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Article

Assessment of beach users' activities and beach quality status, a tool for coastal tourism development in South West Lagos Coastline, Nigeria

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Abstract: Tourist activities is one of the management tools used to identify the carrying capacity of beach and level of natural resources impacted by human activities, and it's highly essential in revenue generation to the national blue economy. However, if its activities is not adequately controlled, it can disrupt the balance of coastal ecosystem and defeat the purpose of environmental services provision. This study assesses the beach quality status and beach users' activities along the Lagos coastline, Southwest Nigeria. The survey was conducted during the summer holiday period in the peak of dry season (November 2021–February 2022) at six beaches (Atican, Alpha, Elegushi, Narval, Oniru and Takwa). A total number 600 people were interviewed, and secondary information was noted from the beach managers' files, including the log book kept in the security post and vendor interviews with food and snack merchants and entertainers. Visitors were chosen at random (using a randomised complete design) to participate in interviews via a combination of passive and active questionnaires from a sample size of 100 visitors at each beach. The heterogeneity of tourists' activities varied and significantly differed across the beaches. *T*-test values for all the activities were significance ($p < 0.05$) with the exception of religious and sporting activities. Recreation, clubbing, picnic, family retreat activities scored above 5% in all beaches, given exceptional note to Narval beach that had the highest activities of the tourists in religious group (70%). The Canonical Correspondence Analysis (CCA) ordination bi-plot diagram state that all activities, ages, and number of visitors were identified as the constrained variables. The activities Eigen scores were religious activity (0.79), picnic (0.58), family retreat (0.52), and site viewing (0.38). Religious activity had highest score of 70% with a strong relationship on the tourists of groups of above 50years at the Narval beach. This is in agreement with the cultural activities that accompanied tourism with peculiarity to life style and location. The ascending order of activities at the Oniru beach are: site viewing 9%, family retreat 25% and Picnic 45%. Whereas, the profound activities on recreation from other study area are: 40%, 35%, 30% and 20% at Takwa beach, Elegushi beach, Atican beach and Alpha beach respectively.

Keywords: tourism; beaches; coastal ecosystems; family retreat; blue economy; Lagos coastline

1. Introduction

Tourism is a significant contributor to the blue economy, generating income and creating jobs in coastal communities. Responsible tourism promotes the sustainable use of marine resources and encourages marine protected areas and conservation

initiatives, helping to preserve marine biodiversity and diversify economic opportunities. Tourism and community have relationship that is interconnected [1] Tourism is believed to have significant roles in the building of marine or coastal protected areas [2,3]. The industry has been registered as one of the exponentials growing economic sector. Its financial records are more than 9% of the global GDP [4,5]. Research studies have stated the prospect of tourism's growth and its demand in marine and coastal services rate surpassed the tourism products of other type [3,6–8]. The beach proficient area is affected, because it could not accommodate the high demand from beach touristic activities [9–13]. Both good and negative influences on marine and coastal destinations leave passive traces on the quality of life of the locals [9–13]. Environmental quality maintenance encounters challenge that distress visitor satisfaction and reversely tolls on revenues from low tourism-related activities [5]. Scaling beaches with characteristics of clean ocean water, large and gleaming qualities are the foremost tourists' precedence [14]. Beaches are treasured reserve in coastal ecosystems, dominated by biodiversity [5]. Tourism has imputed positive effects, yet its contribution to habitat's fragmentation, negative social and cultural effects, and environmental deterioration is increasing [15]. Tourism carried out in zones that are both offshore and coastal waters that encompasses essential tourism and leisure activities are referred to as coastal tourism, which are among the high rating tourism worldwide [3,16,17]. Tourism infrastructural development support coastal tourism's development such as accommodation, restaurants, and other supportive facilities (such as, retail businesses, marinas, and activity suppliers) [16,18,19]. Stakeholders support embraces tourism, because it is one of the sector that needs the company of other sectors [3,20]. Local community are directly affected by tourism development and activities which make them key players in the growth of tourism [21–24].

The sustainable tourism management employs ecosystem-based approach system, inclusive of coastal areas becoming essential tools for marine conservation and critical components [25,26]. Local economy is boosted through the commitment of coastal tourism in job creation that could promote better financial situations, even alleviating poverty [27–30]. Natural environment of tourism destinations can be distorted through unplanned and poorly managed tourism development [31,32]. The coastal area has been pressurized with the diverse potential services, surfing, sunning, and sand exposures are of tourism priority in development of infrastructures (hotels, resorts, transport infrastructure and marinas), and growing popularity of marine tourism (fishing, scuba diving and yachting) [31,33]. Responsible tourism that is ecological friendly could be tagged ecotourism, which will curtail the previous paradigm transformation into a profitable-driven-biodiversity-environmentally approachable tourism. Environmentally approachable tourism should be the focus. The United Nations World Tourism Organization (UNTWO) has collaborated Tourism with the Sustainable Development Goals (SDGs) program. The SDGs empower the tourism sector given platform that support sustainable practice activities [34]. This study aims to (i) assess visitors' tourism activities in Lagos coast beach and (ii) evaluate the current status, visitors' perceptions and grading management practices in the Lagos Atlantic beach

2. Materials and methods

2.1. Study area

The ownership of all land in Nigeria, is vested in the Federal Government according (Section 1 of the Nigerian Land Use Act, 2004), the sacrosanct of the Act as Federal government ownership, it also provides the granting of rights of occupancy and other interest in land to individuals, communities, and organisations, subject to specific controls and sanity. The six beaches fall on the three local government areas on the coastline, (Lagos-Island area Southwest Nigeria: Takwa beach, Eti-Osa area: Narval, Oniru and Elegushi beaches and Ibeju-Lekki area: Atican and Alpha beaches, **Figure 1**).

