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Influence of Landscape Maintenance on Users' Experiences in Tourist Centres

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ABSTRACT

The diligent upkeep of landscapes in tourist centres is crucial not only for aesthetic reasons but also for fostering a sense of safety and security, ensuring a positive experience for visitors and preventing the degradation of the park environment. This study evaluates the influence of landscape maintenance on user experiences in selected tourist sites across Southwest Nigeria. This study employed primary and secondary data. Descriptive statistics, including percentages and index, were used. Six tourist centres were chosen, one from every state in southwest Nigeria. Of the 2,520 tourists to the tourist centres, 345 tourists (13.7%) were chosen by the accidental sampling technique, out of which 317 responses from respondents were received and analysed. The results show that users were generally satisfied with the cleanliness and maintenance of the elements. Specifically, with an average Users' Satisfaction of Maintenance Indices (USMI) of 4.20. The results obtained show strong satisfaction with the cleanliness of tourist centres, with 4.34, while satisfaction with the regular upkeep and maintenance of landscape elements was 4.15. Maintenance of vegetation (trees, shrubs, and lawns) had 4.07, maintenance of lighting had 4.47, and maintenance of signage and information boards had 4.21. When considering the impact of landscape maintenance predictors on user satisfaction, the coefficient values of the multiple regression equivalences showed that the maintenance of water features (ponds, fountains, and streams) had the most significant impact

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on users' satisfaction with $\beta = 0.362$, $p < 0.00$. The study shows that landscape maintenance has consequences on users' experience in tourist centres.

Keywords: Influence; Landscape Maintenance; Social Value; Users' Experiences; Users' Satisfaction; Tourist Centres

1. Introduction

The relationship between natural attractions, for instance, rocks, rivers, vegetation, waterfalls, and architectural schemes, and tourism presents a fascinating landscape and scenery for exploration and invention. The term "landscape", according to Omon^[1], are settings of nature that are also the structure of the earth's surface, particularly the description, classification, nature, and development of diverse surface types and features. Similarly, John and Ayeni^[2] defined landscape as a land surface that appeals to the human sense of beauty. Furthermore, Dorcas^[3] said landscape encompasses the observable features of a land area, comprising physical elements that include mountains, hills, rivers, lakes, valleys, and other natural formations, which are made up of a unique arrangement and distinctive character of these elements within a specific region. These surface features are widely distributed throughout Nigeria^[4]. The maintenance of these features is important for preserving the enduring attraction and functionality of the designed outdoor spaces, ensuring their sustained beauty and integrity over time. According to Mohamed et al.^[5], any area of land can be managed and used to offer leisure gardening, shelter or screening, wildlife protection, market gardening and horticulture quality, botanical education and variety, space for recreation and sport, job generation, or nice vistas or appearance.

Tourism is recognized as experiencing significant global growth, contributing to and backing the world economy's economic success, as emphasised by Ayeni and Eboh^[6] in their observations of developed countries. Therefore, becoming a catalyst for cross-cultural interactions, revenue generation, and sustainable development in Nigeria is a conventional role. Tourism can be described as specific activities chosen and pursued outside one's home environment. Whether or not it includes an overnight stay away from home varies. Camilleri^[7] and Noroozi^[8] describe tourism as a social, economic, and cultural occurrence consisting of people traveling to nations or localities outside of their usual surroundings for either professional or personal reasons. Peo-

ple who undergo such processes are called visitors, tourists, or excursionists. Some can be non-residents or residents. Noroozi^[8] stated that tourism has to do with undertakings, some of which involve tourism activities and expenditure. Tourism, from another perspective, includes lodging, transportation, dining and retail stores, drinking establishments, activity centers, entertainment venues, and other hospitality services undertaken by groups or individuals traveling outside their town and country or away from home^[9]. Therefore, the landscape is a fundamental part of tourist space^[10-13].

However, in achieving a sustainable, memorable, and transformative tourism experience, landscape maintenance is a crucial factor that requires careful and precise exploration. Whereas Makinde^[14] defines landscape maintenance as the process of resisting landscape deterioration^[14]. Landscape maintenance also involves continuous care to preserve, enhance, and manage the aesthetics, functionality, and health of outdoor spaces. It includes various tasks to sustain the desired condition of gardens, parks, lawns, and other landscaped areas, ultimately ensuring their long-term vitality and attractiveness^[15]. Landscape maintenance is a major factor in ensuring that a tourism centre provides an enchanting and unforgettable experience for visitors. Maintaining a landscape means preventing it from deteriorating or wearing away^[16]. A well-maintained landscape not only increases aesthetic appeal but also complements and enhances the overall atmosphere and peacefulness of the site. Landscape maintenance is more than mere aesthetic upkeep; it serves as the bedrock of creating an environment with serenity, harmony, and natural authenticity.

Maintenance, according to Velmurugan and Dhingra^[17], means conducting and continuing repair work. With regard to landscaping, repair work is regularly carried out to keep the landscape in good condition and working order. It is an attempt to sustain, support, or uphold landscaped projects to ensure that their initial beauty, standard, and quality are retained. It also includes all efforts undertaken to keep all landscape facilities and features in an acceptable state to ensure their functionality, good aesthetic standing,

and the continued survival of a beautiful environment^[18]. Landscape maintenance activities are often performed by the same firms that perform installation functions.

This study explores users' perceptions of landscape maintenance, and the manner in which users perceive it holds the key to unlocking a harmonious synergy between architectural design, natural surroundings, and the experiential narratives they weave together. The user's view can be subjective, based on the user's understanding, cultural background, or experience, which can be easily influenced. Tourism has become an increasingly integral part of societal and economic fabric^[19]. The way and manner in which users see the effects of landscape maintenance practices is important. These perceptions can stimulate their interactions with the environment, cultural heritage, and architectural elements that facilitate their journey. The perceived effect of landscape maintenance practices becomes a tool that shapes visitors' interactions, impressions, and memories. The perception of these users also becomes a compass that can guide the evolution of architecture and tourism toward sustainable development.

Users' perceptions regarding the influence of landscape maintenance remain relatively unexplored, particularly within the context of the Owu Waterfall in Kwara State. This gap signifies an exciting avenue for inquiry, in which the study offers a measure for the design of a hotel facility near the Owu Waterfall. By looking into the users' perceptions, the study seeks to shed light on how this phenomenon can influence the sustainability, urban architecture, social behaviour, and functionality of the proposed hotel, bringing about a harmonious coexistence among design, nature, and human experience. The current state of landscape maintenance in tourist centres in Nigeria remains largely unknown, with limited studies conducted in this area^[3, 9]. While Mala et al.^[9] explored the impact of landscape on tourism development, a case study of Abuja, and Dorcas^[3] studied the initiatives for enhancing Nigeria's tourist attractions through landscaping, the study shows that there is a dearth of specific studies identifying and evaluating the present state of landscape maintenance in southwest Nigeria. In the context of landscape maintenance practices, various scholars, including Omon, Bodunde et al., Emmanuel, and Aboufazeli et al.^[1, 20–22], have extensively explored various aspects of landscape and tourism, ranging from addressing the cost of

maintenance practices to the maintenance of conventional landscape plants. However, within this scope of landscape maintenance in tourist centres, a notable gap exists in empirical research focusing on user perceptions. While some studies touch upon the broader aspects of landscape quality or aesthetics, there is a lack of detailed investigation into how users specifically perceive and evaluate the maintenance practices employed in these areas. This information is crucial for informing effective maintenance strategies and enhancing user satisfaction in urban or recreational settings.

Existing research has also explored the influence of various factors on user preferences and experiences in tourist centres, such as landscape perception and its implications in tourism. Terkenli et al.^[12] conducted a comparative research of the perception of visitors and locals in selected areas in Greece and Poland. Another study by Rumao^[23] assessed users' opinions of campus landscapes awareness from the University of Texas at Arlington. In addition, Mala et al.^[9] studied the impacts of landscape on tourism development in Abuja. While several factors influence users' preferences and experiences, a noteworthy gap exists in the existing literature concerning the specific role of landscape maintenance practices in shaping these preferences and experiences. Therefore, there is a need for research that systematically investigates the ways in which landscape maintenance practices influence user preferences and experiences in tourist centers, providing valuable insights for destination management and tourism development strategies. This study aims to inform decision-making processes in destination management, including the design and development of hotels within tourist centers, by bridging these gaps. By understanding the demographic composition of tourists and the influence of landscape maintenance practices on visitor experiences, this research will provide valuable insights for designing hotels that cater to tourists' preferences and needs, thereby contributing to the overall advancement of the tourism industry in the region.

2. Literature Review

2.1. Landscape Concept and Landscape Maintenance in the Tourism Context

Landscape constitutes a major physical medium in the exploration of connections that develop between the tourist

and the visited location^[11]. Therefore, landscapes, according to Omon^[1], are sceneries of nature, whereas, according to most English dictionaries, landscape is defined as a piece of land that can be seen at a glance or by the eye. Similarly, John and Ayeni^[2] defined landscape as a land surface that appeals to the sense of beauty. Another definition given by Dorcas^[3] said landscape encompasses the visible features of a land area, comprising physical elements such as rivers, lakes, mountains, hills, valleys, and other natural formations, which are made up of a unique arrangement and distinctive character of these elements within a specific region, and these surface features are widely spread throughout the earth's surface.

Maintenance plays an essential role in tourism development. Maintaining a landscape involves actively preventing its deterioration and ensuring that it remains in optimal condition^[24]. The objectives of landscape management are diverse, and areas assigned for amenity often fulfill multiple roles^[14]. These roles involve providing appealing views, serving as a protective screen or shelter, contributing to nature preservation, achieving horticultural quality, boosting botanical diversity and education, creating jobs, offering space for sports and recreation, and accommodating leisure gardens^[5]. While some purposes may be immediately evident based on the layout of the land, changes in state of affairs over time might obscure the original intent. Consequently, a clear understanding of the land's use and functions is crucial during the planning or review of maintenance efforts^[25]. Landscape maintenance involves planned and continuous efforts directed toward the preservation, enhancement, and effective management of outdoor spaces within tourist destinations^[4]. It involves a range of activities aimed at sustaining the desired condition of outdoor spaces, which includes gardening, conservation, infrastructure upkeep, and continuous care to ensure the optimal condition of landscaped areas of tourist centres^[26, 27].

