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Management Effectiveness and Tourist Satisfaction in Private Protected Area; Lekki Conservation Centre (LCC) and Lekki Urban Forest and Animal Sanctuary Initiative (Lufasi), Lagos State

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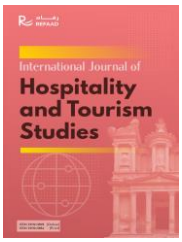

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Abstract: Protected areas have been recognized as one of the most viable tools for conserving the environment which serves as "sanctuary" for threatened species, natural buffers against climate change and other vital ecosystem services. This research is aimed at assessing management effectiveness and also tourist satisfaction in private nature reserves within urban area of Lagos State, Nigeria. Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology was adapted and administered to managers working at LCC and LUFASI nature reserves. Two hundred and three (203) respondents (tourists) were selected for both LCC (113) and LUFASI (90). Tourists were satisfied with the experience they had from their tour. Legal security, staffing, Communication & Information, Infrastructure, finances, Research monitoring & evaluation and outputs were significant ($p \leq 0.05$) indicators between the context in the two reserves. Control of pressures and threat in the two-nature reserve are adequately carried out. However, threat recorded as a result of negative impact of tourist activities such as camping, motorized vehicle use and other types of recreational activities can be managed through development of tourist policy and constant monitoring especially during peak periods of the year which is as a result of high influx of tourists. Site design and planning of the reserves is consistent with the objectives of the reserve, which optimizes conservation of biodiversity. A significant difference between management effectiveness of LCC and LUFASI was obtained ($t = 2.79$ $p = 0.01$). We therefore recommend that more private organizations and individuals should consider investing in establishment of nature reserves.

Keywords: *Protected area; Nature reserves; RAPPAM; Management effectiveness; Biodiversity and Conservation education.*

1. Introduction

Protected areas have gained the focus of an increase in recreational, ecotourism interest and a prime destination for ecotourism. This is due to their uncommon biological, natural and cultural features (Whitelaw *et al.*, 2014). They are an important segment of the global tourism industry (Martin-Lopez *et al.*, 2012) and are key attraction for over 20% of the 990million tourists in 2011 globally (Buckley, 2009). However, the development of ecotourism industry based on protected area affords a golden opportunity for countries which are not well developed to grow their individual economy. Many of these developing countries notably Kenya, Nigeria, Tanzania, Ghana among others have excellent conditions to become a very prominent tourist destination while at the same time, protects its ecosystems. (Myers *et al.*, 2000; WCPA, 2000)

In recent years, benefits that protected areas provide for people and the environment has been on an increase. Examples are genetic resources for pharmaceuticals and agriculture, traditional medicines, space for natural evolution and future ecological restoration, also provide critical ecosystem services that support human prosperity and survival. Also, quality water in adequate quantity, flood control, nursery grounds and breeding zones for fish stocks and its resources, pollination services, unadulterated air, quiet, neat environment and beautiful serene. Other benefits of notable importance are carbon sequestration, recreational opportunities and ecotourism revenues,

sustainable sources of goods such as non-timber forest products and refuge for vulnerable endangered species of flora and fauna according to. (Dudley et al., 2005).

The incessant decadence of natural environment which led to the establishment of protected areas at the end of the 19th century has been due to the impact of anthropogenic activities. The contribution of protected areas has been proven by researchers to be highly substantial for the preservation of biodiversity and genetic materials, for maintenance of productive capacity related to ecosystems, cultural elements and for rural development as a whole (Colchester, 2004).

Presently, peoples' demand for tour to natural destination is on the increase, especially to protected areas for leisure (Hjerpe and Kim, 2007).

The establishment and management of these protected areas are recognized as feasible ways to promote nature conservation while facing the incessant challenge of global biodiversity loss (Emerton et al., 2006). In the past years, the mandates for conservation have expanded to include the improvement of welfare of humans and this has contributed to local sustainable development (Naughton-Treves et al., 2005; Baral et al., 2008). It is a known fact that the establishment of protected areas have positive influence on the generation of employment and boosting of the local economy, especially in rural and underdeveloped regions (Fredman, 2004). However, many human-induced stresses like change in land use (e.g. logging, mining, agricultural expansion and urban development etc.) around protected areas (DeFries et al., 2007), global heating (Turpie, 2003), biological invasions (Pejchar and Mooney, 2009) and financial underfunding (Baral et al., 2008) can jeopardize the long term conservation of protected areas. Hence, efforts in both academic and policy area are needed to showcase the value of protected areas, also allotting sufficient resources for effective protected area management.

Salako et al., (2018) carried out research on assessment of guided tour on visitors' behaviour in LCC. Omoregie et al., (2014) worked on assessment of management effectiveness of Lekki conservation centre in Lagos, Nigeria, while Adeniyi et al., (2016) assessed floral diversity in the wetlands of Ibeju-Lekki area, Lagos, Nigeria.

However, this study focused on evaluating management effectiveness and satisfaction of tourist at two nature reserves in the heart of Lagos, Lekki Conservation Centre (LCC) and Lekki Urban Forest Animal Sanctuary Initiatives (LUFASI) due to dearth knowledge available on these reserves, especially at LUFASI.

