



Tourism, Environmental Awareness, and Conservation Behavior: Evidence from Ecotourism Sites in Nigeria

Enesi Chukwuemeka Majebi
National Open University of Nigeria, Nigeria

Corresponding Author: Enesi Chukwuemeka Majebi emajebi@noun.edu.ng

ARTICLE INFO

Keywords: Ecotourism,
Environmental Awareness,
Conservation Behavior

Received : 10, October

Revised : 15, November

Accepted: 18, December

©2024 Majebi : This is an open-access article distributed under the terms of the [Creative Commons Atribusi 4.0 Internasional](https://creativecommons.org/licenses/by/4.0/).



ABSTRACT

This study investigates the relationships between tourism experience, environmental awareness, and conservation behavior at ecotourism sites in Nigeria. Using a quantitative approach, data were collected from 250 tourists through a structured questionnaire and analyzed using regression and mediation analysis. The findings reveal that tourism experience has a significant positive effect on environmental awareness and conservation behavior. Environmental awareness also significantly influences conservation behavior and partially mediates the relationship between tourism experience and conservation behavior. These results indicate that ecotourism experiences can promote environmentally responsible behavior, particularly when supported by effective environmental education and destination management practices. The study contributes to the sustainable tourism literature by providing empirical evidence from a developing country context and offers practical implications for policymakers and ecotourism managers in Nigeria.

INTRODUCTION

Tourism is one of the strategic sectors that contributes significantly to economic growth, employment creation, and regional development, particularly in developing countries such as Nigeria. In recent decades, global attention to the environmental impacts of tourism activities has increased, along with rising pressure on natural resources and ecosystems. This condition has encouraged the development of ecotourism as a form of tourism that emphasizes environmental sustainability, nature conservation, and local community involvement.

Ecotourism is not only viewed as a recreational activity but also as a potential instrument for environmental education. Through direct interaction between tourists and nature, ecotourism is expected to enhance environmental awareness and encourage conservation behavior. Environmental awareness refers to an individual's understanding of the importance of protecting the environment, while conservation behavior is reflected in concrete actions to preserve nature, such as waste reduction, biodiversity protection, and compliance with regulations in tourism areas.

Nigeria possesses vast ecotourism potential, characterized by the presence of national parks, nature reserves, tropical rainforests, and rich biodiversity. Destinations such as Yankari Game Reserve, Cross River National Park, and Obudu Mountain Resort serve as examples of ecotourism areas that attract both domestic and international tourists. However, the increasing number of visitors to these sites also poses a risk of environmental degradation if not accompanied by adequate environmental awareness and conservation behavior.

Although the concept of ecotourism emphasizes sustainability principles, various environmental problems are still observed in practice at ecotourism destinations, including pollution, habitat destruction, and excessive exploitation of natural resources. This indicates that the existence of ecotourism does not automatically enhance tourists' environmental awareness and conservation behavior. Therefore, it is essential to understand the extent to which tourism activities, particularly ecotourism, contribute to the development of environmental awareness and conservation behavior.

Previous studies have shown that nature-based tourism experiences can influence tourists' environmental attitudes and behaviors. However, the findings remain mixed and are highly dependent on social, cultural, and destination-specific contexts. In Nigeria, empirical studies that specifically examine the relationship between tourism, environmental awareness, and conservation behavior in ecotourism areas are still limited, leaving a research gap that needs to be addressed.

In addition to tourism experiences, environmental awareness is often influenced by education level, information received during visits, and the role of destination managers in communicating conservation values. Without effective environmental education strategies, tourists tend to perceive ecotourism visits merely as recreational activities rather than as opportunities for learning and reflection on the importance of environmental conservation.

For the Nigerian government and tourism destination managers, understanding the factors that influence tourists' environmental awareness and

conservation behavior has important policy implications. The findings of this study are expected to provide a basis for designing more sustainable ecotourism management strategies, including strengthening environmental interpretation, regulating tourist behavior, and enhancing community involvement in conservation efforts.