According to Makinde^[14], the importance of landscape maintenance in tourist centres is underscored by its significant role in ensuring the safety of tourist centres. An excellent and efficient maintenance program is essential for addressing issues such as garbage, graffiti, vandalism, poorly maintained alleyways, and neglected planting. These concerns contribute to the perception of a lack of safety within the tourist centre. These circumstances imply that the area

is uncared for and lacks proper management. Neglecting maintenance can lead to a cycle of abuse, where legitimate park users begin to avoid the area as physical conditions deteriorate^[26]. This avoidance can create an opportunity for inappropriate users to take over the park. Therefore, the regular upkeep of landscapes in tourist centres is crucial not only for aesthetic reasons but also for fostering a sense of safety and security, ensuring a positive experience for visitors and preventing the degradation of the park environment. Makinde^[14] also maintained that landscape maintenance plays a pivotal role in tourist centres' success and sustainability. These centres, often characterized by natural wonders such as waterfalls, mountains, and lush vegetation, rely on effective landscape maintenance to create environments that not only captivate but also offer visitors a memorable and transformative experience. The well-maintained landscapes of tourist centres significantly contribute to attracting and retaining tourists, fostering repeat visits, and enhancing the region's overall economic growth.

Although landscape designs differ depending on use, design principles are the same. Maintenance and management play an important part in determining the aesthetic qualities of look, feel, biodiversity, and usefulness. Differences exist between management and maintenance^[28]. The significance of landscape maintenance extends beyond surface aesthetics, combining with broader environmental sustainability goals. Well-maintained landscapes contribute to environmental stewardship by preserving biodiversity, conserving natural resources, and reducing the impact of tourism activities. It is important for the aesthetic appeal of tourist destinations. It shapes a place's visual narrative, creating harmonious and inviting surroundings that resonate with visitors and enhance their overall experience^[26, 29]. According to Mayer and Vogt^[30], landscape maintenance is a component of landscape management that comprises routine tasks carried out on a daily or weekly basis to care for hard, soft, and green spaces, parks, and gardens. This includes grass cutting, site cleaning, pruning, weeding, fertilizing, planting and pest control. Tourist centres are characterized by unique landscapes, and the practices employed to maintain these environments play a crucial role in determining the overall visitor experience. Various landscape maintenance practices involve various ranges of activities. These include horticultural practices, ecological conservation efforts, infrastructure

upkeep, waste management, and strategies to reduce the environmental impact of tourism-related activities^[30].

Effect of Landscape Maintenance

According to Yu et al.^[31], landscape maintenance has a large impact on both the human experiences and the environment. It entails the preservation and management of outdoor spaces to uphold their aesthetic appeal, ecological integrity, and usability. Effective landscape maintenance contributes to biodiversity conservation, the reduction of environmental degradation, and ecosystem promotion. Moreover, well-maintained landscapes play a major part in shaping and influencing visitor experiences, influencing perceptions, and increasing a sense of connection with nature. By providing aesthetically pleasing surroundings, accessible amenities, and opportunities for recreation and relaxation, landscape maintenance enhances the social connection, well-being and quality of life of both individuals and communities alike^[32, 33]. In his study, Orewere et al.^[33] established that landscaping has significant and positive impacts on health, quality of life, and the milieu of residence. Additionally, the economic benefits of landscape maintenance extend to tourism promotion, property value appreciation, and job creation in related sectors. Overall, landscape maintenance has a significant impact on environmental sustainability, societal well-being, and economic prosperity.

Landscape maintenance has profound and diverse effects on visitor experiences, shaping perceptions, satisfaction, and overall enjoyment of outdoor spaces. Well-maintained landscapes contribute to positive visitor experiences by providing visually appealing surroundings, accessible amenities, and opportunities for engagement with nature^[34]. Some effects highlighted by Orewere and Ogenyi^[34] include the following:

- **Appeal:** Maintained landscapes offer scenic beauty and visual harmony, creating a welcoming and inviting atmosphere for visitors. Vibrant vegetation, well-groomed pathways, and thoughtfully designed features enhance the overall aesthetic appeal, eliciting admiration and enjoyment from visitors.
- **Accessibility and Safety:** Proper maintenance ensures the accessibility and safety of outdoor spaces, allowing visitors of all ages and abilities to enjoy recreational activities with ease and confidence. Well-maintained

trails, signage, and facilities enhance usability and minimize risks, promoting a positive and inclusive visitor experience.

- **Engagement and Exploration:** Maintained landscapes offer opportunities for exploration, discovery, and learning. Educational programs and interactive exhibits encourage visitor engagement and deepen their appreciation for natural and cultural heritage.
- **Social Interaction:** Well-maintained public spaces serve as meeting and gathering places for social collaboration, community function, and engagement. Parks, gardens, and plazas provide settings for picnics, gatherings, and events, fostering social acquaintances and a sense of belonging among visitors.

Motivating the nation toward a higher-income economy entails the creation of a conducive landscape environment with distinct uniqueness and identity, aimed at attracting both foreign and local investments. This involves ensuring sustainable and holistic development through operational and effective management and maintenance practices and landscape planning and development. Focusing on the well-being and quality of life of citizens, the provision of satisfactory landscape spaces for social interaction and recreation becomes paramount. These initiatives align with the objectives outlined by Setiowati et al.^[35] to propel the nation toward economic prosperity while prioritizing environmental sustainability and societal welfare.

The environmental effect of landscape maintenance entails various aspects of ecosystem health and biodiversity conservation. Landscape maintenance helps preserve and enhance biodiversity, support soil health, and protect water quality through practices such as vegetation management, erosion control, and habitat restoration. Additionally, well-maintained landscapes contribute to climate change mitigation, habitat connectivity, and air and noise pollution reduction. By prioritizing sustainable landscape maintenance practices, we can promote environmental sustainability, safeguard natural resources, and make sure the long-lasting health and resilience of ecosystems^[36]. Some of the effects of landscape maintenance on the environment include: biodiversity conservation, water quality and management, climate change mitigation and adaptation, habitat connectivity and wildlife corridors, and air and noise pollution reduction^[32].

Despite its significance, landscape maintenance faces

several obstacles, such as inadequate financing, conflicting land uses, and environmental deterioration. Careful planning and management techniques are required to balance the demands of various stakeholders, including tourists, local people, and conservationists. Furthermore, natural disasters and climate change threaten landscapes, which calls for robust design techniques and adaptive management strategies^[37].

2.2. Tourism and Ecotourism Concept

Tourism that prioritizes the preservation and appreciation of nature is often referred to as green tourism. Duxbury et al.^[38] defined green tourism as the inclination of tourists to establish a connection between the natural environment and human habitat. Authors such as Jehan et al.^[39] specifically delve into the human environment, particularly cultural heritage, as an integral tourism infrastructure component. Lu et al.^[40] emphasized the growing significance of tourism for economies, prompting increased discussions about sustainable tourism. While the earliest motivations for travel were rooted in basic needs such as food, water, safety, and resource acquisition (trade), the concept of travel for leisure and exploration emerged over time. Technological advancements have played a critical role in determining travel, from walking and tame animals to the inventions of the wheel and sail, each of which has expanded the possibilities for individual travel. Defined by Sutapa et al.^[41], tourism encompasses a range of service areas, activities, and industries that offer travel experiences, comprising transportation, accommodations, dining, entertainment, trade, and hospitality services for individuals or groups traveling outside their usual places of residence. Tourism is recognized as the world's principal industry by the World Tourism Organization (WTO) and generates substantial annual revenues. Luong^[42] offer a comprehensive definition, stating that tourism involves the relationships and phenomena resulting from the contact among business suppliers, tourists, host communities, and host governments throughout the processes of enticing, hosting, and serving these tourists and all other visitors.

Ecotourism is a rapidly rising part of the tourism business. It is a form of tourism that centres on nature, minimizes environmental impacts, involves local communities, and prioritizes visitors' education. Ecotourism stands out because it depends on preserving natural ecosystems, allowing visitors

to experience and appreciate both nature and the cultural values they hold. Ecotourism has become a key revenue source for numerous countries, offering a win-win situation for economic growth and conservation in developing nations. The well-preserved landscape in resorts can boost ecotourism demand, promote awareness and appreciation for nature, and even connect visitors to broader natural areas, enhancing the overall tourism experience. Furthermore, ecotourism is more than a natural event that causes an upsurge in the understanding and appreciation of cultural and natural values by the visitor. Ecotourism prioritizes ecological, economic, and social well-being, focusing on the conservation of nature and cultural heritage. Responsible tourism is popular among environmentalists and nature lovers^[43].

2.3. Tourism and Sustainable Development

Tourism and sustainable development are unified and related concepts that aim to balance visitor needs with environmental and community protection. Tourism involves traveling for recreation, exploration, or business, while sustainable development satisfies the present wants without conceding the needs of upcoming generations^[43]. Sustainable tourism balances visitor needs, environmental protection, and community well-being by incorporating social, economic, and cultural aspects. Ecotourism further focuses on environmental awareness, community empowerment, and the preservation of cultural and natural resources, ultimately reducing poverty and enhancing biocultural diversity. Ecotourism achieves this by prioritizing environmental protection, community involvement and responsible visitor behaviour.

The connection between sustainable development and ecotourism is rooted in the ability of tourism to support economic, social, and environmental well-being. Adopting strategies and policies that emphasize environmental conservation, active participation of local communities, and responsible behavior by visitors is crucial to align tourism with sustainable development goals. By doing so, ecotourism can prosper while safeguarding the destination's unique natural and cultural resources^[43]. In line with researchers from various disciplines, ecotourism has a net positive cultural, economic, and social impact on the region. This entails strengthening regional economies, escalating access to healthcare, and encouraging a deeper awareness and comprehension of the area's distinctive cultural customs. There could be

significant ramifications from the increased acquaintance of the community with ecotourism. Hunting, fishing, and deforestation have all significantly decreased as a result of the benefits of ecotourism. This suggests that local environmental protection efforts are positively correlated^[44].