The main objective of this research is to identify private protected areas' management strengths and weaknesses and tourist satisfaction at Lekki Conservation Centre (LCC) and Lekki Urban Forest and Animal Sanctuary Initiative (LUFASI) due to the fact that periodic evaluations of management effectiveness of these protected areas are important factors for their long-term sustainability.

2. Methodology

2.1. Study area

According to Ibe (1998), Lagos/Lekki Lagoons are the biggest of the coastal barrier – lagoon complex which stretches 200km to the east from the Nigeria/Benin Republic border (Ibe, 1988). With a total land mass of 646km^2; they are flanked on many sides by wetlands which still experiences intense development pressure. Many of these wetlands have gone through severe contiguous changes from very fast urbanization processes.

The study area for this research is in Eti Osa local government area of Lagos; geographically, it falls between 2º 45'E and 4º20'E and between latitude 6º52' to 3º54'. The two study sites namely Lekki Conservation Centre (LCC) and Lekki Urban Forest and Animal Sanctuary Initiative (LUFASI) are non-governmental organizations. LCC is one of Nigerian Conservation Foundation (NCF) foremost conservation projects.

2.2. Demography of the study area

According to Okude and Ademiluyi (2006), Lagos state has developed from a settlement of about 3.85km^2 in 1881 to a massive metropolis of over 1,183km^2 in 2004. It is the former capital of Nigeria and the largest megacity on the Africa continent in terms of population (approx. 21million). While the State is essentially a Yoruba speaking environment, it nevertheless attracts both Nigerians and foreigners, which is attributable to its sound economic base and socio-political importance, which induced a high rate of rural-urban migration to the State metropolitan region.

The main study area for this research is Eti osa local government area which has a population of about 283,791 representing about 3.11% of the state's population. (National Bureau of Statistics, 2006)

2.3. Short History of the Study Areas

Ibeju Lekki, an area in part of Lagos state happens to be a wetland full of abundant ecosystem services. However, degradation of wetlands and the ecosystem has inevitably led to loss or diminution of most of these ecosystem functions in a short time.

Lekki is a city in the South-eastern part of Lagos state. Lekki Peninsula is naturally formed and is still largely under construction. The length of the Peninsula is approximately 70 to 80 km, with an average width of 10 km. Currently, Lekki comprises of several estates, big residential developments, farmlands for agricultural purpose,

nature reserves, areas allocated as Free Trade Zone, an airport and a seaport. The proposed land uses master plan for the Lekki envisages the Peninsula as a "Blue-Green Environment City" (Osho, 2017).

LCC and LUFASI are the only private protected areas in a very busy urban setting of Lagos state. They contribute to the protection of endemic species of plants and animals and also educate the public on environmental issues through workshops, seminars, field demonstrations and nature walk in and out of the nature reserves.

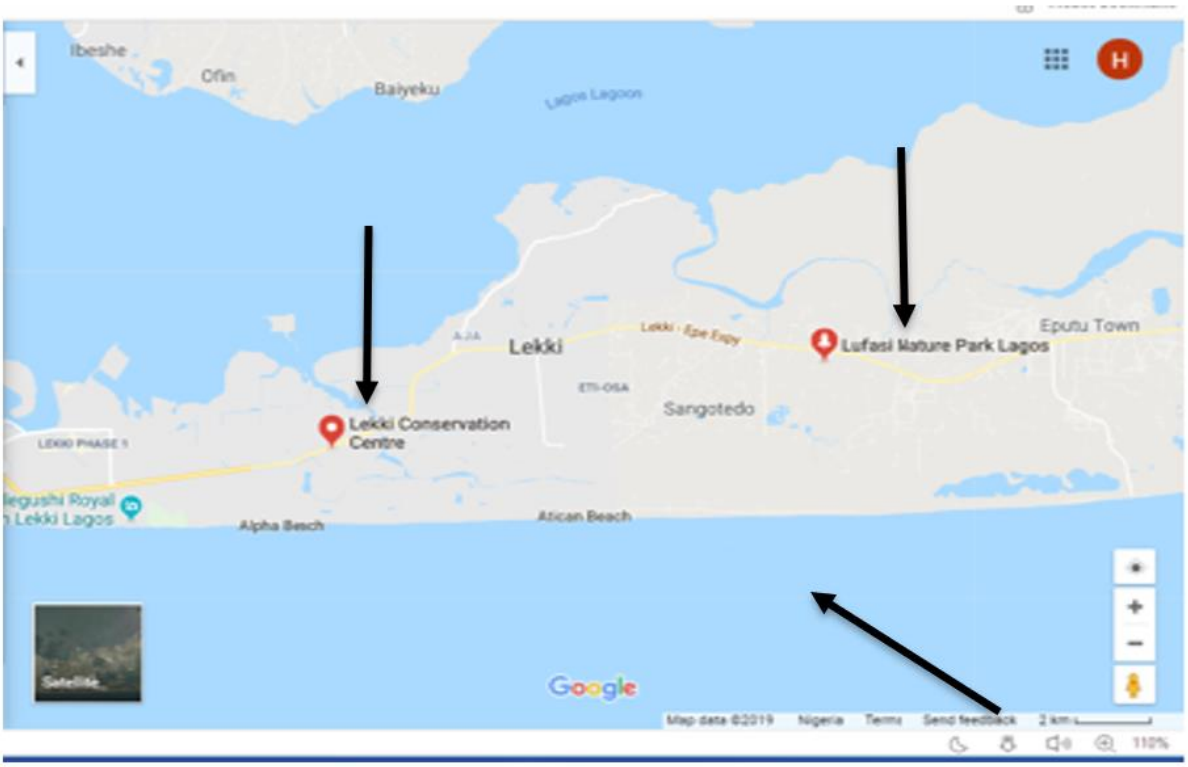

Figure (1): Map of Ibeju Lekki indicating the two study sites, LCC and LUFASI
Source: Google map (2019)

