



Managing Kano Zoo for Sustainable Tourism in Nigeria: Implications on Wildlife Conservation

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Article History:

Submitted 27 August 2025

Reviewed 24 September 2025

Revised 07 October 2025

Accepted 10 October 2025

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Article DOI:

<https://doi.org/10.3126/ajhss.v2i1.83639>

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ABSTRACT

The zoological gardens are set up to enlighten the public on the importance of conservation, but it is still not clear how successful their operations are in Nigeria. Thus, a study on the management of Kano Zoo for sustainable tourism in northwest Nigeria was conducted with the goal of evaluating the facilities within the zoo for the sustainable use of wildlife resources and management implications on conservation. Data were collected through a semi-structured questionnaire and direct observation. A total of 174 questionnaires were used, of which 100 were given to the visitors and 74 to the zoo employees. The findings of the study suggest that a significant association exists between visitors' satisfaction and animal variety in the zoo ($\chi^2=53.07a$), facilities and satisfaction ($\chi^2=37.28a$), cleanliness of the area and satisfaction ($\chi^2=28.23a$), clear signage and satisfaction ($\chi^2=49.33a$). The results further revealed that 50% of the visitors prefer the use of guided tour strategy during environmental education. The staff-visitor relationship was rated high by the majority (67.4%) of the visitors. Most (73%) of the staff-visitor conflicts were attributed to the disregard for rules by the visitors. Teasing of animals and littering of the environment were the most common (56.7%) reported

offenses. Finally, it is imperative that the tourists should be made aware of the importance of conservation.

KEYWORDS: Sustainable tourism, zoological garden, wildlife conservation, environmental education

INTRODUCTION

The zoos are established to provide environmental and conservation education to the public but the effectiveness of their operations is yet to be ascertained in Nigeria. A study on management of Kano Zoo was therefore carried out, with the aim of assessing tourism facilities, visitors' satisfaction and management implications on wildlife conservation and tourism development. The zoos are the facilities for both environmental education and tourism. The zoological garden is human's closest, independent and constant link to nature (Adetola & Oluleye, 2017); they provide opportunity for people to see animals, especially those who cannot visit wildlife in their natural habitats because of certain constraints (Edeh et al., 2021). Wildlife resources in zoos attract people far and near who visits to enjoy unique experiences (Jordaan & du Plessis, 2014).

Good management practices are adopted in the zoological gardens to ensure the wellbeing of the animals and safety of visitors. Good management practices make animals live out their life span, sustainably attract visitors who are satisfied by seeing animals outside their natural habitats, and also served as a living laboratory for environmental education. Good management practices guarantee safety of visitors, thus encourages safety visitations due to the certainty of high level of human protections (Edeh et al., 2021). The popularity of zoological gardens in Nigeria has decreased over the past two decades (Edeh et al., 2021; Ijeomah & Herbert 2012). Many zoos in Nigeria have stopped functioning, some existing ones are in minimal operation or have been converted to other structures while many are either in dilapidated state or are poorly managed. Nigeria's zoos have the potentials to attract visitors far and near but their level of development, lack of baseline data and poor funding makes it growth stunted (Omonona & Kayode, 2011), Kano Zoo may not be exception to this problem.

The zoological garden became popular attractions at a time when people did not have any other opportunities of seeing or learning about wild animals. Nowadays, many zoos still strongly state that their mission is to educate people and conserve endangered species. However, research shows that for most part, they exist for the sake of human entertainment and that the conservational role of zoos is questionable, even controversial. Today, they have come to face opposition from the public due to the way they are managed. People question the conditions of the animals as well as the ethics behind capturing them from the wild and putting them behind bars. As visitor numbers decline and the public boycotts animal-based institutions, zoos are beginning to face an ultimatum: develop or become extinct. The topic around the welfare of animals in zoos is not new; however, the ethics behind the management of Kano Zoo, its conservational role as well as the problems and prospects are not widely discussed or researched in the academic world.

Zoo tourism is a niche under wildlife tourism which can be described as tourism undertaken to view and /or encounter non-domesticated animals in captive and semi-captive environment. Zoo tourism in Nigeria dates back to the existence of the oldest zoological garden 'Jos Museum Zoo' in 1945 by the colonial masters for the purpose of research and tourism. Today, Nigeria has twenty-three zoological gardens across the various geopolitical zones of the country: two are federal government owned, ten are state government owned, three are privately owned and eight are institutionally owned

(seven and one by federal universities and state university respectively). Kano Zoo is among the ten (10) zoos owned by the government of Kano State, Nigeria (Odunlami & Edet, 2017). The growth of tourism industry in Nigeria depends on the ability of the existing tourism centers, including zoological gardens to attract visitors. The way and manner zoos are managed will no doubt affect the survival of animals, patronage by the tourist and peoples' attitude towards wildlife conservation. Kano Zoo was established in 1971 and opened to the public in 1972 by the then state military governor late Alhaji Audu Bako, covering an area of about 46 hectares. The zoo was registered by Pan African Association of Zoo and Aquaria (PAAZA) and International Zoo Educators (IZE) in 2007 and 2010 respectively. The education center of the zoo works towards educating and inspiring pupils and students from various institution of learning about nature. They also offer series of lectures on wild animal conservation and have a mini library which is open on week days (Mondays-Fridays). The information on tourism resources and tourist influx in Kano Zoo has not been properly documented compared to other zoological gardens in Nigeria; hence, the need to assess the existing resources in the zoo for effective management and sustainable tourism.

The global economic recession has resulted in persistent problems; most countries in the world are actively looking for alternative means to sustain their economy (Tisdell, 2011). In developing countries such as Nigeria, tourism maybe considered as one of the economic sectors that could generate substantial income and maintain conservation areas. In view of this, Nigeria's economic recovery programs have necessitated a radical shift from total dependence on petroleum resources as the major source of revenue, and one such attractive area for revenue generation is tourism. It is a great money spinning business that can provide a substantial source of revenue if properly managed. This study will significantly help in understanding the tourism potentials and associated problems in Kano Zoo as well as providing positive ways forward. This study aimed to assess the tourism facilities, services and management strategies of Kano Zoo.