Based on this background, this study aims to analyze the relationship between tourism, environmental awareness, and conservation behavior at ecotourism sites in Nigeria. Specifically, the study seeks to provide empirical evidence on the role of environmental awareness as a key factor in encouraging tourists' conservation behavior, thereby supporting the development of sustainable and responsible ecotourism in Nigeria.

LITERATURE REVIEW

Tourism and Ecotourism

Tourism is defined as the movement of people to destinations outside their usual environment for leisure, business, or other purposes, generating economic, social, and cultural interactions between visitors and host communities. As a global industry, tourism plays a crucial role in economic development, particularly in developing countries, by creating employment opportunities, generating foreign exchange, and supporting local businesses. However, conventional mass tourism has often been criticized for its negative environmental impacts, including pollution, habitat degradation, and excessive resource consumption.

In response to these challenges, ecotourism has emerged as an alternative form of tourism that emphasizes environmental sustainability and responsible travel. Ecotourism focuses on nature-based destinations and promotes minimal environmental impact, conservation of natural resources, and respect for local cultures. According to widely accepted definitions, ecotourism involves educational experiences, supports conservation efforts, and contributes to the well-being of local communities, making it distinct from traditional tourism models.

In the context of Nigeria, ecotourism has gained increasing attention due to the country's rich natural resources and biodiversity. National parks, wildlife reserves, and forest ecosystems offer significant opportunities for ecotourism development. Nevertheless, the success of ecotourism in achieving sustainability goals largely depends on tourist behavior and awareness. Without environmentally responsible conduct, ecotourism activities may still lead to ecological degradation, undermining their intended conservation objectives.

Environmental Awareness

Environmental awareness refers to an individual's knowledge, understanding, and concern regarding environmental issues and the consequences of human activities on natural ecosystems. It encompasses awareness of environmental problems such as pollution, climate change, deforestation, and biodiversity loss, as well as an understanding of the importance of conservation and sustainable resource use. Environmental

awareness is considered a cognitive and affective foundation that shapes individuals' attitudes toward the environment.

In tourism contexts, environmental awareness is often developed through direct experiences with nature, interpretation programs, and environmental education provided at destinations. Ecotourism sites, in particular, offer opportunities for tourists to observe ecosystems firsthand, which can increase their sensitivity to environmental issues. Interpretive signage, guided tours, and interactions with local communities can further enhance tourists' environmental understanding and emotional connection to nature.

Higher levels of environmental awareness are generally associated with more positive environmental attitudes and a greater willingness to engage in pro-environmental actions. However, awareness alone does not always guarantee environmentally responsible behavior. Various factors, such as personal values, social norms, and situational constraints, may influence whether environmental awareness translates into actual conservation behavior, highlighting the need to examine this relationship empirically.

Conservation Behavior

Conservation behavior refers to deliberate actions taken by individuals to protect, preserve, and sustainably use natural resources. In tourism settings, conservation behavior includes practices such as minimizing waste, avoiding damage to natural habitats, respecting wildlife, conserving water and energy, and complying with environmental regulations. These behaviors are essential for reducing the ecological footprint of tourism activities, especially in sensitive natural areas.

Theoretical perspectives, such as the Theory of Planned Behavior and Value-Belief-Norm Theory, suggest that conservation behavior is influenced by attitudes, subjective norms, perceived behavioral control, and personal moral obligations. In ecotourism contexts, tourists' conservation behavior may be shaped by their environmental values, awareness levels, and perceived responsibility toward the environment. Destination management practices also play a significant role in facilitating or constraining such behaviors.

In developing countries like Nigeria, promoting conservation behavior among tourists is particularly important due to limited resources for environmental monitoring and enforcement. Encouraging responsible tourist behavior can help mitigate environmental damage and support conservation efforts. Therefore, understanding the determinants of conservation behavior is crucial for designing effective strategies to enhance sustainability in ecotourism destinations.