2.4. Lekki Conservation Centre (LCC)

Lekki Conservation Centre (LCC) is one of the major initiatives of A.P Leventis in order to support swampy mangrove in Lagos which houses quality number of endemic species of flora and fauna in Lagos state through Nigerian Conservation Foundation (NCF). LCC spans over an area of 78 hectare of land in Lekki. This Centre was established in 1990, before the development of Lekki, for the conservation of wildlife found in the Southwest coastal environment of Nigeria by NCF in the face of sprawling urban development. The project has promoted environmental protection and worked against poaching by people living in surrounding communities as well as serve as ecotourist destination for local and international nature lovers. NCF School Conservation Clubs were established following the impact of school tour to the Centre. LCC land area is divided into two sections: which are LCC Complex and the nature reserve, the LCC Complex comprises multi-purpose Rotunda with seminar hall. This has been flanked by 4 blocks of offices, project staff offices, canteen and the drivers' office. The nature reserve consists of different varieties of vegetation types, which includes secondary forest, swamp forest and Savannah grassland, walkway, tree house and the longest suspended canopy bridge in Africa and second of its kind in the world. These give tourists an opportunity to have a panoramic view of the nature reserve. Nigerian Conservation Foundation (NCF), a non-governmental organisation, is the owner and the manager of this reserve. This serves as a natural habitat for fauna and flora and a sustainable development in Lagos. (NCF, 2008)

A field work within LCC reserve revealed a big expanse of marshland, savannah grassland and a rich aquatic flora and fauna. The scenic area of the reserve which is also referred to as "Family Park" mapped out for picnic is filled with live size outdoor games such as Chess, Ludo, snake and ladder and Draft among others showcasing relaxation point for children, youths and even old folks.

2.5. Lekki Urban Forest Animal Sanctuary Initiative (LUFASI)

Lekki Urban Forest and Animal Sanctuary Initiative (LUFASI) was founded on the 4th of January 2013, by Mr. Desmond Majekodunmi as a non-governmental organisation, established to participate actively in the conservation and protection of natural habitats in the urban area of Lagos. It also plays an important role in the realization of sustainable development programs in Nigeria. LUFASI is also known as an organization which designs and implements various environmental sustainability projects with the technical and financial support of individual

donors, local and international organizations and government. LUFASI is dedicated to stimulating nature friendly practices through awareness and collaborations with surrounding communities to support conservation wetlands in Lagos state.

LUFASI has pristine Forest Reserve, lakes (Lake Nora and Lake Moses) with abundant varieties of fish species (yet to be identified) and Nature Park that sits on 20 hectares of land also along the Lekki-Epe Expressway with a nature-themed leisure playpark and animal rescue shelter. Home to critically endangered species of flora and fauna such as the Ekki or Iron wood tree, vultures and hornbills present in LUFASI Nature Park.

2.6. Research Methods

The methodology of this research includes direct observation and administration of structured questionnaires to tourists and park managers in the reserves at the two study sites LCC and LUFASI.

Rapid Assessment and Prioritization of Protected Area Management (RAPPAM) methodology was used with some adjustment to structure closed ended questionnaire administered to managers working at LCC and LUFASI nature reserves. This method was recommended by IUCN as one of the tools for evaluating protected area management effectiveness.

According to Ervin (2003), RAPPAM methodology offers policy makers a tool for achieving set goals by enabling a rapid assessment of the overall management effectiveness of the protected areas within a particular country or region. The RAPPAM Methodology can be used to achieve the following:

- Identifying management strengths and weaknesses, analysing the scope, severity, prevalence and distribution of a variety of threats and pressures in the reserve.
- Identifying specific areas of high ecological and social importance and vulnerability.
- Indicating the urgent need and conservation priority for individual protected areas.
- Developing and prioritizing appropriate policy interventions and follow-up steps to improve protected area management effectiveness.

2.7. Sampling and Sampling Techniques

Two hundred and three (203) respondents (tourists) were selected for both LCC and LUFASI. Krejcie and Morgan (1970) sample determination table was used to determine sample size of tourist for this research. One hundred and thirteen respondents (113) and ninety respondents (90) were selected from LCC and LUFASI respectively. Accidental sampling was employed in choosing respondents to administer questionnaire. However, a total sampling of all the managers available at the two study sites was done. Eleven (11) questionnaires were administered to managers at LCC while six (6) questionnaires were administered to managers at LUFASI.

2.8. Methods of Data Collection

Reconnaissance survey was carried out at LCC and LUFASI nature reserves in order to get familiar with the research sites and also to get information on influx of tourists to determine the sample size.