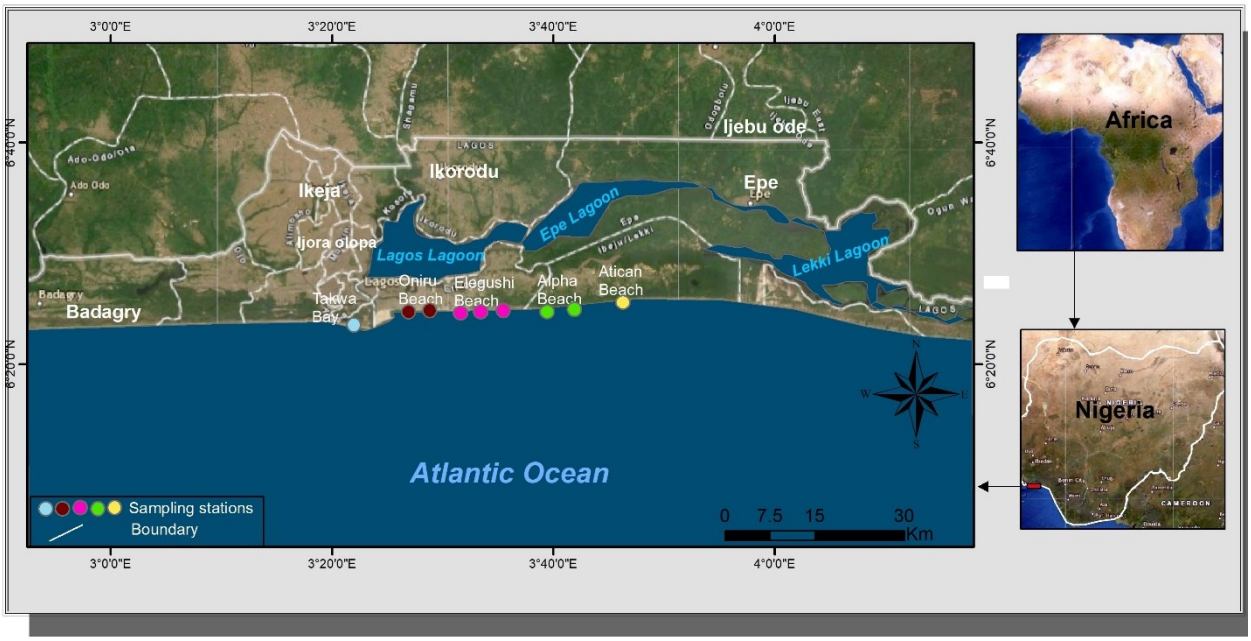

Figure 1. Map of the sampling sites and the adjoining areas.
Source: Ecotourism survey on the coastline, 2022.

All the beaches are located in the prime developed area of the city of Lagos-State Nigeria, they are classified as urban beaches, considering the infrastructures located not too far from their locations. They are both public and private owned, except for Narval beach that had little or no evidence of private funds for development, It is majorly controlled by public volunteers that used it to generate their livelihood, and it is almost freely accessed by public, visitors and for living purposes. Diverse levels of human habitation can be found along the beaches, including residential neighborhoods, natural spaces, and combined urban and tourist destinations. The physical characteristics of beaches (waves, wind, slope, width, materials), the degree of artificial construction, the number of visitors, activities, beach use, and the availability of services and facilities have all been taken into consideration when choosing which beaches [35,36].

Takwa and Narval Beach are both located in the Eti-Osa area. The former is a popular spot for relaxation and recreation. It is known for its calm waters and scenic views beach. The latter is a picturesque beach with white sand and crystal-clear waters.

It is a favorite among tourists and locals. Oniru Beach is located in the same area, it is a bustling beach with a variety of activities like swimming, surfing, and beach volleyball. Elegushi Beach is also located at the Eti-Osa area. It is a private beach known for its luxury amenities and stunning views. The Atican and Alpha Beach are both located in the Ibeju-Lekki area, the former is a serene and peaceful beach with powdery sand and calm waters, while the latter is a popular spot for relaxation and water sports, with crystal-clear waters and a scenic coastline [32].

2.2. Tourist survey

The survey was conducted in the summer, during the peak of the dry season of the November 2021–February 2022, at six beaches (Atican, Alpha, Elegushi, Narval. Oniru and Takwa beaches), Lagos, Nigeria. The survey focused on socio-economic, activities of visitors, management practices on the beach, using semi-structured interview, direct observations, and one on one interview with the stakeholders and records from the beach. People's social life would be well explicit through qualitative research approach that gives in depth meaning and understanding [36–39]. This section addressed the beach users' activities (**Figures 2–6**). Finding out the level of agreement with statements that showed factors, relating to the sources and structured points to the activities considered responsible for the litter issues such as: religious and tourism activities on the beach, fishery and maritime transport, and cruise activities, public waste management, scarcity of waste bins and human generated marine litters and debris on the beach.

Figure 2. Illegal tent houses built along the beach coastline and marine litters reflecting human activities.
Source: Beach Ecotourism Survey, 2022.

A total number of people interviewed at the six beaches over the course of the survey was 600. Secondary information was noted from the beach managers' files, including the log book kept in the security post and vendor interviews with food and snack merchants and entertainers. In contrast using a randomized full design, 100 visitors (in each six beaches) were chosen at random for interviews using a combination of passive and active questionnaires. Since some tourists do not want interruptions when they were there, oral and Playaway methods were employed to

gather information from a sample size of no more than one hundred people at each beach. Collective knowledge from the authors and researchers were solicited to forecast, grade, and rank the various viewpoints and the current condition of the beach, drawing on earlier research by Schlacher [40]. The information from questionnaire were extracted, coded and subjected to statistical analysis.

