating indicators can be complex, but it is essential to ensure the effectiveness and success of sustainable tourism strategies. One of the important tourism stakeholders that should be included in developing and implementing sustainable tourism indicators is tourists (Rasoolimanesh et al.,. While numerous studies have explored indicators from the perspective of policymakers, industry professionals, and environmental experts, there remains a critical gap in understanding how tourists perceive and interact with sustainability metrics. Tourists play a crucial role in sustainable tourism as their behaviors and choices can significantly impact the environment, economy, and the host community. However, little attention has been paid to incorporating tourist perspectives in the development of sustainable tourism indicators (Aydın and Alvarez 2020; Rasoolimanesh et al. 2023). Including tourist perspectives in developing sustainable tourism indicators is important because it allows for a more comprehensive and holistic evaluation of sustainability.

This article seeks to address these gaps by examining sustainable tourism indicators from tourists' perspective. By prioritizing tourists in our analysis, we aim to investigate their perceptions of sustainable tourism indicators within a city destination context. Understanding tourists' perspectives is crucial as they are key stakeholders in the tourism industry, and their behaviors and preferences shape the demand for sustainable tourism practices.

By focusing on tourists' perceptions, we can identify potential gaps or discrepancies between existing sustainable tourism indicators and tourists' needs and preferences. This understanding can guide the refinement and adaptation of indicators to better align with the expectations and priorities of tourists, ultimately enhancing the effectiveness of sustainability initiatives in city destinations. This research contributes to a more holistic understanding of sustainability in tourism and provides actionable recommendations for destination managers, policymakers, and industry stakeholders to enhance the sustainability of city tourism.

2. Literature review

2.1. Sustainable Tourism Indicators in Relation with Urban Context

Efforts to implement the concept of sustainable tourism have led to the development of numerous sets of indicators with the hope of quantifying sustainability. "*Indicators are measures of the existence or severity of current issues, signals of upcoming situations or problems, measures of risk and the potential need for action, and means to identify and measure the results of our actions*" (World Tourism Organization (UNWTO), 2004:8). According to Leite et al. (2022), "*the sustainability indicators may be regarded as variables of an operational nature of a certain attribute about quality, characteristics, and property*". As such, sustainable tourism indicators serve as essential tools for identifying unsustainable realities and are valuable for both planning and monitoring public policies aimed at achieving sustainable tourism development. In contemporary times, where the tourism industry stands at the intersection of rapid growth and sustainability imperatives, there has been a significant demand for indicator tools in recent years, especially at the destination level (Tanguay, Rajaonson, and Therrien 2013). Since the early stages of implementing sustainable development in the tourism industry, the World Tourism Organization has been promoting the development of sustainable tourism indicators, starting with the publication of the first set of indicators in 1996 (Kristjánsdóttir, Ólafsdóttir, and Ragnarsdóttir 2018). These indicators were considered the first developed tools for operationalizing sustainable development in any tourism destination context. By 2004, the World Tourism Organization had published "*Indicators of Sustainable Development for Tourism Destinations: A Guidebook*" (World Tourism Organization (UNWTO) 2004), presenting an extensive

compilation of indicators, serving as a valuable starting point for aligning chosen indicators with the policy objectives of a particular destination. This work recommends 12 aims of sustainable tourism based on the triple bottom principle: economic, social, and environmental. Similarly, the European Tourism Indicator System (European Union 2016) is another management, information, and monitoring tool designed explicitly for sustainable tourism destinations. This system includes 27 core and 40 optional indicators, categorized into four types: destination management, social and cultural impacts, economic value, and environmental impact. Some other methodological tools utilized to gauge municipal sustainability include the Pressure-State-Response model, the Ecological Footprint, the Sustainability Barometer, Sustainable Development Indicators Brazil, and the Municipal Sustainable Development Index (Leite et al. 2022). The study by Asmelash & Kumar (2019) presents a comprehensive synthesis of research on selecting sustainability indicators. The authors identified and validated a set of 53 indicators across four distinct dimensions: economic, socio-cultural, environmental, and institutional sustainability. The findings of this study offer valuable insights into the development of indicator frameworks that can effectively evaluate and monitor sustainability across diverse domains. Nevertheless, although destinations may share certain fundamental indicators, they also encounter distinct sustainability challenges and employ different governance mechanisms. Hence, there is a need for indicators tailored to specific sites and destinations (Rasoolimanesh et al. 2023). Additionally, most previous studies on this subject are merely descriptive, subjective, and heavily reliant on qualitative data (Asmelash and Kumar 2019) and have followed a supply-based perspective, ignoring the tourist view (Aydın and Alvarez 2020; Rasoolimanesh et al. 2023).

