

CONSERVATION AND SUSTAINABILITY IN ANAMBRA'S TOURISM SECTOR: AN EMPIRICAL ASSESSMENT

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ABSTRACT

This study examined conservation practices and eco-friendly hospitality initiatives in Anambra State, Nigeria, focusing on the relationship between destination environmental management and sustainable tourism development. Motivated by tensions between tourism growth and environmental sustainability, a cross-sectional survey design was adopted involving 112 stakeholders (hoteliers, government officials, and community leaders) across Ogbunike Caves, Agulu Lake, Igbo-Ukwu Museum, and Ogbaukwu Cave and Waterfall. Data were collected using the Sustainable Tourism Practices and Environmental Management Questionnaire (STPEMQ) and analysed using descriptive statistics, Pearson Product Moment Correlation, and one-way ANOVA. Findings revealed moderate conservation effectiveness ($M = 3.11$) and eco-friendly practice adoption ($M = 3.21$), with weaknesses in waste management, community participation, renewable energy use, and recycling systems. A significant positive relationship was found between community-involved management and environmental integrity of tourism destinations ($r = 0.58, p < 0.01$). Significant differences were also observed in perceived cost barriers to sustainability ($F(2,109) = 9.87, p < 0.001$), with hoteliers reporting stronger financial constraints than other stakeholder groups. The study concludes that despite policy support, including the Anambra State Heritage Tourism Masterplan, implementation at destination and enterprise levels remains limited. Strengthened stakeholder coordination, green financing mechanisms, community-based conservation strategies, and capacity-building programmes are recommended to enhance sustainable tourism development.

Keywords: Sustainable tourism, conservation, eco-friendly practices, hospitality management, environmental sustainability, Anambra State.

Introduction

Tourism, in its broadest sense, refers to the temporary movement of people away from their usual place of residence to destinations outside their normal environment for purposes such as leisure, business, cultural exploration, or personal enrichment. It encompasses the activities, services, and industries that cater to these travellers, including transportation, accommodation, food and beverage, entertainment, and attraction management. Unlike migration or commuting, tourism is characterised by its temporary nature, voluntary participation, and the expectation of a rewarding experience that extends beyond mere survival or necessity.

Tourism is widely recognised as a strategic driver of socio-economic development, particularly in emerging economies such as Nigeria, where it contributes to employment generation, foreign exchange earnings, infrastructure development, and regional integration (United Nations World Tourism Organization [UNWTO], 2023). Despite being endowed with rich cultural heritage, diverse ecological landscapes, and historical assets, Nigeria's tourism potential remains largely underexploited. This potential is especially pronounced in Anambra State, South-East Nigeria, which hosts a distinctive mix of geological, aquatic, and cultural attractions, including the Ogbunike Caves (currently being considered for UNESCO World Heritage listing by the Anambra State Government), Agulu Lake, Igbo-Ukwu Museum (renowned for its ancient bronze artefacts), and the Ogbaukwu Cave and Waterfall (Anambra State Ministry of Culture and Tourism, 2022).

Tourism development in Anambra State reflects a paradox common to many emerging destinations: efforts to promote economic growth through tourism expansion often inadvertently generate environmental degradation and cultural erosion. Adu-Ampong (2023) describes this challenge as the "development-first sustainability trap," wherein short-term economic priorities consistently overshadow long-term environmental stewardship. As tourism activities intensify without adequate regulatory and management frameworks, the natural and cultural resources that sustain destination attractiveness become increasingly vulnerable.

In Anambra State, these vulnerabilities manifest through interrelated environmental challenges, including: ineffective waste management systems contributing to pollution in sensitive ecosystems such as Agulu Lake; unregulated visitor pressure accelerating physical and ecological degradation at fragile heritage sites like the Ogbunike Caves; and the expansion of hospitality infrastructure without corresponding adoption of environmentally responsible practices (Ezeudu, Udeh & Nwosu, 2022; Mba et al., 2025). Recent research by Mba et al. (2025) specifically examined Ogbunike Caves, identifying inadequate management, environmental degradation, and poor infrastructure as persistent challenges requiring urgent intervention. These challenges are compounded by limited institutional capacity within the Anambra State Ministry of Culture and Tourism, weak enforcement mechanisms, and fragmented policy coordination issues widely observed in sub-Saharan African tourism contexts (Asuquo & Etim, 2024).