MATERIALS AND METHOD

The study was carried out in Kano Zoological garden of Kano state. The zoo was established on the 3rd of November 1972. The Kano Zoo popularly known as "Gidan Zoo" is located in Kano Metropolis, Kano State, the commercial heart of Nigeria. It covers an area of 42 hectares and was accredited by Pan Association of zoo and aquaria in 2007 and 2010 respectively. Kano state is located in north western Nigeria, created on May 27th, 1967 from part of the northern region. Kano State borders Katsina state to the North West, Jigawa State to the north east, Bauchi State to the south east and Kaduna State to the south west. The capital of Kano state is Kano. The state originally included Jigawa state which was made a separate state in 1991.

Kano is located on latitude 12° 00'N and longitude 8° 31'E in the Sahelian geographic region south of the Sahara. Kano is the commercial nerve center of northern Nigeria. According to 2006 census, Kano is the most populous state in Nigeria with a population of 9,383,682 million people. The Kano urban area covers 137 km² and comprises eight local government areas (Kano Municipal, Gwale, Tarauni, Nassarawa, Dala, Ungoggo, Fagge, and Kumbotso). The mean annual rainfall is 752mm. The average annual relative humidity is 31.1% and average monthly relative humidity ranges from 11% in March to 68% in August. The warmest month of the year is April with an average temperature of 39°C; January is the coldest month with temperature averaging 18.5°C (Kano climate normal, 2016). The vegetation of Kano state is semi-arid savannah. The

canopies of the trees are very wide and most of them are less than 20m tall. The common trees species include *Azadirachta indica*, *Acacia albida*, *Adansonia digitata*, *Balanitea agyptiaca*, *Azadirachta indica*, *Vitex doniana*, and *Diospyros mespiliformis*. These tree species are very resistant to drought.

The field survey method was used to collect all the necessary information regarding the study. A reconnaissance survey was conducted to make a good appraisal of the condition of the site in order to get the relevant information needed for the study and to determine a suitable survey method to adopt. After the preliminary survey, field survey was conducted to assess the various ecotourism resources in the zoo. Fauna and flora species were recorded through direct sightings.

Questionnaires were administered to both the staff of the zoo and the visitors to illicit information on the respondents' level of satisfaction on services offered in the zoo, their willingness to pay for entrance fees, visitor's welfare and purpose of their visits. One hundred (100) questionnaires were administered to the visitors and seventy-four (74) were distributed to the zoo employees for the purpose of this study. The option of collecting necessary information on the existing administrative records was also considered. Only ninety-two (92) questionnaires were retrieved from the visitors and all questionnaire administered to the employee of the zoo were retrieved.

Sample population of employee = 148

Sample size = 74 (50% of the sample size)

Number of questionnaire returned = 74

The data obtained from this study were manually transferred into a spreadsheet and the data were subjected to descriptive statistics such as frequency, percentages and tables and chi-square test.

RESULTS

The results of the study were presented in the form of tables and figures. They are divided into three thematic categories, which include the socio-economic characteristics of the visitors in the zoo, the distribution of the respondents on the purpose of their visits to the zoo, and the conservation education strategies suggested by visitors in the zoo.

Table 1

Socio-Economic Characteristics of the Visitors in Kano Zoo

Variables	Frequency	Percentage
Sex		
Male	62	67.4
Female	30	32.6
Age		
15-25	42	45.7
26-35	34	37.0
36-45	10	10.9
45 and above	6	6.5
Educational Status		
No formal education	12	13.0
Primary	2	2.2
Secondary	19	20.7
Tertiary	59	64.1

Marital Status		
Married	33	35.9
Single	55	59.8
Divorced	3	3.3
Widow	1	1.1
Family Size		
1-5	44	47.8
6-7	33	35.9
11-16	8	8.7
Above 16	7	7.6
Occupation		
Farming	15	16.3
Trading	42	47.7
Civil servant	17	18.5
Others	18	19.6
Monthly income		
<₦10,000.00	21	22.8
₦11,000-20,000.00	30	32.6
₦21,000-30,000.00	14	15.2
Above ₦31,000.00	27	29.3
Total	92	100

The result on socioeconomic data of the visitors in Kano Zoo shows the male dominated participants (67.4%) while 32.6% were females as shown in Table 1. Majority (40.6%) are within the ages of 15-25 years. The results further revealed that there is high of level of educational qualification among the visitors in Kano Zoo as 67.4% of respondents had post-secondary certificates, while 20.7% had secondary school leaving certificates.

Table 2
Socioeconomic Characteristics of Staff in Kano Zoo

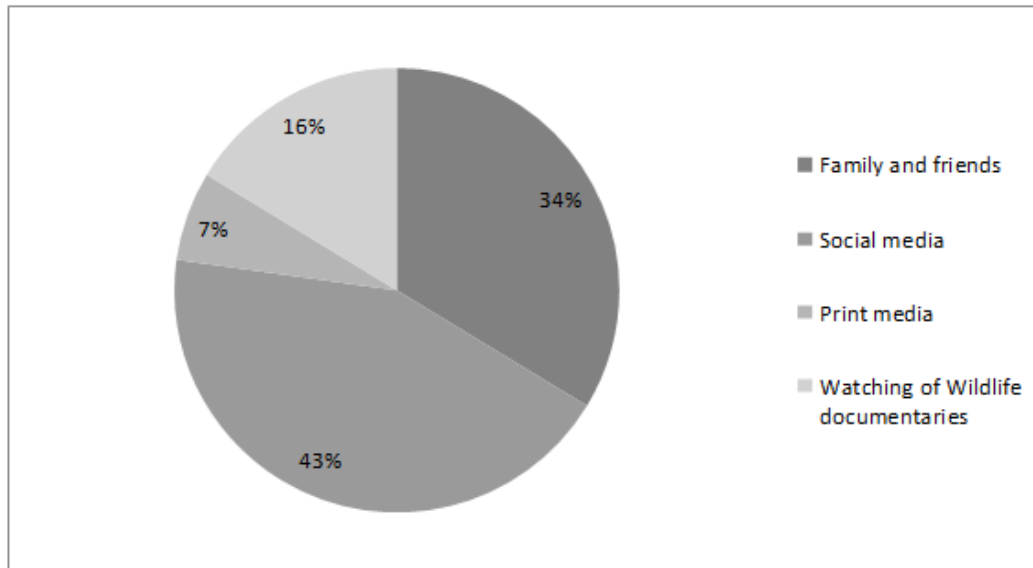
Variables	Frequency	Percentage (%)
Gender		
Male	61	82.4
Female	13	17.6
Total	74	100
Age		
20-30	10	13.5
31-40	20	27
41-50	30	40.6
Above 50	14	18.9
Total	74	100
Educational status		
Primary school certificate	5	6.8
Secondary School Certificate	12	16.1
ND	10	13.5