The assessment of sustainability in urban areas has garnered attention from several authors (Boom et al. 2021; Chadha and Onkar 2014; Martí, Nolasco-Cirugeda, and Serrano-Estrada 2017; Maxim 2016; Önder, Wöber, and Zekan 2017; Sitepu et al. 2019). Chadha & Onkar (2014) study identified sustainable urban tourism indicators based on environmental, social, and economic parameters applied in the case of Omkareshwar city, India. They categorized six factors into three systems relevant to urban tourism: 1) Human systems (individual development, social system, government system); 2) Support systems (economic system, infrastructure system); and 3) Natural systems, encompassing environmental and resource systems. However, the analysis in this study relied solely on a SWOT analysis of the indicators, lacking quantitative results. Maxim (2016) contributed to understanding sustainable tourism applications in large cities, using London as a case study through primary and secondary data collection (online surveys, semi-structured interviews, and document analysis) to investigate local government efforts towards sustainable tourism. The paper concluded that despite some progress, economic growth and development remain primary goals for governments and local authorities, often overshadowing social and environmental issues. Önder et al. (2017) study addressed a bottom-up approach through TourMIS, a platform for exchanging tourism statistics among tourism organizations, aimed at gathering measures for sustainable urban tourism development. The authors synthesized various reference frameworks for sustainable tourism indicators for regions and cities based on three dimensions: economic, social, and environmental. Martí et al. (2017) devised a tailored instrument comprising twenty-seven urban attributes to evaluate the sustainability of tourist cities in the Spanish Mediterranean region. This assessment tool considers three unique urban characteristics: land utilization, the diversity of economic activities, and open spaces. al.'s (2019) research aimed to develop a model for implementing sustainable tourism development in Medan, Indonesia. Factors of sustainable tourism included sustainable management, socio-cultural benefits, economic benefits for neighboring communities, environmental benefits, and the application of sustainable tourism. Hocevar & Bartol (2021), in their bibliometric literature review, summarised that the main focus of urban tourism shifts towards addressing social sustainability issues, encompassing perspectives from tourism businesses, socio-cultural viewpoints, and environmental considerations. Emerging terms like Airbnb and overtourism signify significant changes in cities and societies, while the interplay between tourism and health, notably highlighted during events like the Covid-19 pandemic, underscores the vulnerability of cities and tourism to climate change and disease. These developments may prompt a significant re-evaluation of previous sustainability concerns.

2.2. Tourists' Perspectives on Sustainable Tourism

Tourists' perspectives on sustainable tourism are crucial in understanding their attitudes, behaviors, and motivations towards sustainability. This key stakeholder of the tourism industry plays a pivotal role in sustainable tourism development as they wield influence over local economies, societies, cultures, and environments through their decisions (Rasoolimanesh et al.,. By incorporating tourists' perspectives, sustainable tourism indicators can capture their values, preferences, and expectations, resulting in more relevant and effective strategies for sustainable tourism (Bernini, Urbinati, and Vici 2015). Furthermore, involving tourists in developing sustainable tourism indicators can foster a sense of ownership and responsibility towards sustainable practices. This can lead to increased awareness and engagement among tourists, ultimately contributing to the success of sustainable tourism initiatives (Aydın and Alvarez 2020; Rasoolimanesh et al. 2023). However, tourists are often overlooked as stakeholders in sustainable tourism studies despite their significant role in shaping visitor behavior and

informing sustainable tourism decisions. Their experiences and feedback offer valuable insights for enhancing destination management. Future research must focus on developing sustainable tourism indicators (STIs) tailored to tourists' perspectives (Aydın and Alvarez 2020; Diéguez-Castrillón, Gueimonde-Canto, and Rodríguez-López 2022; Rasoolimanesh et al. 2023).

A limited number of prior research endeavors have explored tourists' perspectives on tourism sustainability (Aydın and Alvarez 2020; Cottrell et al. 2004; Nicholas and Thapa 2010; Page, Essex, and Causevic 2014). Cottrell et al. (2004) Cottrell et al. conducted a study comparing tourist perceptions of sustainability based on 15 indicators grouped in three aspects (ecological aspects, social-cultural aspects and economic aspects) in Manuel Antonio/Quepos, Costa Rica, and Texel, The Netherlands. They found that tourists rated the ecological dimension of sustainability as the most important, followed by social-cultural and economic dimensions. Loss of local lifestyles and urbanization were perceived as significant issues in Manuel Antonio/Quepos, while Texel tourists mentioned problems such as price increases and urbanization. This study demonstrates tourist awareness of sustainability issues and suggests that this awareness could influence future tourist preferences. Study of (Nicholas and Thapa 2010) focuses on visitors as key stakeholders in sustainable tourism development in The Pitons Management Area (PMA) World Heritage Site, United States. The research examined visitors' environmental, economic, and social attitudes towards sustainable tourism development and found that attitudes were generally positive. The Economic Attitudinal Index had the highest predictive power to support sustainable tourism development, followed by the Social Attitudinal Index. This study implies the importance of understanding visitor attitudes for the sustainable development of tourism in world heritage sites. Page et al. (2014) explored tourists' attitudes towards water use in Zanzibar, The Gambia, and the Dominican Republic. It found that unsustainable water use, exacerbated by climate change, threatens water access and can lead to conflicts between tourists, tourism businesses, residents, and the environment. The study highlights tourists' lack of awareness of the impacts of their water use on the local environment and community, indicating the growing unsustainability of tourism in certain destinations. Aydın & Alvarez (2020) address the need to consider tourists' viewpoints when creating sustainable destinations. It emphasizes that marketing plays a crucial role in sustainability initiatives but notes a lack of literature focusing on tourists' perceptions of sustainability attributes. The research aims to determine which sustainability traits are most important to tourists and their willingness to pay for these aspects. The findings suggest that tourists view sustainability from a varied perspective and prefer attributes that enhance their tourist experiences. Overall, these studies underscore the importance of understanding tourist perceptions and attitudes towards sustainability to develop sustainable tourism destinations.

Therefore, this study seeks to enhance the existing literature by exploring the viewpoints of tourists regarding the diverse factors contributing to the sustainability of tourist cities, focusing on identifying the most significant indicators.

3. Methodology

3.1. Study Site: Context of Da Lat, Viet Nam

Da Lat is located on Lam Vien plateau in the Central Highlands of Vietnam, at an elevation of 1,500 m above sea level with a total natural area at 393.29 km².

