

## **Environmental Challenges of Ecotourism in Pandam Game Reserve, Plateau State, Nigeria**

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**Abstract:** *The major concern of ecotourism is to maintain the workings of the ecosystem and to have a protected environment. Unfortunately, this idea is being defeated due to some environmental factors that act as threats. The study analyses the environmental challenges of ecotourism in Pandam Game Reserve in Plateau State, Nigeria. The structured questionnaires, field survey, in depth interviews of key informants and administrative records were used to obtain data. Questionnaire was randomly administered to tourists in the park to obtain information on tourists' experience and level of satisfaction with the park. Another set of questionnaire were randomly administered to park officials to obtain information on the impact of management strategies and challenges in the park. Correlation and Principal Component Analysis (PCA) were employed in analyzing the data. Results showed that the major environmental challenges of ecotourism in Pandam Game Reserve were destruction of wildlife species, unauthorized deforestation and inadequate infrastructure to cater for all tourism activities in the park. The study therefore concludes and recommends that government should invest in the ecotourism industry, facilities needed in the industry should be upgraded and/or provided, private investors should be encouraged, unauthorized logging and poaching should be abated, and capacity building for community members should be encouraged.*

**KEYWORD:** *Ecotourism, Environmental Challenges, Game Reserve, Sustainable Development*

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### **I. Introduction**

Ecological and environmental protection is the core content of ecotourism development<sup>16</sup>. Ecotourism has been regarded as a panacea for solving many of the environmental and economic problems of less developed nations. Yet, regardless of how socially and environmentally responsible ecotourism may be in theory, in practice it remains rooted in the tourism industry<sup>15</sup>. Ecotourism is an industrial activity that exerts a series of impacts that are similar to most other industrial activities. It consumes scarce resources, produces waste by-products and requires specific infrastructure and superstructure to support it<sup>17</sup>. According to ecological sustainability, there must be efficient management and conservation of natural resources and it also includes maintenance of biodiversity, atmospheric and other ecosystems by creating appropriate policies and awareness among people<sup>11</sup>.

According to Eagles<sup>5</sup>, ineffective management of ecotourism causes negative impact on protected area resources. It provides an alternative mechanism of resource utilization which may bring adverse impact on environmental resources<sup>14</sup>. Litter problems had occurred in 44 percent of the nature reserves, water pollution in 12 percent, noise pollution in 11 percent and air pollution in 3 percent of the nature reserves in China<sup>12</sup>. Environmental degradation is a common problem which increases with increase in visitor number in a protected area open to recreational use. Camping and caravanning zones will add increased levels of pollution to the nearby river. The ecosystem may become less stable and local pollution may have drastic effects, such as fish kills.

Ecotourism generally occurs in areas that are environmentally sensitive and fragile. Mountains, protected areas, and cultural and religious sites are very popular destinations of eco-tourists. Like traditional or mass tourists, eco-tourists have caused both on-site and off-site negative impacts to the visited areas. Deforestation for fire wood, water pollution by sewage, soil pollution due to non-biodegradable wastes, and visual pollution are major environmental problems. According to Kruk and Banskota<sup>9</sup> who are mountain ecotourism experts, environmental problems in many mountains including Mt. Everest seem to be very severe. Due to the crowd of trekkers and mountaineers, the Everest Base Camp has been badly affected by wastes left behind. The wastes generally includes garbage, oxygen cylinders, trekking and mountaineering instruments and human wastes which threaten the whole realm of this unique site which has also been known as main tourism

destination. And one more serious problem of the Everest site is trail erosion due to the overflow of tourists. In same way Honey<sup>7</sup> also adds:

“During 1980 to 1991, the number of trekkers increased by 225 percent and the impact on this Himalayan Kingdom’s fragile environment has been tremendous. Careless trekkers wander off trail, destroy vegetation and leave behind tin cans, packaging, and other litters... Ridges once covered with rhododendrons are now barren, and deforestation is destroying the natural habitats of rare snow leopard and red panda.”