Figure 3. Coastline cleaned from marine debris and faecal deposit.
Source: Beach Ecotourism Survey, 2022

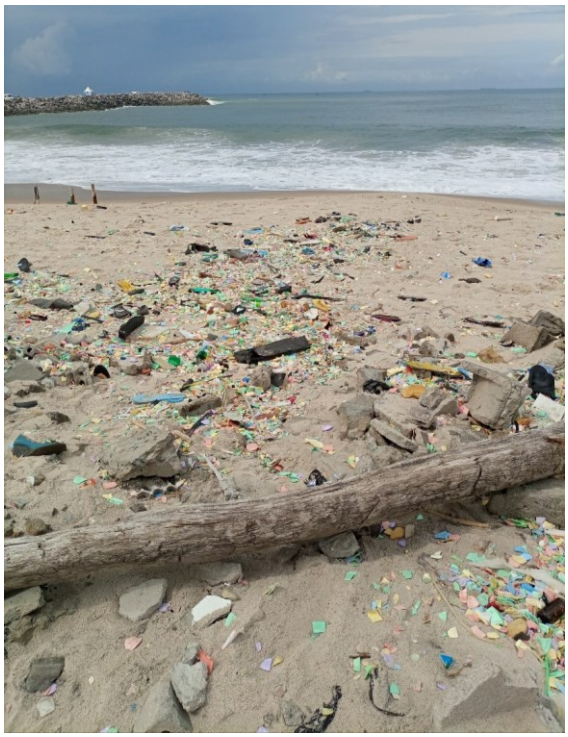

Figure 4. Mixed solid wastes deposited on the shoreline.
Source: Beach Ecotourism Survey, 2022.

Figure 5. Shoreline birds.

Source: Beach Ecotourism Survey, 2022

Figure 6. Visitors clustered on the beach with different activities.

Source: Beach Ecotourism Survey, 2022.

2.3. SWOT analysis

The four dimensions: Strengths, Weakness, Opportunities, and Threats, in strategic analysis and staging status of an organization is SWOT [41]. Strength and Weakness are internally controlled within the organization's supportive framework to achieve the set objectives, while Opportunities and Threats are visibly uncontrolled measurements that aid and incapacitate the organization a set goal [42]. Stating factors in these four scopes are pointers in strategic description of competence for decision making and planning [5,43]. The data analysis was done using IBM-SPSS 24, for descriptive analysis, frequency analysis and *T*-test for significance at ∞0.05 [44,45]. Clustering and Dendrogram analysis were conducted to reveal the sampling sites' relationship with the activities

3. Results

A total number of 600 people were interviewed during the four-sampling survey in the six beaches Atican, Alpha, Elegushi, Narval, Oniru and Takwa beaches. The tourists visit frequency in ascending order is Alpha < Atican < Takwa < Oniru < Elegushi < Narval beaches (**Figure 1**). Narval beach had the highest percentage frequency of 32.7%, Elegushi had 21%, while the least value was registered in Alpha beach 7.2%. In Gender distribution, 47% of the respondent were female and 53% were male. The heterogeneity of activities of tourists varies and significantly differed across the beaches, *T*-test values (**Table 1**) for all the activities were significance except religious and sporting activities. Tourists' age frequency was significantly difference (**Table 1**) across the beaches, the highest frequency of age bracket was in the groups of (31 to 40 years; 41 to 50 years) (**Figures 7** and **8**). Gender frequency indicate highest frequency in Narval beach (female and Takwa beach (male, **Figure 9**). Recreation, clubbing, picnic, family retreat activities scored above 5% in all beaches, giving exceptional note to Narval beach that had the highest activities of the tourists in Religious group (70%) (**Figure 10**). The different time spent across the beaches and population of the visitors are displayed in **Figures 11** and **12**.

Table 1. The Strength scores for the surveyed tourist beaches.

Strength/Beaches	Alpha	Atican	Elegushi	Narval	Oniru	Takwa
Aesthetics (Beautiful scenery)	5	5	5	3	5	4
Water transparency	5	5	5	4	4	4
Field of views	3	4	3	4	5	4
Scenic views of inland water	1	1	1	0	0	1
Geographical position	4	4	5	5	5	5
Beach vegetation contrast	2	2	3	3	3	4
Diversity of landscape, Large Sand line	4	4	5	4	5	5
Water Transparency	4	4	4	4	4	4
Field of view	5	5	5	5	4	4
Friendly climate, regular sunshine, and natural water reserves (Sand, Sea and Sun)	5	5	5	5	5	5
Collaboration with non-governmental organizations for conservation	3	3	3	2	4	4

Table 1. (*Continued*).

Strength/Beaches	Alpha	Atican	Elegushi	Narval	Oniru	Takwa
Aesthetics (Beautiful scenery)	4	4	4	3	4	4
Shore birds' assemblage	3	3	3	3	4	4
Sea turtles Nest/ Evidence	2	2	3	2	3	1
Marine mammals' evidence	1	1	2	2	2	1

Note: 0 = Unsuitable; 1 = Rarely observed reflect changes connected to tourist activities; 2 = Seldom observed, shows little changes to tourist activities; 3 = Generally observed, it reflects only minor changes linked to tourist activities; 4 = Often prominently recorded connected to tourist activities; 5 = Consistently recorded unaffected by interference to tourist activities

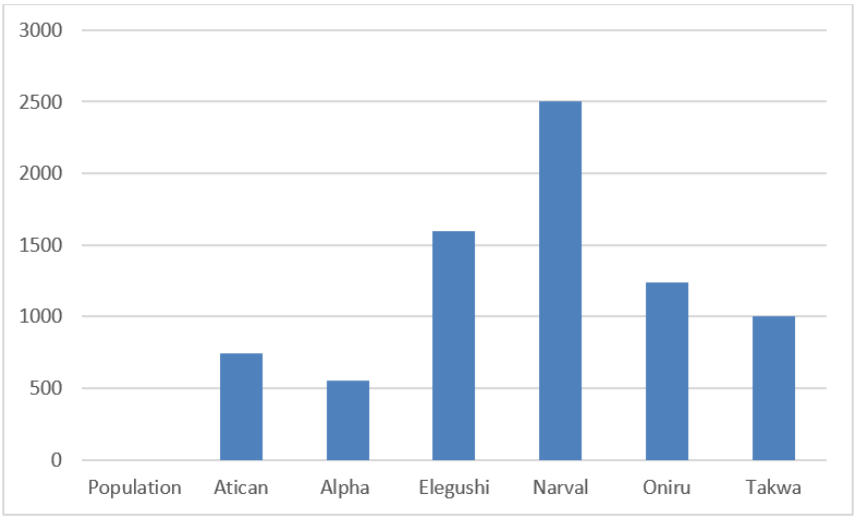

Figure 7. Bar chart of population frequency of tourists.