Da Lat was formed in 1893 when Dr. Alexandre Yersin came to the Lam Vien plateau. Since its inception, Da Lat has been designed and developed as a resort hub in Indochina. As of 1986, it has expanded to include 12 wards and 4 communes. The introduction of a flower festival in the 2000s gave da Lat's tourism industry a boost. Thanks to its delightful climate, breathtaking natural scenery, unique local culture, and hospitable people, the number of tourists visiting the city has grown exponentially - from 710,000 in 2000 to 2.1 million in 2009, 5.9 million in 2019, and a projected 6.7 million in 2023, as reported by the Lam Dong Department of Culture, Sports, and Tourism (Tỉnh ủy Lâm Đồng 2022). Despite the recent growth in tourism and other economic sectors, Da Lat faces significant challenges in achieving sustainable development, making it an excellent case study for this research.

Ward 8 (Flower Garden of the City).

Fig. 1. Da Lat map with some pictures of city development issues

(Source: https://thanhnien.vn and https://vnexpress.net)

3.2. Research design, measurement

This study aims to evaluate sustainability indicators from tourists' perspectives. Initially, various indicators were gathered from previous tourism studies, and a suitable set was selected for assessing sustainable tourism in Da Lat. The indicators, derived from Asmelash and Kumar (2019), cover four dimensions: Economic, Environmental, Socio-Cultural, and Institutional Sustainability. Adjustments were made through discussion groups with local experts for better applicability. A total of 53 items were included in the questionnaire, measured on a five-point Likert scale (ranging from 1 strongly disagree to 5 strongly agree). Data were collected through on-site surveys from March to June 2023, targeting tourists, with a sample size of 305, following Hair et al. (2010)'s recommendation. The convenient sampling method was employed for data collection.

3.3. Data analysis

The measurement model was tested with SPSS 20.0 software with descriptive statistics, Cronbach alpha, and exploratory factor analysis. To explore dimensions of tourism sustainability from tourists' perspectives in an urban context, a set of items was analyzed for exploratory factor analysis to identify those items not belonging to the specified domain. To obtain several theoretically meaningful factors, the factoring extraction method was applied. Given the sample size, loadings greater than 0.30 could be considered statistically significant (Žabkar, Brenčič, and Dmitrović 2010). As the number of variables analyzed is also important in deciding which loadings are significant (Hair et al., 1998), only items with a loading below 0.60 and/or cross-loadings above 0.35 were discarded, enabling us to keep a minimum of three items for each of the factors. Subsequently, the data were used for assessing reliability and validity and testing the model with $\chi 2/df$, CFI, TLI, GFI, and RMSEA (Baumgartner and Homburg 1995).

3.4. The characteristics of the sample

A total of 305 responses were collected from on-site surveys. The majority of respondents were young adults aged 21 to 35 (84.5%), followed by those under 20 years old (14.3%), and smaller percentages in the age groups of 36 to 46 years (2.3%) and 46 to 55 years (1.0%). Singles constituted the highest portion of participants (90.6%), with smaller percentages of married (7.8%) and divorced (0.6%) individuals. Females comprised 55.2% of respondents, while males accounted for 41.9%. Most participants were students (58.1%) with an average monthly income below 5 million VNĐ (53.6%), and held undergraduate degrees.

Tab 1. Demographic profile of the respondents

		Frequency	Percentage (%)
Number of travel trips per year	1	58	19
	2-5	74	24.3
	>5	173	56.7
Sex	Male	129	41.9

	Female	170	55.2
	Others	6	1.9
Marital status	Single	279	90.6
	Married	24	7.8
	Divorced	2	0.6
Age	< 20	44	14.3
	21-35	251	84.5
	36-45	7	2.3
	46-55	3	1.0
	>55	0	0
Occupation	Student	179	58.1
	Private workers	77	25
	Government workers	15	4.9
	Others	34	11
Monthly average income (million VND)	<5	165	53.6
	5-10	98	31.8
	10-20	29	9.4
	>20	13	4.2
Education	Below high school	3	0.98
	High school	38	12.46
	College	35	11.48
	Undergraduate	210	68.85
	Post-graduate	19	6.23

4. Results

4.1. Descriptive statistics

All the indicators reported were good mean scores. Respondents also showed higher satisfaction with most of the indicators. Economic Viability had the highest score, accounting for a mean value of 3.82 and followed by Local Prosperity and Political Support at Different Levels of Government with mean values of 3.79 and 3.77, respectively. Employment quality received the least attention from tourists, with a mean value of only 3.47/5.

Tab 2. Mean of constructs

Dimensions and sub-dimensions	**Mean**	**Dimensions and sub-dimensions**	**Mean**
Economic sustainability	***3.69***	***Environmental Sustainability***	***3.59***
Employment Quality	3.47	Physical Integrity	3.62
Economic Viability	3.82	Biological Diversity	3.62
Local Prosperity	3.79	Resources Efficiency	3.56
Socio-cultural Sustainability	***3.63***	Environmental Purity	3.54
Social Equity	3.69	***Institutional Sustainability***	***3.73***
Visitor Fulfillment	3.55	Local-Oriented Control Policy	3.74
Local Control	3.66	Political Participation	3.72
Community Wellbeing	3.68	Local Planning Policy	3.69
Cultural Richness	3.58	Political Support at Different Levels of Governments	3.77

To check whether constructs on the set of sustainable tourism indicators through the tourist's perspective are suitable, Cronbach's alpha coefficients were tested for the scale's reliability. Cronbach's alpha coefficients of the indicators were above 0,6, which is a suggested benchmark by Wahyuningsih et al. (2022). All Corrected Item-Total correlation value is above 0.4. All items were used for exploratory factor analysis. The 17 items were eliminated in four dimensions because the coefficients appeared simultaneously in two dimensions or the loading factor was lower than 0.5. KMO value is 0.932>0.7, Sig.<0.05, Bartlett's test is highly significant ($X^2(703)$ =

7626,043 p < 0.001). The total variance explained is 68,005% and retained, while 36 items have new seven dimensions. These new dimensions were renamed as follows: 1) Institutional Sustainability (10 items); 2) Socio-cultural Sustainability (8 items); 3) Environmental Sustainability (6 items); 4) Negative Environmental Impacts (4 items); 5) Urban Identity (3 items); 6) Sustainable Labor (3 items); 7) Negative Socio-cultural Impacts (2 items).