Lieberknecht<sup>10</sup> asserted that ecotourism will require more space for tourists and increased clearing of land. Farmers’ extensive farming methods can bring some negative effects, such as sharp drop of forest, vegetation damage, desertification and soil erosion. Successful ecotourism initiatives may draw increasing interest and a correspondingly higher number of tourists, thus intensifying negative impacts such as solid waste generation, habitat disturbance, and trail erosion. Such impacts could seriously threaten the resources upon which ecotourism depend<sup>10</sup>.

Ecotourism in Nepal strives to preserve forest, but the rate of deforestation is rapid in different tourist areas because the forests are used as firewood for cooking and as timber for construction<sup>19</sup>. Hence, it contributes to wildlife habitat destruction, environmental pollution and soil erosion. All these are continuously exceeding local carrying capacity. The local carrying capacity is in fact, a complex phenomenon, which is very difficult to gauge, and the continuous exceeding of local carrying capacity creates an even more complex issue. This is the reason many are skeptical of ecotourism’s real contribution to sustainable development, especially in the developing countries<sup>3</sup>. Furthermore, unplanned settlements around the protected areas and trekking routes also create environmental stress and deterioration of the pristine natural attractions<sup>19</sup>.

A study was carried out to assess the environmental impacts of recreation on camping sites and nature trails in Kibale National Park in Uganda<sup>13</sup>. Nine physical parameters were assessed in camping sites and four parameters on nature trails of the national park. It concludes that the impact was clearly the result of higher use frequency following the recent increase in the number of tourists to Kibale National Park. An empirical case study to examine efforts on the Island of Cuba to establish environmentally sensitive and sustainable tourism was also conducted<sup>18</sup>. The study was conducted with face-to-face interviews with key informants from semi-autonomous agencies organizing ecotours, personnel at government ministries, management personnel involved in ecotourism and government park managers involved with tourism operations. It concludes that Cuba have mixed success in moving to sustainable ecotourism.

It was stated that nature based tourism is contributing to the decline of some wild orchid populations<sup>2</sup> and data on Australian threatened orchids was used to assess and demonstrate that tourism contributes to the loss of some orchids in the wild by direct collecting, habitat clearance and trampling, and/or indirectly by increasing the impact of other threats such as weeds, pathogens and climate change. It therefore concludes that increased recognition and more research are required into the role of nature based tourism in the declines of these and other species of threatened plants as well as into ways in which impacts can be mitigated. The relationships between natural resource management and tour operators’ inputs and outputs with the help of quantitative and secondary data collection methods was assessed<sup>4</sup>. Input data were collected from a variety of secondary sources whereas output data were collected through 4800 surveys of reef visitors from November 2006 to December 2008. Results suggest that operators can strengthen those links through high service quality, effective interpretation in order to produce higher visitor satisfaction.