Sustainable tourism refers to travel that does not have a detrimental effect on the economy, society, environment, or bottom line. The goal of ecotourism is to minimize adverse effects on natural environments and maximize beneficial effects on nearby communities and their residents. Its objectives could include educating tourists, raising funds for environmental preservation, assisting locals in gaining political and economic clout, or encouraging tolerance and acceptance of human rights and different cultures. Since the 1980s, the environmental movement has considered ecotourism to be crucial for future generations to witness the world as it existed before widespread tourism^[45].

2.4. Influence of Socio-Cultural and Environmental Factors on Sustainable Tourism

Sustainable tourism similarly focuses on social and cultural standards. Ecotourism benefits the social and cultural fabric of the area^[45]. According to Rigolon et al.^[46], in addition to its economic advantages, ecotourism has a positive and significant impact on local culture and society. As an addition to Hall's original statement, Reed^[47] contends that ecotourism helps build local communities, inspires more people to be involved, and promotes linkages between different areas of the same region. According to Cole^[48], the preservation of local culture depends on the beneficial effects of ecotourism. Even Fentaw et al.^[49] agreed that ecotourism benefits the local population both socially and economically. According to researchers from various disciplines, ecotourism has social, economic, educational, environmental, and cultural impact on the region. This includes strengthening and expanding access to healthcare, local economies, and encouraging a deeper awareness and comprehension of the area's distinctive cultural customs. The increased awareness of ecotourism in the community could have significant ramifications. Hunting, fishing, and deforestation have all significantly decreased as a result of ecotourism^[50]. This suggests that community efforts to protect the environment are positively correlated with environmental protection^[51].

According to Compeán-Guzmán^[45], one of the main tenets of sustainable tourism is to preserve natural environments and their resources. Ecotourism is a beneficial factor in the battle against deforestation, wildlife conservation, plant life growth, and renewable energy production. Numerous studies have demonstrated that ecotourism is essential for maintaining local ecology and its resources. Researchers claim that ecotourism revenue also helps the ecosystem. Researchers have discovered that ecotourism encourages the conservation of natural areas and, consequently, the biodiversity of the area. The ethics of preserving natural habitats are inextricably tied to those of ecotourism. The amount of harm done to the environment decreases when ecotourism is introduced to an area. To maximize the long-term benefits for the enjoyment of the local population and the environment, ecotourism employs as few natural resources as feasible^[45].

2.5. Relationship between Sustainable Development and Green Tourism

In line with Makinde^[52], a lot of pressure has been placed on the tourism sector. Since the 1992 "Earth Summit," efforts to align the environmental record with other industries have helped fuel the worldwide movement toward green tourism. Along with the other three core tenets of sustainability, cultural sustainability is an essential component to consider when developing sustainable tourism. This is especially true when tourist practices in a particular region are founded on the local indigenous people's culture and customs^[53]. While the notion of sustainable tourism development at a worldwide level remains teleological in nature, the transition toward sustainability is indispensable for ensuring ecological, economic, and sociocultural well-being now and in the future. This transition must be aligned with community-based economic models, equitable conservation, and environmental economics principles^[54]. Despite its aspirational status, the pursuit of sustainability remains essential for well-being across these domains^[55]. **Figure 1** shows a model of green tourism principles and values.

When done correctly, ecotourism can have a major positive impact on the education and economy of participants^[45]. In addition to educating the public on the importance and vulnerability of these ecosystems, it opens the door for a broader reach of new audiences and wins support for conservation initiatives^[56]. Additionally, it promotes the use of wilderness

areas without taking anything from them, benefiting the communities reliant on them^[57]. A little reprieve from the stress of the manufactured world and the pollution of big cities is offered by nature tourism^[58]. People have an appreciation for preserving nature in their lives when they have close encounters with it. It increases understanding and respect for

local and indigenous traditions^[59]. Ecotourism is a potent instrument for community development because of its benefits to the local economy, ecology, and community^[60, 61]. Ecotourism may support sustainable development, economic growth, local community development, and environmental conservation in developing countries, such as Nigeria.

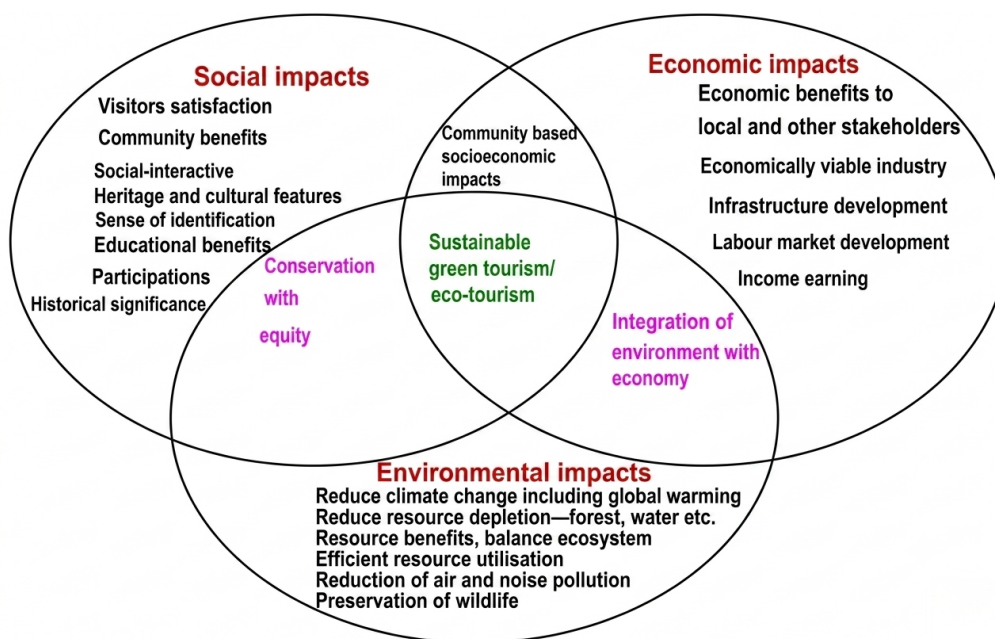


Figure 1. Model of green tourism principles and values.

2.6. Methodological Approaches in Landscape Maintenance Studies

The study by Dorcas^[3] looked at the method for leveraging landscape design to improve long-term tourism growth in Nigeria. This study adopts a quantitative approach alongside a literature review to assess the perspectives of tourism users in Nigeria regarding the significance of landscaping in tourism development. Closed-ended questionnaires were employed for data collection, with responses measured on a Likert scale extending from “strongly agree” to “strongly disagree.” The study population included users from four selected states (Ekiti, Kogi, Ondo, and the Federal Capital Territory-Abuja). The study employed convenience sampling as well as random sampling methods. Stratified random sampling was employed to select respondents from various sectors within the tourism industry. This methodology aimed to ensure the credibility, reliability, and validity of the findings while effectively achieving the study objec-

tives. This study examined how enhancing Nigerian tourist attractions can support sustainable tourism growth and development.

Makinde^[14] assessed landscape maintenance in line with cost planning with the use of an expert review of standards for sustainably maintaining public parks in Nayan. The methodology adopted in the study is quantitative. The method employed in assessing the cost implication of public park maintenance was the use of a mixed-method approach, specifically Fu et al.’s^[24] explanatory sequential design. Initially, the quantitative method was employed for phase one data analysis and collection, focusing on expert confirmation of the landscape maintenance checklist. The questionnaire survey used aimed to validate significant attributes and parameters for the checklist, drawing responses from experts in the Malaysian landscape industry, including government sectors, academics, landscape firms, developers, contractors, and nursery operators. A sample size of 15 expert panels based on ILAM directory members was chosen for the vali-

dation process. The questionnaire consisted of two sections: respondent background and selection standard of public park maintenance, and a Likert scale was used to rate the outlined criteria. Criteria were organized based on themes derived from the literature review, covering the phases of landscape planning, design, construction, implementation, and maintenance. Quantitative data analysis used the percentage of consensus of agreement (PoCoA), with attributes achieving a consensus agreement of 80.0% or higher incorporated into the final landscape maintenance checklist. This methodology ensured comprehensive coverage of key maintenance parameters while maintaining reliability and validity through expert validation and consensus analysis.

Rumao's^[23] study assessed users' opinions of campus landscapes: acquiring knowledge from the University of Texas, the methodology adopted in the study is quantitative techniques. This study employed quantitative techniques to evaluate users' views of the campus landscape. The data collection methods included passive on-site observations, online surveys, and a systematic review of secondary data relevant to campus landscape design. Historic campus documents were obtained from the special collection of the university's central library. The appraisal method involved participants completing online survey questions based on their campus experiences. Both open- and closed-ended questions were included to gain comprehensive insights. The researcher's passive observation on the campus was documented through qualitative descriptions and site photographs. Subsequently, a data triangulation method was used to illustrate users' perceptions of campus landscapes and analyse the findings.

In a comparative study by Ayob et al.^[25] of locals' and visitors' opinions in selected destinations in Greece and Poland, the study was conducted to gain knowledge of tourist landscape. This study adopted structured questionnaires administered to stakeholders. The research design involved conducting surveys with 261 respondents in Zwierzyńiec and Chios, comprising tourists, residents, and tourism stakeholders. Researchers administered structured questionnaires at highly visited locations during peak tourist periods. Purposive sampling was used for tourists, while door-to-door interviews were conducted with residents. Stakeholders were sampled using purposive non-probability sampling, targeting tourism product owners/managers. Respondents were questioned about their perceptions of the landscapes visited,

focusing on the significance of various landscape features and their impact on defining the tourist landscape.

Mala et al.^[9] examined the influence of landscape on tourism development. The study used a case study of Abuja Millennium Park. The methodology adopted in this study is qualitative research methods. The following methods are used: visual survey that involves visiting parks and carefully observing their features. Additionally, a structured interview was used, which involved conducting interviews with administrative and technical staff to gather detailed information on various aspects of the park's functionality. Furthermore, an analytical and comparative study was used to compare the landscapes of the parks using independent variables such as primary means of circulation, major facilities, landscape concept and style. Data collection methods include observations, visual surveys, analytical and comparative studies, and structured interviews. A questionnaire was the primary tool used for data documentation and collection. Procedures for data collection included site visits, visual analysis of landscape elements, and documentation of their harmony with nature.