Tab 3. Exploratory factor analysis: Importance given by tourists to urban tourism sustainability

Items	Code	Mean	SD	Loading	Eigen Value	% of variance explained	Cronbach's Alpha
Institutional Sustainability	TC				15.256	42.379	.944
Local residents' participation in benefit sharing from tourism	TC2.3	3.78	.745	.886			
Quality of public-private partnership in tourism	TC2.2	3.70	.779	.870			
Presence of support for development projects at regional level	TC4.1	3.75	.779	.841			
Inclusion of indigenous knowledge in site tourism	TC1.3	3.83	.776	.833			
Level of local residents' participation in tourism decision making process	TC2.1	3.69	.793	.815			
Inclusion of tourism into community development program	TC3.3	3.78	.842	.810			
Local leaders towards tourism development	TC4.2	3.75	.728	.796			
Level of support for conservation of sites at local level	TC4.3	3.81	.772	.684			
Controlling practices of local tourism development	TC1.1	3.70	.888	.633			
Implementation of land zoning practices in the attraction sites	TC3.2	3.61	.894	.592			
Socio-cultural Sustainability	VHXH				2.132	5.924	.900
Availability of maintenance and restoration funds	VHXH5.1	3.52	.914	.520			
Percentage of sites accessible to physically disabled tourists (eg. wheelchair users)	VHXH2.3	3.64	.792	.861			
Quality of host-guest interaction	VHXH2.2	3.48	.918	.792			
Effectiveness of registering and handling visitors' complaints	VHXH2.4	3.71	.793	.787			
Presence of local help for residents on how to portray their culture to tourists	VHXH3.4	3.73	.760	.576			
Retention of local lifestyles	VHXH4.2	3.58	.836	.571			
Percentage of tourists encouraged to learn about local cultures	VHXH2.1	3.51	.936	.568			
Actions undertaken to reduce pollution (eg. Air, sound, water)	MT4.3	3.52	.914	.523			
Environmental Sustainability	MT				1.827	5.075	.872
Suitability of facilities to tourism	MT1.2	3.52	.914	.861			
Integration of tourism and the environment	MT1.1	3.64	.792	.805			
Efforts made to minimize damages on the environment	MT2.3	3.48	.918	.768			
Renewable resources reusing/recycling practices	MT3.2	3.71	.793	.635			
Private sector and local community's sensitivity to the environment	MT1.3	3.73	.760	.602			
Quality of solid waste management actions	MT3.3	3.58	.836	.533			
Negative Environmental Impacts	NMT				1.654	4.594	.831

Amount of litter attributed to tourism	MT4.2	3.56	1.140	.981			
Level of pollution (water, sound, soil and air) due to tourism	MT4.1	3.57	.894	.860			
Percentage of water and energy resources consumption caused by tourism	MT3.1	3.60	.865	.695			
Pressure of tourist activities on fauna and flora species	MT2.1	3.75	.859	.571			
Urban Identity	UI				1.403	3.896	.748
Availability of markets for local products	KT3.2	3.95	.797	.888			
Variety of local products available because of tourism	KT3.1	3.96	.775	.859			
Seasonality level of tourism	KT2.2	3.83	.758	.604			
Sustainable Labor	SL				1.163	3.231	.691
Level of equity among men and women in the tourism job	KT1.2	3.62	.765	.838			
Percentage of quality (stable, high paid, permanent and full-time) tourism jobs	KT1.4	3.40	.895	.715			
Number of job opportunity for the local residents	KT1.1	3.67	.693	.589			
Negative socio-cultural impacts	NVHXH				1.046	2.904	.715
Incidents of illicit trafficking of historical and archaeological artefacts	VHXH5.3	3.26	1.094	.865			
Percentage of criminality, alcoholism, vandalism, etc. caused by tourism	VHXH4.3	3.38	.949	.711			
Overall scale						68.005	.958

In general, Urban Identity is more interesting to tourists with the highest mean scores. This can be seen from the tourist's perspective; for Da Lat's destination, Urban Identity not only attracts tourists but also contributes to Da Lat's sustainability and is followed by indicators of Institutional Sustainability. The participation of key stakeholders, sustainable tourism planning, and controlling and implementing land zoning practices are important in achieving sustainable destination development. Besides, the data showed that Negative Socio-cultural Impacts received the least attention from tourists.

4.2. Assessing reliability and validity

Composite reliability (CR) and Average Variance Extracted (AVE) were identified to assess reliability and validity. The value of CR is required to be 0.5 or higher. The AVE of all constructs exceeded the minimum criterion of 0.5 (Fornell and Larcker 1981). Institutional Sustainability scored the highest AVE value (0.614) followed by Socio-cultural Sustainability and Negative Environmental Impacts, at 0,575 and 0,571, respectively.