2.9. Questionnaire Survey

A set of closed ended questionnaire was administered to managers in order to evaluate their management effectiveness in the nature reserves. Also, another set of closed ended questionnaire was structured to evaluate tourists' satisfaction and the level of conservation awareness among tourists who visit the nature reserves at LCC and LUFASI. A total number of (17) questionnaire was administered to managers at the two study sites, 11 questionnaires at LCC and 6 questionnaires were administered to managers at LUFASI. While for tourist, a total number of 203 questionnaires were administered to tourist at the two study sites and 100% return rate was recorded.

2.10. Data Analysis

Data collected through questionnaires were coded and analysed. The relationships between variables were determined using cross-tabulation with the use of package for social science (SPSS). Descriptive statistics was used to determine frequencies and percentages while inferential statistical analysis using independent sample t-test to determine whether expected frequencies differ from the actual frequencies observed.

3. Results

Demographic variables of respondents (nature reserve managers) are as shown in Table 1-6.

Table (1): Demographic variables of respondents (n = 17)

Variables	Percentage	Mean
Gender of respondents		
Male	58.8	
Female	41.2	
Age group		
30-40	23.6	28.83
41-50	5.9	
51-60	5.9	
Position		
Programme head	5.9	
Technical consultant	5.9	
Admin	5.9	
Educational officer	5.9	
Project manager	5.9	
Education		
OND/HND	11.8	
B.Sc.	35.3	
M.Sc.	23.5	
Nationality		
Nigerian	94.1	
Indian	5.9	

Table (2): Context in the management of LCC and LUFASI reserves

Elements of assessing management effectiveness	No %	Mostly no %	Mostly yes %	Yes %	Mean of LCC	Mean of LUFASI	Mean of all Respondent
Pressures and threats							
Collection of non-timber forest products from the protected area	64.7	23.5	-	11.8	0	1.67	0.58
Negative impact from tourist activities on the ecosystem	41.2	47.1	11.8	-	0.45	1.67	0.71
Appropriate management of waste generated from the reserve.	-	-	47.1	52.9	2.73	2.17	2.53
Occurrence of catastrophic fires or disease outbreak.	82.4	17.6	-	-	0.27	0	0.18
Invasive species –plants /animals introduced by humans into the reserve.	64.6	29.4	5.9	-	0.45	0.33	0.41
Biological importance							
The PA contains high number of, threatened, or endangered species.	-	5.9	64.7	29.4	2.27	2.17	2.24
The PA has relatively high levels of biodiversity.	5.9	-	17.6	76.5	2.64	2.67	2.65
The PA has a relatively high degree of endemism.	29.4	-	47.1	23.5	1.55	1.83	1.65
Socio-economic importance							
The PA has features of aesthetic importance e.g scenic view.	5.9	-	11.8	82.4	2.55	0	2.71
The PA has a high recreational value.	-	5.9	17.6	76.5	2.64	2.83	2.71
The PA contributes ecosystem services to communities.	-	-	17.6	82.4	2.82	2.83	2.82
The PA has a high educational and/or scientific value.	-	5.9	11.8	82.4	2.73	2.83	2.76
Vulnerability							
Illegal activities within the PA are difficult to monitor.	58.8	29.4	11.8	-	0.18	1.67	0.53

The area is experiencing civil unrest and/or political instability.	82.4	5.9	11.8	-	0.36	0.17	0.29
The PA is easily accessible for illegal activities.	70.6	23.5	5.9	-	0.18	0.67	0.35
There is a strong demand for vulnerable PA resources	82.4	17.6	-	-	0.09	0.33	0.78
The PA manager is under pressure to unduly exploit the PA resources.	94.1	5.9	-	-	0.09	0	0.06
Recruitment and retention of employees is difficult.	35.3	41.2	17.6	5.9	0.90	1	0.94

Table (3): Design and planning of the reserves

Elements of assessing management effectiveness	**No %**	**Mostly no %**	**Mostly yes %**	**Yes %**	**Mean of LCC**	**Mean of LUFASI**	**Mean of all Respondents**
Objectives							
PA objectives provide for the protection and maintenance of biodiversity.	-	-	11.8	88.2	2.82	3.0	2.88
Management policies and plans are consistent with the PA objectives.	-	5.9	41.2	52.9	2.55	2.33	2.47
Legal security							
The PA has long-term legally binding protection.	5.9	-	17.6	76.5	2.73	2.5	2.65
There are no unsettled disputes regarding land tenure or use rights.	23.5	11.8	11.8	52.9	2.09	1.66	1.94
Boundary demarcation is adequate to meet the PA objectives.	-	17.6	23.5	58.8	2.73	1.83	2.41
Staff and financial resources are adequate to conduct critical law enforcement activities.	17.6	5.9	41.2	35.3	2.45	1	1.94
site design and planning							
The siting of the PA is consistent with the PA objectives.	-	5.9	29.4	64.7	2.83	2.83	2.59
The layout and configuration of the PA optimizes conservation of biodiversity.	-	5.9	52.9	41.2	2.33	2.33	2.35
The PA zoning system is adequate to achieve the PA objectives, (core zones, buffer zones, resource use zones, and cultural sites)	-	-	58.8	41.2	2.33	2.33	2.41
The land use in the surrounding area enables effective PA management.	47.1	23.5	23.5	5.9	1	1	0.88
The PA is linked to another area of conserved or protected land.	94.1	5.9	-	-	0.17	0.17	0.06