HND	15	20.3
First degree	19	25.7
Postgraduate certificate	13	17.6
Total	74	100
Departments		
Administration and Gen. Service	23	31.1
Security Department	16	21.6
Planning, Research, and Statistics	6	8.1
Wildlife Department	10	13.5
Zoo services	19	25.7
Total	74	100

The result on socioeconomic data of the employee in Kano Zoo shows male dominated participants (82%) while 17.6% are female as shown in Table 2. Majority (40.6%) are within the ages of 41-50 years. It is evident from the study that there is high of level of educational qualification in the among the members of staffer in Kano Zoo as 25.7% of respondents had first degree, 20.3% had HND while 17.6% had post-graduate qualifications respectively.

Figure 1

Visitors' Sources of Information about the Zoo



Majority of the visitors got information about the zoo through social media (43.5%), family and friends had 33.7% while 16.3% claimed to know about the zoo by watching wildlife documentaries (see Figure 1). This implies that social media such as Facebook, WhatsApp, Twitter, and Instagram played a significant role in conservation education.

Majority of the respondents (44.6%) visited the facility for recreational purposes, 22.8% visited the zoo for educational purposes while 15.2% visited the area during festivities (see Figure 2).

Figure 2

Reasons Why Visitors Patronized the Zoo

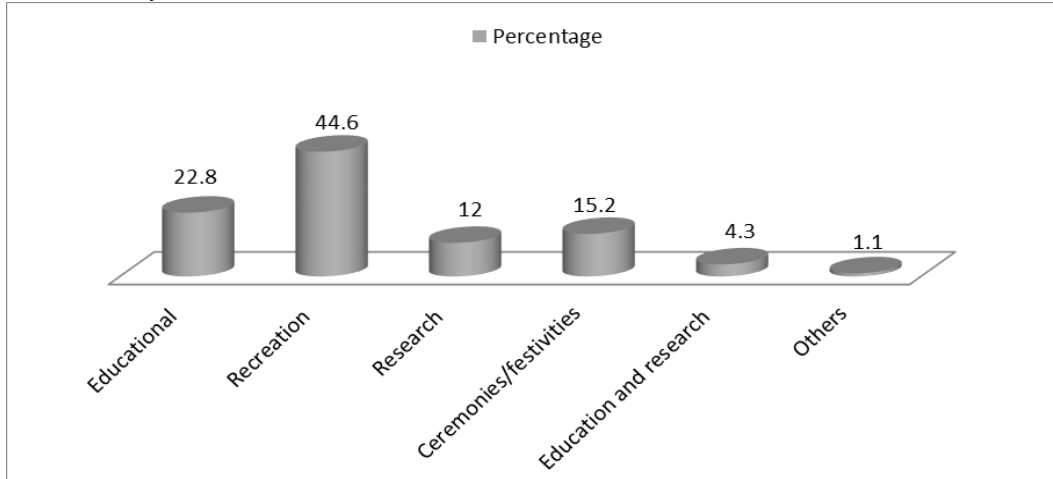
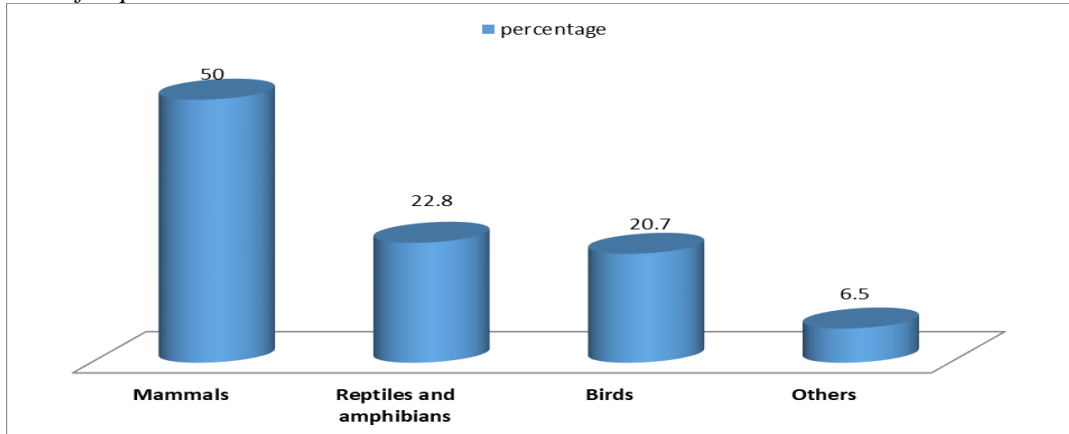


Figure 2 implies that visiting the zoo can be a rewarding and enriching experience that offers numerous benefits for individuals, communities, and the environment.

Figure 3

Wildlife Species that Attracts Visitors to the Zoo



Most of the visitors were attracted by mammals such elephant and lions while 22.8% were attracted by the different species of snakes and the Nile crocodiles (see Figure 3).

