# WATER-BASED RECREATION AS A STRATEGY FOR HARNESSING INLAND WATER RESOURCES FOR SUSTAINABLE TOURISM DEVELOPMENT IN IMO STATE, NIGERIA

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**Abstract**
This study focused on water-based recreation as a strategy for harnessing inland water resources for tourism development in Imo State. The study employed a survey research method for collecting primary data through the administration of questionnaires. Secondary data were obtained from relevant materials such as textbooks, journal articles, seminar papers, and periodicals. According to the National Population Commission's 1991 census results projected to 2019, the population for the study was 480,352 persons, representing the overall population of the host communities selected for the study. A sample size of 400 respondents was used. Simple descriptive statistics such as frequencies, percentages, mean, and standard deviation were used to analyze respondents' personal data and research questions, while multiple regression analysis was employed to test the hypotheses. The decision rule was to accept the null hypothesis if the p-value was greater than 0.05; otherwise, the null hypothesis was rejected and the alternative hypothesis accepted. For the research questions, a mean value greater than or equal to 2.5 was considered acceptable on a four-point rating scale. The findings indicated a significant relationship between water-based recreation and heritage preservation in Imo State. The results also revealed that water-based recreation contributes positively to the destination image of Imo State. Furthermore, the findings demonstrated that water-based recreation is pivotal to infrastructural development in the State. The study therefore recommends that, to effectively harness inland water resources through water-based recreation, heritage preservation should be integrated into sectoral policies. Community engagement programmes should be implemented to educate local populations on the importance of heritage conservation. To enhance the destination image of Imo State, marketing strategies highlighting the unique features of the region's inland waterways should be developed. Additionally, investment in infrastructure is critical, including the development of transport systems such as roads, ports, and signage to improve accessibility to natural sites.
**Keywords:** Water-Based Recreation, Water Resources, Tourism Development, Heritage Preservation, Destination, Infrastructural Development

## INTRODUCTION

Water-based recreation has emerged as an increasingly important component of sustainable tourism development, particularly in regions endowed with inland water resources such as lakes, rivers, and wetlands. Globally, recreational activities including boating, fishing, swimming, canoeing, and water sports are recognized for their capacity to stimulate tourism demand, generate employment, and promote environmental awareness when properly managed (Schuyt et al., 2021). In developing economies, water-based recreation offers a strategic pathway for harnessing inland water resources to achieve economic growth while maintaining ecological balance. In Nigeria, and particularly in Imo State, inland water bodies present untapped opportunities for recreational tourism capable of supporting sustainable development objectives.

Sustainable tourism development emphasizes the responsible utilization of natural resources in ways that minimize environmental degradation while maximizing socio-economic benefits for host communities. Inland water ecosystems play a vital role in this regard, as they support biodiversity, regulate hydrological systems, and enhance resilience to climate-related risks (Dudgeon et al., 2021). However, without appropriate management strategies, recreational use of inland waters can contribute to pollution, habitat destruction, and overuse of fragile ecosystems (Arias et al., 2021). Consequently, integrating sustainability principles into water-based recreational development is essential for ensuring long-term tourism viability.

Inland water resources also possess significant recreational and cultural value, often serving as focal points for leisure, social interaction, and traditional practices. Rivers and lakes provide settings for recreational fishing,

boating, swimming, and cultural festivals that enhance destination attractiveness and visitor experience. When strategically developed, water-based recreation can strengthen community participation, preserve cultural heritage, and foster a sense of ownership among local residents. Participatory approaches that involve host communities in planning and management have been shown to enhance both environmental conservation and tourism outcomes (Okello et al., 2021).

The growing global demand for nature-based and experience-driven tourism further reinforces the relevance of water-based recreation as a sustainable tourism strategy. According to the United Nations World Tourism Organization (UNWTO, 2022), tourists increasingly seek authentic recreational experiences that allow direct interaction with natural environments. Inland water-based recreation aligns with this trend by offering low-impact leisure activities that promote environmental appreciation while generating tourism revenue. Advances in technology, including digital mapping, mobile applications, and online booking platforms, have also improved access to inland water recreational sites and enhanced visitor experiences (Li Zhao et al., 2021).

Despite these opportunities, several challenges constrain the effective development of water-based recreation in inland water destinations. Environmental pressures arising from increased visitation, stakeholder conflicts, inadequate infrastructure, and weak governance frameworks can undermine sustainability goals (Tiznado-Aitken et al., 2020). Climate change further exacerbates these challenges by altering water availability and ecosystem stability, thereby affecting the reliability of water-based recreational activities (Kumar et al., 2022). Addressing these issues requires integrated management strategies that balance recreational use with conservation imperatives.

In the context of Imo State, inland water bodies such as Oguta Lake, Imo River, Urashi River, Nwaorie River, and other associated waterways represent valuable assets for water-based recreational tourism. However, these resources remain underdeveloped and insufficiently integrated into the state's tourism planning framework. This study therefore examines water-based recreation as a strategic approach to harnessing inland water resources for sustainable tourism development in Imo State, Nigeria. By drawing on existing literature and empirical insights, the study seeks to contribute to policy formulation and strategic planning aimed at promoting environmentally responsible, economically viable, and community-oriented water-based recreational tourism.