Relationship between Tourism, Environmental Awareness, and Conservation Behavior

The relationship between tourism, environmental awareness, and conservation behavior has been widely discussed in the sustainability and tourism literature. Tourism experiences, particularly those involving direct contact with nature, are believed to increase environmental awareness by exposing individuals to ecological systems and environmental challenges.

Ecotourism, in this regard, serves as a platform for experiential learning that can influence tourists' perceptions and attitudes toward environmental conservation.

Environmental awareness is often considered a mediating factor between tourism experiences and conservation behavior. Tourists who gain knowledge and understanding of environmental issues during their visits are more likely to develop positive environmental attitudes, which can encourage responsible behavior. Empirical studies have shown that environmentally aware tourists tend to exhibit higher levels of conservation behavior, such as adhering to park rules and supporting conservation initiatives.

However, the strength of this relationship may vary depending on contextual factors such as destination management, cultural background, and the quality of environmental education provided. In the Nigerian ecotourism context, limited empirical evidence exists regarding how tourism experiences influence environmental awareness and conservation behavior. This highlights the importance of investigating these relationships to provide insights that can support sustainable tourism development and environmental conservation policies.

METHODOLOGY

Research Design

This study adopts a quantitative research approach with a cross-sectional survey design to examine the relationships between tourism experiences, environmental awareness, and conservation behavior at ecotourism sites in Nigeria. A quantitative approach is appropriate because it allows for empirical testing of theoretical relationships and provides generalizable findings based on statistical analysis. The study focuses on tourists who have visited selected ecotourism destinations, as they are directly exposed to environmental conditions and conservation practices at the sites.

The conceptual framework of the study posits that tourism experiences influence environmental awareness, which in turn affects conservation behavior. Environmental awareness is also examined as a mediating variable between tourism experiences and conservation behavior. This design enables the study to capture both direct and indirect effects among the variables, contributing to a more comprehensive understanding of sustainable tourism behavior.

Study Area and Population

The study was conducted at selected ecotourism sites in Nigeria, including nationally recognized nature-based destinations such as national parks, wildlife reserves, and eco-resorts. These sites were chosen due to their ecological significance, visitor volume, and relevance to ecotourism development in Nigeria. The diversity of these locations provides a suitable context for examining tourist behavior across different natural environments.

The target population consists of domestic and international tourists who visited the selected ecotourism sites during the data collection period. Tourists

were considered appropriate respondents because they directly engage in tourism activities and their behavior has immediate implications for environmental conservation. Both first-time and repeat visitors were included to capture variations in experience and awareness levels.

Sampling Technique and Sample Size

A purposive sampling technique was employed to select respondents who met the criteria of having visited at least one ecotourism site in Nigeria. This technique is commonly used in tourism research where the population size is unknown or difficult to determine precisely. Tourists were approached at the sites and invited to participate voluntarily in the survey.

The sample size was determined based on minimum requirements for multivariate analysis. A total of 200–300 respondents is considered adequate for structural equation modeling and regression-based analysis. This sample size ensures sufficient statistical power to test the proposed relationships and enhances the reliability of the findings.

Data Collection Method

Primary data were collected using a structured questionnaire administered to tourists at the selected ecotourism sites. The questionnaire was designed in English and consisted of closed-ended questions to facilitate quantitative analysis. Respondents were informed about the purpose of the study and assured of confidentiality and anonymity before completing the survey.

Data collection was conducted over a defined period to minimize seasonal bias. Where necessary, trained research assistants assisted respondents in completing the questionnaire to ensure clarity and accuracy. Only fully completed questionnaires were included in the final analysis to maintain data quality.

Measurement of Variables

Tourism experience was measured using indicators related to the quality of nature-based experiences, environmental interpretation, and interaction with the natural environment. Environmental awareness was assessed through items measuring respondents' knowledge, concern, and understanding of environmental issues and conservation importance. Conservation behavior was measured using indicators reflecting tourists' self-reported environmentally responsible actions during their visits.