3. Research Methodology

The study was conducted at numerous selected tourist centers in southwest Nigeria, which comprise: Oyo, Ogun, Ekiti, Lagos, Ondo, and Osun. **Figure 2** displays the location map of the southwestern part of Nigeria.

The sampling frame employed consisted of tourist centers with natural attractions such as beaches, waterfalls, rocks, rivers, and gardens in southwest Nigeria, specifically those with hotels. There are 39 recognized tourist centers that make up the sample population. **Table 1** lists the numerous tourist centers in the southwest regions of Nigeria.

The sample size was determined by selecting tourist centers/hotels that host events, meetings, picnics, and other gatherings, thus making data/information collection easier. Six tourist centers were purposively chosen from each state for their hotel facilities and landscape features. Purposive sampling, which is acknowledged as authoritative or judgmental sampling, is a non-probability method in which an area or participants centered on specific characteristics and experiences pertinent to the study's objectives are deliberately selected. On average, these centers receive 2,520 visi-

tors, out of which 13.7% were selected, indicating a sample size of 345 visitors. **Table 2** displays the designated tourist centers in southwest Nigeria. The study used an accidental sampling technique in the distribution of the questionnaire to

respondents, also known as opportunity or convenience sampling, which is also a non-probability method. This study selected participants who were easiest to reach and were readily accessible and available.

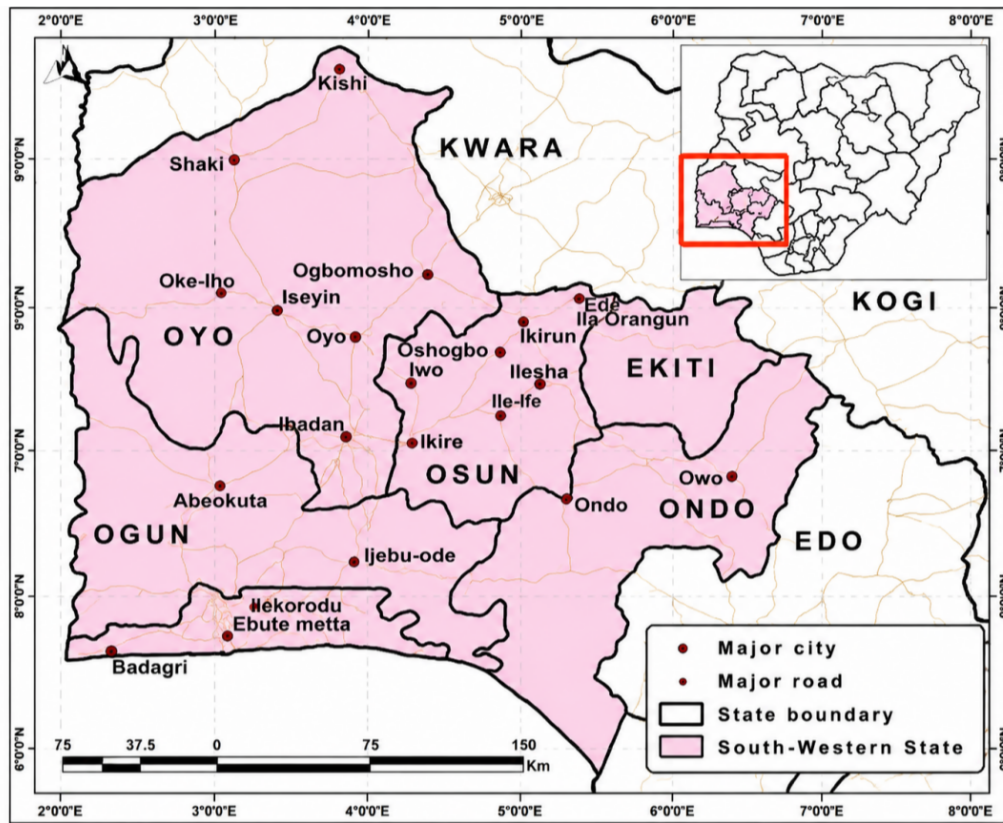


Figure 2. Map of South Western Nigeria.

Source: Southwest Topographical Map-HD GIS Mapping (Geoinfotech).

Table 1. List of various tourist centers in the southwest geopolitical regions of Nigeria.

S/N	States	Name of the Tourist Center	Total Number
1	Ekiti	Arinta Waterfall	6
		Erin Ayonigba's Sacred Groove	
		Esa Cave	
		Ewi's Palace	
		Ikogosi Warm Springs	
		Olosunta Hill	
2	Osun	The Erin Ijesha Waterfall	6
		Erinle Natural Spring	
		Odo Owa Cave and Waterfall	
		Olumirin Waterfall	
		Osun-Osogbo Sacred Grove	
3	Ogun	Ogun River	5
		Ogun State Cultural Center	
		Oke-Ado Mountain	
		Olumo Rock	
		Omo Forest Reserve	

Table 1. Cont.

S/N	States	Name of the Tourist Center	Total Number
4	Oyo	Ado-Awaye Suspended Lake	8
		Agodi Gardens	
		Alaafin of Oyo's Palace	
		Cocoa House	
		Igbo-Ora	
		Ogbomoso Wildlife Park	
		Okeho-Igboho Waterfalls	
		Old Oyo National Park	
5	Ondo	The African Heritage Research Library and Cultural Center	7
		Ebomi Lake	
		Idanre Hills	
		Igbara-Oke Hills	
		Igbo Olodumare	
		Igbokoda Waterfront	
		The Owo Museum of Antiquities	
6	Lagos	Epe Mangroves	7
		Eredo Hills	
		The Lekki Conservation Center	
		National Museum of Lagos	
		Omu Resort	
		Whispering Palms Resort	
		Yemoji Natural Swimming Pool	

Table 2. Selected tourist centers in southwest Nigeria.

S/N	State	Selected Hotel for the Study	Average Number of Users per Week	13.7% Sample Size Was Selected
1	Osun	Zenababs Half Moon Resort Hotel	173	24
2	Ondo	Goshen Trust Hotel	238	33
3	Oyo	Ilaji Hotel and Resort	442	60
4	Ekiti	Ikogosi Warm Springs Resort	462	63
5	Ogun	Green Legacy Resort, Abeokuta, Japan	560	77
6	Lagos	Lekki Beach Resort	645	88
Total	6	6	2,520	345

The sample size employed in this study was obtained from Slovin's formula. The minimum sample size was determined and obtained using Slovin's formula at a 95% confidence level with a 5% margin of error ($E = 0.05$). The formula allows us to calculate a perfect sample size given an anticipated level of precision, confidence level, desired and projected proportion of the population. This formula is considered appropriate for large populations. The study used both closed-ended (structured) and open-ended (semi-structured) questionnaires to obtain information from the respondents. The questionnaire developed for this research purpose typically consists of several sections. The sections depend on the objectives and the study topic. These are questions for descriptive and inferential analyses. The

questions for descriptive analysis collected information on the respondents' socioeconomic characteristics (age, educational qualification, gender, tribe, and income level, among others), while the questions for inferential analysis were designed to obtain data on the dependent and independent variables of the study. Nevertheless, every question in the questionnaire employed each of these measurement scales, comprising the ratio, ordinal, interval, and nominal scales. This methodology ensures inclusive coverage of key research objectives while upholding reliability and validity through expert validation and consent analysis. Content validity was used to measure the extent to which the items that include the scale correctly measure the facts being assessed. The questions that were asked

represented the questions that need to be asked. In addition, the study used construct validity procedures by calculating mean scores and determining if they can be generalized. Construct validity statistical analyses, such as correlations and regression, were used to verify the relevance of the questions. The coefficient alpha is used to assess the consistency of the items. The alpha value is 0.887, and the instrument is considered reliable. With a Cronbach's alpha score of 0.887, the questionnaire is reliable and well

arranged for the study objectives.

Conceptual Frameworks of the Study

The conceptual framework for the research presented in **Figure 3** shows that user socio-economic characteristics, tourism design characteristics, impacts of social elements' maintenance, and physical elements influence users' satisfaction with landscape quality.