Table (4): Inputs of LCC and LUFASI reserves

Elements of assessing management effectiveness	**No**	**Mostly no**	**Mostly yes**	**Yes**	**Mean of LCC**	**Mean of LUFASI**	**Mean of all Respondents**
Staffing							
The level of staffing is sufficient to effectively manage the area.	17.6	23.5	47.1	11.8	1.82	1	1.53
Staff members have adequate skills to conduct critical management activities.	5.9	11.8	52.9	29.4	2.36	1.5	2.06
Training and development opportunities are appropriate to the needs of the staff.	-	17.6	64.7	17.6	2.27	1.5	2
Staff employment conditions are sufficient to retain high-quality staff.	-	5.9	76.5	17.6	2.27	1.83	2.12
communication and information							
Adequate means of communication between field and office staff.	-	5.9	70.6	23.5	2.27	2	2.18
Existing ecological and socio-economic data are adequate for management planning	5.9	-	70.6	23.5	2.36	1.67	2.12
Adequate equipment for collecting new data	-	11.8	70.6	17.6	2.27	1.67	2.06

Adequate systems for processing and analysing data	-	11.8	70.6	11.6	2.27	1.67	2.06
Infrastructure							
Transportation infrastructure is adequate to perform critical management activities.	-	17.6	64.7	17.6	2.27	1.5	2
Staff facilities are adequate to perform effective management activities.	-	-	82.4	17.6	2.27	2	2.18
Maintenance and care of equipment is adequate to ensure long-term use.	-	5.9	76.5	17.6	2.27	1.83	2.12
Visitor facilities are appropriate to the level of visitor use.	-	-	82.4	17.6	2.27	2	2.18
Finance							
Funding have been adequate to conduct critical management activities.	17.6	11.8	52.9	17.6	2.27	0.67	1.71
The long-term financial outlook for the PA is stable.	-	52.9	41.2	5.9	1.73	1.17	1.53

Table (5): Management process in LCC and LUFASI reserves

Elements of assessing management effectiveness	No %	Mostly no %	Mostly yes %	Yes %	Mean of LCC	Mean of LUFASI	Mean of all Respondents
Management planning							
Comprehensive, relatively recent written management plan.	-	41.2	29.4	29.4	1.55	2.5	1.88
There is a comprehensive inventory of natural resources in the reserve.	-	23.5	58.8	17.6	2.27	1.33	1.94
Detailed work plan to identify specific targets for achieving management objectives.	-	5.9	70.6	23.5	2.36	1.83	2.18
The results of research and monitoring are routinely incorporated into planning.	-	11.8	64.7	23.5	2.27	1.83	2.12
Management decision making							
PA staff regularly collaborate with partners, NGOs, and other organizations.	-	5.9	47.1	47.1	2.36	2.5	2.41
There is effective communication between all levels of PA staff and administration.	-	5.9	35.3	58.8	2.73	2.17	2.53
Research, monitoring and evaluation							
Research on key ecological issues is consistent with the needs of the PA.	-	5.9	47.1	47.1	2.64	2	2.41
PA staff members have regular access to recent scientific research and advice.	-	-	52.9	47.1	2.55	2.33	2.47
Critical research and monitoring needs are identified and prioritized.	-	17.6	47.1	35.3	2.55	1.5	2.18

Table (6): Responses to statement on output in the reserves

Elements of assessing management effectiveness	No %	Mostly no %	Mostly yes %	Yes %	Mean of LCC	Mean of LUFASI	Mean of all Respondents
Outcome							
Threat prevention and law enforcement.	-	5.9	70.6	23.5	2.36	1.83	2.18
Effective management of wildlife or habitat.	-	5.9	52.9	41.2	2.55	2	2.35
Community outreach and conservation education efforts.	-	-	35.3	64.7	2.64	2.67	2.65
Visitors and tourists management.	-	-	52.9	47.1	2.64	2.17	2.47
Research and monitoring outputs.	-	5.9	52.9	41.2	2.64	1.83	2.35

3.1. Respondents' responses to statement on context in management of the reserve

Table 7 below shows the response of respondents (reserve managers) from LCC and LUFASI to statement on evaluating effective management of the reserves which was rated on a scale of 0-3, "no" =0, "mostly no" =1, "mostly yes" =2, or "yes" =3.