Table 3

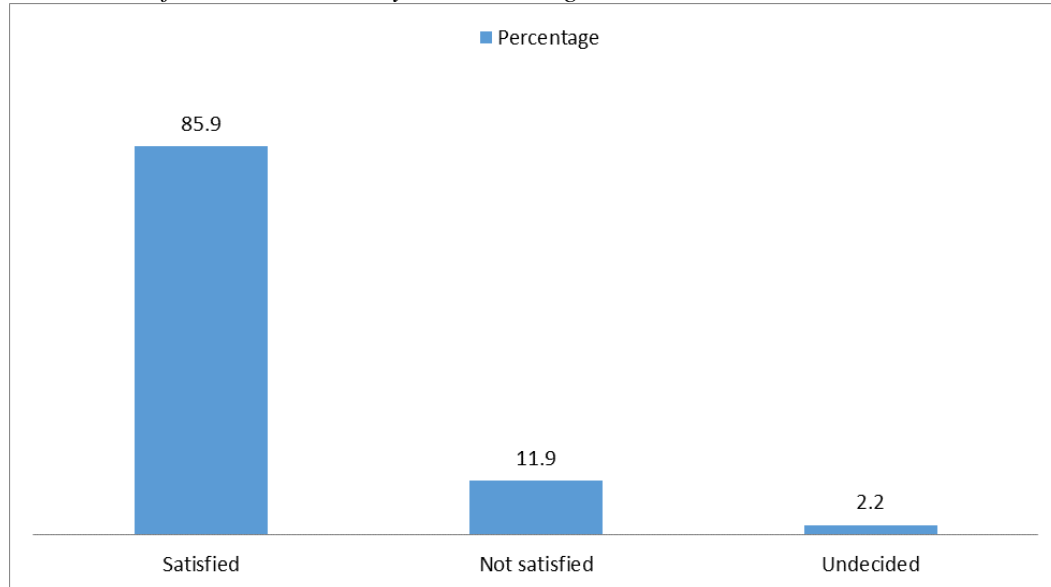
Opinion of the Visitors with Regard to Entrance Fees

Variables	Frequency	Percentage
Affordable	68	73.9
Not affordable	14	15.2
Very low	10	10.9

Majority of the visitors considered the current gate fees as affordable (73.9%), 15.2% said it was not affordable while 10.9% agreed that it was very low (see Table 3). This implies that majority of the visitors have a strong passion for conservation and willing to pay for the gate fees without any hiccup.

Figure 4

Visitors Satisfaction with the Way Zoo Is Managed



Satisfaction on how Kano Zoo is managed among visitors in the study area (see Figure 4) show that majority (85.9%) visitors of the organization were satisfied with the way and manner the facilities and resources are managed in the zoo while 11.9% were not satisfied, though 2.2% were uncertain whether they satisfied or dissatisfied. This implies that most respondents felt that the general working conditions and resources in the Kano Zoological Garden were adequately managed.

Table 4

Factors that Facilitates Visitors' Satisfaction in Kano Zoo

Variables	Frequency	Percentage
Animal variety and Diversity	18	24.3
Cleanliness and Maintenance	24	32.4
Clear signage and interpretation	05	6.8
Friendly and Knowledgeable Staff	08	10.8
Good Customer Service	03	4.1
Amenities and Facilities	10	13.5
Natural and Peaceful Environment	06	8.1

Most (32.2%) of the visitors were motivated by the variety of the animals and how the area is maintained (cleanliness). Amenities and other facilities also motivated visitors a lot (see Table 4). This implies that the modern zoo practices are well practiced in the zoo.

Table 5*Association between Visitors' Satisfaction and Socioeconomic Factors*

Variables	χ^2 value	$\alpha 0.05$
Age* Satisfaction	41.21a	0.004*
Gender*Satisfaction	28.34a	0.000*
Education*Satisfaction	19.17a	0.002*
Family size*Satisfaction	40.74a	0.601ns
Income*Satisfaction	51.25a	0.411ns

*indicates significant difference at $p \leq 0.05$, ns=not significant

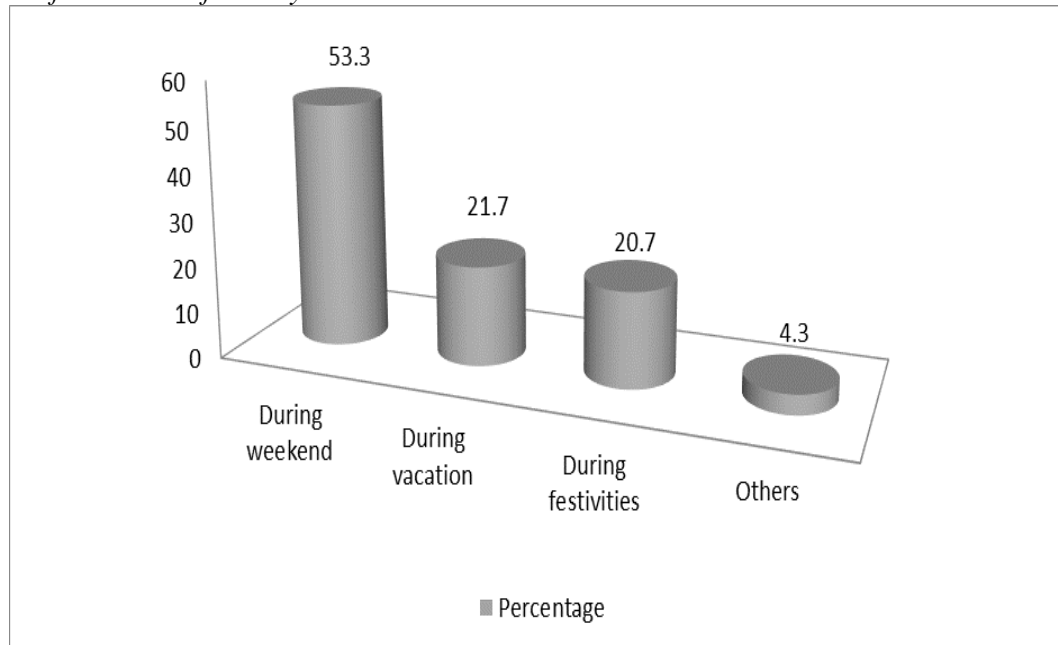
The results presented in Table 5 revealed that there is a strong association between gender and satisfaction ($p < 0.05$). Also educational status influenced visitors' satisfaction with the and manner the resources are managed in the zoo.