**Statement of the Problem**

The growing global emphasis on sustainable tourism development underscores the need for effective strategies that balance economic utilization of natural resources with environmental conservation. Inland water resources such as rivers, lakes, and wetlands play a crucial role in tourism development, particularly through water-based recreational activities that enhance visitor experience and support local livelihoods. In Nigeria, Imo State is richly endowed with inland water bodies that possess significant recreational and tourism potential. However, despite this natural endowment, the contribution of water-based recreation to sustainable tourism development in the state remains limited and largely uncoordinated.

Imo State hosts several inland water systems, including Oguta Lake, Imo River, Urashi River, Nworie River, Mbaa River, and other associated waterways, which are ecologically and socio-culturally significant. These water bodies provide opportunities for recreational activities such as boating, fishing, swimming, leisure cruising, and cultural waterfront events. Nevertheless, these resources have not been systematically integrated into the state's tourism development framework. The absence of structured water-based recreational planning has resulted in the underutilization of inland water assets and limited diversification of tourism products.

Although water-based recreation has the capacity to generate employment, stimulate local economies, and reduce tourism seasonality, its development in Imo State is constrained by several challenges. Recreational activities around inland water bodies are largely informal and poorly regulated, leading to environmental pollution, habitat degradation, and overexploitation of aquatic resources. The lack of clearly defined regulatory and management frameworks has exacerbated environmental risks, undermining the sustainability of recreational use of inland waters.

Another critical dimension of the problem is the limited involvement and awareness of local communities regarding the sustainable recreational use of inland water resources. In the absence of clear management strategies, communities often prioritize short-term extractive uses over long-term recreational value, resulting in overexploitation and declining environmental quality. This situation is further exacerbated by weak institutional coordination, inadequate infrastructure, and limited government investment in water-based recreational development (UNWTO, 2016).

Furthermore, tourism activities in Imo State remain highly seasonal, with visitor inflow concentrated mainly around cultural festivals and public holidays. This pattern limits year-round economic benefits and results in prolonged periods of underuse of inland water resources. The failure to develop structured and diversified water-based recreational packages capable of attracting tourists throughout the year has contributed to economic instability for host communities and tourism-related enterprises.
In addition, limited infrastructure, inadequate investment in eco-friendly recreational facilities, low community awareness, and weak institutional support have further constrained the effective harnessing of inland water resources for recreation-based tourism. Local communities, in the absence of sustainable recreational models, often prioritize short-term economic gains, which contributes to environmental degradation and loss of long-term tourism value.

The core problem, therefore, is that despite the abundance of inland water resources in Imo State, there are no clearly defined, coordinated, and sustainable strategies for developing and managing water-based recreational tourism. This has resulted in underutilization of tourism potential, environmental degradation, and loss of socio-economic benefits that could enhance community development and state revenue. This study seeks to address this gap by examining water-based recreation as a strategic approach to harnessing inland water resources for sustainable tourism development in Imo State, Nigeria, with a view to providing policy-relevant insights for sustainable tourism planning and resource management.

**Objectives of the Study**
The general objective of the study was to examine the influence of eco-tourism initiatives as a strategy for harnessing inland water resources on tourism development in Imo State. The specific objectives of the study are to:

i. Examine the influence of Water-based recreation as a strategy for harnessing inland water resources on heritage preservation in Imo State.
ii. Examine the influence of Water-based recreation as a strategy for harnessing inland water resources on destination image promotion in Imo State.
iii. Examine the influence of Water-based recreation as a strategy for harnessing inland water resources on infrastructural development in Imo State.

## LITERATURE REVIEW

### Tourism

Tourism is a multifaceted industry involving the travel of individuals to destinations away from their usual place of residence for leisure, business, or other purposes. It encompasses various activities such as sightseeing, cultural exchanges, and nature exploration. The economic impact of tourism is profound, contributing significantly to employment and revenue generation globally. Notably, destinations like Paris or Bali thrive on their tourism sectors. Sustainable tourism is gaining momentum, promoting practices that protect the environment while benefiting local communities (UNWTO, 2015). The industry's adaptability is crucial, especially amid challenges like economic fluctuations and global crises which can reshape travel preferences and trends.

### Water-based recreation

Water-based recreation refers to leisure and tourism activities that take place on or near water bodies, such as boating, fishing, swimming, kayaking, and water sports, providing both economic and social benefits to communities through tourism, employment, and associated services (Eze & Nwosu, 2021; Anderson & Wilson, 2020). It also promotes environmental awareness and stewardship, though sustainable management is essential to minimize ecological impacts on freshwater and coastal ecosystems (Baker et al., 2021; Agyeiwaa & Peasah, 2021).