Addressing these challenges requires systematic adoption of sustainable tourism principles, which emphasise balancing economic, social, and environmental impacts while meeting the needs of visitors, host communities, and the environment (UNWTO, 2023). In Anambra State, operationalising this approach necessitates a dual focus: destination-level conservation and environmentally sustainable practices within hospitality enterprises. These dimensions are mutually reinforcing; poorly managed hospitality operations undermine conservation efforts, while degraded destinations reduce the quality and competitiveness of tourism services.

Effective destination conservation extends beyond symbolic protection to include science-based management strategies such as establishing visitor carrying capacities, implementing biodiversity monitoring, enforcing site-specific regulations, and integrating climate adaptation measures (Buckley & Castellanos, 2024). Equally important is host community inclusion. Within the Igbo socio-cultural context, conservation approaches that integrate indigenous knowledge and community-based stewardship have been shown to enhance local ownership, compliance, and long-term sustainability (Ezeano, 2024).

Parallel to conservation efforts is the need for eco-friendly practices within the hospitality sector, including renewable energy use, water-efficient systems, waste reduction and recycling, and sustainable procurement (Mensah & Boakye, 2023). The L'eola Hotel case in Lagos demonstrates that eco-friendly hospitality practices are being implemented in Nigeria, providing a precedent for what is achievable in the Nigerian context. However, adoption of these practices in Nigeria's hospitality industry remains limited overall. High perceived costs, inadequate technical expertise, weak regulatory incentives, and underdeveloped green supply chains continue to constrain green innovation (Akanwa & Joe-Ikechebelu, 2023), thereby increasing environmental pressure on tourism destinations.

Bridging destination conservation and hospitality practices requires an integrated governance framework that aligns tourism development goals with environmental protection mandates. The Anambra State government has initiated the development of a Heritage Tourism Masterplan, which represents a significant policy step toward establishing a coordinated sustainability framework. However, this plan has not yet been fully operationalised, and challenges persist in translating policy intentions into on-the-ground improvements at key destinations. In the absence of effective coordination, siloed governance structures persist, resulting in policy incoherence and ineffective oversight (Okoli & Ifeakor, 2023). This study is therefore situated at the intersection of destination conservation, hospitality environmental practices, and governance integration, seeking to generate empirical evidence to support the effective implementation of the state's tourism policy framework.

Statement of the Problem

Anambra State's tourism sector faces growing environmental degradation despite its rich natural and cultural assets. At key destinations like Ogbunike Caves and Agulu Lake, unregulated visitation, poor waste management, and weak conservation frameworks have accelerated ecological decline (Mba et al., 2025). Community participation in conservation remains minimal, undermining indigenous stewardship traditions.

Similarly, the hospitality sector shows low adoption of eco-friendly practices, constrained by high upfront costs, limited technical capacity, and weak regulatory enforcement. Although the Anambra State Government has developed a Heritage Tourism Masterplan, implementation lags, with little tangible improvement at destination or enterprise levels. This gap between policy and practice underscores the urgent need for empirical evidence to guide effective sustainability interventions.

Purpose of the Study

The main purposes of this study are to:

1. Assess the current state of environmental conservation and eco-friendly hospitality practices at major tourist destinations in Anambra State.
2. Identify the key barriers of sustainable practices within the state's tourism sector.

Research Questions

The study is guided by the following research questions:

1. What is the current state of environmental integrity at key tourist destinations and the level of eco-friendly practice adoption in the surrounding hospitality sector in Anambra State?
2. What are the principal barriers in Anambra State's tourism sector?

Research Hypotheses

The following null hypotheses were formulated and tested at the 0.05 level of significance:

H₀₁: There is no significant relationship between the implementation of structured management plans (incorporating community involvement) and the perceived environmental integrity of tourist destinations in Anambra State.

H₀₂: There is no significant difference in the perception of the most critical barrier to sustainability integration among key stakeholders (government officials, hoteliers, and community leaders) in Anambra State's tourism sector.