Table 6*Association between Visitors' Satisfaction and Services Offered/Facilities in the Zoo*

Variables	χ^2 value	$\alpha 0.05$
Animal variety * Satisfaction	53.071a	0.000*
Cleanliness and Maintenance*Satisfaction	37.28a	0.003*
Amenities and Facilities *Satisfaction	28.23a	0.001*
Clear signage and interpretation *Satisfaction	49.33a	0.002

*indicates significant difference at $p \leq 0.05$

The results presented in Table 6 shows that a number of factors influenced visitor's satisfaction with the services offered during their visits ($p < 0.05$).

Figure 5*Preferred time of visit by the visitor*

Majority (53.3%) of the respondents preferred to visit the zoo during weekends while 21.7 prefer vacation times (see Figure 5). This implies that visitors prefer to visit the zoo at their leisure times.

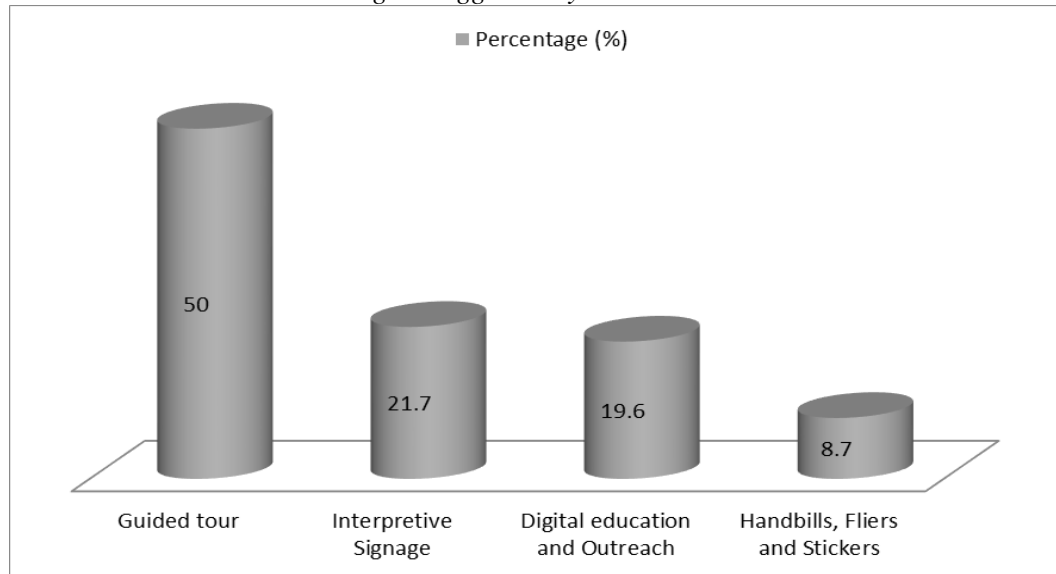
Figure 6*Conservation Education Strategies Suggested by Visitors in Kano Zoo*

Figure 6 shows that half (50%) of the visitors to Kano Zoo prefer the use of guided tour strategy during environmental education, 21.7% prefer interpretive signage, while 19.6% digital education and outreach. This implies that the visitors were satisfied with the services offered by the zoo keepers in terms of conservation education

Table 7*Rating of the Staff-Visitors Relationship by the Visitors*

Variables	Frequency	Percentage
Excellent	12	13.0
Very good	19	20.7
Good	31	33.7
Satisfactory	30	32.6
Total	92	100

The staff-visitors' relationship was rated high by the majority (67.4%) as excellent; very good and good (see Table 7). This indicates that the Kano Zoo staffer was so friendly and diplomatic in discharging their duties without compromising the modern zoo practices.

Table 8*Checklist of Fauna Species in Kano Zoo*

S/No	English Names	Scientific Names
1.	Dwarf cows	<i>Bas Taurus</i>
2.	Zebra	<i>Egurus burchell</i>
3.	Giraffe	<i>Giraffe camelus</i>
4.	Duiker	<i>Sylvicapra agrimmia</i>
5.	Rock python	<i>Python sebae</i>
6.	Nile crocodile	<i>Crocodilus niloticus</i>
7.	Giant tortoise	<i>Testudo sulcata</i>
8.	Monitor lizard	<i>Varanus noliticus</i>

9.	Cobra	<i>Cobra spp</i>
10.	Cane rat	<i>Thryonomis swinderianus</i>
11.	Rabbit	<i>Lepus capensis</i>
12.	Elephant	<i>Loxodonta africana</i>
13.	Mona monkey	<i>Cercopithecus mona</i>
14.	Green monkey	<i>Chlorocebus sabeous</i>
15.	Senegalese Parrot	<i>Poicephalus senegalus</i>
16.	Brown pelicans	<i>Pelecanus occidentalis</i>
17.	Ostrich	<i>Sthruthio camelus</i>
18.	Maraboo stork	<i>Leptaptilos crumenefer</i>
19.	Eagypitian goose	<i>Alopechen aegyptica</i>
20.	White stork	<i>Ciconia ciconia</i>
21.	Patas monkey	<i>Erythrcebus patas</i>
22.	Baboon	<i>Papio anubis</i>
23.	Hippopotamus	<i>Hippopotamus amphibious</i>
24.	Lion	<i>Panthera leo</i>