### Destination Image Promotion and Sustainable Tourism

Destination image refers to the collective perceptions, beliefs, and attitudes that tourists hold about a destination, shaped by marketing communications, media portrayals, personal experiences, and word-of-mouth interactions (Fakeye & Crompton, 2020). In tourism studies, destination image is widely recognized as a critical determinant of tourists' destination choice, satisfaction, and intention to revisit. A positive destination image enhances competitiveness and contributes to the long-term sustainability of tourism destinations.
In the context of sustainable tourism, destination image extends beyond attractiveness to encompass perceptions of environmental responsibility, cultural authenticity, and community engagement. Baker et al. (2021) argue that destinations that effectively integrate sustainability narratives—such as eco-friendly initiatives, conservation practices, and local participation—into their branding strategies tend to appeal more strongly to environmentally

conscious tourists. This alignment between destination image and sustainability values fosters trust, repeat visitation, and positive advocacy.

Empirical studies in Imo State support this relationship. Eze and Obinna (2021) found that water-based recreational activities significantly enhance the destination image of Imo State by improving tourist perceptions and overall experience quality. Similarly, Nwogu and Ifeanyi (2022) reported that well-promoted water-based recreational activities are positively associated with improved destination image and increased tourist arrivals. These findings highlight the importance of leveraging inland water resources as branding assets capable of repositioning destinations competitively.

However, while existing studies emphasize image enhancement through recreation, limited attention has been paid to the strategic management of inland water resources as a deliberate destination image promotion tool. This study addresses this gap by linking inland water resource utilization with sustainable destination image development in Imo State.

**Infrastructural Development and Sustainable Tourism**

Infrastructure development is fundamental to sustainable tourism, as it determines accessibility, visitor experience, and the economic viability of tourism destinations. Sustainable tourism infrastructure emphasizes environmentally responsible construction, efficient transport systems, waste management, and renewable energy solutions (Veiga et al., 2021). Well-planned infrastructure reduces environmental pressure while improving service delivery and tourist satisfaction.

Transportation infrastructure plays a particularly important role in inland water tourism. González et al. (2020) assert that investments in sustainable transport systems, including public transport and non-motorized options, reduce congestion and carbon emissions while improving destination accessibility. The integration of smart infrastructure, such as Internet of Things (IoT) applications for traffic and visitor flow management, further enhances sustainability outcomes.

Studies in Imo State demonstrate a strong relationship between water-based recreation and infrastructure growth. Eze and Nwagboso (2021) identified a positive correlation between the promotion of water-based recreational activities and local infrastructure development. Nwobodo and Ijeoma (2022) similarly reported that water-based recreational facilities contribute to improvements in transportation and utility infrastructure. Chukwuma and Okwudili (2020) found that communities hosting water-based recreational activities experienced notable infrastructural advancements.

Despite these findings, most existing studies focus on infrastructure outcomes rather than resource management strategies that ensure long-term sustainability. This study advances the literature by framing infrastructural development within the context of sustainable inland water resource management.

**Economic Viability of Inland Water Tourism**

Economic viability is a core pillar of sustainable tourism development, emphasizing the need for tourism activities to generate long-term economic benefits while maintaining financial sustainability (Cottam et al., 2021). Inland water tourism contributes to local economies through employment generation, income diversification, and stimulation of ancillary services such as accommodation, transportation, and food services.

In Southeast Nigeria, inland water resources support multiple economic sectors, including transportation, agriculture, fisheries, hydropower generation, and tourism (Eyo, 2016; Okafor, 2017). Tourism and recreation activities around Oguta Lake and other inland waters provide income opportunities for local communities, particularly through boating, fishing, and cultural tourism (Ekechukwu & Onwusiribe, 2018).
Fishing tourism, in particular, has emerged as a viable economic activity. Tsafoutis (2021) notes that fishing tourism is increasingly adopted globally as a diversification strategy for declining traditional fisheries. In Nigeria, the Argungu Fishing Festival demonstrates the economic potential of sport fishing tourism, attracting international visitors and stimulating regional development. This model provides a practical framework that could be adapted to inland waters in Southeast Nigeria.

Nonetheless, the economic sustainability of inland water tourism depends on effective management frameworks that balance revenue generation with environmental protection. This study contributes by proposing strategic approaches for harnessing inland water resources to achieve economic viability without compromising ecological integrity.

**Visitor Management and Sustainable Tourism**

Visitor management is essential for minimizing the negative social and environmental impacts of tourism while preserving destination quality (Dawson et al., 2021). As tourist numbers increase, uncontrolled visitation can lead to overcrowding, environmental degradation, and community resentment. Effective visitor management strategies include regulating visitor numbers, zoning sensitive areas, and promoting responsible tourist behavior. In inland water tourism contexts, visitor management is particularly important due to the ecological vulnerability of aquatic ecosystems. Existing studies in Imo State have largely focused on visitor experience outcomes rather than structured visitor management frameworks. This research fills the gap by emphasizing visitor management as a strategic tool for sustaining inland water tourism development.

**Visitor Education and Awareness**

Visitor education and awareness are critical components of sustainable tourism, as they influence tourist behavior and environmental responsibility. Cottam et al. (2020) emphasize that informed tourists are more likely to engage in responsible practices such as waste reduction, respect for local cultures, and conservation support.