Methodology

The study adopted a cross-sectional survey research design using quantitative approach. This design was appropriate as it allowed data collection from multiple stakeholders at one point in time to describe existing practices and relationships between variables. The study was conducted in Anambra State, Nigeria, focusing on four purposively selected tourism destinations: Ogbunike Caves (Oyi LGA), Agulu Lake (Anaocha LGA), Igbo-Ukwu Museum (Aguata LGA), and Ogbaukwu Cave and Waterfall (Orumba North LGA). The sites were selected using a multi-criteria approach comprising tourism typology, environmental sensitivity, tourism development intensity, and governance structure. The sites represent distinct tourism functions, including geotourism (Ogbunike Caves and Ogbaukwu Cave and Waterfall), aquatic/ecological tourism (Aguata Lake), and cultural-heritage tourism (Igbo-Ukwu Museum). They were also selected based on varying levels of environmental vulnerability, visitor pressure, and infrastructure development, allowing for comparative assessment of sustainability challenges across different tourism contexts. In addition, the sites reflect different governance arrangements, including state-managed, community-influenced, and hybrid systems, enabling analysis of how institutional structure affects environmental management outcomes.

The target population comprised 280 stakeholders, including hotel and resort managers, government officials from the Ministries of Culture and Tourism, and Environment, and community leaders (town union executives and traditional council members) directly involved with the selected destinations. A sample of 120 respondents was drawn using purposive sampling. This technique was chosen to ensure only individuals with direct knowledge of sustainability practices in the study area were included. The sample comprised 48 hoteliers, 37 government officials, and 35 community leaders. A structured questionnaire titled Sustainable Tourism Practices and Environmental Management Questionnaire (STPEMQ) was used. It contained 15 closed-ended items on a five-point Likert scale covering conservation effectiveness, eco-friendly practices, and barriers to sustainability. The questionnaire was validated by three experts: two senior academics in Tourism and Hospitality Education and one official from the Anambra State Ministry of Culture and Tourism. Their inputs were used to modify unclear items. Reliability was established through a pilot study involving 20 respondents from a non-participating destination. Cronbach's Alpha coefficients were 0.81 for conservation items, 0.79 for eco-practice items, and 0.84 for barrier items, all above the 0.70 acceptable threshold. The researchers and three trained assistants administered the questionnaire over six weeks. Questionnaires were distributed to hoteliers at their establishments, to government officials at their offices, and to community leaders during community meetings. Out of 120 distributed questionnaires, 112 were properly completed and returned, giving a 93.3% response rate. Data were analysed using SPSS (Version 27).

Descriptive statistics (mean and standard deviation) answered the research questions. Pearson Product Moment Correlation tested H_{01} , and one-way ANOVA tested H_{02} at 0.05 level of significance. Mean scores were interpreted as: 1.00–2.49 (Ineffective/Low), 2.50–3.49 (Moderately Effective/Moderate), and 3.50–5.00 (Effective/High).

Results

A total of 120 questionnaires were administered to four key respondent categories: Of these, 112 were properly completed and returned, representing a 93.3% response rate.

Research Question 1: What is the current state of environmental integrity at key tourist destinations and the level of eco-friendly practice adoption in the surrounding hospitality sector in Anambra State?

Table 1: Descriptive Analysis of Conservation Strategy Effectiveness (N=112)

S/N	Conservation Indicators	Mean ()	Std. Dev. (SD)	Remark
1	Existence and implementation of formal site management plans	3.28	0.86	Moderately Effective
2	Regulation and control of visitor activities (e.g., carrying capacity)	3.11	0.91	Moderately Effective
3	Effectiveness of waste management and pollution control at sites	2.94	0.89	Ineffective
4	Level and quality of community involvement in conservation	2.87	0.93	Ineffective
5	Perceived overall environmental condition of the destinations	3.34	0.82	Moderately Effective
	Aggregate Mean Score	3.11	0.88	Moderately Effective

Source: Field Survey (2026)

Decision Rule: Mean Score: 1.00–2.49 = Ineffective; 2.50–3.49 = Moderately Effective; 3.50–5.00 = Effective

Table 2: Descriptive Analysis of Eco-Friendly Practice Adoption (N=43 Hotel/Resort Managers)

S/N	Eco-Friendly Practices	Mean ($\bar{x}$)	Std. Dev. (SD)	Remark
1	Use of energy-efficient lighting (LEDs, etc.)	3.76	0.72	Widely Adopted
2	Investment in renewable energy (solar, etc.)	2.91	0.95	Minimally Adopted
3	Use of water conservation technologies	3.42	0.80	Moderately Adopted
4	Systematic waste recycling and reuse programmes	2.88	0.92	Minimally Adopted
5	Sustainable/green procurement practices	3.07	0.84	Moderately Adopted
	Aggregate Mean Score	3.21	0.85	Moderately Adopted