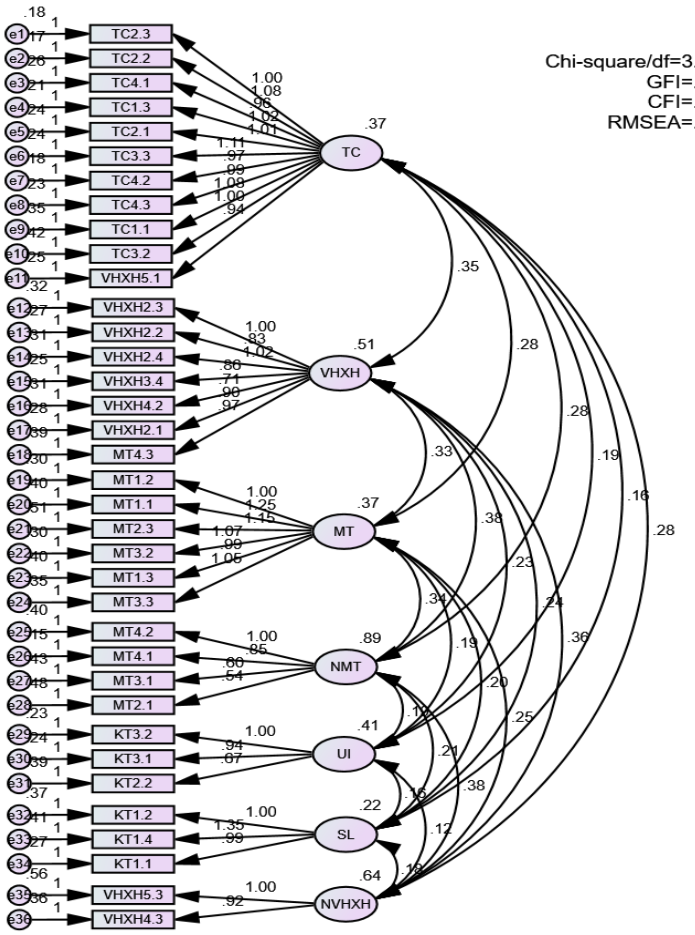
Tab 4. Construct reliability

	CR	AVE	MSV	TC	VHXH	MT	NMT	UI	SL	NVHXH
TC	0.946	0.614	0.636	0.784						
VHXH	0.904	0.575	0.636	0.767***	0.758					
MT	0.874	0.536	0.575	0.757***	0.759***	0.732				
NMT	0.838	0.571	0.346	0.483***	0.566***	0.588***	0.755			
UI	0.762	0.521	0.29	0.493***	0.506***	0.503***	0.320***	0.722		
SL	0.695	0.532	0.533	0.575***	0.723***	0.730***	0.488***	0.538***	0.657	
NVHXH	0.721	0.563	0.389	0.566***	0.624***	0.520***	0.504***	0.236**	0.490***	0.751

Note: Institutional Sustainability = TC, Socio-cultural Sustainability = VHXH, Environmental Sustainability = MT, Negative environmental impacts = NMT, Urban Identity = UI, Sustainable labor = SL, Negative socio-cultural impacts = NVHXH.

4.3. Testing model

According to the overall statistics, the model of sustainability indicators produced with the values $\chi 2/df$ = 3.126<, CFI= 0.834 <0.9; TLI = 0.817<0.9; GFI = 0.760<0.8; and RMSEA = 0.084. For RMSEA, values up to 0.08 are reasonable (Baumgartner and Homburg 1995). Therefore, all fit indices were above the cut points recommended by Baumgartner and Homburg (1995).



Note: TC = Institutional Sustainability; VHXH = Socio-cultural Sustainability; MT = Environmental Sustainability; NMT = Negative Environmental Impacts; UI = Urban Identity; SL = Sustainable Labor; NVHXH = Negative socio-cultural impacts

Fig. 2. Confirmatory Factor Analysis Results

5. Discussion

The descriptive analysis has indicated the level of interest of tourists in 53 specific indicators. From there, more detailed assessments of four criteria on the current status of sustainable tourism development in the city have been made through the tourists' perspectives. Economic and institutional sustainability criteria are rated higher, while those related to environmental and socio-cultural aspects face more challenges in sustainable development. Most tourists provided neutral assessments of sustainable tourism development in Da Lat. This suggests that while there are existing issues in sustainability, there are also ongoing efforts and initiatives aimed at improving the destination's sustainability profile. It underscores the dynamic nature of sustainable development and the need for continuous monitoring and adaptation (Rasoolimanesh et al. 2020, 2023).

The discussion of the results highlights key findings regarding tourists' perceptions of sustainability indicators in Da Lat and their implications for sustainable tourism development. Through exploratory factor analysis, seven factors were identified: institutional, socio-cultural, and environmental dimensions, negative environmental impacts, urban identity, sustainable labor, and negative socio-cultural impacts. Notably, negative environmental and socio-cultural impacts, sustainable labor practices in tourism, and urban identity, emerged as significant considerations for tourists. These insights offer a fresh perspective on sustainable strategies in urban areas, moving

beyond the traditional four pillars of sustainability (Asmelash and Kumar 2019), to explore the multifaceted nature of urban sustainability in tourism (Aydın and Alvarez 2020). The factor analysis revealed that the set of indicators proposed by Asmelash & Kumar (2019) may not fully align with the context of Da Lat. This highlights the importance of using context-specific indicators that resonate with tourists' experiences and perceptions in the destination.