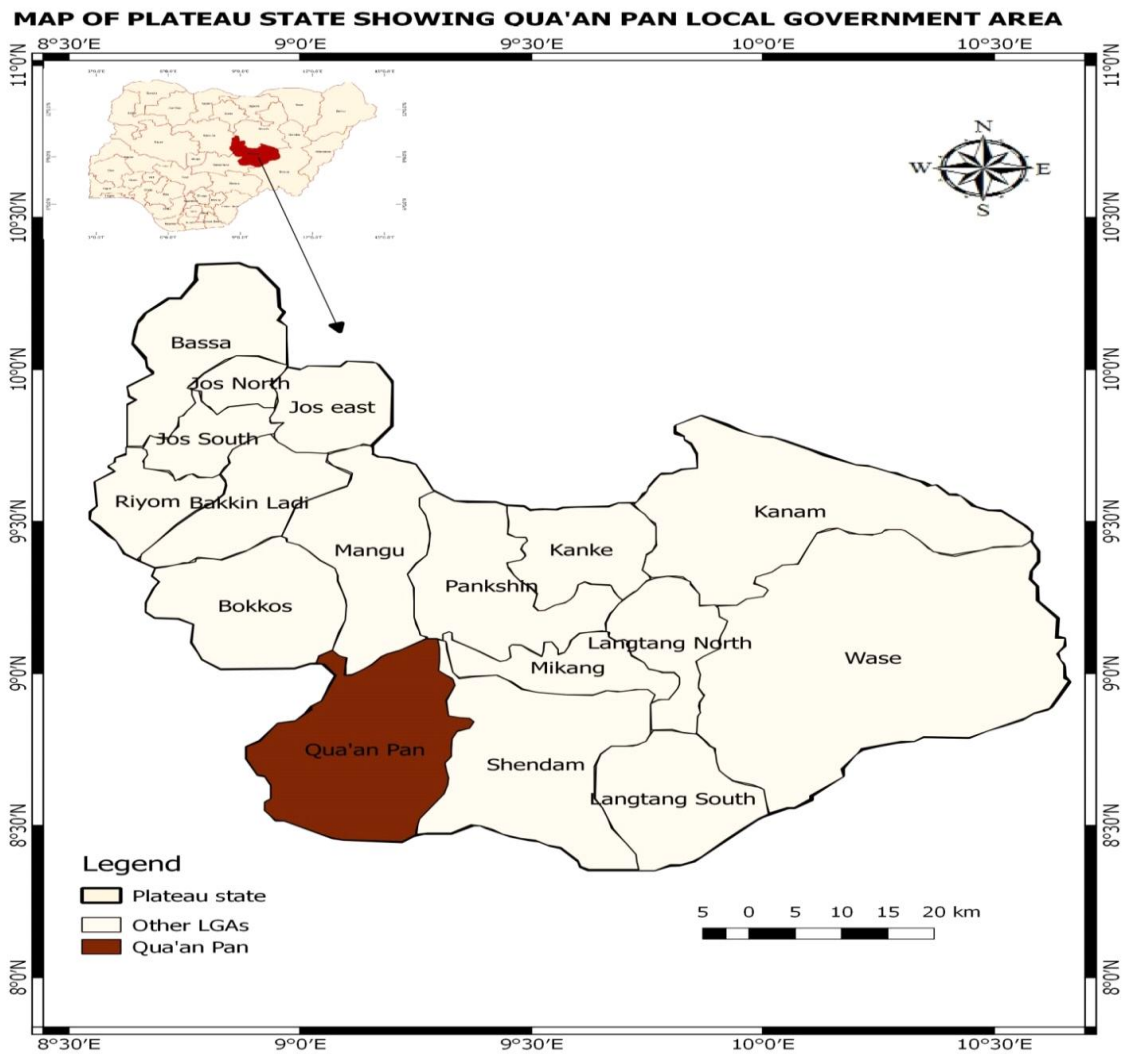
In Nigeria, ecotourism industry is also saddled with environmental challenges which have negatively affected its development. It is therefore very pertinent that these environmental parameters are discovered and mitigating measured recommended.