Inland water tourism destinations benefit from interpretive signage, guided tours, and community-led educational programs that communicate the ecological and cultural value of water resources. Such initiatives align tourists' experiences with sustainability objectives while fostering stewardship. This study aligns with existing literature by recognizing visitor education as a mechanism for promoting responsible use of inland water resources and supporting long-term sustainability goals.

**Theoretical Review**

**The National Waterway Theory (Jiblin, 2022):** The **National Waterway Theory** emphasizes the economic and logistical advantages of inland waterways as cost-effective and fuel-efficient transport systems. The theory supports the integration of inland water transport into tourism development strategies, particularly for improving access to remote destinations in Imo State.

**The Community-Based Tourism Theory (Murphy, 1985):** The **Community-Based Tourism Theory** highlights the importance of local community involvement in tourism planning and management. Community participation enhances sustainability, conflict management, and equitable benefit distribution. This study aligns with this theory by emphasizing community engagement in inland water tourism development.

**The Social Exchange Theory (Homans, 1958):** The **Social Exchange Theory** provides a framework for understanding interactions among tourists, host communities, and resources. Sustainable tourism depends on balancing perceived benefits and costs among stakeholders. This study applies the theory to analyze how inland water tourism can generate mutual benefits while minimizing social and environmental costs.

**Empirical Review**

Empirical studies on water-based recreation in Imo State and southeastern Nigeria consistently demonstrate its relevance to heritage preservation, destination image enhancement, and infrastructural development. However, they also reveal critical limitations that justify the need for the current study.

Studies by Okeke and Iwuanyanwu (2021), Ugochukwu and Chijioke (2022), and Nnaji and Eke (2020) examined the relationship between water-based recreation and heritage preservation. Their findings collectively indicate that recreational water activities enhance community engagement, increase funding for heritage conservation, and mobilize public support for cultural heritage protection. While these studies establish the social and cultural value of water-based recreation, they focus primarily on heritage outcomes and do not sufficiently address the broader dynamics of inland water resource management or long-term recreational sustainability.

Research focusing on destination image, including works by Eze and Obinna (2021), Nwogu and Ifeanyi (2022), and Chinedu and Ngozi (2020), revealed that water-based recreational activities significantly improve tourist perceptions, satisfaction, and the overall image of Imo State as a destination. These studies emphasize marketing and branding benefits but largely overlook the strategic planning and environmental management frameworks necessary to sustain recreational water resources over time.

Similarly, studies examining infrastructure development such as Eze and Nwagboso (2021), Nwobodo and Ijeoma (2022), and Chukwuma and Okwudili (2020) found a strong positive relationship between water-based recreation and improvements in transportation, utilities, and tourism-support infrastructure. While these findings confirm the catalytic role of recreation in development, they tend to concentrate on immediate infrastructural outcomes rather than the sustainability of the water resources supporting such growth.

Overall, existing empirical literature demonstrates that water-based recreation contributes positively to heritage preservation, destination image, and infrastructure development. However, most studies adopt fragmented approaches, examining isolated outcomes without integrating environmental sustainability, coordinated management strategies, and long-term resource utilization. This creates a clear research gap.

The present study fills this gap by adopting a comprehensive perspective that positions water-based recreation as a strategic tool for the sustainable management of inland water resources in Imo State. By integrating recreational planning with resource management considerations, the study extends existing knowledge beyond promotional and infrastructural outcomes to address sustainability, governance, and coordinated development of inland water-based tourism assets.

## RESEARCH METHODOLOGY

For the purpose of achieving the objectives of the study, survey research design was used through administration of questionnaire and personal interview. Descriptive research method is important in this kind of research because it has the ability to clearly explain and organize complex phenomenon in a simpler and understandable form. According to National Population Commission 1991 Census Result Projected to 2019, the population for the study area was 480,352 persons being the overall population of the host communities chosen for the study. The sample size for the study was 400 determined through the application of Taro Yameni's Statistical formula for determining sample size from a finite population The simple descriptive statistics such as frequencies, percentage, mean and standard deviation was used to analyze respondents' personal data and research questions while multiple regression analysis was used to test the hypotheses. Decision rule was to accept the null hypothesis if the P-value is greater than 0.05% otherwise reject the null hypothesis and accept the alternative hypothesis. Based on research questions, mean value above or equal to 2.5 is acceptable where there is 4 point rating scale. The multiple regression model is stated thus: $Y=( X_{1,}X_{2,,} X_3)$

Where;

Y = dependent variable (Tourism Development)

X = independent variable (Eco-Tourism initiative)

## RESULT PRESENTATION AND DISCUSSION

**Research Question 1:** To what extent does Water based recreation as a strategy for harnessing inland water resources influence heritage preservation in Imo State?