Table 9*Staff-Visitors' Conflicts in the Zoo as Reported by Zoo Staff*

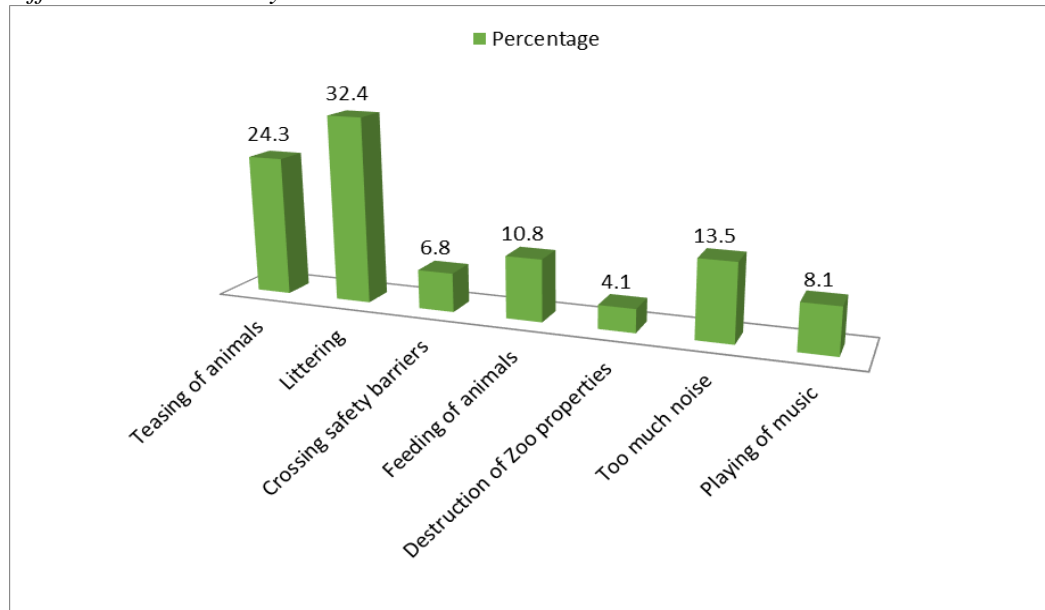
Variables	Frequency	Percentage
Yes	25	33.8
No	49	66.2
Total	74	100

Table 9 shows that majority (66.2%) of the sampled staff did not had any encounter with visitors while 33.8% experienced one form of conflict or the other.

Table 10*Causes of Staff-Visitors' Conflicts as Reported by the Sampled Staff*

Variables	Frequency	Percentage
Disregard for rules	54	73.0
Payment of entrance fees	20	27.0
Total	74	100
Most effective conflict resolution strategy		
Visitor orientation/Dialogue	43	58.1
Collaborative problem-solving	27	36.5
Visitor feedback mechanism	04	5.4
Total	74	100

Majority (73%) of the sampled staff reported disregard for zoo rules as the main factor responsible for the conflict between staff and visitors (see Table 10). The visitor orientation and dialogue was considered most effective conflict resolution method by the majority (58.1) of staff in Kano Zoo while about half suggested collaborative problem solving approach (36.5%).

Figure 7*Offences Committed by Visitors in Kano Zoo*

Littering (32.4%) and teasing of animals (24.3) were most common offence reported by the majority of staff in Kano Zoo as reported in Figure 7.

DISCUSSION

The results on the socio-economic characteristics of the study participants (Table 1 and 2) revealed male dominated participants. This indicates that the tourists and the staff of the zoo are predominantly males and the reason may be religious or even cultural. This is inconsistent with Adetola and Adedire (2018) who documented more females than males in two Nigerian zoos. The findings give voice to the fact that while males may be more eager to travel to eco-destinations than females (Arul et al., 2013; Alarape et al., 2015), though females are not left out, and in some cases, may even be at par with their male counterparts. Most of the respondents (staff and visitors) are within the ages of 41-50 years and 15-35 years. This implies that the zoo attracts visitors of all groups of ages and educational background. Majority of the respondents attended tertiary institutions with higher degree certificates. The attainment of such level of education can help in proper control of the visitors and quick dissemination of tourism potentials and conservation knowledge to the potential visitors.

The findings of this research further revealed that digital media ranked first as the main source of zoo awareness followed by family and friends (see Figure 1). This is in tandem with Edeh et al. (2021), who discovered that family and friends was the major media of awareness in the zoos in Nigeria. Nowadays, people are so addicted to digital media such as Facebook, WhatsApp, Twitter, Instagram, YouTube, and LinkedIn. These media sources bring information about tourism destinations at the fingertips of the visitors. Every individual visitor tries to share experience with close relations or people around him through Facebook, WhatsApp, YouTube, Twitter, Instagram, and LinkedIn who could be either friends or family members. In essence, one zoo-visit leads to the chains of visits from the social cycle of a particular visitor through digital media. However, sharing of experiences by zoo visitors on social media facilitates growth in conservation awareness. This is in tandem with the report of Alarape et al. (2017). In the

case of the role of broadcast media on awareness about the zoo and the importance of conservation is created through the prominent radio and television stations across the state especially during festivities and world environmental day. The importance of broadcast media in creating awareness about the existence of zoological gardens and the importance of conservation cannot be over emphasized. Animal variety, cleanliness, and facilities were ranked first and second factors that facilitate visitors' satisfaction in Kano Zoo. Attractiveness of the zoos in terms of facilities and abundance of unique species influences visitors' willingness to pay for captive tourism facilities and repeat visit with close associates that could be friends, family or co-worker (Adetola et al., 2016). The facilities in Kano Zoo (especially children play ground) are loved by visitors particularly children (see Table 4 and Figure 3). Passing of information about facilities in the zoological garden by visitors through digital and broadcast media could be an effective strategy for attracting visitors while ensuring proper dissemination of conservation education. More than half of the respondents were attracted by mammals such as lions and elephants while some were attracted by reptiles and amphibians such as snakes and crocodiles (see Figure 2). This trend may not be unconnected with the fact that mammals such as elephants and lions are hardly seen within human habitations considering their global conservation status unlike reptiles and amphibians. These animals contributed immensely to the excitement and conservation impacts on the zoo visitors. This implies that these species have the greatest conservation impact as many of the visitors had their first live encounter with these species in Kano Zoo. This is in conformity with Ijeoma et al., 2019 who reported that visitors derived pleasure from viewing lions and hyena in the origin garden and the zoo. This also agrees with Adetakun (2020), who reported that Kano Zoo was designed to conserve animals for people to see, render recreational services, serve as a research centre and provide practical educational instructions. This is also in conformity with Adetola and Adedire (2018) who stated that the main motivations of the zoo visitors are to see the condition of habitat and diversity of wildlife at the University of Ibadan and Obafemi Awolowo University zoos in Southwest Nigeria.