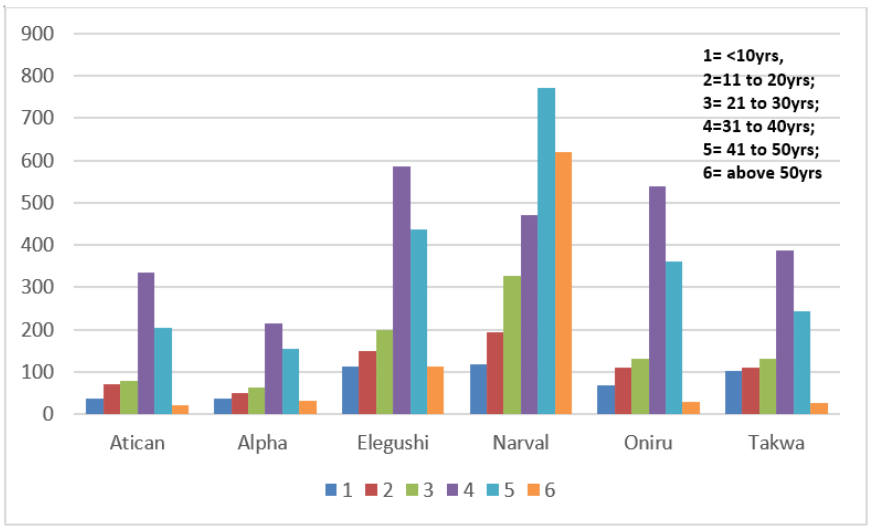

Figure 8. Bar chart of the tourists' age bracket.

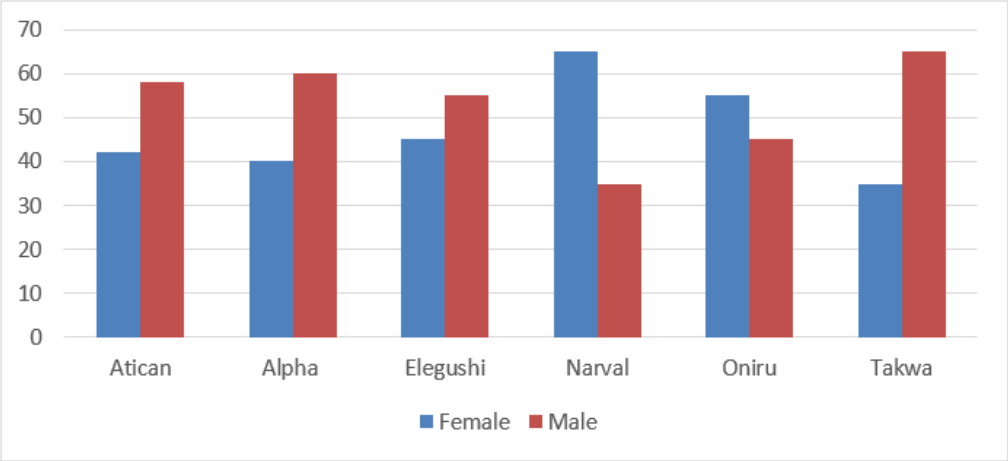

Figure 9. Bar chart of the gender frequency of tourist in the six beaches.

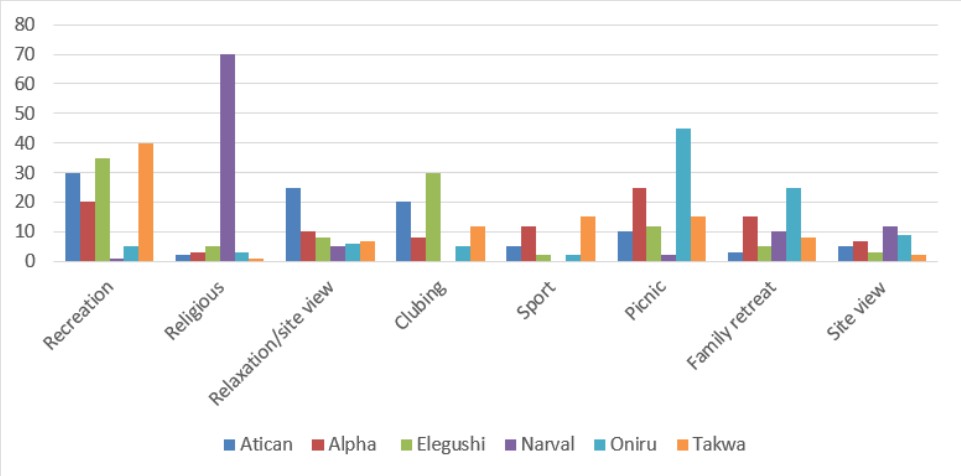

Figure 10. Bar chart of the different activities across the beaches.

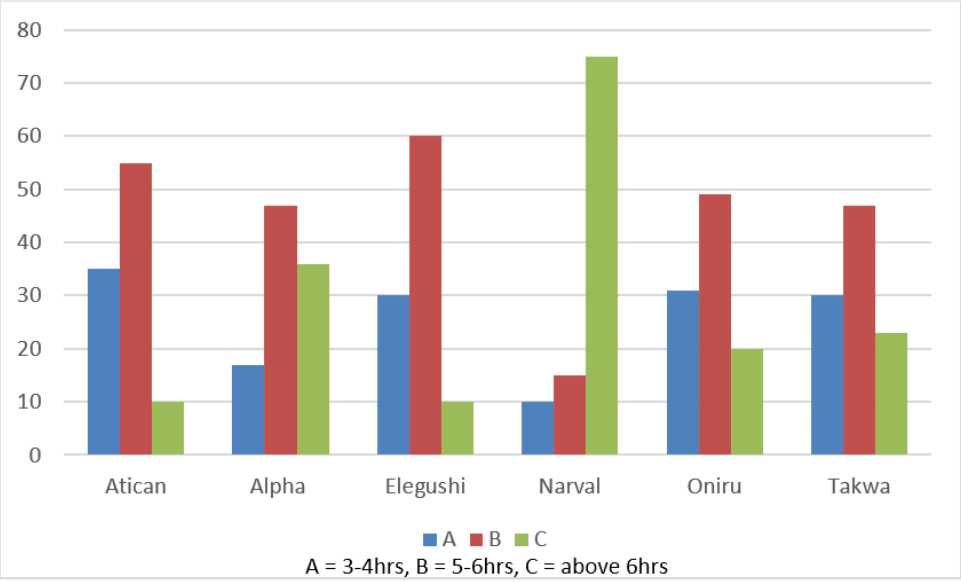

Figure 11. Bar chart of the different time spent across the beaches.