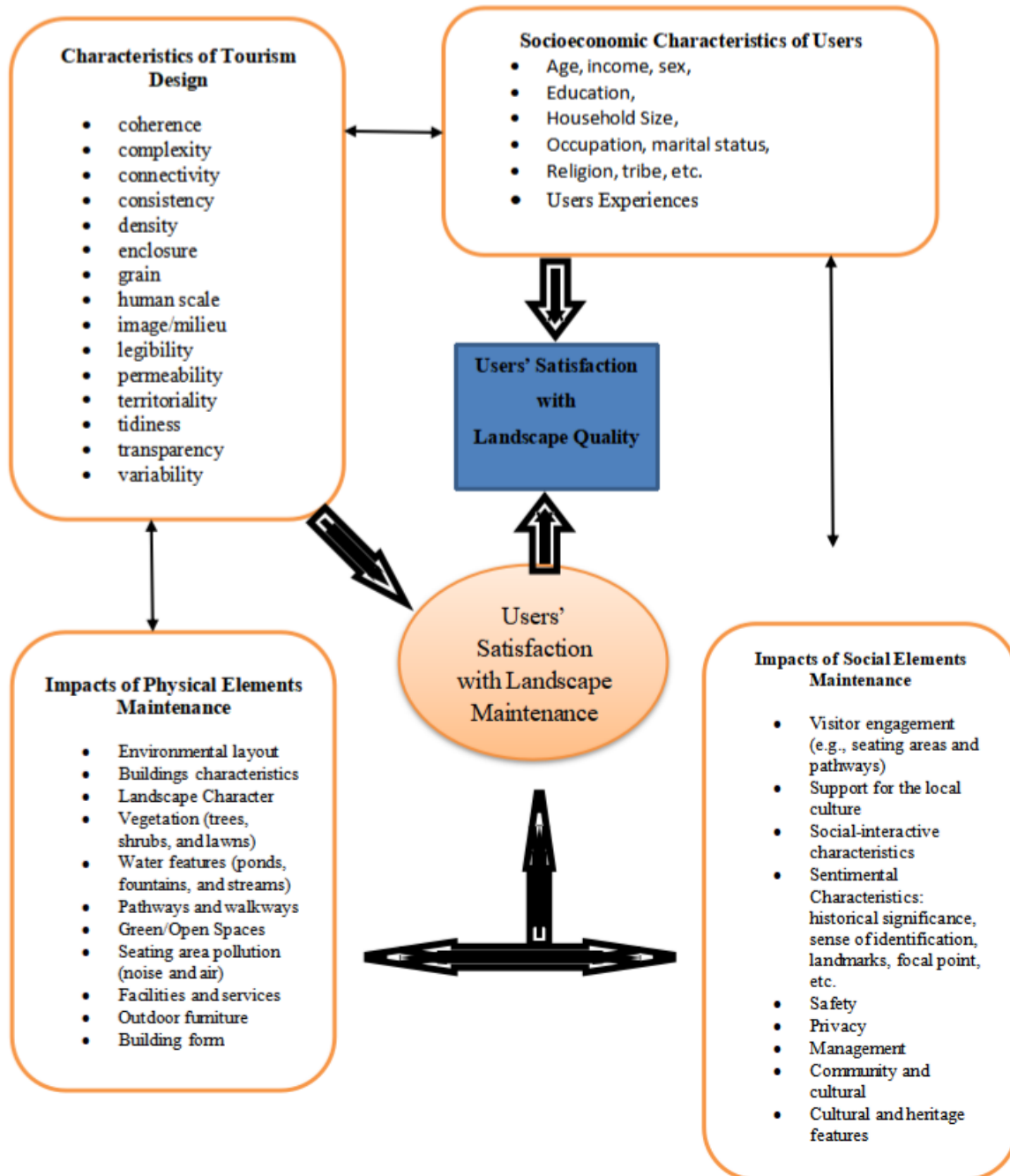


Figure 3. Conceptual frameworks for the study design.

4. Data Analysis and Interpretation

Table 3 illustrates the total questionnaires distributed and the retrieval of questionnaires across the six selected tourist centers in Southwest Nigeria. The study made use of

six trained research field assistants for question administration and retrieval. Having 91.9% of questionnaires retrieved was due to ensuring the survey instrument and topic were passionately relevant to the target group, thus reducing response time and fatigue.

Table 3. Total distributed questionnaires.

Selected Tourist Centers in Southwest Nigeria	Number of Questionnaires Distributed	Number of Questionnaires Retrieved
Ekiti	63 18.3%	58 18.3%
Osun	24 7.0%	19 6.0%
Ogun	77 22.3%	70 22.1%
Oyo	60 17.4%	53 16.7%
Lagos	88 25.5%	87 27.4%
Ondo	33 9.6%	30 9.5%
Total	345 100.0%	317 100.0%

4.1. Descriptive Results

Table 4 presents the users' satisfaction with maintenance in tourist centres in the study areas. The results show that the users were generally satisfied with the overall cleanliness and maintenance of these elements. Specifically, with an average index of 4.20 Users' Satisfaction of Maintenance Indices (USMI), this is on the positive side. The results obtained show strong satisfaction with the cleanliness of tourist centres, with a USMI of 4.34, while satisfaction with the regular upkeep and maintenance of landscape elements, vegetation (trees, shrubs, and lawns), lighting, signage and information boards had USMI of 4.15, 4.07, 4.47, and 4.21, respectively. However, areas such as horticultural excellence and water feature maintenance received lower satisfaction ratings, with 3.44 and 3.47 respondents, respectively. These findings reveal the need for continued efforts to maintain high standards of cleanliness, upkeep, and functionality in all aspects of landscape elements at tourist centres.

4.2. Impact of Landscape Maintenance on User Satisfaction

The study also examined the direct impact of landscape maintenance on user satisfaction. **Table 5** presents

the results of the investigation into the level of landscape maintenance of elements that determine users' satisfaction in the study area. The elements considered were maintenance of accessibility and safety areas (e.g., well-lit pathways and clear signage), maintenance of educational features (e.g., information on plants), maintenance of lighting, condition and functionality of seating areas, overall cleanliness and tidiness, condition and functionality of landscape elements, landscaping esthetics, maintenance of space for sports and recreation, maintenance of signage and information boards, maintenance of leisure gardening spaces, regular upkeep and maintenance of landscape elements, maintenance of vegetation (trees, shrubs, and lawns), nature conservation efforts, maintenance of natural elements, maintenance of water features (ponds, maintenance of fountains, streams, and maintenance of horticultural areas).

The linear permutation of the predictor variables in the model revealed in **Table 5** the significant forecast of the users' satisfaction, $R^2 = 0.679$, $F \text{ value} = 38.771$, $p < 0.00$. This indicates that the model accounts for 68% of the variance in the satisfaction of landscape maintenance users. The F ratio of 38.771 was statistically significant at the 1% level. These results show that there is a strong relationship between the independent variable and the dependent variables. The

model also seemed competent in forecasting the impact of landscape maintenance on user satisfaction. When considering the impact of landscape maintenance predictors on user satisfaction as shown in **Table 5**, the coefficients value of the multiple regression equivalences showed that accessibility and safety ($\beta = 0.209, p < 0.00$), overall cleanliness and tidiness ($\beta = -0.239, p < 0.00$), landscaping aesthetics ($\beta = -0.247, p < 0.00$), space for sports and recreation ($\beta = 0.231, p < 0.01$), maintenance of signage and information boards ($\beta = 0.239, p < 0.00$), nature conservation efforts ($\beta = 0.277, p < 0.00$), maintenance of water features (ponds, fountains,

streams) ($\beta = 0.362, p < 0.00$), were the significant predictors of users' satisfaction. The educational features ($\beta = 0.044, p < 0.358$), maintenance of lighting ($\beta = -0.014, p < 0.767$), condition and functionality of seating areas ($\beta = 0.039, p < 0.459$), condition and functionality of landscape element ($\beta = -0.004, p < 0.925$), maintenance of leisure gardening spaces ($\beta = 0.010, p < 0.855$), regular upkeep and maintenance of landscape elements ($\beta = 0.088, p < 0.072$), maintenance of vegetation (trees, shrubs, lawns) ($\beta = -0.015, p < 0.798$), and integration of natural elements ($\beta = -0.006, p < 0.899$), which are not significant predictors of user satisfaction.

Table 4. Satisfaction indices.

S/N	Variables	Very Dissatisfied (1)	Dissatisfied (2)	Neutral (3)	Satisfied (4)	Very Satisfied (5)	Total (Frequency) (n)	TWV	TWV/n
1	Accessibility and safety (e.g., well-lit pathways and clear signage)	-	-	-	-	317	317	1,585	5.00
2	Educational features (e.g., information on plants)	-	12	-	123	182	317	1,426	4.50
3	Maintenance of the lighting	-	5	10	132	170	317	1,418	4.47
4	Condition and functionality of the seating areas	-	-	45	88	184	317	1,407	4.44
5	Overall cleanliness and tidiness	-	3	45	111	158	317	1,375	4.34
6	Condition and functionality of the landscape elements	-	45	12	56	204	317	1,370	4.32
7	Landscaping aesthetics	2	24	34	89	168	317	1,348	4.25
8	Space for sports and recreation	-	-	56	130	131	317	1,343	4.24
9	Maintenance of the signage and information boards	1	-	90	65	161	317	1,336	4.21
10	Leisure gardening spaces	-	-	97	56	164	317	1,335	4.21
11	Regular upkeep and maintenance of the landscape elements	-	12	55	123	127	317	1,316	4.15
12	Maintenance of vegetation (trees, shrubs, and lawns)	-	35	55	80	147	317	1,290	4.07
13	Nature conservation efforts	-	12	76	110	119	317	1,287	4.06
14	Integration of the natural elements	-	22	87	90	118	317	1,255	3.96
15	Maintenance of water features (ponds, fountains, and streams)	-	120	45	35	117	317	1,100	3.47
16	Horticultural excellence	-	89	68	90	70	317	1,092	3.44
Average								67.14/16	4.20

Table 5. Regression results.

Model Summary						
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate		
1	0.824 ^a	0.679	0.662	0.33951		
ANOVA ^b						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	71.504	16	4.469	38.771	0.000 ^a
	Residual	33.773	293	0.115		
	Total	105.277	309			
Note: ^a Predictors: (Constant), Horticultural excellence average, Accessibility and safety (e.g., well-lit pathways and clear signage), Educational features (e.g., information on plants), Condition and functionality of the landscape elements, Integration of the natural elements, Leisure gardening spaces, Maintenance of the lighting, Landscaping aesthetics, Maintenance of water features (ponds, fountains, and streams), Nature conservation efforts, Regular upkeep and maintenance of the landscape elements, Condition and functionality of the seating areas, Maintenance of the signage and information boards, Maintenance of vegetation (trees, shrubs, and lawns), Overall cleanliness and tidiness, Space for sports and recreation. ^b Dependent Variable: User's Satisfaction.						
Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	<i>t</i>	Sig.
		B	Std. Error	β		
	(Constant)	1.177	0.598		1.968	0.05
2-7	Accessibility and safety (e.g., well-lit pathways and clear signage)	0.054	0.013	0.209	4.225	0
2-7	Educational features (e.g., information on plants)	0.054	0.058	0.044	0.921	0.358
2-7	Maintenance of the lighting	−0.015	0.049	−0.014	−0.297	0.767
1 2-7	Condition and functionality of the seating areas	0.043	0.058	0.039	0.741	0.459
2-7	Overall cleanliness and tidiness	−0.195	0.049	−0.239	−4.01	0
2-7	Condition and functionality of the landscape elements	−0.004	0.047	−0.004	−0.094	0.925
2-7	Landscaping aesthetics	−0.262	0.046	−0.247	−5.638	0
2-7	Space for sports and recreation	0.221	0.065	0.231	3.399	0.001
2-7	Maintenance of the signage and information boards	0.208	0.056	0.239	3.725	0
2-7	Maintenance of leisure gardening spaces	0.011	0.061	0.01	0.183	0.855
2-7	Regular upkeep and maintenance of the landscape elements	0.085	0.047	0.088	1.803	0.072
2-7	Maintenance of vegetation (trees, shrubs, and lawns)	−0.017	0.065	−0.015	−0.256	0.798
2-7	Nature conservation efforts	0.253	0.052	0.277	4.816	0
2-7	Integration of the natural elements	−0.005	0.039	−0.006	−0.127	0.899
2-7	Maintenance of water features (ponds, fountains, and streams)	0.492	0.078	0.362	6.31	0
2-7	Horticultural excellence Average	−0.169	0.047	−0.145	−3.571	0
Note: ^a Dependent Variable: User's Satisfaction.						