Majority of the respondents have been visiting the zoo for the past 10 years. This further revealed the level of acceptance of the zoo by the visitors and how fast the industry is growing; it also indicates the level of interest of the people to visit some of these conservation areas. This result agreed with the opinion of Baral et al. (2008) who opined that, ecotourism has become one of the fastest-growing sectors of the tourism industry worldwide. Kano Zoo experienced the highest influx during weekends and festivities (see Figure 5). This indicates that most tourist prefer visiting the zoo on non-working days when children are off school and this is more of benefit to the children to meet their curiosity of seeing live animal species in captivity. Viewing live animals in captivity increase satisfaction in zoo visitors' experience. It was observed that apart from game viewing, visitors engaged in group discussions about the animals and conservation impact of the zoo. This revealed the interest of the visitors on biodiversity conservation. One conservation impacts of this development is that the visitors who have never met, connect, share, and discuss their diverse zoo experiences within the zoo premises. These interactions create and spread environmental education and conservation awareness. Most of the respondents rated the visitor-staff relationship as excellent (see Table 7). When the relationship and services rendered by the zoo staffer is poor, the aim of establishing the zoo is defeated.

The use of tour guide was the conservation education strategy preferred by the majority of the visitors in Kano Zoo (see Figure 6). This can be attributed to the fact that

tour guiding is interactive; it offers visitors opportunity to get detailed information about the biology of animal species. The tour guide can also provide answers to many questions asked by the visitors. This implies that the use of tour guide in Kano Zoo brings about effective conservation impacts of zoos on visitors. Jacobson and Robles (1998) opined that a tour guide training program in Costa Rica's Tortuguero National Park has helped mitigate negative environmental impacts by providing information and regulating tourists on the parks' beaches used by nesting endangered sea turtles.

A Chi-square analysis revealed a significant association between the visitors' gender and satisfaction (see Table 5). This implies that male visitors are more satisfied with the facilities and the way tourism resources are managed in the zoo. In addition, there is an association between the visitors' level of education and satisfaction. This implies that educated people among the visitors were more satisfied with the tourism resources in the zoo than less educated visitors. This is in tandem with Edeh et al. (2021), who stated that those who participated in nature-based tourism are usually educated people. A significant association exists between age and the visitors' satisfaction. The age differences bring about the different experiences and encounters with nature. The adult zoo visitors have more life experiences because they have visited many zoos for their personal experiences or to educate their children while younger people visit few zoos just to meet their curiosity of viewing live animals in captivity or over what they have learnt in schools. Moreover, an association exists between animal diversity and the visitors' satisfaction. This implies that the different fauna species in the zoo facilitates the visitors' satisfaction and promote conservation awareness in the zoo. An association also exists between the facilities and the visitors' satisfaction (see Table 6). This indicates that the resources/facilities in Kano Zoo have potentials of attracting the visitors to the zoo if well managed. The results also show that the quality of tourism services/facilities has a positive impact on the level of tourist satisfaction. These results are considered to be valuable to the zoo managers, tourism organizations and businesses in evaluating the level of their current services and/or facilities. This is in agreements with Operinde and Emma (2020). Therefore, this study suggests that the visitors' satisfaction can be boosted by raising the standard of service quality throughout the destinations' attractions, facilities, and modes of accessibility. However, the visitors have various motives for visiting a zoo; information on these motives can be applied by zoo management to make informed decisions when developing marketing strategies to ensure the success and future relevance of the zoo (Couch et al., 2013).

Some of the staff of the zoo that reported having some kind of conflict with the visitors stated that they had some issues with the visitors though not frequently (see Tables 9 and 10, and Figure 7). Frequently occurring conflicts may have a drastic effect on the tourist patronage to a particular zoo. Disregard for rules was reported to be the main cause of conflict in the zoo. This may take a form of contravening the zoo rules and regulations. The study further revealed that the conflicts were usually resolved amicably through dialogue. The result indicates that majority of the zoo staff described teasing of animals and littering of the environment as the most frequently committed offences (see Figure 7). This may be as a result of lack of awareness from the tourist side, as first time visitors. This is in line with the finding of Tuohino and Hynonem (2001) who opined that, more initiative should be carried out to improve the tourist awareness, sensitize them to the environmental issues and care about the places they visit. The result further shows that the frequently committed offences were addressed by educating the visitors on the dangers of their offences as reported by the majority of the staff. This will significantly help in ensuring a mutual and establishing a good rapport between the

visitors and the staff. This result agreed with finding of Tuohino and Hynonem (2001) who opined that more initiatives should be carried out to improve their awareness, sensitize them to environmental issues, and care about the places they visit.

Majority of the respondents are of the opinion that the gate fee is affordable and this can lead to high turnout (see Table 3). Though the results obtained indicated that the visitors can afford the gate fees, but the amount is too low compared to the amount charged by other zoological gardens in Nigeria like the University of Ibadan Zoo. Still when the gate fee is high, the visitors will find it difficult to patronize the zoo. The visitors' willingness to pay for entrance fees in this study is not an isolated case. The fee charged is a significant source of revenue for tourist destinations such as Kano Zoo, which can be used to manage the zoo to serve the purpose it was meant for. Several studies show that entry fee rates are required to cover operating expenses and costs in tourist destinations based on the price of entry fee payments in many developing countries. This result is consistent with the findings of Adetola et al. (2016) who reported that the visitors to the U.I Zoo were willing to pay captive wildlife tourism especially if the fees will be used in for conservation purposes and improving the facilities in the zoos. The findings of Armira et al. (2015) show that majority of the visitors were willing to pay for ecotourism at PuncakLawang Park, Indonesia.

CONCLUSION

Overall, the findings of the study show that the zoo attract visitors of different group of ages and educational levels, majority of whom were male that mostly visited the zoo to view animals for recreational purpose. The media of awareness about the zoo were mainly the digital and broadcast media. The visitors' influx during weekends was found to be high and they were satisfied with the tourism resources and facilities in the zoo. It seems that expectations of Kano Zoo visitors are more oriented on entertainment and education than research. Therefore, Kano Zoo needs to continue its role as a place for recreation and conservation education, but also to focus its attention to other programs that will suit the needs and the requirements of the visitors and most importantly invest more on marketing strategies to facilitate the dissemination of environmental education.