Source: Field Survey (2026)

Interpretation (RQ1): The analysis indicates that conservation strategies at major tourist destinations in Anambra State are perceived to be moderately effective overall (Aggregate Mean = 3.11). Critically, waste control (Mean=2.94) and community involvement (Mean=2.87) were rated as ineffective, signalling significant weaknesses in pollution management and participatory governance. Similarly, the adoption of eco-friendly practices in the hospitality sector is at a moderate level (Aggregate Mean = 3.21). Adoption is practice-specific, with low-cost measures like energy-efficient lighting being widespread, while capital-intensive practices like renewable

energy and systemic waste recycling are minimally adopted. This pattern indicates a sector engaging with "low-hanging fruit" but hesitating before more transformative sustainability investments.

Research Question 2: What are the principal barriers in Anambra State's tourism sector

Table 3: Descriptive Analysis of Barriers to Sustainable Practice Adoption (N=112)

S/N	Influencing Factors / Barriers	Mean ($\bar{x}$)	Std. Dev. (SD)	Rank
1	High initial cost of green technology	4.01	0.68	1st
2	Weak government incentives/support	3.82	0.71	2nd
3	Lack of technical expertise/know-how	3.63	0.77	3rd
4	Siloed governance and policy incoherence	3.55	0.79	4th
5	Low environmental awareness/values of management	3.47	0.80	5th

Source: Field Survey (2026)

Interpretation (RQ2): The findings identify a hierarchy of barriers, with economic and institutional factors being most prominent. High initial cost (Mean=4.01) is the most formidable barrier, followed closely by weak government incentives (Mean=3.82) and siloed governance (Mean=3.55). This underscores a critical policy and governance gap where the absence of financial support, coherent regulations, and inter-agency coordination stifles the integration of sustainability across destinations and enterprises.

Test of Hypotheses

H₀₁: There is no significant relationship between the implementation of structured management plans (incorporating community involvement) and the perceived environmental integrity of tourist destinations in Anambra State.

Table 4: Pearson Correlation between Management Plan and Environmental Integrity

Variables	N	Mean	SD	r	p-value	Decision
Management Plan	112	3.28	0.86	0.58	0.000	Reject H ₀
Environmental Integrity	112	3.34	0.82			

Source: Field Survey (2026)

Interpretation: The analysis yielded a correlation coefficient of $r = 0.58$, which is positive, moderate in strength, and statistically significant ($p < 0.01$). This indicates that destinations with more formal and community-involved management plans tend to have higher perceived

H₀₂: There is no significant difference in the perception of the most critical barrier to sustainability integration among key stakeholders (government officials, hoteliers, and community leaders) in Anambra State's tourism sector.

Table 5: One-way ANOVA Summary for Perception of High Cost Barrier

Source of Variation	Sum of Squares	df	Mean Square	F-ratio	p-value	Source of Variation
Between Groups	8.15	2	4.08	9.87	0.000	Between Groups
Within Groups	44.92	109	0.41			Within Groups
Total	53.07	111				Total

Post-Hoc (Tukey HSD) Test Results:

Group Comparison	Mean Difference	p-value
Hoteliers vs. Government Officials	0.48	0.012
Hoteliers vs. Community Leaders	0.41	0.028
Government Officials vs. Community Leaders	0.07	0.751

Interpretation: The ANOVA result is significant ($F(2,109) = 9.87$, $p < 0.001$), indicating a statistically significant difference in how stakeholder groups perceive the barrier of high cost. Post-hoc analysis reveals that hoteliers perceive high cost as a significantly more critical barrier compared to both government officials ($p = 0.012$) and community leaders ($p = 0.028$). There was no significant difference between the perceptions of government officials and community leaders. Therefore, the null hypothesis (H_{02}) is rejected. This confirms a stakeholder divide: the group directly responsible for investment (hoteliers) feels the financial constraint most acutely, highlighting a potential disconnect in understanding among stakeholders.

Discussion of Findings

The findings of this study reveal that sustainable tourism practices in Anambra State are characterized by moderate implementation across both destination management and hospitality operations. Conservation effectiveness was rated as moderately effective (Mean = 3.11), although notable weaknesses were observed in waste management and community participation. Similarly, eco-friendly hospitality practices were moderately adopted (Mean = 3.21), with basic measures such as energy-efficient lighting being more common, while capital-intensive interventions such as renewable energy systems and structured recycling programmes remained limited.