The maintenance of water features (ponds, fountains, and streams) had the most significant impact on users' satisfaction with ($\beta = 0.362$), followed by nature conservation efforts with ($\beta = 0.277$), maintenance of the signage and information boards ($\beta = 0.239$) and space for sports and recreation ($\beta = 0.231$). The study results showed that this

model accounted for 68% of the variance in the users' satisfaction, which is a sign that other factors may have also aided the result. Some of these elements positively impacted user satisfaction, while others negatively impacted user satisfaction. Ultimately, this model aligns with previous studies and results about the positive influence of landscape maintenance on user satisfaction, which in turn has the potential to enhance users' experiences, well-being, and quality of life of the tourist. Justifying the presence of variables with multicollinearity in the regression model is sometimes essential when the emphasis is on prediction rather than interpretation and when the variables are theoretically inseparable. While multicollinearity makes it difficult to interpret individual coefficient estimates, it does not diminish the model's general predictive influence. The primary objective of this study is to predict the dependent variable, and multicollinearity is not fatal. The overall fit and predictions of the model remain reliable.

4.3. Study Discussion Relating to the Findings in the Literature

The study is in agreement with John and Ayeni^[2], who stated that landscape maintenance is important for cost planning and that the standards of sustainable landscape maintenance should be incorporated for public and private tourist planning. The study also concurred with Dorcas^[3] that there is a need to enhance tourist attractions through landscaping for sustainable tourism expansion, which enhances the owner's economic fortune and improves the health, happiness, and well-being of tourists and users' experiences. The study also confirms the study by Mohamed et al.^[5] and Ayeni and Ebohon^[6] on the potential landscape maintenance for sustainable city planning and sustainable tourism for developmental growth. Furthermore, the study is in line with Camilleri^[7] on the need to enhance the tourism industry to influence more patronage. The study is in line with Mala et al.^[9], which agreed on the significant impact of landscape maintenance on tourism identities and development in Nigeria. The study also confirms the study by Terkenli et al.^[12] that there is a need to add landscape conscience, harvest user opinion, and stakeholder participation toward understanding and developing tourist landscapes. This study is also in line with Deng et al.^[13] on the need to have a pragmatic study

of landscape typology, elements, and mechanisms of urban gardens in promoting the psychological and physiological restoration of landscape and regular maintenance. This study is also in line with Velmurugan and Dhingra^[17] on the need to develop maintenance policy selection and identify its influence on maintenance function. Furthermore, the study agreed with Wu et al.^[19] on the likely influence of sustainable landscapes on the people's quality of life and well-being through tourism, which comprised happiness, healing, image, and milieu. This study is also in line with Bodunde et al.^[20] on the importance of the effect of maintenance on edible and conventional plant components and landscape design notion. Also, this study identified with Aboufazeli et al.^[22] on the significance of aesthetic quality modelling on the form of natural features in the environs of urban greens. This study is also in line with Fu et al.^[24] on the significance of ecosystem services, landscape elements, and users' happiness as important indicator frameworks for tourism management founded on mental appraisal model.

The study also agreed with Ayob et al.^[25] on the need to identify criteria for sustainable landscape maintenance and address cost implications. Furthermore, the study confirmed Yu et al.^[31] on the significant influence of landscape pattern on the outdoor thermal environment. The study also agreed with Orewere and Ogenyi^[34] on the significance of soft landscaping and its influence on enhancing and augmenting the status and position of Nigerian urban tourist centres. The study also collaborated with a study by Duxbury et al.^[38] on the significance of entanglements between culture and tourism, which requires movement from grassroots practices to reformative cultural policies in smaller and bigger communities. The study also agrees with Jehan et al.^[39] on the influence of tourism on the social relations, economic and environmental impacts on local communities. The study is also in line with Barış and Kaygusuz^[44] on the need to identify sustainable design approaches and landscape planning for sustainable cities. This study also agreed with Yan et al.^[53] on the need to look at tourism and sustainable socio-economic development of local communities from the viewpoint of the synergistic role of green industry, technological innovation and social capital. Additionally, the study agreed with Wu et al.^[60] and Park et al.^[61] on the influences of environmental and socio-economic influences of tourism on local communities, which can be seen in transforming

rural and urban communities from the lens of tourism development.

Theoretical Contributions

Landscape maintenance needs groundbreaking solutions that align with Sustainable Development Goal 11 (SDG 11), which requires cities to be inclusive, resilient, sustainable, and safe^[62]. Tourism is one of the most important predispositions of the 21st century. The developments have enhanced economic development; they have also intensified social inequalities, environmental preservation, and biodiversity^[63]. The study of landscape maintenance on users' experiences in tourist centers contributes to SDG 11 (Sustainable Cities and Communities) by developing strategies that encourage, conserve and safeguard functional tourist infrastructure that comprises greening areas, particularly cultural heritage, tourism design characteristics, physical and social elements and diverse users' socioeconomic features. The SDGs 2023 report highlights the significance of the need to include green infrastructure in city planning to meet access to green spaces, air quality targets, and affordable housing^[62]. This study explores the role and the significance of landscape maintenance in the achievement of SDG 11 by looking at existing case studies and evaluating the impacts of landscape maintenance on users' experiences in tourist toward promoting sustainable urban environments. The study offers an analysis of how urban tourist centers can implement landscape maintenance strategies to address persistent environmental degradation, deterioration and social challenges of our green infrastructure, thereby ensuring a more sustainable future for tourist centers in cities and communities.

Connecting global goals with indigenous desires is vital, and landscape maintenance serves as a healthy pathway and means to achieve this. This study on landscape maintenance contributes to 5 SDGs indirectly and 5 other SDGs directly. Straight and direct contributions to knowledge are obvious in goals connected with spatial and biophysical typologies of sustainability, comprising SDG 3 that emphasised Good Health and Wellbeing, SDG 6, which discusses Clean Water and Sanitation, SDG 11, which discusses Sustainable Cities and Communities, and SDG 13, which discusses Climate Action. Furthermore, SDG 15, which talks about Life on Land. These contributions to knowledge underline the significance of landscape maintenance in the areas of

ecological restoration, biodiversity conservation, landscape multi-functionality, green infrastructure, and nature-based resolutions, which must be executed through sustainable landscape maintenance, landscape planning and control, anchored and grounded in the ideologies of robust sustainable landscape maintenance. The five SDGs in which sustainable landscape maintenance contributed to indirectly include: SDG 1, which discusses No Poverty, SDG 7, which is on Clean Energy, and SDG 8, which emphasizes Decent Work and Economic Growth. Others are SDG 9, which highlights the importance of Industry, Innovation, and Infrastructure and SDG 10, which points out the need to reduce inequalities. These contributions are primarily connected to sustainable livelihoods, ecosystem services, and green economies, in addition to all-encompassing landscape maintenance, which requires proper preparation, strategies and control that incorporate local information and promote fairness. Sustainable landscape maintenance plays an important role in nurturing innovations and user participation, thus connecting spatial configurations with socioeconomic practices.

The study on evaluating the influence of landscape maintenance on users' experiences in tourist centres, centred on users' perceptions of the landscapes visited, had advanced existing literature focusing on various landscape elements' significance and their contribution to defining the tourist landscape. This study advances existing literature by showcasing that landscape maintenance has a strong impact on users' experiences in tourist centres by directly and openly touching aesthetic demand, safety, and comfort, which consecutively energizes visitors' satisfaction, experiences, and loyalty. The study demonstrated that a well-maintained landscape environment characterized by high-quality amenities and neat vegetation raises positive emotional responses and inspires repeat visits, whereas poor maintenance decreases satisfaction. The study identified crucial characteristics of landscape maintenance that influence users, which included greenery and vegetation, among others. The study emphasized that well-maintained natural vegetation and greenery are the top contributors to aesthetic satisfaction and visitor perception. Furthermore, the functional infrastructure cannot be compromised, with high-quality seating areas, high-quality pathways, clearly marked lighting, and clean accessible areas that enhance visitor comfort, privacy, social experiences, and security. Furthermore, consideration of good design elements

in the development of sustainable tourist centres influences the level of users' perceived quality of the tourist centres. Landscape design elements, such as proportion, symmetry, and diversity, have a great influence on users' perception. The study highlighted the following aspects: density, human scale, proportion, territoriality, surveillance, image and milieu, enclosure, consistency, connectivity, coherence, and tidiness, among others. The maintenance of essential elements (e.g., vegetation, lighting, walkways, seating, and fountains) and the cleanliness of the environments significantly influence the level of the perceived quality of the tourist centres. Well-maintained landscapes contribute to tourist destination preferences and enhance visitor satisfaction.