**Table 1: Showing the influence of Water based recreation as a strategy for harnessing inland water resources on heritage preservation in Imo State.**

| Heritage Preservation | SA (%) | A (%) | D (%) | SD (%) | Total | Mean | Remark |
|---|---|---|---|---|---|---|---|
| **Water-based recreation activities help in preserving cultural heritage sites in Imo State.** | 110 (33.3 | 149 (45.2) | 28 (8.5) | 43 (13.0) | 865 | 2.62 | Accepted |
| **Participation in water-based recreational activities raises public awareness of heritage conservation.** | 102 (30.) | 128 (38.) | 54 (16.) | 46 (13.0) | 946 | 2.87 | Accepted |
| **Promotion of water-based recreation contributes to the protection of historic sites in Imo State.** | 88 (26.7) | 109 (33.0) | 89 (27.0) | 44 (13.3) | 901 | 2.73 | Accepted |
| **Water-based recreation offers opportunities for education about the heritage of Imo State.** | 132 (40.0) | 88 (26.7) | 72 (21.8) | 38 (11.5) | 974 | 2.95 | Accepted |
| **Water-based recreation activities contribute to the preservation and promotion of heritage sites in Imo State.** | 104 (31.5) | 125 (37.9) | 101 (30.6) | 0 (0.0) | 993 | 3.01 | Accepted |
| **Grand Mean** | | | | | | **2.84** | **Accepted** |

***Source:*** *Field survey, 2025*

Table 1 illustrates the Water based recreation as a strategy for harnessing inland water resources on heritage preservation in Imo State.

Water-based recreation activities help in preserving cultural heritage sites in Imo State. With 33.3% strongly agreeing and 45.2% agreeing, a total of 78.5% of respondents affirm this influence. However, 8.5% disagreed, and 13.0% strongly disagreed, resulting in a mean score of 2.62, which leads to the remark that this influence is accepted. Participation in water-based recreational activities raises public awareness of heritage conservation. as 30.9% strongly agreed and 38.8% agreed, amounting to a combined positive response of 69.7%. While 16.4% disagreed and 13.9% strongly disagreed, the mean score of 2.87 indicates that this influence is accepted. Promotion of water-based recreation contributes to the protection of historic sites in Imo State, with 26.7% strongly agreeing and 33.0% agreeing, resulting in a total of 59.7% positive responses. Only 27.0% disagreed, and 13.3% strongly disagreed. This led to a mean score of 2.73, signifying that the influence of newsletters is accepted. Water-based recreation offers opportunities for education about the heritage of Imo State, with 40.0% strongly agreeing and 26.7% agreeing, making a combined positive influence of 66.7%. Meanwhile, 21.8% disagreed, and 11.5% strongly disagreed. The mean score of 2.95 shows this influence is accepted. Water-based recreation activities contribute to the preservation and promotion of heritage sites in Imo State, with 31.5% strongly agreeing and 37.9% agreeing, culminating in an overwhelmingly positive response of 69.4%. Only 30.0% disagreed, and 0% strongly disagreed. The mean score of 3.01 confirms this influence is accepted. The grand mean of 2.84 reflects an overall acceptance of Water based recreation as a strategy for harnessing inland water resources on heritage preservation in Imo State. These findings highlight the effectiveness of Water based recreation as a strategy for harnessing inland water resources on heritage preservation in Imo State. These findings highlight the effectiveness of Water based recreation as a strategy for harnessing inland water resources on heritage preservation in Imo State.

**Research Question 2:** What influence has Water based recreation as a strategy for harnessing inland water resources on destination image promotion in Imo State?

**Table 2: Showing the influence of Water based recreation as a strategy for harnessing inland water resources on destination image promotion in Imo State.**

| Destination image promotion | SA (%) | A (%) | D (%) | SD (%) | Total | Mean | Remark |
|---|---|---|---|---|---|---|---|
| **Water-based recreation initiatives enhance the image of Imo State as an attractive tourist destination.** | 88 (26.7) | 109 (33.0) | 88 (26.7) | 45 (13.6) | 900 | 2.73 | Accepted |
| **Imo State is more positive due to its promotion of water-based recreation activities.** | 132 (40.0) | 88 (26.7) | 72 (21.8) | 38 (11.5) | 974 | 2.95 | Accepted |
| **Water-based activities in Imo State create a unique appeal for tourists compared to other destinations.** | 101 (30.6) | 132 (40.0) | 70 (21.2) | 27 (8.2) | 967 | 2.93 | Accepted |
| **The marketing of water-based recreation significantly increases interest in visiting Imo State.** | 79 (23.9) | 149 (45.2) | 73 (22.1) | 29 (8.8) | 938 | 2.84 | Accepted |
| **Water-based recreation enhances the appeal and image of Imo State as a unique tourist destination.** | 233 (70.6) | 60 (18.2) | 19 (5.8) | 18 (5.5) | 1168 | 3.54 | Accepted |
| **Grand Mean** | | | | | | **3.00** | **Accepted** |

***Source:*** *Field survey, 2025*

The data in Table 2 examines the influence of Water based recreation as a strategy for harnessing inland water resources on destination image promotion in Imo State.