This pattern suggests that sustainability practices in the study area are largely incremental and cost-sensitive rather than transformative. The dominance of moderate scores across indicators reflects a form of partial institutionalization, where awareness of sustainability exists but is not fully translated into systematic operational practice. This finding aligns with sustainability transition theory, which posits that developing tourism systems often progress from symbolic compliance to full integration through stages shaped by governance capacity, financial resources, and institutional incentives.

When situated within recent empirical literature, the findings are consistent with the 2025 study on Ogbunike Caves, which identified persistent challenges such as weak environmental enforcement, inadequate infrastructure, and limited stakeholder coordination. The convergence of findings suggests that the challenges observed are not site-specific but systemic, reflecting broader governance and implementation deficits within the state's tourism management structure. The recurring issues of waste accumulation and weak community participation further indicate that conservation strategies remain insufficiently embedded within local management systems.

In contrast, evidence from Nigeria's hospitality sector presents a different trajectory of sustainability adoption. The L'eola Hotel in Lagos demonstrates that eco-friendly hospitality practices including structured waste management systems, energy efficiency technologies, and environmentally conscious procurement are achievable within the Nigerian context when supported by adequate managerial commitment, investment capacity, and operational incentives. This comparison highlights a clear spatial disparity in sustainability implementation between Lagos-based hospitality enterprises and those in Anambra State.

The relatively lower adoption of advanced eco-friendly practices in Anambra State can be explained by several interrelated factors. First, the high initial cost of sustainable technologies, which was identified as the most significant barrier (Mean = 4.01), discourages investment in renewable energy systems and recycling infrastructure. Second, weak government incentives and

limited policy enforcement reduce the pressure and motivation for compliance with environmental standards. Third, insufficient technical expertise constrains the ability of hospitality operators and destination managers to implement and maintain advanced sustainability systems effectively.

Furthermore, the observed divergence in stakeholder perceptions suggests a fragmented governance environment. Hoteliers, who bear the direct financial burden of sustainability investments, perceive cost constraints more acutely than government officials and community leaders. This misalignment reflects weak coordination across stakeholder groups and highlights the absence of a unified sustainability implementation framework.

Importantly, the significant positive relationship between community-involved management and environmental integrity ($r = 0.58$, $p < 0.01$) reinforces the argument that participatory governance enhances conservation outcomes. Destinations with stronger community involvement tend to exhibit improved environmental conditions, likely due to increased local ownership, informal monitoring mechanisms, and the integration of indigenous ecological knowledge into conservation practices. This finding supports participatory resource governance theories, which emphasize decentralization and stakeholder inclusion as critical drivers of environmental sustainability.

Overall, the findings indicate that while policy frameworks such as the Anambra State Heritage Tourism Masterplan exist, their impact is constrained by implementation gaps rather than policy absence. The sustainability challenge in the study area is therefore structural, driven by governance fragmentation, financial limitations, and uneven stakeholder capacity rather than lack of awareness or policy intent. Without targeted interventions that address these structural constraints, tourism development in Anambra State risks remaining at a moderate but non-transformative level of sustainability performance.

Conclusion

The study concludes that while Anambra State has made progress in tourism development and environmental awareness, sustainability practices remain moderately implemented and structurally constrained. The absence of fully integrated governance mechanisms, combined with financial and technical limitations, continues to hinder effective conservation and eco-friendly hospitality practices. However, the presence of policy initiatives such as the Heritage Tourism Masterplan indicates that a foundation for sustainable tourism already exists. The key challenge lies in strengthening implementation, improving stakeholder coordination, and translating policy into practical, enforceable actions at both destination and enterprise levels.

Recommendations

Based on the conclusions drawn, the following recommendations are proposed:

1. Strengthen multi-stakeholder collaboration through structured tourism sustainability committees involving government, hospitality operators, and host communities.
2. Introduce targeted financial incentives such as green grants, tax reliefs, and soft loans to encourage adoption of eco-friendly technologies.
3. Enhance capacity-building programmes for hospitality operators and destination managers on sustainable tourism practices.
4. Formalize community participation in destination management to improve conservation outcomes and integrate indigenous knowledge systems.
5. Improve coordination among relevant government agencies to reduce policy fragmentation and enhance implementation effectiveness.

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