When considering Institutional Sustainability, it becomes evident that institutional factors significantly influence urban tourism sustainability, as indicated by the high scores received by related indicators from tourists. This highlights their emphasis on governance, policy, and management factors when evaluating the city's sustainability endeavors. Effective institutional frameworks and regulations are crucial drivers of sustainable tourism development. Stakeholders, particularly local governments, play pivotal roles in supporting development projects, conservation efforts, and implementing land zoning practices at tourist sites. In recent years, urban planning in Da Lat has faced challenges such as housing density overload, impacting the city's architectural landscape, and decreasing pine forest areas while exacerbating the greenhouse effect (Truong 2019; Truong and Dérioz 2020). These changes underscore the pivotal role of local authorities in urban planning. Additionally, local authorities address issues affecting tourists, such as providing hotlines and conducting random inspections at tourism facilities (Truong and Nguyen 2023). Moreover, they encourage resident participation in decision-making processes.

From the tourist's perspective, urban identity receives the highest score, highlighting Da Lat's distinctive agricultural products like artichokes, coffee, tea, strawberries, and flowers, as well as local delicacies and souvenirs, enticing tourists to purchase them as gifts (Jennings 2011; Truong and Dérioz 2020). This promotion of local products not only creates job opportunities and income for local residents but also fosters sustainable development. Additionally, tourists recognize Da Lat's seasonal variation, with distinct dry and rainy seasons, which adds to its charm and tourist appeal. Similarly, sustainable labor practices in tourism garner significant attention as a key contributor to urban tourism sustainability, a newly discovered indicator post-data processing. Currently, the urban workforce endeavors to offer tourism products and services tailored to tourists' needs, yet challenges such as work pressure, low wages, long hours, health risks, and gender inequality persist, affecting their quality of life (Nguyen, Truong, and Nguyen 2023). Addressing these issues is crucial to ensuring a balance of rights and interests among workers, thereby fostering sustainable urban tourism development.

Tourists show significant concern for environmental and socio-cultural sustainability aspects. However, indicators related to negative socio-cultural impacts received the lowest scores in tourists' evaluations. This disparity between institutional and environmental sustainability perceptions versus socio-cultural sustainability perceptions underscores the need for enhancements in environmental management, conservation efforts, and socio-cultural management practices within the destination. These findings confirm the outcomes of previous research from tourists' perspectives (Aydın and Alvarez 2020; Cottrell et al. 2004; Page, Essex, and Causevic 2014), shedding light on tourists' evolving priorities and concerns regarding sustainability in urban destinations. These results underline the importance of considering tourists' perspectives when designing and implementing sustainable tourism strategies. By understanding tourists' perceptions and preferences, destination managers can better address their needs and concerns, leading to more effective and impactful sustainability initiatives (Rasoolimanesh et al. 2020).

6. Conclusion and managerial implications

The purpose of this study is to identify sustainable tourism indicators for cities from tourists' perspectives. The result of this study filled a critical gap in understanding how tourists perceive and interact with sustainability metrics. When utilizing the measurement scales proposed by Asmelash and Kumar (2019) within the context of urban tourism, seven sustainable tourism indicators were identified, including 1) Institutional sustainability, 2) Socio-cultural sustainability; 3) Environmental sustainability; 4) Negative Environmental Impacts; 5) Urban Identity; 6) Sustainable Labor; and 7) Negative Socio-cultural Impacts. Adopting these measurement scales offers a comprehensive framework for evaluating sustainability in urban tourism contexts. By incorporating these seven constructs, researchers and policymakers gain valuable insights into various dimensions of sustainable tourism, ranging from institutional governance to socio-cultural impacts. This approach facilitates a more nuanced understanding of the complexities of fostering sustainable tourism practices within urban areas (Aydın and Alvarez 2020; Hocevar and Bartol 2021; Rasoolimanesh et al. 2020, 2023).

The results highlight the significance of Urban Identity and Institutional Sustainability indicators in fostering sustainable tourism development. Urban Identity, in particular, is a defining feature that captivates tourists and enriches their experiences. The study sheds light on the context of tourism development in Da Lat and underscores the need to address internal planning and management issues to promote sustainability. Additionally, tourists' perspectives on Sustainable Labor in tourism, negative environmental impacts, and negative socio-cultural impacts were clearly articulated. The findings suggest that tourists are increasingly aware of sustainability issues and that

this awareness may shape their preferences over time (Aydın and Alvarez 2020; Page, Essex, and Causevic 2014). Rather than mere consumers, tourists perceive themselves as contributors to the city's enrichment, signalling a shift towards responsible tourism practices. Overall, the research offers a multidimensional understanding of sustainable tourism from tourists' viewpoints, transcending the conventional definition of the concept and emphasizing the interconnectedness of various sustainability dimensions in enhancing tourist experiences and destination attractiveness (Aydın and Alvarez 2020).

Based on the findings of this study, several managerial implications can be drawn. Firstly, the local government must implement effective measures to preserve and promote the distinctive features, internal planning, and management aspects of Da Lat city, all of which contribute to its sustainable development. Addressing environmental concerns, strengthening institutional frameworks, and implementing sustainable tourism practices are crucial for fostering long-term sustainability and attractiveness of the destination. This underscores the importance of targeted interventions to improve governance, community involvement, and environmental conservation efforts.

Secondly, efforts should be made to raise tourists' awareness of sustainability issues, as such awareness can influence their preferences over time. Encouraging environmental protection and soliciting tourists' feedback on sustainable tourism practices are essential steps in this regard.

Moreover, fostering responsible tourist behavior through educational initiatives and promoting sustainable tourism practices can enhance the overall tourist experience and attractiveness of the destination. Additionally, incorporating tourists' perspectives into decision-making processes and planning strategies can help align tourism development efforts with their preferences and values, ultimately leading to more sustainable outcomes.