This study of landscape maintenance on user experiences offers numerous significant theoretical and scientific contributions to the profession of tourism management, such as highlighting and extending eco-friendly psychology in tourism. It highlights the bonds between eco-friendly aesthetics and end-user behavior, demonstrating that the physical setting (landscape) is not just a milieu or backdrop but an active and lively agent in shaping and influencing user satisfaction. This study enhances sustainable development frameworks by supporting the development of models that link landscape elements and stewardship with tourism sustainability, emphasizing that aesthetic and visual upkeep are vital for the establishment of heritage. The study contributes to knowledge in the social value assessment of tourism. It enhances the understanding of how social beliefs (e.g., social production of space and community perception of space) and various design principles (e.g., human scale, symmetry, proportion, and rhythm) can be combined into maintenance procedures to meet and enhance user expectations. The study also contributes to theoretical knowledge in the area of cultural landscape management by contributing to a better understanding and awareness of how to sustain, conserve, preserve, and manage cultural heritage and sites while still meeting modern tourists' tastes, standards, and expectations. Proper upkeep and maintenance of tourist centres ensure spaces remain ecologically, economically, and socially active, inclusive, and safe. It reduced ecological footprints by regulating extreme heat, managing flood and storm water, and providing quality recreational zones for communities. Maintained community gardens and urban forests encourage outdoor

programs, activities, and socialization. Regular maintenance (e.g., debris clearing, pruning, and pathway maintenance) is essential to make these spaces safe, accessible to persons with disabilities, and friendly for children, women, and the elderly. Appropriately maintained tourist infrastructure acts as a neighbourhood ecological buffer zone. It helps absorb excessive rainfall and shields communities from the adverse impacts of natural disasters. Landscaping conservation that highlights native species needs continuing and sustainable maintenance. This maintenance safeguards local biodiversity, provides home for wildlife, and safeguards the cultural and natural heritage of a city.

5. Conclusions

The study shows that landscape maintenance had consequences on users' experience in tourist centres. The results indicated that several landscape elements significantly contributed to a positive experience in tourist centres. Among these elements, community and cultural integration, visitor engagement, and environmental sustainability emerged as highly influential. The results show that the users considered community and cultural integration to be very important, highlighting the desire for tourist centres to be integrated into the local community and offer cultural experiences. Similarly, visitor engagement and environmental sustainability received strong support, with several users agreeing that they are significant factors. The results show that tourist centres with well-designed spaces for interaction, educational signage, and sustainable practices are more likely to attract and satisfy visitors. Social interaction, educational experiences, and local cultural support were other influential factors. Collectively, these elements contribute to a positive and enriching visitor experience, demonstrating the importance of considering social quality aspects in tourist centers' landscape design.

Limitations of the Study

The study acknowledges the limitations of the purposive and accidental sampling methods, including lower illustrative power, selection bias, and failure to generalize and simplify findings to a larger population. Additionally, there is potential social desirability bias in the surveys, and the

geographic focus on Southwest Nigeria only neglects other regions due to time frame and resource limitations (limiting generalizability).

Author Contributions

Conceptualization, O.O.A.; methodology, O.O.M. and O.T.M.; software, O.O.M.; validation, I.C.E.; formal analysis, O.O.A.; investigation, O.T.M.; resources, O.O.A.; data curation, O.O.A. and O.T.M.; writing—original draft preparation, O.O.M.; writing—review and editing, O.O.M. and O.T.M.; visualization, O.O.M. and O.O.A.; supervision, I.C.E.; project administration, I.C.E.; funding acquisition, I.C.E. All authors have read and agreed to the published version of the manuscript.

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Institutional Review Board Statement

Ethical review and approval were waived for this study as it ensures participant rights, safety and welfare.

Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data supporting this study are available from the corresponding author upon reasonable request.

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completion of this work.

Conflicts of Interest

The authors declare no competing financial, professional, or personal interests from other parties. The authors declare no conflict of interest related to this research.

AI Use Statement

During the preparation of this work, the authors used CoPilot to refine the academic language of their own work in order to correct any inaccurate grammar and punctuation. After using this tool/service, the authors reviewed and edited the content as needed. The authors take full responsibility for the content of the published article.

References

- [1] Omon, E.J., 2014. Landscape features and tourism development in Nigeria. *Developing Country Studies*. 4(10), 163–166.
- [2] John, O., Ayeni, D., 2019. Achieving aesthetics using landscape design in resort environment. *Landscape Design*. 7(9), 707–713. DOI: <https://doi.org/10.22214/ijraset.2019.9097>
- [3] Dorcas, A.A.A., 2012. Enhancing the Nigerian Tourist Attractions through Landscaping for Sustainable Tourism Development. *American Journal of Tourism Research*. 1(2). Available from: <https://worldscholars.org/index.php/ajtr/article/view/194>
- [4] Setiowati, R., Koestoer, R.H., 2024. Valuation of Urban Green Open Spaces Using the Life Satisfaction Approach. *Civil Engineering Journal*. 10(4), 1159–1181. DOI: <http://dx.doi.org/10.28991/CEJ-2024-010-04-010>
- [5] Mohamed, N., Othman, N., Ariffin, M.H., 2012. The potential of urban forest park for sustainable city. *Planning Malaysia*. 10(3). DOI: <https://doi.org/10.21837/pmjourn.v10.i3.101>
- [6] Ayeni, D.A., Ebohon, O.J., 2012. Exploring sustainable tourism in Nigeria for developmental growth. *European Scientific Journal*. 8(20), 126–140.
- [7] Camilleri, M.A., 2018. The tourism industry: An overview. In *Travel Marketing, Tourism Economics and the Airline Product: An Introduction to Theory and Practice*. Springer: Cham, Switzerland. pp. 3–27. DOI: https://doi.org/10.1007/978-3-319-49849-2_1
- [8] Noroozi, H., 2020. Definition of Tourism and Sustainable Tourism. *ResearchGate*. DOI: <https://doi.org/10.13140/RG.2.2.33562.47042>

- [9] Mala, S.M., Hassan, A., Kyari, B., et al., 2020. Impact of Landscape on Tourism Development, A Case Study of Abuja Millennium Park Abuja, Nigeria. *International Research Journal*. 11(3), 59–72.
- [10] Fu, B., Liu, Y., Zhao, W., et al., 2025. The emerging “pattern-process-service-sustainability” paradigm in landscape ecology. *Landscape Ecology*. 40(3), 54. DOI: <https://doi.org/10.1007/s10980-025-02063-7>
- [11] Terkenli, T.S., 2014. Landscapes of tourism. In: Lew, A.A., Hall, C.M., Williams, A.M. (Eds.). *The Wiley Blackwell Companion to Tourism*. John Wiley & Sons: Hoboken, NJ, USA. pp. 282–293. DOI: <https://doi.org/10.1002/9781118474648.ch22>
- [12] Terkenli, T.S., Skowronek, E., Tucki, A., et al., 2019. Toward understanding tourist landscape. A comparative study of locals’ and visitors’ perception in selected destinations in Poland and Greece. *Quaestiones Geographicae*. 38(3), 81–93. DOI: <https://doi.org/10.2478/quageo-2019-0031>
- [13] Deng, L., Li, X., Luo, H., et al., 2020. Empirical study of landscape types, landscape elements and landscape components of the urban park promoting physiological and psychological restoration. *Urban Forestry & Urban Greening*. 48, 126488. DOI: <https://doi.org/10.1016/j.ufug.2019.126488>
- [14] Makinde, O.O., 2020. Design Factors as Determinants of Neighborhood Quality in the Urban Area of Ibadan, Nigeria. *International Journal of Architecture and Urban Development*. 10(3), 25–40.
- [15] Pereira, P., Zhao, W., 2025. Geography and geographical knowledge contribute decisively to all Sustainable Development Goals targets. *Geography and Sustainability*. 6(1), 100267. DOI: <https://doi.org/10.1016/j.geosus.2025.100267>
- [16] Ahmad, S., Ayob, Z., Mohd Hussain, N.H., et al., 2022. Assessment of Landscape Maintenance toward Cost Planning: Expert Validation on the Criteria of Sustainable Landscape Maintenance for Public Park. *Planning Malaysia: Journal of the Malaysian Institute of Planners*. 20(3), 87–98. DOI: <https://doi.org/10.21837/pm.v20i22.1129>
- [17] Velmurugan, R., Dhingra, T., 2015. Maintenance strategy selection and its impact on maintenance function: A conceptual framework. *International Journal of Operations Production Management*. 35(2), 1622–1661. DOI: <https://doi.org/10.1108/IJOPM-01-2014-0028>
- [18] Efobi, K., 2006. Landscape maintenance in Enugu metropolis: A review. *Journal of Science and Engineering Technology*. 13(3), 7099–7105.
- [19] Wu, J., Addai, J., Consolata, M., et al., 2025. Landscape sustainability science and the Sustainable Development Goals. *Geography and Sustainability*. 6(5), 100309. DOI: <https://doi.org/10.1016/j.geosus.2025.100309>
- [20] Bodunde, J., Olubode, O., Owolabi, C.O., 2020. Impact of maintenance on a conventional and edible plant components landscape design concept. ResearchGate. DOI: <https://doi.org/10.13140/Rg.2.2.15042.94407>
- [21] Emmanuel, S., 2021. *Tourism in the Great Alpine Glacial Sites: Perceptions and Adaptations to Landscape Change* [PhD Thesis]. Université Savoie Mont Blanc: Chambéry, France.
- [22] Aboufazeli, S., Jahani, A., Farahpour, M., 2024. Aesthetic quality modeling of the form of natural elements in the environment of urban parks. *Evolutionary Intelligence*. 17, 327–338. DOI: <https://doi.org/10.1007/s12065-022-00768-1>
- [23] Rumao, G.S., 2016. *Assessing Users’ Perceptions of Campus Landscapes Learning from the University of Texas at Arlington* [Master’s Thesis]. University of Texas at Arlington: Arlington, TX, USA.
- [24] Fu, H., Guan, J., Zhong, Q., et al., 2024. Landscape elements, ecosystem services and users’ happiness: An indicator framework for park management based on cognitive appraisal theory. *Ecological Indicators*. 165, 112209. DOI: <https://doi.org/10.1016/j.ecolind.2024.112209>
- [25] Ayob, Z., Ahmad, S., Shinbira, I.A., 2022. Criteria for Sustainable Landscape Maintenance: Addressing Cost Implication. *Environment-Behaviour Proceedings Journal*. 7(20), 315–322.
- [26] Fang, X., Ma, Q., Liu, Z., et al., 2024. Landscape sustainability and land sustainability: A bibliometric analysis. *Land Use Policy*. 147, 107374. DOI: <https://doi.org/10.1016/j.landusepol.2024.107374>
- [27] Makinde, O.O., Rasah, L.A., Akangbe, O.O., et al., 2025. Evaluating the effects of landscape elements quality on user preferences in selected tourist centers in Southwest Nigeria. *UNIOSUN Journal of Engineering and Environmental Sciences*. 7(1). DOI: <https://doi.org/10.36108/ujees/5202.70.0103>
- [28] Makinde, O.O., Lanrewaju, A.F., 2024. Henri Lefebvre Theory of Space and Social Production Philosophy: A Critical Interpretation. *Global Journal of Arts Humanity and Social Sciences*. 4(1), 67–80. DOI: <https://doi.org/10.5281/zenodo.10577092>
- [29] Akangbe, O.O., Makinde, O.O., Adeyinka, R., et al., 2025. Influence of Landscape Maintenance, Social Value and Design Principles on Users’ Perceptions of Tourist Centers in Nigeria. *ISAR Journal of Economics and Business Management*. 3(9), 30–50. DOI: <https://doi.org/10.5281/zenodo.17139625>
- [30] Mayer, M., Vogt, L., 2016. Economic effects of tourism and its influencing factors: An overview focusing on the spending determinants of visitors. *Zeitschrift für Tourismuswissenschaft*. 8(2). DOI: <https://doi.org/10.1515/tw-2016-0017>
- [31] Yu, H., Zhang, T., Fukuda, H., et al., 2023. The effect of landscape configuration on outdoor thermal environment: A case of urban Plaza in Xi’an, China. *Building and Environment*. 231, 110027. DOI: <https://doi.org/10.1016/j.buildenv.2023.110027>