Table (7): Responses to statement on context in the reserve

Variables	Sites	N	Mean	SD	T	df	P	Decision
Pressures & Threats	LCC	11	10.55	1.44	-1.22	15	0.24	NS
	LUFASI	6	11.33	0.82				
Biological importance	LCC	11	6.45	1.57	-0.26	15	0.80	NS
	LUFASI	6	6.67	1.75				
Socio-Economic importance	LCC	11	10.73	2.41	-0.73	15	0.48	NS
	LUFASI	6	11.50	1.22				
Vulnerability	LCC	11	16.18	1.78	1.43	15	0.17	NS
	LUFASI	6	14.67	2.58				
Objectives	LCC	11	5.35	1.03	0.07	15	0.95	NS
	LUFASI	6	5.33	0.52				
Legal security	LCC	11	10.00	1.73	2.47	15	0.03	S
	LUFASI	6	7.00	3.35				
Site design and Planning	LCC	11	8.09	2.07	-0.60	15	0.56	NS
	LUFASI	6	8.67	1.51				
Staffing	LCC	11	8.72	1.85	3.03	15	0.01	S
	LUFASI	6	5.83	1.94				
Communication & Information	LCC	11	9.18	1.83	2.19	15	0.04	S
	LUFASI	6	7.00	2.19				
Infrastructure	LCC	11	9.09	1.45	2.72	15	0.02	S
	LUFASI	6	7.33	0.82				
Finances	LCC	11	4.00	0.77	4.62	15	0.00	S
	LUFASI	6	1.83	1.17				
Management Planning	LCC	11	8.45	1.51	1.33	15	0.21	NS
	LUFASI	6	7.50	1.22				
Management decision making	LCC	11	5.09	0.83	0.76	15	0.46	NS
	LUFASI	6	4.67	1.51				
Research monitoring &evaluation	LCC	11	7.72	1.34	3.01	15	0.01	S
	LUFASI	6	5.83	0.98				
Outputs	LCC	11	12.82	2.32	2.26	15	0.04	S
	LUFASI	6	10.50	1.22				

* $p \leq 0.05$=significant

3.2. Result of t-test analysis between management of LCC and LUFASI

Table (8) below shows that there is a significant difference between management effectiveness of LCC and LUFASI. From the table, the t-value is 2.79 and the p-value is 0.01.

Table (8): Difference in management of LCC and LUFASI nature reserves

Variables	Sites	N	Mean	SD	t	DF	p-value	Decision
Management's score	LCC	11	132.45	12.46	2.79	15	0.01	S
	LUFASI	6	115.67	10.59				

* $p \leq 0.05$=significant

3.3. The table below indicates the demographic variables of tourist satisfaction at LCC and LUFASI

Table (9): Demographic variables of respondents (tourists) (n = 213)

Variables	Percentage	Mean
Gender of respondents		
Male	45.8	
Female	54.2	
Education		
Primary	2.5	
Secondary	21.2	
OND/HND	19.2	
University	38.9	
Postgraduate	17.2	
Age group		
≤ 10	2.0	
11-20	31.0	
21-30	34.0	26.31
31-40	21.2	
41-50	6.9	
≥50	.5	
Nationality		
Nigerian	88.7	
Congolese	4.9	
Italian	2.5	
American	3.9	
Marital status		
Single	65.0	
Married	34.5	
Employment status		
Student	43.2	
Employed	51.2	
Unemployed	4.9	
Number of visit		
1-3	80.3	
4-6	17.2	
7-9	2.0	
≥9	.5	

Table (10): Tourists satisfaction at LCC and LUFASI nature reserve

S/N	Statements	Mean of LCC	Mean of LUFASI	Mean of all respondents
1	Accessibility of the road	3.57	3.63	3.60
2	Level of language communication while on tour	4.22	4.43	4.32
3	Feeling of personal safety and security	4.03	3.78	3.92
4	Good access and parking areas	4.22	3.92	4.09
5	Uniqueness and attractiveness of natural environment and landscapes	4.30	4.00	4.17
6	Availability of restaurants	3.51	3.36	3.45
7	Attitude and friendliness of staff	4.24	4.07	4.16
8	Availability of guided excursions/ tour guide	4.11	3.79	3.97
9	Environmental quality (air, noise)	4.83	4.11	4.51
10	Availability of first aid services	3.89	3.48	3.70
11	Responsiveness to tourist complaints/ Existence of information Centre	3.90	3.51	3.72

12	Public enlightenment on conservation education	4.09	3.84	3.98
13	Toilet facilities for tourist	3.82	3.66	3.75
14	Availability of recreational facilities for children	3.82	3.88	3.85
15	Quality of relaxation spots/areas	4.15	4.11	4.13
16	Availability of shopping area/ complex	3.13	3.07	3.10

Excellent=5, Very good=4, Good=3, Fair=2 and bad=1.

Table (11): Difference in tourist satisfaction in LCC and LUFASI nature reserves due to availability of fascinating facilities

Variables	Sites	N	Mean	SD	T	df	p-value	Decision
Tourist satisfaction	LCC	113	63.14	9.45	2.54	201	0.01	S
	LUFASI	90	59.78	9.29				