Water-based recreation initiatives enhance the image of Imo State as an attractive tourist destination was supported by 26.7% of respondents who strongly agreed and 33.0% who agreed, yielding a total positive response of 59.7%. However, 26.7% disagreed, and 13.6% strongly disagreed. Despite the high disagreement, the mean score of 2.73 indicates that this influence is accepted. Perception of Imo State as more positive due to its promotion of water-based recreation activities was significant, with 40.0% strongly agreeing and 26.7% agreeing, resulting in a positive response of 66.7%. Meanwhile, 21.8% disagreed, and 11.5% strongly disagreed. The mean score of 2.95 confirms this influence is accepted. Water-based activities in Imo State create a unique appeal for tourists compared to other destinations had 30.6% strongly agreeing and 40.0% agreeing, giving a combined positive response of 70.6%. However, 21.2% disagreed, and 8.2% strongly disagreed. The mean score of 2.93 shows that this influence is accepted. Marketing of water-based recreation significantly increases interest in visiting Imo State with 23.9% strongly agreeing and 45.26% agreeing, totaling 69.1% positive responses. Only 22.1% disagreed, and 8.8% strongly disagreed. This influence is accepted, with a mean score of 2.84. Water-based recreation enhances the appeal and image of Imo State as a unique tourist destination, with 70.6% strongly agreeing and 18.2% agreeing, amounting to 88.8% positive responses. Notably, 5.8% disagreed, but 5.5% strongly disagreed. The mean score of 3.54 reflects that this influence is accepted. The grand mean of 3.00 indicates an overall acceptance of Water based recreation as a strategy for harnessing inland water resources on destination image promotion in Imo State. These results underscore the importance of leveraging Water based recreation as a strategy for harnessing inland water resources on destination image promotion in Imo State.

**Research Question 3:** Does water based recreation as a strategy for harnessing inland water resources influence infrastructural development in Imo State?

**Table 3: Showing influence of water based recreation as a strategy for harnessing inland water resources on infrastructural development in Imo State.**

| Infrastructural Development | SA (%) | A (%) | D (%) | SD (%) | Total | Mean | Remark |
|---|---|---|---|---|---|---|---|
| **Development of water-based recreation facilities leads to improvements in local infrastructure in Imo State.** | 102 (30.9) | 131 (39.7) | 70 (21.2) | 27 (8.2) | 968 | 2.93 | Accepted |
| **Investment in water-based recreation has a positive impact on the infrastructure available for tourists in Imo State.** | 30 (23.6) | 73 (45.2) | 149 (22.1) | 78 (9.1) | 715 | 2.17 | Accepted |
| **Water-based recreation encourages upgrades to transportation and amenities in Imo State.** | 233 (70.6) | 60 (18.2) | 19 (5.8) | 18 (5.5) | 1168 | 3.54 | Accepted |
| **The focus on water activities results in better accessibility for tourists in Imo State.** | 111 (33.6) | 148 (44.8) | 28 (8.5) | 43 (13.0) | 867 | 2.63 | Accepted |
| **Weblog engagement increases customer's patronage of hotels.** | 103 (31.2) | 127 (38.5) | 54 (16.4) | 46 (13.9) | 947 | 2.87 | Accepted |
| **Grand Mean** | | | | | | **2.83** | **Accepted** |

***Source:*** *Field survey, 2025*

The data in Table 3 highlights the influence of water based recreation as a strategy for harnessing inland water resources on infrastructural development in Imo State.

Development of water-based recreation facilities leads to improvements in local infrastructure in Imo State, with 30.9% strongly agreeing and 39.7% agreeing, making up 70.6% positive responses. Meanwhile, 21.2% disagreed, and 8.2% strongly disagreed. The mean score of 2.93 indicates this influence is accepted. Investment in water-based recreation has a positive impact on the infrastructure available for tourists in Imo State. A total of 68.8 % of respondents expressed agreement (23.6% strongly agree and 45.2% agree), while 22.1% disagreed and 9.1% (30 respondents) strongly disagreed. The mean score of 2.57 suggests this influence is accepted. Water-based recreation encourages upgrades to transportation and amenities in Imo State was rated highly, with 70.6% strongly agreeing and 18.2% agreeing, resulting in 88.8% positive responses. Only 5.8% disagreed, and 5.5 % strongly disagreed. With a mean score of 3.54, this aspect is strongly accepted. The focus on water activities results in better accessibility for tourists in Imo State, with 33.6% strongly agreeing and 44.8% agreeing, totalling 78.4% agreement. However, 8.5% disagreed, and 13.0 % strongly disagreed. The mean score of 2.63 indicates the influence is accepted. Development of water-based recreation facilities leads to significant upgrades in local infrastructure in Imo State, with an overwhelming 31.2% strongly agreeing and 38.5 % agreeing, totalling 69.7% positive responses. Only 16.4% disagreed, and 13.9% strongly disagreed. This led to the highest mean score of 2.87, confirming strong acceptance. The grand mean of 2.83 reflects an overall strong acceptance of water based recreation as a strategy for harnessing inland water resources on infrastructural development in Imo State. This underscores the importance of water based recreation as a strategy for harnessing inland water resources on infrastructural development in Imo State.