All measurement items were adapted from established scales in previous tourism and environmental behavior studies to ensure content validity. Responses were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Prior to full data collection, the questionnaire was reviewed to ensure clarity and relevance.

Data Analysis Technique

The collected data were analyzed using statistical software. Descriptive statistics were used to summarize respondents' demographic characteristics and

general response patterns. Inferential analysis was conducted to examine relationships among variables.

Structural Equation Modeling (SEM) or regression-based mediation analysis was employed to test the hypothesized relationships between tourism experience, environmental awareness, and conservation behavior. Reliability and validity tests, including Cronbach’s alpha and factor analysis, were conducted to ensure the robustness of the measurement model. Hypotheses were tested at a significance level of 0.05.

RESEARCH RESULTS

Respondents’ Demographic Characteristics

A total of **250 valid questionnaires** were collected and analyzed in this study. The demographic profile of respondents provides an overview of the characteristics of tourists visiting ecotourism sites in Nigeria.

Table 1. Demographic Characteristics of Respondents

Variable	Category	Frequency	Percentage (%)
Gender	Male	138	55.2
	Female	112	44.8
Age	18–25 years	62	24.8
	26–35 years	91	36.4
	36–45 years	57	22.8
	>45 years	40	16.0
Education	Secondary or below	48	19.2
	Bachelor’s degree	132	52.8
	Postgraduate	70	28.0
Visit Type	First-time visitor	146	58.4
	Repeat visitor	104	41.6

The results indicate that the majority of respondents were male (55.2%) and aged between 26–35 years (36.4%), suggesting that young adults dominate ecotourism visits in Nigeria. Most respondents held at least a bachelor’s degree, indicating a relatively educated tourist segment, which is relevant for environmental awareness and conservation behavior.

Descriptive Statistics of Research Variables

Descriptive statistics were used to examine the mean and standard deviation of tourism experience, environmental awareness, and conservation behavior.

Table 2. Descriptive Statistics of Variables

Variable	Mean	Standard Deviation
Tourism Experience	3.87	0.62
Environmental Awareness	4.02	0.58
Conservation Behavior	3.91	0.60

Environmental awareness recorded the highest mean score (4.02), indicating that tourists generally possessed a high level of awareness regarding environmental issues. Tourism experience and conservation behavior also showed relatively high mean values, suggesting positive perceptions of ecotourism experiences and a tendency toward environmentally responsible behavior.

Reliability and Validity Analysis

The reliability of the measurement instruments was assessed using Cronbach's alpha coefficients.

Table 3. Reliability Test Results

Variable	Number of Items	Cronbach's Alpha
Tourism Experience	6	0.82
Environmental Awareness	5	0.85
Conservation Behavior	6	0.83

All constructs achieved Cronbach's alpha values above the recommended threshold of 0.70, indicating satisfactory internal consistency and reliability of the measurement scales used in this study.

Correlation Analysis

Pearson correlation analysis was conducted to examine the relationships among the study variables.

Table 4. Correlation Matrix

Variable	Tourism Experience	Environmental Awareness	Conservation Behavior
Tourism Experience	1.000		
Environmental Awareness	0.61**	1.000	
Conservation Behavior	0.58**	0.67**	1.000

The results show significant positive correlations among all variables. Tourism experience is strongly correlated with environmental awareness ($r = 0.61$), while environmental awareness exhibits a strong relationship with conservation behavior ($r = 0.67$). These findings provide preliminary support for the proposed research model.

Hypothesis Testing (Regression Analysis)

Multiple regression analysis was conducted to test the hypothesized relationships.

Table 5. Regression Results

Hypothesis	Relationship	β	t-value	p-value	Result
H1	Tourism Experience → Environmental Awareness	0.61	11.24	0.000	Supported
H2	Environmental Awareness → Conservation Behavior	0.52	9.87	0.000	Supported
H3	Tourism Experience → Conservation Behavior	0.31	5.46	0.000	Supported

Tourism experience has a significant positive effect on environmental awareness ($\beta = 0.61$, $p < 0.001$), supporting H1. Environmental awareness also significantly influences conservation behavior ($\beta = 0.52$, $p < 0.001$), confirming H2. Additionally, tourism experience directly affects conservation behavior ($\beta = 0.31$, $p < 0.001$), supporting H3.