* $p \leq 0.05$=significant

3.4. Source of Conservation Awareness Among Respondents (Tourists)

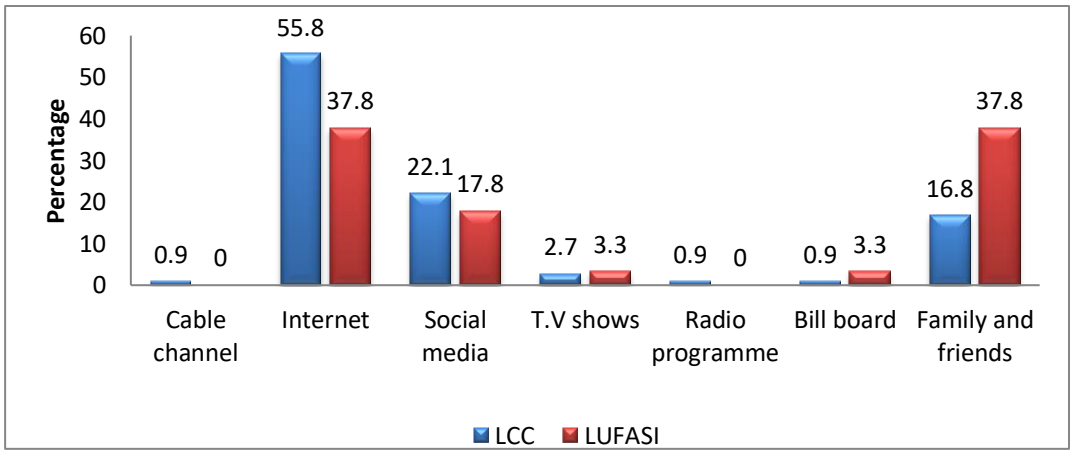

Figure (2): Source of conservation awareness among respondents in the nature reserves

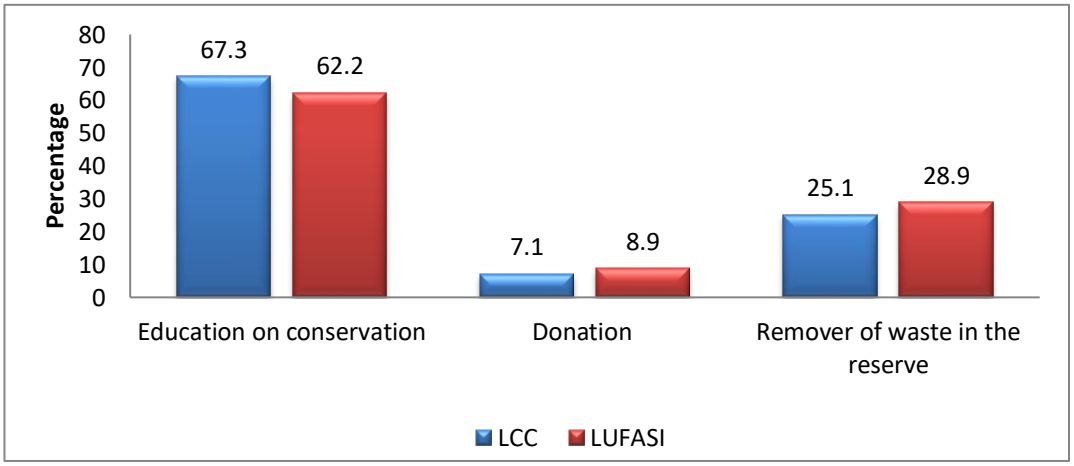

Figure (3): Tourists support towards conservation effort of the nature reserves

Figure (4) shows that 88.8% of respondents in LCC and 88.9% in LUFASI watch programmes on importance of protecting natural resources around and outside of their environments.

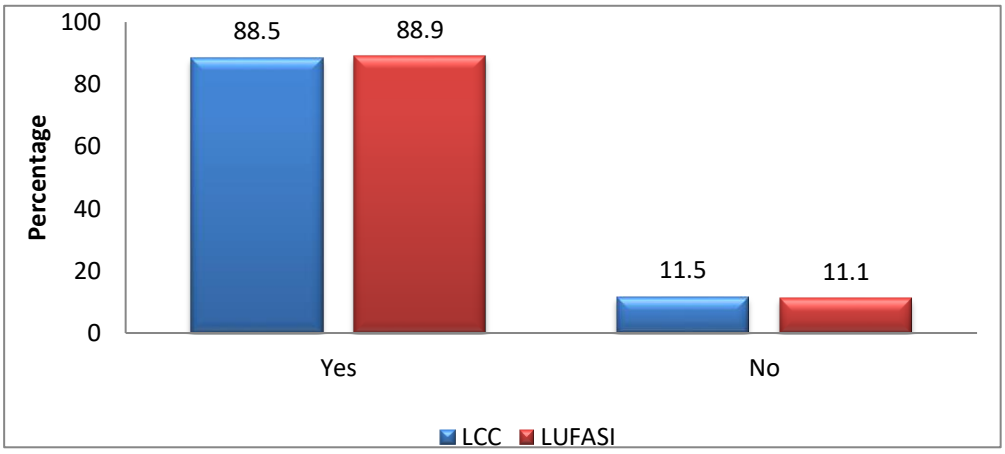

Figure (4): Respondents' response concerning watching of programmes on protection of nature reserve

Figure (5) shows the results of respondent on compliance with the nature reserve rules and regulations such as playing of music while on tour, 53.1% of respondents in LCC and 42.2% in LUFASI admit to violation of the rules especially during their tour in the reserve by playing loud music.