## **II. Materials and Methods**

- **The Study Area**

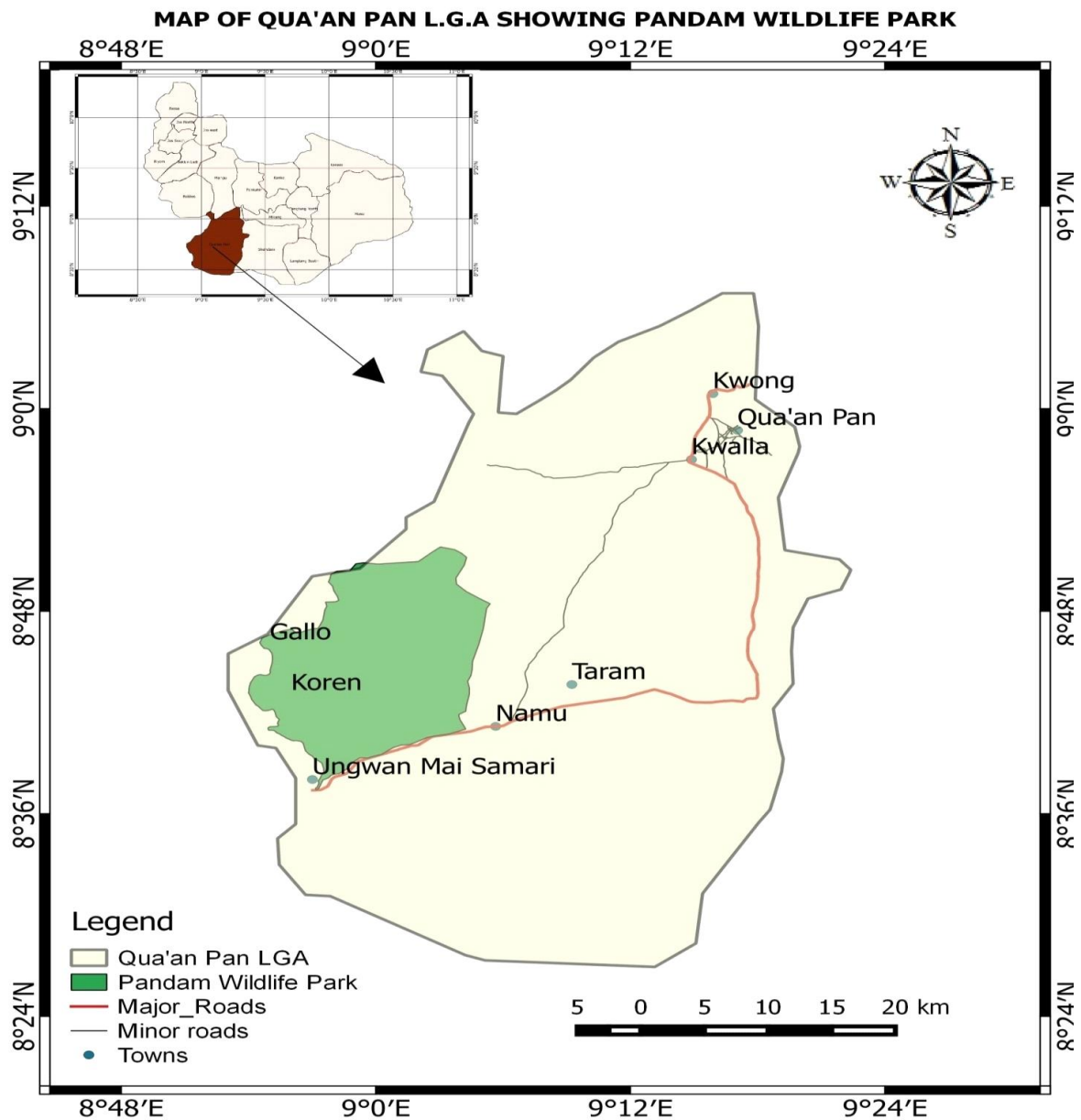
Pandam Wildlife Park is located North of Benue River<sup>6</sup> and South of Plateau State<sup>1</sup> along Lafia–Shendam Road in Qua’anpan Local Government Area of Plate State<sup>8</sup>. It lies between latitudes 8°35’N and 8°55’N, and longitudes 8°00’E and 8°45’E. The park covers an area of 224 square kilometers. Pandam Park is located at a height of 175 - 310 meters above sea level and it is bounded by a river to the North and by Pandam to the west and bounded by Namu, Kayarda and Aningo settlements to the south and east.

Pandam Game Reserve and Wildlife Park in Plateau State is home to some rare animals and exotic birds. A natural animal habitat that has drawn tourists and researchers both locally and from foreign countries, but now suffers from years of neglect. The over three hours’ journey from Jos, the Plateau State capital, to Pandam Game Reserve at the Southern Senatorial District of the State, held more excitement than seeing the sorry State of one of Plateau’s abandoned natural tourist destinations. Obviously suffering from years of neglect, a part of the Game Reserve has been converted into a park called the Pandam Wildlife Park and is considered to be Plateau’s largest forest area containing animals and protects 224sq km of unspoiled savanna wetlands and forest.



**Fig. 1: Plateau State showing Qua'an Pan LGA**

**Source: Plateau State Ministry of Land and Survey, 2010.**



**Fig. 2: Qua'an Pan L.G.A Showing Pandam Game Reserve**

Source: Plateau State Ministry of Land and Survey, 2010.