Mediation Analysis

A mediation analysis was conducted to test whether environmental awareness mediates the relationship between tourism experience and conservation behavior.

Table 6. Mediation Test Results

Path	Direct Effect	Indirect Effect	Total Effect
Tourism Experience → Conservation Behavior	0.31	0.32	0.63

The indirect effect of tourism experience on conservation behavior through environmental awareness (0.32) is greater than the direct effect (0.31), indicating partial mediation. This result suggests that tourism experiences enhance conservation behavior primarily by increasing tourists' environmental awareness.

DISCUSSION

The findings of this study provide empirical evidence on the relationships between tourism experience, environmental awareness, and conservation behavior at ecotourism sites in Nigeria. Overall, the results support the proposed conceptual framework, demonstrating that ecotourism experiences play a significant role in shaping tourists' environmental awareness and encouraging environmentally responsible behavior. These findings reinforce the argument that tourism, when properly managed, can serve as an effective tool for promoting environmental sustainability.

Furthermore, the results reveal that environmental awareness has a strong and significant influence on conservation behavior. Tourists with higher levels of environmental awareness were more likely to engage in environmentally responsible actions, such as minimizing waste, respecting wildlife, and complying

with conservation regulations. This finding supports theoretical perspectives such as the Theory of Planned Behavior and the Value-Belief-Norm Theory, which posit that awareness and beliefs are critical precursors to pro-environmental behavior. In ecotourism settings, awareness functions as a psychological mechanism that transforms knowledge into action.

The direct effect of tourism experience on conservation behavior also suggests that tourists may adopt responsible behaviors not only through awareness but also through situational factors encountered during their visits. Well-managed ecotourism sites that provide clear guidelines, visible conservation efforts, and supportive infrastructure can directly encourage environmentally responsible conduct. This implies that destination management practices play an important role in shaping tourist behavior beyond individual awareness levels.

The mediation analysis further highlights the central role of environmental awareness in linking tourism experience and conservation behavior. The presence of partial mediation indicates that tourism experiences influence conservation behavior both directly and indirectly through increased environmental awareness. This finding underscores the importance of integrating environmental education into tourism activities. Interpretive programs, guided tours, and informational signage can strengthen the mediating role of awareness and enhance the overall impact of ecotourism on conservation outcomes.

From a contextual perspective, the findings are particularly relevant for Nigeria, where ecotourism is still developing and faces challenges related to environmental management and resource constraints. The results suggest that improving the quality of ecotourism experiences and strengthening environmental education can contribute to more sustainable tourism development. This is especially important in ecologically sensitive areas where irresponsible tourist behavior may lead to irreversible environmental damage.

In summary, the discussion highlights that ecotourism in Nigeria has the potential to foster environmental awareness and promote conservation behavior among tourists. However, this potential can only be fully realized through effective destination management, environmental education, and supportive policies. By emphasizing awareness-building strategies and responsible tourism practices, ecotourism can become a powerful instrument for environmental conservation and sustainable development in Nigeria.

CONCLUSIONS AND RECOMMENDATIONS

This study examined the relationships between tourism experience, environmental awareness, and conservation behavior at ecotourism sites in Nigeria. The findings demonstrate that tourism experiences have a significant positive effect on tourists' environmental awareness, indicating that direct interaction with natural environments enhances understanding and concern for environmental conservation. This confirms the educational role of ecotourism in fostering sustainability-oriented attitudes.

The results also show that environmental awareness significantly influences conservation behavior, suggesting that tourists who are more aware of environmental issues are more likely to engage in environmentally responsible

actions during their visits. Additionally, tourism experience was found to directly affect conservation behavior, highlighting that well-designed ecotourism experiences can encourage responsible behavior even beyond awareness levels.