RECOMMENDATIONS

Based on the results obtained from the research, the followings recommendations are made for sustainable tourism through wildlife conservation in Nigeria:

1. Since majority of the respondents are visiting the zoo for recreational and educational purposes, there is a need for the management of Kano Zoo to focus more attention on entertainment and educational programs aimed at attracting more visitors.
2. There is also a great need for management to create awareness to the general public on the importance of ecotourism which is intended to offer tourist an insight into the impacts of human beings on environment and provides income as well as job opportunities to the host communities.
3. A provision of additional ecotourism resources is recommended to improve the recreational and aesthetic values of the zoos.
4. The amount charged as the gate fee should be reviewed as the amount charged so far is found to be very low compared to what is being charge in other zoological gardens in the country.

5. Zoo management should also provide equal opportunities for training and development to its employees to help improve their capacities for effective service delivery to attract more visitors.

CONFLICT OF INTEREST DECLARATION

We hereby wish to declare that we do not have any conflict of interests to disclose. However, we declare that the manuscript has not been published before and is not being considered for publication elsewhere.

AUTHOR CONTRIBUTIONS

This paper is a joint effort of the authors. Dr. Mustapha Sani Bunza, the principal author, collected the data, wrote literature review and the method, interpretation and discussion of the results in consultation with co-authors. Prof Abideen Abiodun Alarape carried out the empirical analysis while Dr. Rilwanu Oluyinka Adewale prepared the draft of the paper. Dr. Zubeiru Dododawa reviewed the first draft of the paper and Mr. Murtala Tijjani edited the draft before sending it for publication.

ACKNOWLEDGEMENTS

We extend our sincere gratitude to all those who contributed to the completion of this article, especially visitors to the Kano Zoo who took out their time to fill this study questionnaire. We are grateful to the management of Kano Zoo, Nigeria, for granting us the opportunity to conduct this study.

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REFERENCES

- Alarape, A. A., Yager, G.O. & Salman, K.K. (2015). Assessment of tourists' satisfaction and perception in Makurdi Zoological Garden, Benue State, Nigeria. *Journal of Research in Forestry, Wildlife and Environmental*, 7(1), 1-12
- Adetola, B. O., Adenuga, A. J., & Morenikeji O. (2016). Willingness to pay for captive wildlife tourism at the university of Ibadan Zoological Garden. *J. Res. Forestry, Wildlife and Environ*, 8(2), 58-72.
- Adetola B. O., & Oluleye A. O. (2014, November 16-20). Visitors' profile and perception of zoo environment towards conservation. A case study. University of Ibadan and Obafemi Awolowo University Zoological Gardens, South Western Nigeria (paper presented) at Conference of the Tropical Biology Association African Alumni Group, Nigeria.
- Adelakun, K. M. (2023). Job satisfaction among employees of Kano Zoological Garden, Kano, Nigeria. *International Journal of Current Research in the Humanities*, 24(1), 405–417. <https://doi.org/10.4314/ijcrh.v24i1>.
- Armira, I., Mohd, R. Y., Ibrahim, K., & Alias, R. (2015). Estimating economic value for potential ecotourism resources in PuncakLawang Park, Agam District, West Sumatera, Indonesia *Procedia Environ. Sci.* 30: 326-331.
- Baral, N., Stern, M. J. & Bhattarai, R. (2008). Contingent valuation of ecotourism in Annapurna conservation area, Nepal: Implications for sustainable park finance and local development. *Ecological Economics*, 66(2-3), 218–227. <https://doi.org/10.1016/j.ecolecon.2008.02.004>.
- Dowling, R. K. (1995). Ecotourism: Concept, design and strategy. *Tourism Recreation Research*, 20(1), 60–61. <https://doi.org/10.1080/02508281.1995.11014739>
- Edeh, O. A., Ijeoma, H. M., & Odunlami, S. S. (2021). Management of zoos in selected destinations in Nigeria: Implications on wildlife conservation and ecotourism development. *HATMAN Journal of Hospitality and Tourism*, 11(1), 83-94.
- Jordaan, Y. & du Plessis. G. M. (2014). Motivators to visit the national zoological gardens of South Africa. *African Journal of Hospitality, Tourism and Leisure*, 3(1), 1-15.
- Ijeomah, H. A. & Herbert, B. C. (2012). Reality of tourism management: Business viability and tourists' behavior in Plateau State, Nigeria. *CULTUR*, 6(3), 55-71.
- Odunlami, S. S. & Edet, D. I. (2017, February 20-25) *An Assessment of wildlife resources utilization by catchment communities of Okomu National Park, Nigeria: Implication on ecotourism*. A paper Presented at the 39th Annual Conference of the Forestry Association of Nigeria (FAN) held in Ibadan, Oyo State, Nigeria
- Ogunbodede E.F. (2012). Patronage Pattern of tourists to Idanre Hills and its implications for tourism development in Nigeria. *Journal of Environmental Research and Development*, 6(3), 908-915.
- Operinde, O. H., & Emma-Egoro P. (2020). Assessment of tourists' perception and satisfaction in Agodi Park and Gardens Ibadan as a nature-based tourism attraction. *International Journal of Research-GRANTHAALAYAH*, 8(7), 144-159 <https://doi.org/10.29121/granthaalayah.v8.i7.2020.653>

- Omonona, A. O. & Kayode I. B. (2011). *Ecotourism: Implications on human and wildlife health*. Ibadan University Press.
- The International Ecotourism Society. (2015). *The emergence of alternative forms of tourism, in tourism alternatives: Potentials and problems in the development of tourism*. University of Pennsylvania Press.

To cite this article [APA 7th edition style]:

Bunza, M.S., Alarape, A.A., Adewale, R.O., & Dododawa, Z. (2025). Managing Kano Zoo for sustainable tourism in Nigeria: Implications on wildlife conservation. *Academia Journal of Humanities & Social Sciences*, 2, 340-357. <https://doi.org/10.3126/ajhss.v2i1.83639>