Furthermore, collaboration between stakeholders, including government agencies, local communities, businesses, and tourists, is crucial for successfully implementing sustainable tourism initiatives. By working together, these stakeholders can share resources, knowledge, and expertise to address sustainability challenges more effectively and create positive impacts for the environment and the local community.

While this study offers valuable insights into tourists' perceptions of sustainability indicators in Da Lat, there are several limitations to consider. Firstly, the sample size of 305 respondents, although sufficient for factor analysis, may not fully represent the diverse population of tourists visiting the city, potentially limiting the generalizability of the findings. Secondly, using a convenient sampling method may introduce selection bias, as participants may not be representative of all tourists. Additionally, the data collection period from March 2023 to June 2023 may not capture seasonal variations in tourist behavior and perceptions. Furthermore, despite efforts to translate the questionnaire into Vietnamese, language barriers may have affected the accuracy of responses, particularly among non-English-speaking tourists. Lastly, reliance solely on self-reported data may introduce response bias, as participants may provide socially desirable responses rather than reflecting their true perceptions and behaviors.

Future research could address these limitations by employing more robust sampling methods, such as stratified random sampling, to ensure a more representative sample of tourists. Additionally, longitudinal studies could capture changes in tourists' perceptions and behaviors over time, providing a deeper understanding of the dynamics of sustainable tourism development. Moreover, qualitative research methods like interviews and focus groups could complement quantitative surveys to gain richer insights into tourists' attitudes and experiences. Furthermore, cross-cultural studies could be conducted to explore how tourists from different cultural backgrounds perceive sustainability indicators in urban tourism contexts. Finally, collaboration between researchers, policymakers, and industry stakeholders could facilitate the implementation of evidence-based strategies to promote sustainable tourism practices and enhance destination management efforts in Da Lat and beyond.

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References

Asmelash, Atsbha Gebreegziabher, and Satinder Kumar. 2019. “Assessing Progress of Tourism Sustainability: Developing and Validating Sustainability Indicators.” *Tourism Management* 71(September 2018): 67–83. https://linkinghub.elsevier.com/retrieve/pii/S0261517718302346.

Aydın, Begüm, and Maria D. Alvarez. 2020. “Understanding the Tourists’ Perspective of Sustainability in Cultural Tourist Destinations.” *Sustainability* 12(21): 8846. https://www.mdpi.com/2071-1050/12/21/8846.

Baumgartner, H, and C Homburg. 1995. “Applications of Structural Equation Modeling in Marketing and Consumer Research: A Review.” *Intern. J. of Research in Marketing* 13: 139–61.

Bernini, Cristina, Emilio Urbinati, and Laura Vici. 2015. "Visitor Expectations and Perceptions of Sustainability in a Mass Tourism Destination." *Tourism in Southern and Eastern Europe* 3: 1–17. https://search-proquest-com.libproxy.murdoch.edu.au/docview/1702272894/fulltextPDF/8E20834648864FBDPQ/4?accountid=12629.

Boom, Samantha et al. 2021. "Identifying Stakeholder Perspectives and Worldviews on Sustainable Urban Tourism Development Using a Q-Sort Methodology." *Current Issues in Tourism* 24(4): 520–35. https://doi.org/10.1080/13683500.2020.1722076.

Chadha, Harsimran, and Preeti Onkar. 2014. "Sustainable Urban Tourism: A Case of Omkareshwar." *OIDA International Journal of Sustainable Development* 7(2): 55–68.

Cottrell, Stuart, René van der Duim, Patricia Ankersmid, and Liesbeth Kelder. 2004. "Measuring the Sustainability of Tourism in Manuel Antonio and Texel: A Tourist Perspective." *Journal of Sustainable Tourism* 12(5): 409–31. http://www.tandfonline.com/doi/abs/10.1080/09669580408667247.

Diéguez-Castrillón, M. Isabel, Ana Gueimonde-Canto, and Nuria Rodríguez-López. 2022. "Sustainability Indicators for Tourism Destinations: Bibliometric Analysis and Proposed Research Agenda." *Environment, Development and Sustainability* 24(10): 11548–75. https://doi.org/10.1007/s10668-021-01951-7.

European Union. 2016. Luxembourg: Publications Office of the European Union *The European Tourism Indicator System: ETIS Toolkit for Sustainable Destination Management*. https://data.europa.eu/doi/10.2873/983087.

Fornell, C, and D. F Larcker. 1981. "Evaluating Structural Equation Models with Unobservable Variables and Measurement Error." *Journal of Marketing Research This* 18(1): 39–50.

Gutierrez, Eylla Laire M., John Paolo R. Rivera, and Alejandro Christian D. Soler. 2021. "Creating Local Sustainability Indicators towards Evidence-Based Policymaking for Tourism in Developing Economies: Evidence from the Philippines." *Journal of Quality Assurance in Hospitality & Tourism* 22(5): 561–90. https://doi.org/10.1080/1528008X.2020.1818356.

Hair, J. F et al. 2010. *Multivariate Data Analysis (Ed.)*. Pearson Prentice Hall.

Hocevar, Marjan, and Tomaz Bartol. 2021. "Mapping Urban Tourism Issues: Analysis of Research Perspectives through the Lens of Network Visualization." *International Journal of Tourism Cities* 7(3): 818–44. https://www.emerald.com/insight/content/doi/10.1108/IJTC-05-2020-0110/full/html.

Jennings, E T. 2011. *Imperial Heights: Dalat and the Making and Undoing of French Indochina*. Berkeley: University of California Press. https://books.google.com.vn/books?id=7xl5Otm3jC4C.