- //doi.org/10.1016/j.buildenv.2023.110027
- [32] Hobbs, R., 1997. Future landscapes and the future of landscape ecology. *Landscape and Urban Planning*. 37(1–2), 1–9.
- [33] Orewere, E., Katyen, A., Tarni, A., 2020. The Effect of Landscaping on Health and Environment in Housing Estate, Jos Nigeria. *International Journal of Recent Innovations in Academic Research*. 4(7), 16–35.
- [34] Orewere, E., Ogenyi, A., 2019. Soft landscaping and its impact in enhancing the status of Nigerian urban centers: A case of Jos city center, Nigeria. *Journal of Environmental Sciences and Resources Management*. 11(2), 17–36.
- [35] Setiowati, R., Mizuno, K., Hasibuan, H.S., et al., 2022. Urban green spaces for support healthiness in Jakarta during the COVID-19 pandemic: A quantitative study. *Environmental Engineering Research*. 28(2), 210598. DOI: <https://doi.org/10.4491/eer.2021.598>
- [36] Akhimien, N., Isiwele, A.J., Adamolekun, M.O., 2018. The impact of landscape architecture on the built environment. *Journal of Environmental Studies*. 2(2), 139–146.
- [37] Shi, X., Wang, Y., Jin, S., 2024. Aesthetic values and quality of life in green urban corridors. *Sustainability*. 16(3), 287.
- [38] Duxbury, N., de Castro, T.V., Silva, S., 2025. Culture-tourism entanglements: Moving from grassroots practices to regenerative cultural policies in smaller communities. *International Journal of Cultural Policy*. 31(4), 497–516. DOI: <https://doi.org/10.1080/10286632.2025.2470828>
- [39] Jehan, Y., Batool, M., Hayat, N., et al., 2023. Socio-Economic and Environmental Impacts of Tourism on Local Community in Gilgit Baltistan, Pakistan: A Local Community Prospective. *Journal of Knowledge Economy*. 14, 180–199. DOI: <https://doi.org/10.1007/s13132-021-00885-9>
- [40] Lu, C.-W., Huang, J.-C., Chen, C., et al., 2021. An energy-efficient smart city for sustainable green tourism industry. *Sustainable Energy Technologies and Assessments*. 47, 101494. DOI: <https://doi.org/10.1016/j.seta.2021.101494>
- [41] Sutapa, I.D.A., Mbarep, D.P.P., Hasibuan, H.S., et al., 2023. Ecohydrology Approach to Strengthen Public Green Open Space Management towards Comfortable Common Space and Playground in Kalijodo Area—Jakarta Province, Indonesia. *Ecohydrology & Hydrobiology*. 23(4), 518–531. DOI: <https://doi.org/10.1016/j.ecohyd.2023.04.005>
- [42] Luong, T.B., 2023. Eco-destination image, environment beliefs, ecotourism attitudes, and ecotourism intention: The moderating role of biospheric values. *Journal of Hospitality and Tourism Management*. 57, 315–326. DOI: <https://doi.org/10.1016/j.jhtm.2023.11.002>
- [43] Seervi, P., 2023. Ecotourism and Sustainable Development. *International Journal for Multidisciplinary Research*. 5(5). Available from: <https://www.ijfmr.com/papers/2023/5/7049.pdf>
- [44] Barış, M.E., Kaygusuz, S.Z., 2023. Landscape planning and design approaches for ecologically sustainable cities. *Asian Research Journal of Agriculture*. 16(3), 85–95. DOI: <https://doi.org/10.9734/arja/2023/v16i3395>
- [45] Compeán-Guzmán, F.J., 2025. Ecotourism and sustainable development—A bibliographic approach. *Journal of Environmental Protection*. 16(7), 754–769. DOI: <https://doi.org/10.4236/jep.2025.167039>
- [46] Rigolon, A., Browning, M.H., Lee, K., et al., 2018. Access to Urban Green Space in Cities of the Global South: A Systematic Literature Review. *Urban Science*. 2(3), 67.
- [47] Reed, M.S., 2008. Stakeholder Participation for Environmental Management: A Literature Review. *Biological Conservation*. 141(10), 2417–2431. DOI: <https://doi.org/10.1016/j.biocon.2008.07.014>
- [48] Cole, S., 2006. Information and empowerment: The keys to achieving sustainable tourism. *Journal of Sustainable Tourism*. 14(6), 629–644. DOI: <https://doi.org/10.2167/jost607.0>
- [49] Fentaw, G., Mezgebu, A., Wondie, A., et al., 2022. Ecological health assessment of Ethiopian wetlands: Review and synthesis. *Environmental and Sustainability Indicators*. 15, 100194. DOI: <https://doi.org/10.1016/j.indic.2022.100194>
- [50] Diaz, I., 2010. Community-Based Ecotourism and Gender in the Tuxtla Biosphere Reserve (Mexico) Steps. *Journal of Tourism and Cultural Heritage*. 3, 151–165.
- [51] Beaumont, N., 2011. The third criterion of ecotourism: Are ecotourists more concerned about sustainability than other tourists? *Journal of Ecotourism*. 10(2), 135–148. DOI: <https://doi.org/10.1080/14724049.2011.555554>
- [52] Makinde, O.O., 2020. The effects of physical and social characteristics on residents' perception on neighborhood quality in the urban environment. *Journal of Human, Earth, and Future*. 1(3), 122–145. DOI: <https://doi.org/10.28991/HEF-2020-01-03-03>
- [53] Yan, L., Gooib, L., Huang, W., et al., 2025. Ecotourism and economic sustainable development of local communities from the lens of technological innovation: The synergistic role of green industry and social capital. *International Review of Economics and Finance*. 104, 104720. DOI: <https://doi.org/10.1016/j.iref.2025.104720>
- [54] Indwar, T., Muthukumar, P.K., 2023. Role of Ecotourism in Sustainable Development: An Overview. *Journal of Pharmaceutical Negative Results*. 14(2), 1600–1608.
- [55] Raj, G., Feola, G., 2025. Becoming community economy: How community-supported agriculture diversi-

- fies farm labor. *Local Environment*. 31(1), 82–97. DOI: <https://doi.org/10.1080/13549839.2024.2447762>
- [56] El Ashmawy, R.A., Ragheb, A.A., Ragheb, G., et al., 2024. Sustainable design principles for green office buildings: A comprehensive review. *International Journal of Sustainable Development and Planning*. 19(6), 2069–2077. DOI: <https://doi.org/10.18280/ijSDP.190607>
- [57] Siregar, O.M., Siregar, A.M., Andriansyah, 2022. Literature review: Identification of sustainable ecotourism in Tangkahan. *IOP Conference Series: Earth and Environmental Science*. 1115, 012068. DOI: <https://doi.org/10.1088/1755-1315/1115/1/012068>
- [58] Thompson, B.S., 2022. Ecotourism anywhere? The lure of ecotourism and the need to scrutinize the potential competitiveness of ecotourism developments. *Tourism Management*. 92, 104568. DOI: <https://doi.org/10.1016/j.tourman.2022.104568>
- [59] Saavedra, S., 2025. Economic development and environmental conservation: Evidence from ecotourism. *Economic Development and Cultural Change*. 73(3). DOI: <https://doi.org/10.1086/730828>
- [60] Wu, J., Wang, M., Li, W., et al., 2015. Impact of Urban Green Space on Residential Housing Prices: Case Study in Shenzhen. *Journal of Urban Planning and Development*. 141(4), 5014023. DOI: [https://doi.org/10.1061/\(asce\)up.1943-5444.0000241](https://doi.org/10.1061/(asce)up.1943-5444.0000241)
- [61] Park, J., Zou, S.W., Soulard, J., 2024. Transforming rural communities through tourism development: An examination of empowerment and disempowerment processes. *Journal of Sustainable Tourism*. 32(4), 835–855. DOI: <https://doi.org/10.1080/09669582.2023.2178446>
- [62] United Nations, 2025. United Nations Sustainable Development Goals: Sustainable Cities and Communities. Available from: https://info.library.okstate.edu/sdg/cities_sdg11 (cited 20 February 2026).
- [63] Rasli, F.N., Juhari, M.L., HalimGreen, A.H.A., 2025. Green Corridors in Coordinating and Supporting SDG 11: Sustainable Cities and Communities. *International Journal of Research and Innovation in Social Science*. 8(12), 1053–1071. DOI: <https://dx.doi.org/10.47772/IJRISS.2024.8120089>