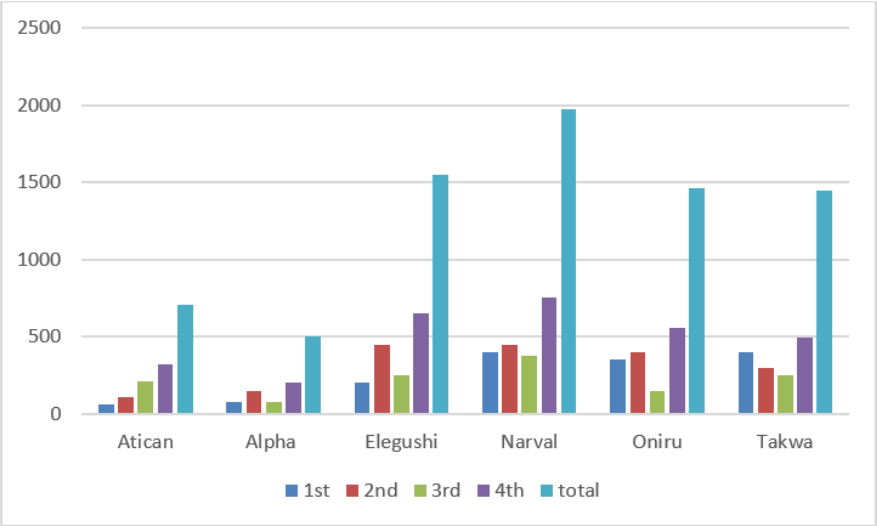

Figure 12. Frequency Chart for the survey visit.

3.1. Sanitation

Sanitation and clean environment are priority for sustainable tourism. Sanitation and cleaning practice on the beaches were graded from the perception of visitors and observation, that Oniru and Takwa beaches are cleaned daily, Atican, Alpha and Elegushi beaches do their cleaning weekly, while Narval beach does cleaning monthly. Dust bins displayed were graded (1–5: 1 = none, 2 = poor, 3 = good, 4 = very good, 5 = excellent) in terms of the number of dustbins provided on the beach. Atican, Alpha, and Oniru were graded as good, Elegushi Beach was graded poor, Takwa Beach was graded very-good and Narval beach had no dustbin displayed thus, graded none. The cleaning practices were done by the staff and volunteers of the beach (Atican, Alpha, Elegushi, Oniru and Takwa beach), while Narval beach cleaning was mostly done by the volunteers.

3.2. Cluster analysis

3.2.1. Correspondence canonical analysis

The first two axes revealed that 99.9% of the variance of the beaches data were explained by beach users' activities. The CCA ordination bi-plot diagram (**Figure 13**) state that all activities, ages, and number of visitors were identified as the constrained variables. The activities scores were religious activity (0.79), picnic (0.58), family retreat (0.52) and site viewing (0.38). Religious activity had highest score with a strong relationship on the tourists of group above 50 years in Narval beach. Relaxation, sporting, clubbing and picnic were the activities that pronounced in Oniru and Alpha beaches. The ages group scores on the bi-plot ordination, 10–20 years (−0.9), 21–30 years (0.43), 31–40 years (−0.63) and 41–50 years (0.50) and all clustered at Takwa, Elegushi, Atican, Alpha, and Oniru beaches.

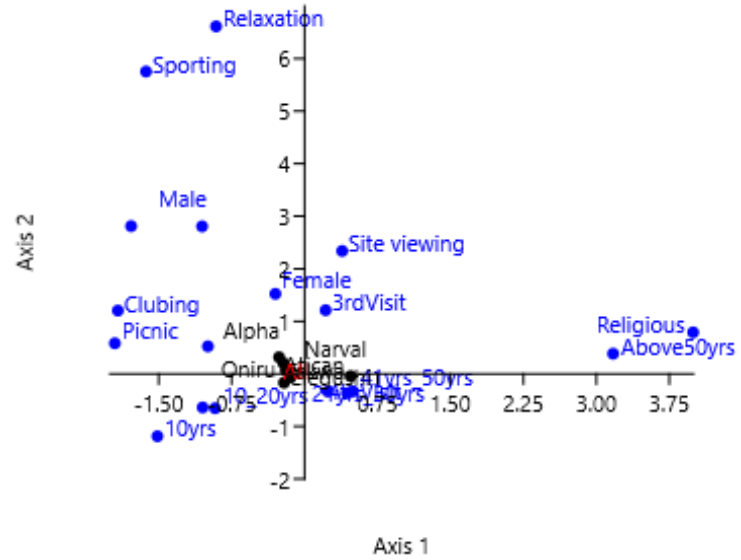

Figure 13. Canonical correspondence analysis of the tourists' activities, age and sex in the six beaches.

3.2.2. Cluster analysis

The cluster analysis (**Figures 14** and **15**) showed two groups of the sampling sites, the first group had five beaches (Atican, Alpha, Elegushi, Oniru and Takwa beaches). These five beaches were clustered in the same group, indicated the similarity in the activities of tourists and visitor's population. Narval beach is distinct from other beaches, it was categorized in the second group.