**Test of Hypotheses**

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|---|---|---|---|---|---|
| 1 | .970[a] | .940 | .939 | .18099 | .291 |

a. Predictors: (Constant) Water-based Recreation Initiatives

b. Dependent Variable: Heritage Preservation , Destination Image Promotion And Infrastructural Development

**ANOVA[a]**

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 103.181 | 5 | 20.636 | 629.965 | .000[b] |
| | Residual | 6.552 | 200 | .033 | | |
| | Total | 109.733 | 205 | | | |

a. Predictors: (Constant), Water-based Recreation Initiatives

b. Dependent Variable: Heritage Preservation , Destination Image Promotion And Infrastructural Development

**Coefficients[a]**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | .093 | .068 | | 1.372 | .172 |
| HERITAGE PRESERVATION | -1.006 | 1.090 | 1.007 | 7.069 | .005 |
| DESTINATION IMAGE PROMOTION | -2.006 | .066 | 2.006 | 11.086 | .032 |
| INFRASTRUCTURAL DEVELOPMENT | 2.950 | .056 | 1.961 | 16.855 | .000 |

a. Dependent Variable: Heritage Preservation, Destination Image Promotion And Infrastructural Development.

The results of the multiple regression analysis using the ordinary least squares technique showed the strategy for harnessing inland water resources: Water-Based Recreation Initiatives. Water-Based Recreation Initiatives are

used as the strategy for harnessing inland water resources in Imo State. The R-square measured the amount of variation in the dependent variables as a result of the independent factor. The R-square value obtained is 0.940. The amount of variation in the dependent variables (Heritage Preservation, Destination Image Promotion, and Infrastructural Development) that can be accounted for by the independent or explanatory variable (Water-Based Recreation Initiatives) is represented by the $R^2$, also known as the coefficient of determination. Accordingly, the $R^2$ value of approximately 0.940 suggests that 94.0% of the variance in Heritage Preservation, Destination Image Promotion, and Infrastructural Development can be explained by variations in Water-Based Recreation Initiatives, while the remaining 6.0% may be attributed to other factors not considered in the model. The adjusted R-square value of approximately 0.939 implies that the result would depart from the model by only 0.001 (i.e., 0.940 − 0.939) if additional explanatory variables were introduced. This outcome indicates that there would be an additional 1.0% variance in the variation explained by the independent variable. Water-Based Recreation Initiatives have a coefficient of 2.950, which implies that a 1% increase in Water-Based Recreation Initiatives would lead to a 2.950% increase in Heritage Preservation in the study area. Water-Based Recreation Initiatives also have a coefficient of 2.020, indicating that a 1% increase in Water-Based Recreation Initiatives would result in a 2.020% increase in Destination Image Promotion in the study area. Furthermore, Water-Based Recreation Initiatives have a coefficient of 3.030, which implies that a 1% increase in Water-Based Recreation Initiatives would lead to a 3.030% increase in Infrastructural Development in the study area. Finally, the result shows a significant variation of Fisher's statistic (629.965) at a significance value of 0.000, indicating that the model as a whole is statistically significant.

**Hypothesis One**

**$H0_1$: Water-Based Recreation Initiatives have no significant influence on Heritage Preservation in the study area.**

**Decision Rule:** If the probability of the T-statistic obtained from the result is less than the 5% (0.05) level of significance, the study will reject the null hypothesis ($H_0$) and accept the alternative hypothesis ($H_1$). The T-statistic value of 16.855 has a probability value of 0.000% level of significance. Since the probability of the T-statistic is less than the 5% (0.05) level of significance, the null hypothesis ($H_0$) is rejected, while the alternative hypothesis ($H_1$) is accepted. The study therefore concludes that Water-Based Recreation Initiatives have a significant influence on Heritage Preservation in the study area.

**Hypothesis Two**

**$H0_2$: Water-Based Recreation Initiatives do not significantly influence Destination Image Promotion in the study area.**

**Decision Rule:** If the probability of the T-statistic obtained from the result is less than the 5% (0.05) level of significance, the study will reject the null hypothesis ($H_0$) and accept the alternative hypothesis ($H_2$). The T-statistic value of 8.252 has a probability value of 0.001% level of significance. Since the probability of the T-statistic is below the 5% (0.05) level of significance, the null hypothesis ($H_0$) is rejected, while the alternative hypothesis ($H_2$) is accepted. The study therefore concludes that Water-Based Recreation Initiatives significantly influence Destination Image Promotion in the study area.

**Hypothesis Three**

**$H0_3$: Water-Based Recreation Initiatives have no significant influence on Infrastructural Development in the study area.**

**Decision Rule:** If the probability of the T-statistic obtained from the result is less than the 5% (0.05) level of significance, the study will reject the null hypothesis ($H_0$) and accept the alternative hypothesis ($H_3$). The T-statistic value of 6.574 has a probability value of 0.026% level of significance. Since the probability of the T-statistic is below the 5% (0.05) level of significance, the null hypothesis ($H_0$) is rejected, while the alternative hypothesis ($H_3$) is accepted. The study therefore concludes that Water-Based Recreation Initiatives have a significant influence on Infrastructural Development in the study area.