### III. Method of Data Collection

The data were obtained through key informant interviews, informal discussions, questionnaire survey and field observation. Open-ended and close-ended questionnaires were administered to Plateau State Tourism Corporation, Tourism professionals and Stakeholders and host communities. For reliability and proficiency in this study, a structured questionnaire of about 400 was administered to the host communities, professionals in ecotourism and stakeholders. This provided insight to the challenges of ecotourism industry.

### IV. Method of Data Analysis

At the end of the data collection process, all the codes and their corresponding data were entered into the collation sheet according to the various locations within the study area. The qualitative data from the Likert scale structured questionnaire response were coded using values such as; 5, 4, 3, 2, and 1 for strongly agreed, agreed, disagreed, and strongly disagreed, undecided respectively. These were further converted to quantitative data using weighted mean. This conversion enabled further analysis of the generated data. The method used to

analyse the data obtained from the field are descriptive analytical statistics and inferential statistics. Descriptive statistics such as simple percentages, standard deviations and mean were used.

The Principal Component Analysis (PCA) was also employed in the study. PCA which is a data extraction technique was used to reduce the number of variables while retaining as much of the original variance as possible. One Sample T-test which is a parametric test was used to test difference in means of two independent samples. It was used to determine whether two means (x1 and x2) were significantly different at a 0.05 level of significance. Hence, it was used to test the hypothesis of the study. Weighted Mean was used for item by item analysis. Qualitative responses were converted to quantitative data using coding for the five point likert question items. Weight (code) was attached to each response such as 5, 4, 3, 2 and 1. Weighted mean was therefore used to determine the averages of the responses by the respondents.

### **Sampling Frame and Techniques**

A sample is the finite part of a statistical population whose properties are studied to gain knowledge about the whole. Hence, there are different types of sampling methods (random, judgmental, cluster or multi-stage, systematic, quota and the random walk sampling). Simple random sampling technique was used to sample population within the study area. The simple random technique permits (gives) each member of the population an equal chance of being selected. Data was collected by use of a structured questionnaire for Government establishments, local communities and stakeholders within the study area.

The sample size for this research was statistically determined using “Taro Yamane” (1967) Formula:

$$n = \frac{N}{I + N(e)^2}$$

Where:

n is the sample size:

N is the finite population,

E is the level of significance (limit of tolerable error), that is 0.05(5%) and

L is unity (a constant).

$$n = 295914 / 1 + 295914 \times (0.05)^2$$

$$n = 295914 / 1 + 295914 \times (0.0025)$$

Therefore,  $n = 295914 / 739 = 400$  (target population)

Using the sample frame formula with 2017 projected population of 295,914, approximately 400 respondents were sampled at 0.05 level of significance.

A stratified sample technique was used; a random sample from each stratum is taken in a number supposedly proportional to the stratum’s size when compared to the population. These subsets of data were then pooled to form a random sample. This technique captures key population characteristics and was most suitable for this study because it provided information about the population attributes. Stratified random sampling is a method of sampling that involves the division of a population into smaller groups known as strata.

Therefore, the strata were randomly chosen. Although there were no population figures for each stratum from population commission, published materials and the internet, the researcher made calculations based on the number of strata within the study area.

The number of questionnaire distributed in each stratum was statistically determined using the projected population for 2017 from the 2006 population census figures. This gave rise to a sample size of 400 respondents. Simple random sampling was used to select the respondents so that all members of the population had an equal chance of being selected.

## **V. Results and Discussion**

The field data were collated and presented in frequency tables. A total of four hundred (400) copies of the questionnaire were distributed and retrieved for the analysis.

**Table 1: Distribution of Gender of the Respondents**

Status	Frequency	Percent
Male	250	62.5%
Female	150	37.5%
<b>Total</b>	<b>400</b>	<b>100.0</b>

**Source: Field Survey, 2018**

Table 1 shows the distribution of gender of the respondents. From the result, it was discovered that 250 representing 62.5 percent of the respondents were males while 150 which represents 37.5 percent are females. This indicated that there were more males respondents than female respondents in the study.