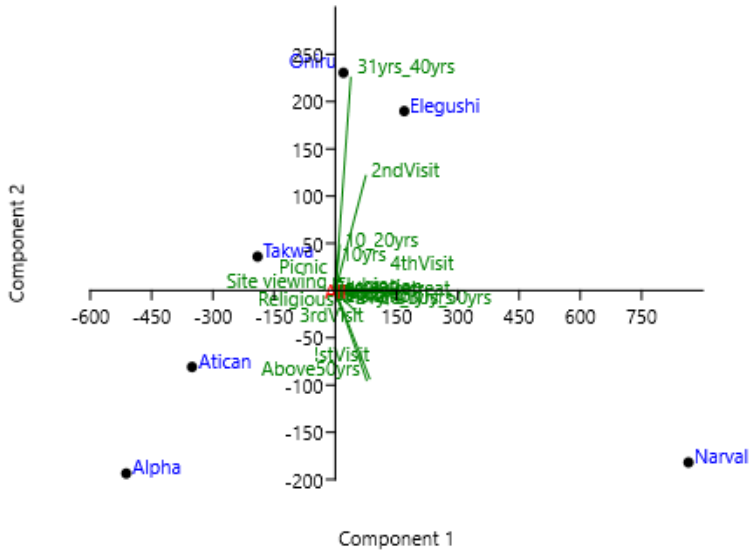

Figure 14. Scatter analysis of the activities and the sampling sites.

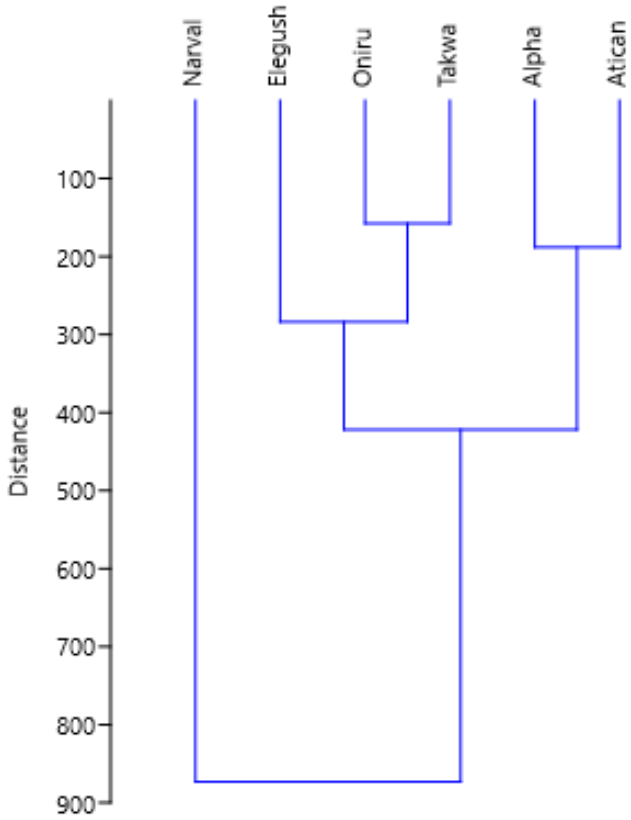

Figure 15. Hierarchical clustering analysis of the sampling sites.

3.2.3. SWOT analysis

The SWOT analysis is a flow data chart table and flexible paradigm that will provide a comprehensive description of the state of the environment today, taking into account the opinions, suggestions, and feedback from stakeholders, tourists, and researchers. It provides a clear image that is condensed into a bullet point without taking bias into account. Therefore, it is sustainable, because it is designed to provide an overview of the current status of the environment. It was thought to be useful in this study because the majority of data gathered from visitors, stakeholders, and the general public would be presented in an easy-to-understand explanation. The six beaches sampled were urban beach type due to their location in the developed area of the city of Lagos. SWOT analysis is a sustainable tool that define status of beach for management practice. Its flexibility with other research procedures gives it an excellent adaptive structure at all levels. The secondary data used in this research work was collected from local managers, stake holders, books and scientific publication.

3.2.4. Strength

The strength of the beaches is the Aesthetic (beautiful scenery), sun and sand line feature are unique characteristics that tourist are still exploring. According to this study, tourism development along Lagos coast line is highly patronized during the summer holidays. Diversity of landscape that supports biodiversity such as benthic organisms, high tide and waves. Friendly climate, bright sunshine throughout the year, cool and warm breeze exchange both during and day experience in and around the coastline areas is one of the major strengths.

3.2.5. Weakness

The most significant weakness is that the beaches are highly impacted with marine debris on the coastline and poor management of the environment in terms of regular cleaning, sanitation and control of litter through inland waters to the sea. Litters sources to the coastline are from human activities. Poor support system for biodiversity growth, is a critical issue that is not in agreement with sustainable development goals (SDGs) on climate change control. There are healthy vegetation surrounding the beaches, but no provision is made for wildlife protected areas, such as bird watching, sea turtle breeding site, shark and marine mammals' site, all these are potentials that could promote ecotourism development on the coastline. Uncontrolled noise known as noise pollution is unregulated in the beaches especially during the peak period of tourists visit to the beaches. The noise pollution could be traced to activities such as clubbing, partying and recreation.

3.2.6. Opportunities

Opportunity is greatest in the sector of ecotourism development, it will promote sustainable wildlife conservation especially species under threat, increasing the population of wildlife and balancing the ecosystem. The climate and the sandy beach support vegetation that could act as habitat for some wildlife species. Therefore, regulation through Government laws must be encourage on responsible tourism, through control of crowd that would reduce noise pollution. Afforestation and re-planting of plant species are good sustainable tools for conducive habitat for marine life should be considered as one of the tools for opportunity. Ecotourism, green vegetation, and protected areas for wildlife enhance the aesthetic value of the beach and could be used to promote economic values of beach business, by paying extra fee to access these natural resources.

3.2.7. Threats

Coastal erosion is one of the uncontrolled threats on coastline, rising of sea level has led to the shifting of coastline, washing of the top layer of sand, has drastically change the sediment characterizations of the ecosystem beaches. Habitat loss and deforestation are accompanied by urbanization development, unregulated land use policy has resulted in poor planning of the infrastructures in the beach areas in Lagos coastline. The Opportunity scores for the surveyed tourist beaches are display in **Table 2**, while the weakness and threats scores for the surveyed tourist beaches are displayed in **Tables 3** and **4**.

Table 2. The Opportunity scores for the surveyed tourist beaches.