Kristjánsdóttir, Kristín Rut, Rannveig Ólafsdóttir, and Kristín Vala Ragnarsdóttir. 2018. "Reviewing Integrated Sustainability Indicators for Tourism." *Journal of Sustainable Tourism* 26(4): 583–99. https://doi.org/10.1080/09669582.2017.1364741.

Leite, Eduardo, Luís Mota, Sérgio Lousada, and Ana Leite. 2022. "Standardized Reading of Sustainable Tourism Indicators for Ultraperipheral Regions." *Sustainability* 14(21): 14076. https://www.mdpi.com/2071-1050/14/21/14076.

Martí, Pablo, Almudena Nolasco-Cirugeda, and Leticia Serrano-Estrada. 2017. "Assessment Tools for Urban Sustainability Policies in Spanish Mediterranean Tourist Areas." *Land Use Policy* 67(April): 625–39. http://dx.doi.org/10.1016/j.landusepol.2017.06.015.

Maxim, Cristina. 2016. "Sustainable Tourism Implementation in Urban Areas: A Case Study of London." *Journal of Sustainable Tourism* 24(7): 971–89. https://www.tandfonline.com/doi/full/10.1080/09669582.2015.1115511.

Nguyen, Thi Thanh Ngan, Thi Lan Huong Truong, and Van Anh Nguyen. 2023. "Case Study 1: Tourism Seasonality: Responsible Business and Human Rights." In *Case Study in Viet Nam on Responsible Business Practices (Monographs)*, eds. Quang Canh Le and Le Hai Ha Dinh. Hanoi: National Economics University Publishing House, 129–50.

Nicholas, Lorraine, and Brijesh Thapa. 2010. "Visitor Perspectives on Sustainable Tourism Development in the Pitons Management Area World Heritage Site, St. Lucia." *Environment, Development and Sustainability* 12(5): 839–57. http://link.springer.com/10.1007/s10668-009-9227-y.

Önder, Irem, Karl Wöber, and Bozana Zekan. 2017. "Towards a Sustainable Urban Tourism Development in Europe: The Role of Benchmarking and Tourism Management Information Systems - A Partial Model of Destination Competitiveness." *Tourism Economics* 23(2): 243–59.

Page, Stephen J., Stephen Essex, and Senija Causevic. 2014. "Tourist Attitudes towards Water Use in the Developing World: A Comparative Analysis." *Tourism Management Perspectives* 10: 57–67. http://dx.doi.org/10.1016/j.tmp.2014.01.004.

Rasoolimanesh, S. Mostafa et al. 2020. "A Systematic Scoping Review of Sustainable Tourism Indicators in Relation to the Sustainable Development Goals." *Journal of Sustainable Tourism* 0(0): 1–21. https://doi.org/10.1080/09669582.2020.1775621.

———. 2023. "A Systematic Scoping Review of Sustainable Tourism Indicators in Relation to the Sustainable Development Goals." *Journal of Sustainable Tourism* 31(7): 1497–1517. https://doi.org/10.1080/09669582.2020.1775621.

Sitepu, Edy Sahputra et al. 2019. "Structural Models for Sustainable Tourism Development in Medan City." *International Journal of Applied Sciences in Tourism and Events* 3(2): 158–77.

Tanguay, Georges Antoni, Juste Rajaonson, and Marie Christine Therrien. 2013. "Sustainable Tourism Indicators: Selection Criteria for Policy Implementation and Scientific Recognition." *Journal of Sustainable Tourism* 21(6): 862–79.

Lam Dong Provincial Party Committee. 2022. *Summary of 5 Years of Implementation of Resolution No. 07-NQ/TU, dated 16/11/2016 of the Provincial Party Committee "On Developing High-Quality Tourism in the 2016 - 2020 Period, with a Vision to 2025 in Lam Dong Province".*

Truong, Thi Lan Huong. 2019. "Quelle Place Pour La Typicité Locale et l'authenticité Dans l'expérience Touristique : Le Cas de Dalat, Station de Montagne Au Vietnam." Université d'Avignon ; École doctorale 537 "Culture et patrimoine'''(Avignon)." https://tel.archives-ouvertes.fr/tel-02526288.

Truong, Thi Lan Huong, and Pierre Dérioz. 2020. "The Place of Peripheral Rural Areas in the Construction, by and for Tourism, of the Identity of the Region of Dalat (Vietnam)." *Via Tourism Review* (17): 1–25. http://journals.openedition.org/viatourism/5127.

Truong, Thi Lan Huong, and Thi Diem Kieu Nguyen. 2023. "Street Food Experience and Destination Image: A Study on Tourist Perceptions in Da Lat." *Journal of International Economics and Management* 23(3): 68–88. https://jiem.ftu.edu.vn/index.php/jiem/article/view/394.

Wahyuningsih, H Nasution, Y. H Yeni, and R Roostika. 2022. "A Comparative Study of Generations X, Y, Z in Food Purchasing Behavior: The Relationships among Customer Value, Satisfaction, and Ewom." *Cogent Business and Management* 9(1).

World Tourism Organization (UNWTO). 2004. *Indicators of Sustainable Development for Tourism Destinations: A Guidebook*. Mad: World Tourism Organization. http://www.tourisk.org/content/projects/Indicators for Tourism Development.pdf.

Žabkar, V, M. M Brenčič, and T Dmitrović. 2010. "Modelling Perceived Quality, Visitor Satisfaction and Behavioural Intentions at the Destination Level." *Tourism Management* 31(4): 537–546 Contents.