**Table 2: Distribution of Educational Qualification of the Respondents**

<b>Educational Qualification</b>	<b>Frequency</b>	<b>Percent</b>
Certificate/Ordinary Diploma	80	20.0%
First Degree/HND	190	47.5%
Masters/Ph.D	100	25.0%
Others	30	7.5%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

**Source: Field Survey, 2018**

The results in Table 2 shows that 80 (20.0%) of the respondents were Certificate/ Ordinary Diploma holders, 190 (47.5%) were First Degree/HND holders, 100 (25.0%) were Masters/Ph.D. holders, while 30 (7.5%) had other qualifications not specified in this study.

**Table 3: Distribution of monthly income of the Respondents**

<b>Monthly income</b>	<b>Frequency</b>	<b>Percent</b>
Less than ₦50,000	110	27.5%
₦51,000 – ₦150,000	150	37.5%
₦151,000 – ₦250,000	110	27.5%
₦251,000 and above	30	7.5%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

**Source: Field Survey, 2018**

Table 3 shows the distribution of the monthly income of respondents. The result shows that a total of 110 (27.5%) of the respondents had monthly income of less than ₦50,000 and ₦151,000 – ₦250,000 respectively. About 150 (37.5%) earned ₦51,000 – ₦150,000 monthly, while only 30 (7.5%) of the total respondents earn ₦251,000 and above per month. This indicates that the respondents majorly are low income earners.

**Table 4: Respondents purpose for visiting Pandam Game Reserve**

<b>Purposes of visiting</b>	<b>Frequency</b>	<b>Percent</b>
Tourist	240	60.0%
Resident	90	22.5%
Work	70	17.5%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

**Source: Field Survey, 2018**

From the result in Table 4, it is shown that most of the respondents visit Pandam game reserve for tourism than for living and work purposes. Particularly, the result shows that a total of 240 respondents representing 60.0% of the respondents visit Pandam game reserve for tourism; 90 (22.5%) visit the reserve for living while 70 (17.5%) visit the reserve for work.

**Table 5: Respondents opinion on the major economic activity in Pandam game reserve locality.**

<b>Economic Activity</b>	<b>Frequency</b>	<b>Percent</b>
Farming	160	40.0%
Fishing	70	17.5%
Trading	140	35.0%
Tourism	30	7.5%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

**Source: Field Survey, 2018**

Table 5 shows that economic activities at Pandam game reserve include farming, fishing, trading, and tourism. From the result, it is shown that the major economic activity in the area is farming (40.0%) followed by trading (35.0%), fishing (17.5%) and lastly tourism (7.5%).

**Table 6: This Table Shows the Respondents description of Pandam community**

<b>Description</b>	<b>Frequency</b>	<b>Percent</b>
Religious	110	27.5%
Secular	50	12.5%
Cultural	230	57.5%
Others	20	5.0%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

**Source: Field Survey, 2018**

Result in Table 6 indicates that the respondents consider Pandam community as a cultural community rather than religious or secular community.

**Table 7: Respondents Perception of safety in Pandam community**

Level of safety	Frequency	Percent
Extremely safe	30	7.5%
Very safe	190	47.5%
Neutral	120	30.0%
Very unsafe	60	15.0%
Extremely unsafe	0	0.0%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

Source: Field Survey, 2018

Table 7 presents the respondents perception of safety in Pandam. From the result, it was shown that Pandam is safe and people in the area feel safe.

**Table 8: Respondents distance to Pandam**

Distance	Frequency	Percent
Less than 15km	80	20.0%
16-50km	30	7.5%
51-100km	120	30.0%
Above 100km	170	42.5%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

Source: Field Survey, 2018

Table 8 presents the respondents distance from Pandam. The result shows that the people travel far (about 51 km and above) to Pandam. Particularly, the result shows that 80 (20.0%) travel less than 15km to Pandam, 30 (7.5%) travel 16-50km to Pandam, 120 (30.0%) travel to Pandam, while 170 (42.5%) travel above 100km to Pandam.

**Table 9: Respondents frequency of visit to Pandam game reserve**

Frequency of visit	Frequency	Percent
Weekly	50	12.5%
Monthly	30	7.5%
Every three months	0	0.0%
Every 6 months	20	5.0%
Annually	130	32.5%
Seasonally	170	42.5%
<b>Total</b>	<b>400</b>	<b>100.0%</b>

Source: Field Survey, 2018

From the results in Table 9, it is shown that visits to Pandam game reserve is often seasonally and annually than weekly and monthly. Specifically, about 42.5 percent of the respondents visit the Pandam game reserve seasonally; 32.5 percent visits the reserve annually; while about 12.5 percent and 7.5 percent of the respondents visit the reserve weekly and monthly, respectively.