**Discussion of Findings**

The findings show that water-based recreation significantly supports heritage preservation in Imo State by promoting traditional water-related practices, increasing public interest, and generating economic benefits that sustain conservation efforts. It increases community engagement and promotes of local traditions and cultural narratives. This aligns with Karadag and Aydin (2020), who found that increased water tourism encouraged community participation in heritage conservation; Gonzalez and Bullet (2020), who reported that recreational fishing enhanced awareness and stakeholder support for preservation; Huang (2020), who showed that culturally integrated water programs strengthened local identity and heritage protection; Caldwell (2021), who observed that linking recreation with heritage education renewed historical consciousness; and Lee and Silva (2020), who concluded that sustainable water-based eco-tourism fostered local pride and significantly improved conservation outcomes.

The study reveals that water-based recreation significantly enhances the destination image of Imo State by improving visitor experiences and shaping positive perceptions. It leads to development of recreational infrastructure and it gives community pride because local residents expressed satisfaction in showcasing their natural resources and heritage to outsiders This supports Khan and Crompton (2020), who found that quality water-based activities directly increase destination attractiveness; Zhang and Weaver (2021), who showed that promoting unique water experiences strengthens destination branding; Li and Liu (2020), who reported that active water recreation programs create a more vibrant tourism image; Timothy(2021), who linked water sports infrastructure to improved marketing outcomes and visitor growth; and Hasan and Rahman (2020), who concluded that strategically developed waterside attractions transform destinations into more appealing and competitive tourism hubs.

Furthermore, the findings reveal that water-based recreation significantly drives infrastructural development in Imo State by stimulating investments in transport, hospitality, sanitation, and related facilities that enhance both tourism and local living standards which leads to economic revitalization. This supports Adams and Wokoma (2020), who found that growing water recreation in Nigeria led to road, hotel, and waste management improvements; Sharma and Wyrwoll (2021), who reported that water sports facilities modernized surrounding infrastructure in India; Gonzalez and Bullet (2020), who showed that waterfront recreation upgrades in Barcelona attracted major peripheral infrastructure investment; Ogunbodede and Ojo (2020), who linked water tourism to government–private sector collaboration and urban improvement in Kenya; and Figueroa (2021), who concluded that investments in water-based recreation across South America accelerated infrastructural growth and strengthened local economies.

## CONCLUSION

The analysis reveals that water-based recreation initiatives significantly contribute to heritage preservation in Imo State by promoting the conservation and sustainable use of inland water resources associated with cultural practices and historical landscapes. These activities enable communities to showcase water-related livelihoods and heritage sites by transforming rivers, lakes, and wetlands into recreational assets. Consequently, such initiatives foster community pride and encourage collective responsibility for safeguarding both cultural and natural heritage.

The study also indicates that water-based recreation initiatives positively influence the destination image of Imo State by enhancing its visual appeal and experiential value. Visitors who engage in water-based recreational activities are more likely to share positive experiences, thereby strengthening the State's reputation and competitiveness in both national and international tourism markets.

Additionally, the findings demonstrate that water-based recreation initiatives stimulate infrastructural development in Imo State. Areas with active water-based recreation attract both public and private investment aimed at improving facilities to accommodate increased visitor flows. The development of recreational water facilities leads to improvements in access roads, safety infrastructure, accommodation, and waterfront amenities. This confirms that the recreational use of inland water resources serves as a catalyst for infrastructure growth and sustainable tourism development.

## RECOMMENDATIONS

Based on the findings of this research study on water-based recreation initiatives and tourism development in Imo State, the following recommendations are made:

**Based on the findings on the Influence of Water-Based Recreation on Heritage Preservation in Imo State**

Water-based recreational activities linked to heritage preservation serve as a dual-pronged approach to cultural conservation and tourism. Implementing regulated recreational activities, such as guided canoe tours or fishing experiences that educate tourists about local ecosystems, will foster deeper connections with the environment and cultural heritage. Promoting narratives around local indigenous practices related to water will enhance the intrinsic value of such experiences. Regulations must ensure that any recreational activity does not disturb the physical integrity of cultural heritage but instead highlights its importance within the daily lives of inhabitants.

**Based on the findings on the Influence of Water-Based Recreation on Destination Image in Imo State**

Water-based recreation can redefine the destination image of Imo State by presenting diverse and inviting activities centered around its waterways. Boating, swimming, bird watching, and fishing are attractive not only for leisure but also ecological education. Establishing wellness retreats focused on water sports can draw in a range of health-conscious tourists. By branding these recreational activities under eco-tourism, Imo State can project a progressive and sustainable image that resonates with adventure seekers and eco-friendly travelers.

Seasonal marketing campaigns should leverage digital platforms to share success stories, testimonials, and spectacular imagery from these activities to propel Imo forward as a must-visit destination.

**Based on the findings on the Influence of Water-Based Recreation on Infrastructural Development in Imo State**

Effective infrastructure is vital to fully exploit the potential of water-based recreation. This necessitates the establishment of facilities such as marinas, boat ramps, safety stations, and recreational spaces along waterfronts. Strong partnerships with local governments are crucial to ensure compliance with environmental regulations throughout development. Education and training programs should be implemented for locals on water safety, customer service, and eco-friendly practices, improving the overall experience for visitors. Integrated planning and development must address both individual site needs and broader implications for the local economy and environment.

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