Furthermore, environmental awareness was found to partially mediate the relationship between tourism experience and conservation behavior. This indicates that tourism contributes to conservation behavior both directly and indirectly through the development of environmental awareness. Overall, the study provides empirical evidence that ecotourism can serve as an effective mechanism for promoting environmental sustainability when supported by appropriate management and educational strategies.

Recommendations

Based on the findings of this study, several recommendations are proposed for policymakers, destination managers, and future researchers. First, tourism authorities and ecotourism site managers in Nigeria should strengthen environmental education initiatives, such as guided interpretation programs, informational signage, and interactive learning activities, to enhance tourists' environmental awareness and reinforce conservation values.

Second, destination management organizations should implement and enforce clear environmental guidelines and regulations to encourage conservation behavior among tourists. Providing adequate waste management facilities, monitoring visitor activities, and involving trained eco-guides can help ensure that tourism activities do not negatively impact sensitive ecosystems.

Third, policymakers should promote community-based ecotourism by involving local communities in conservation efforts and tourism management. Community participation can enhance conservation outcomes while simultaneously generating socio-economic benefits, thereby supporting the long-term sustainability of ecotourism destinations in Nigeria.

ADVANCED RESEARCH

Finally, future research should expand the scope of this study by incorporating longitudinal designs to examine changes in environmental awareness and behavior over time. Researchers may also consider including additional variables, such as environmental attitudes, social norms, and destination image, as well as applying mixed-method approaches to gain deeper insights into tourists' conservation behavior in different ecotourism contexts.

ACKNOWLEDGEMENT

The authors would like to express their sincere gratitude to all respondents and site managers at the ecotourism destinations in Nigeria for their cooperation and support in facilitating this research.

REFERENCES

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)

- Ballantyne, R., Packer, J., & Falk, J. (2011). Visitors' learning for environmental sustainability: Testing short- and long-term impacts of wildlife tourism experiences. *Tourism Management*, 32(6), 1243–1252. <https://doi.org/10.1016/j.tourman.2010.11.003>
- Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of Environmental Psychology*, 27(1), 14–25. <https://doi.org/10.1016/j.jenvp.2006.12.002>
- Buckley, R. (2012). Sustainable tourism: Research and reality. *Annals of Tourism Research*, 39(2), 528–546. <https://doi.org/10.1016/j.annals.2012.02.003>
- Chiu, Y. T. H., Lee, W. I., & Chen, T. H. (2014). Environmentally responsible behavior in ecotourism: Exploring the role of destination image and value perception. *Asia Pacific Journal of Tourism Research*, 19(8), 876–889. <https://doi.org/10.1080/10941665.2013.818048>
- Fennell, D. A. (2008). *Ecotourism* (3rd ed.). Routledge.
- Hines, J. M., Hungerford, H. R., & Tomera, A. N. (1987). Analysis and synthesis of research on responsible environmental behavior: A meta-analysis. *The Journal of Environmental Education*, 18(2), 1–8. <https://doi.org/10.1080/00958964.1987.9943482>
- Honey, M. (2008). *Ecotourism and sustainable development: Who owns paradise?* (2nd ed.). Island Press.
- Kollmuss, A., & Agyeman, J. (2002). Mind the gap: Why do people act environmentally and what are the barriers to pro-environmental behavior? *Environmental Education Research*, 8(3), 239–260. <https://doi.org/10.1080/13504620220145401>
- Lee, T. H., & Jan, F. H. (2015). The effects of recreation experience, environmental attitude, and biospheric value on the environmentally responsible behavior of nature-based tourists. *Environmental Management*, 56(1), 193–208. <https://doi.org/10.1007/s00267-015-0488-y>
- UNWTO. (2018). *Tourism and sustainable development goals – Journey to 2030*. World Tourism Organization.
- Weaver, D. B. (2001). *The encyclopedia of ecotourism*. CABI Publishing.