The likert questionnaire data gathered from the field were analyzed using the weighted mean and standard deviation as appropriate. In addition, the environmental parameters affecting ecotourism in Pandam game reserve were equally subjected to correlation and PCA analysis to determine their association. The results of the 9 environmental parameters generated are shown in Table 10. These were properly coded to ensure easy handling of data for PCA analysis.

**Table 10: Coding and labeling of the 9 Environmental Parameters affecting Ecotourism in Pandam Game Reserve**

S/N	Variable Description	Variables Labels	Variables Codes
1	The lake viewing and its activities are functional and interesting.	LAK	Y1
2	The game and animal viewing are excellent for sighting and visits	ANI	Y2
3	The sports fishing activities are carried out on-demand basis	FIS	Y3
4	The forest reserve is home to biodiversity and interesting species	BIO	Y4
5	The accommodation facilities are excellent and provide basic standard services	ACC	Y5

6	There are sufficient canoes for lake visiting	CAN	Y6
7	Tourism related activities are seasonal	SEA	Y7
8	Tourism related activities contribute to the destruction of wildlife species.	WIL	Y8
9	There are no clear positive contributions to natural environment.	CON	Y9

The variables labeling and codes were made for convenience.

**Table 11: Field Data of the 9 environmental parameters affecting ecotourism in Pandam Game Reserve**

Districts within the Game Reserve	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
Zone 1	15	9	17	0	140	50	18	0	35
Zone 2	148	80	45	15	110	230	37	223	268
Zone 3	44	24	16	6	60	60	33	119	47
Zone 4	146	196	197	195	90	50	277	37	24
Zone 5	47	91	125	184	0	10	35	21	26

The matrix of the correlation coefficients for the environmental parameters generated from the questionnaire responses of the respondents are shown in Table 12.

**Table 12: Correlation Matrix of the Environmental Parameters affecting Ecotourism in Pandam Game Reserve**

	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Y8	Y9
Y1	1								
Y2	.756	1							
Y3	.519	.949	1						
Y4	.304	.823	.953	1					
Y5	.162	-.182	-.354	-.582	1				
Y6	.614	-.039	-.321	-.482	.457	1			
Y7	.627	.903	.843	.660	.064	-.169	1		
Y8	.551	-.079	-.350	-.458	.153	.902	-.218	1	
Y9	.569	-.066	-.318	-.431	.327	.983	-.265	.898	1

The correlation result for the samples obtained from the responses of the respondents on the perceived environmental influence on the sustainable development of ecotourism in pandam game reserve showed that some of the variables exhibit serial autocorrelation while some did not. For example, Y2 showed strong positive correlations with Y3, Y7 and Y9. With these set of autocorrelations that characterize the data, the process was further subjected to Principal Component Analysis (PCA). The PCA analysis was able to collapse the remaining 9 variables into three significant and orthogonal components that explained the variables in the observed data.

**Table 13: Varimax Rotated Component Matrix of Environmental factors**

Variable code	Variable Label	Components			
		I	II	III	
Y1	LAK		.733	.670	.111
Y2	ANI		.991	.064	-.114
Y3	FIS		.939	-.203	-.258
Y4	BIO		.792	-.321	-.490
Y5	ACC		-.083	.177	.974
Y6	CAN		-.070	.953	.279
Y7	SEA		.945	-.143	.197
Y8	WIL		-.139	.961	-.003
Y9	CON		-.116	.966	.128
<b>Eigen value</b>		<b>4.417</b>	<b>3.318</b>	<b>1.060</b>	
<b>% of variance explained</b>		<b>49.082</b>	<b>36.869</b>	<b>11.776</b>	



<b>Cumulative % explained</b>	<b>49.081</b>	<b>85.950</b>	<b>97.726</b>
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The variance maximization rotation was employed in order to maximize the covariance loadings on each component so as to achieve as many high and as many low loadings as possible while maintaining the orthogonality (i.e. the uncorrelation) of the original components. From Table 13, it is clear that the three components explained 97.73 percent of the variations on the environmental influence on the sustainability of ecotourism in Pandam while all the three components had eigen values greater than 1.00. The variables with the highest loadings on each of the components were picked and shown in tables 14 – 16 with their corresponding variables.