Opportunity/Beaches	Alpha	Atican	Elegushi	Narval	Oniru	Takwa
Establishment of Protected areas for biodiversity conservation	5	5	5	3	4	4
Establishment of parking space for disabled users	2	2	1	0	1	1
Access to bathing areas for disabled users	1	0	0	0	0	0
Floatables in water	3	3	3	0	2	3
Dikes and breakers	5	5	5	5	5	5
Permanent infrastructure	3	3	3	1	3	2
Temporary structure	2	3	2	4	3	3

Table 2. (*Continued*).

Opportunity/Beaches	Alpha	Atican	Elegushi	Narval	Oniru	Takwa
Sand, sun, and surfing promotion	5	5	5	4	4	5
Surf Swimming area	3	3	4	2	4	4
Anglers/ fishing for price	4	4	3	2	3	3
Clubbing/ party areas	5	5	4	2	4	4
Ecotourism promotion	4	4	4	4	4	4
Government Regulation of Beach Management	4	4	4	4	4	4
Control of beach access	4	4	3	2	4	4

Note: 0 = Unsuitable; 1 = Rarely observed reflect changes connected to tourist activities; 2 = Seldom observed, shows little changes to tourist activities; 3 = Generally observed, it reflects only minor changes linked to tourist activities; 4 = Often prominently recorded connected to tourist activities; 5 = Consistently recorded unaffected by interference to tourist activities

Table 3. The weakness scores for the surveyed tourist beaches.

Weakness/Beaches	Alpha	Atican	Elegushi	Narval	Oniru	Takwa
Uncontrolled influx of litter on the shoreline	3	3	3	5	2	3
Poor environmental management system	2	2	2	5	2	2
Noise pollution	3	3	3	5	4	5
Warning flags and sign post for sea	1	2	1	0	2	2
Creating bathing areas	2	2	2	0	2	2
Rescue and Ambulance for emergency	1	1	1	0	1	0
Lack of provision for protected areas, biodiversity viewing (Bird watching, Marine mammals' areas, sea turtle breeding site)	5	5	5	5	5	5
Uncontrolled coastal urbanization	3	3	4	4	4	2
Lack of enforcement of the ecotourism regulations	4	4	4	4	4	4
Lack of parking lots, resort and lodging facilities	1	1	2	5	3	3
No safety and monitoring facilities during both low and high season	2	2	2	4	2	3
Cleaning of exposed of beach	3	4	4	1	3	3
Lack of proper town and land use planning around the coastline	3	3	3	3	3	3
Lack of parking lots, resort and lodging facilities	1	1	1	5	2	3

Note: 0 = Minimal; 1 = Low observed impact on tourist activities; 2 = Reasonable observed impact on tourist activities; 3 = Moderately observed impact, mixed support from oral information connected, on tourist activities; 4 = Consistently observed response, on tourist activities; 5 = Strong and consistent observed response, on tourist activities.

Table 4. The threats scores for the surveyed tourist beaches.

Threats/Beaches	Alpha	Atican	Elegushi	Narval	Oniru	Takwa
Deforestation of vegetation along the coastline, for urbanization development	3	3	3	3	3	3
Increasing marine debris pollution due to litter migration from inland waters to the sea	3	3	3	5	3	3
Coastal erosion from rising sea levels	2	2	2	5	2	2
Lack of private business collaboration and interest in coastal tourism	1	1	2	4	2	2
Nuisance activity	2	2	3	4	3	3
Unauthorized activity	2	1	1	4	1	2

Table 4. (*Continued*).

Threats/Beaches	Alpha	Atican	Elegushi	Narval	Oniru	Takwa
Illegal dumping site	1	1	1	4	2	2
Unregulated use of waterways for transportation, which directly affected tourism	2	2	2	5	2	4
Overcrowding	3	3	4	5	5	5
Sanitary risk, through fecal deposit/ lack of toilet facilities	1	1	2	5	1	2
Marine life support (evidence of organic matter, Hydrocarbon, pollution)	2	2	3	5	3	3

Note: 0 = Minimal; 1 = Low observed impact on tourist activities; 2 = Reasonable observed impact on tourist activities; 3 = moderately observed, mixed support from oral information connected, on tourist activities; 4 = consistently observed, response on tourist activities; 5 = Strong and consistent observed, response on tourist activities.

4. Discussion

The beach visitors recorded during this study, in the summer period, are most senior age-group, they stay longer on the beach with varied preference. Beach visitors' highly differed in age and higher frequency was recorded in more senior age group across the beaches, this corroborate the results of Lukoseviciute and Panagopoulos [5]. The highest frequency of beach visitors were registered in Narval beach with religious purposes as the most preferred activities. They stayed for more than 4 to 6 hours on the beach. In terms of the age-group record, our result differ from the previous work of Lukoseviciute and Panagopoulos [5], that recorded highest number of younger beach visitors in the summer period at the Algarve beaches, Portugal. Overcrowding was significantly a disturbing factor during the summer period in most of the beaches. On the occasion of our four-time visits to each of the beach, the population of visitors showed a significantly difference trends on the scatter analysis plot graph, an indication of overcrowded population, thus contributing to the coastal degradation according to Pereira and Jin [45,46]. Tourists' satisfaction and sustainable tourism objectives would be achieved with control measures for overcrowding on beaches. The managerial and Beach visitor's perception confirmed overcrowding as one of the threats to combat [5,47]. The beaches sanitation was done at different periods such as: daily, weekly, monthly and yearly. The Atican, Alpha, Elegushi, Oniru and Takwa beaches had the sanitation done daily, weekly and monthly. These beaches were manually cleaned during the summer, with the use of rakes, pickers and shovels to stir the sand, remove beach litters and algae beached on the shore This management cleaning practices were contrary to the research findings of Gonzalez and Holtmann-Ahumada [48]. that adopted mechanically beach cleaning procedure in beaches of the Northern Chile. Narval beach management cleaning practice differed from the other five beaches, as there were no consistent cleaning periods there-in, most of the cleaning was done by volunteers, while the other five beaches were done by both staffs and volunteers. Narval beach is a categorized urban beach along the five beaches, whose status in terms of environmental quality is shanty. Dust-bin placement along the coast line on the beach were rated according to the number of bins provided by the beach management, Narval had none, Elegushi rated poor, Atican, Alpha, and Oniru were rated good, and Takwa rated as very good. Environmental values and climate change issues awareness and education should be prioritized as beach management seamlessly satisfy beach users [5]. Beach users negatively valued beaches' shore

accumulated with organic matter and slow the decomposition of the matter [49]. The aesthetic values of beach is predisposed by the sanitary quality of the sand owing to concentration of solid waste arising from the lack of cultural facilities and high density of visitors [48–54]. The aesthetic beautiful scenery, sand, sea and sun, diversity land scape and friendly climate change are among the strength index quality of high values that promoted recreational, relaxation/site viewing and picnic activities registered across the beaches, these strength index explained the urbanization characteristics for the beaches along the coast of Lagos, although, more infrastructures development are desirable to favor the local tourism. The SWOT analysis revealed the weakness values of the beaches in this study, poor services and facilities provided for the visitors.