**Table 14: Variables with high loadings on Component I**

VARIABLES	VARIABLE NAME	LOADINGS	INDEX
Y <sub>2</sub>	The game and animal viewing are excellent for sighting and visits	0.991	<i>Variations and inclusion of different types of tourism related activities based on season</i>
Y <sub>7</sub>	Tourism related activities are seasonal.	0.945	
Y <sub>3</sub>	The sports fishing activities are carried out on demand basis	0.939	

**Table 15: Variables with high loadings on Component II**

VARIABLES	VARIABLE NAME	LOADINGS	INDEX
Y <sub>9</sub>	There are no clear positive contributions to natural environment.	0.966	<i>Negative effects on the environment</i>
Y <sub>8</sub>	Tourism related activities contribute to the destruction of wildlife species.	0.961	
Y <sub>6</sub>	There are sufficient canoes for lake visiting.	0.953	

**Table 16: Variables with high loadings on Component III**

VARIABLES	VARIABLE NAME	LOADINGS	INDEX
Y <sub>5</sub>	The accommodation facilities are excellent and provide basic standard services	0.974	<i>Good facilities within the game reserve</i>

From the extracted tables of the components for environmental influence, it is clearly depicted that components 1, 2, and 3 have eigen values of 4.417, 3.318 and 1.060 respectively. Thus, component 1 explains 49.08 percent of the variations in sustainable development of ecotourism caused as a result of environmental influence; component II explains 36.87 percent; and component 3 is shown to provide explanation to 11.78 percent of the variance. In the Principal Component Analysis of the responses of the respondents on the environmental influence, it was clearly established that animal viewing, fishing activities within the reserve and other related tourism activities loaded highly on component 1. This shows that the variations and inclusion of different types of tourism related activities based on season will influence the sustainability of ecotourism in the game reserve. In component 2, lake visits by the tourist and destruction of wildlife species due to tourist activities loaded highly. This was reflected in the third variable that loaded highly in component 2 as there are no clear positive contributions of the other two variables to the natural environment while in component 3, accommodation facilities which were considered to be excellent in addition to the need for the provision of other basic standard services were shown to have loaded highly. Consequently, it is clear based on the foregoing that the following are potential environmental factors capable of influencing sustainable development of ecotourism in Pandam game reserve:

- Variation and inclusion of different types of tourism related activities such as game and animal viewing were based on season as in Component I.
- The environmental conditioning of the game reserve is being affected by logging activities as in Component II.
- Need for good facilities and other basic standard services within the game reserve as in Component III

### **VI. Conclusion/Recommendation**

Findings have shown that, there are abundant tourism resources in Pandam Game Reserve to which the government can convert into finished products for optimal benefits. The ecotourism resource in Pandam Game Reserve is still under-developed. Ecotourism also have its negative impacts such as; distortion of local customs,

physical erosion, water pollution, killing of wildlife, and destruction of wild vegetation by man as mentioned by the respondents.

The study shows that ecotourism in Pandam Game Reserve is obviously affected by environmental influences. It shows that the variations and inclusion of different types of tourism related activities based on season, such as animal viewing, fishing activities within the reserve and other related tourism activities will influence the sustainability of ecotourism in the game reserve. The study also revealed the environmental parameters with the highest negative effect to include logging and destruction of wildlife species due to tourist activities. It also revealed the need for accommodation facilities and provision of other basic standard services within the game reserve.

Having identified the major environmental factors in Pandam Game Reserve, the study therefore recommends that there is need for government to put in funds into the ecotourism industry for upgrading and/or providing the facilities needed in the industry. There is also need to encourage private and foreign investors into the industry. Unauthorized logging of wood and poaching should be abated. Also, involvement of the host communities in tourism matters by the management of Pandam Game Reserve should be encouraged.

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