The beaches lack beach resort for lodging visitor that prefers natural environment, poor sanitary facilities, showers, footbaths, lack of monitoring safeguarding facilities, poor sun shed and chairs.

This result from this study corroborated the findings of Gonzalez and Holtmann-Ahumada [54].

5. Conclusion

This study assessed the tourist's activities and beach environmental status of the beaches along the Lagos coast using combined methods of SWOT, Survey and direct interviews of the stakeholders. The studied beaches had their strength in the high quality of natural features such as: vegetation, expanded sea water, waves, sand-line, sunshine and cool breeze at night. All these natural characteristics are still prominent because the beaches infrastructural development are still at an early stage. Cluster analysis revealed two groups of management practices, activities of tourists and frequency of visits to the beaches. Narval beach was distinct among all the six beaches (Atican, Alpha, Elegushi, Narval. Oniru and Takwa), The beach was the only beach categorized with overcrowding, poor environmental sanitation, neglect of recreational function oin the group. Narval beach is also the beach that posses the most visitors on the purpose of religious activities among the group, hence classified as a shanty beach, based on this study. Our study identified the beach based as distinct based on the its non-sustainable coastal development policy there-in to protect the marine biodiversity, and provide socio-economic values to the tourist and people around the area. However, there are numerous and potential opportunities for all the beaches studied in the areas in the establishing protected areas on the coast line for wildlife observation, viewing, ecotourism development and government regulation on management practices. If these potential opportunities are unlock, it will encourage coastal dwellers to participate in tourism.

Therefore, there is need for an effectively organized sustainable coastal development plans that will progress living ability, equitability and average sharing of resources, for a local community. It shall also assist the government in the generation of funds from the tourism industry, and offer quality services to the tourists. This is a call to tourists, community dwellers, policymakers, and researchers to come up with sustainable development practices that will sustain marine and coastal tourism.

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Appendix

Personal background

(1) How old are you? a. < 10 yrs, b. 11–20 yrs, c. 21–30 yrs, d. 31–40 yrs, e. 41–50 yrs, f. above 50 yrs.
(2) Where do you leave? A. within the locality, b. within the state, c. outside the state, d, outside the country
(3) Sex (a. Female, b. male, c. others)
(4) How frequent do you visit this beach? a. weekly. b. monthly, c. Bi- monthly, d. once in six months, e. yearly, f. rarely
(5) Do you visit alone, friends or with family?
(6) What is the purpose of visit? a. recreation; b. family retreat; c. Religious activities; d. sport; e. relaxation; f. clubbing; g. picnic; h; site viewing; i. others.

Visit Frequency

(1) Do you visit other beach in this area? Mention name (if applicable)
(2) How many hours will you spend here? A. 3–4 hrs, b. 5–6 hrs, c. above 6 hrs

Environmental Health/ Cleaning of the beach/ Awareness of litter

(1) Why do you like to visit this beach? A. cleanliness, B. safe environment/ security, C. beautiful view
(2) Are you aware of marine litters seen on this beach? (plastics, Styrofoam, woods, glass, others)
(3) Are there dust bins around here? A. yes B. no C. indifferent
(4) Do you leave your trash on the beach floor any time you visit? A. yes, B. No, C. Can't remember
(5) How would you rate the cleanliness of the beach you most recently visited? (A. Very Clean, B. Clean, C. Moderately Clean, D. Dirty, E. Very Dirty)
(6) What kind litters found on this beach; do you feel most concerned for? Mention (plastics, Styrofoam, woods, glass, fecal, dump litter site, others)
(7) Do you perceive irritating odour in this beach? (A. yes, B. No)
(8) What is the appearance of the water? (A. clear, B. not clear, C. indifferent)
(9) What is your suggestion in improving the beach environment (Clean environment)

Beach Facilities

(1) Which of the facilities, do you enjoyed most here? (toilets, bars, shower, parking, entertaining, craft shops, religious fellowship site)
(2) Do you enjoyed the duration of time spent here? (a. yes, b. No, c. other explanation)
(3) What do feel about facilities or rating the facilities? (a. very satisfactory, b. satisfactory, c. fair d. poor, e. very poor)
(4) What are other facilities that you can suggest for quality services of the beach?

Opinion and Feed backs

(1) What are the special potentials of this beach that can be improved on? Your opinion.
(2) What is your rating on the quality of the beach? (a. Excellent, b. very good, c. good, d. fair, e. poor, f. very poor)
(3) Would you visit again? (a. yes, b. No). If yes, what will be your interest concerning the general management.
(4) Would recommend other tourists/ visitors, for the experience here? (a. why, b. why not, c. other explanation)
(5) Do you feel tourism will develop the economic value of this area?
(6) Staff and managers (partial/full) of the beach

(7) Who does the cleaning of the beach? (a. contractors, b. staff, c. volunteers, d. others)
(8) What is the periodic time for cleaning? (a. daily, b. weekly, c. monthly, d, others)
(9) What type of cleaning do you always engage on? (a. soft b. hard, c. intensive, d. others)
(10) What are the tools used in cleaning? (list it)
(11) Can you briefly explain the procedure of cleaning?
(12) How often do you empty the dustbin during the day?
(13) On average can you give the population of visitors daily, weekly, monthly?