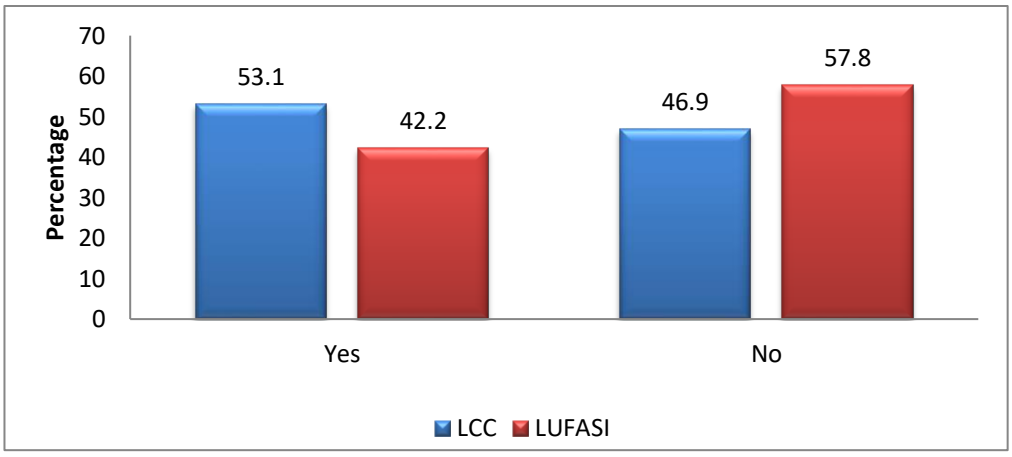

Figure (5): Percentage of respondents who comply with instructions of the reserve

3.5. The majority of respondents (98.2% and 98.9% in LCC and LUFASI) admits that they read warning sign posts while in the reserve at all times, which is indicated in figure (6) below.

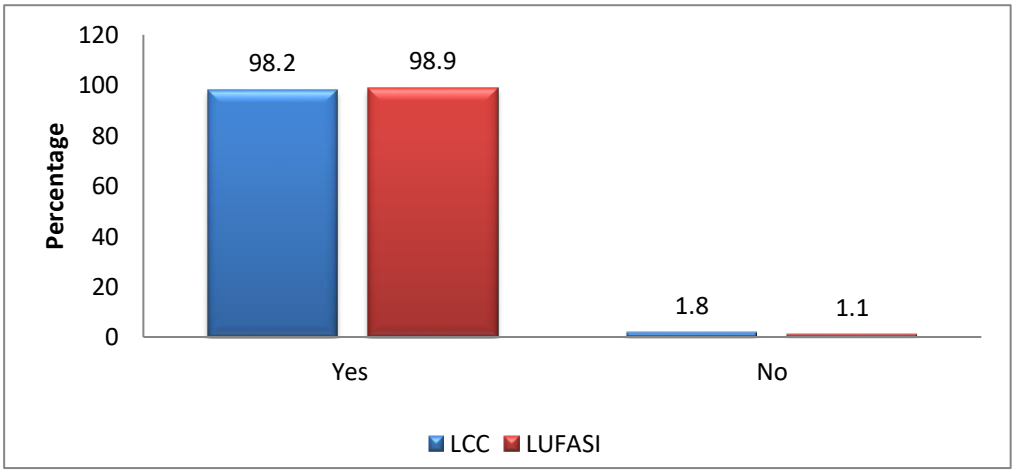

Figure (6): Percentage of respondents who read information on signpost in the reserves

Figure (7) shows that 98.2% of respondents at LCC and 97.8% at LUFASI are ready to recommend the private nature reserves to friends, family, colleagues and nature enthusiast.

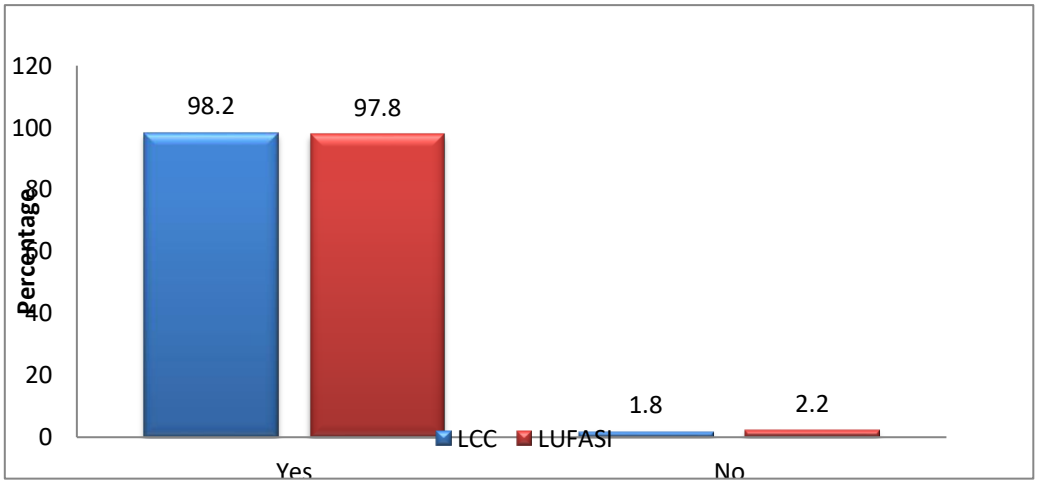

Figure (7): Percentage of the respondents who recommends the reserve to friends

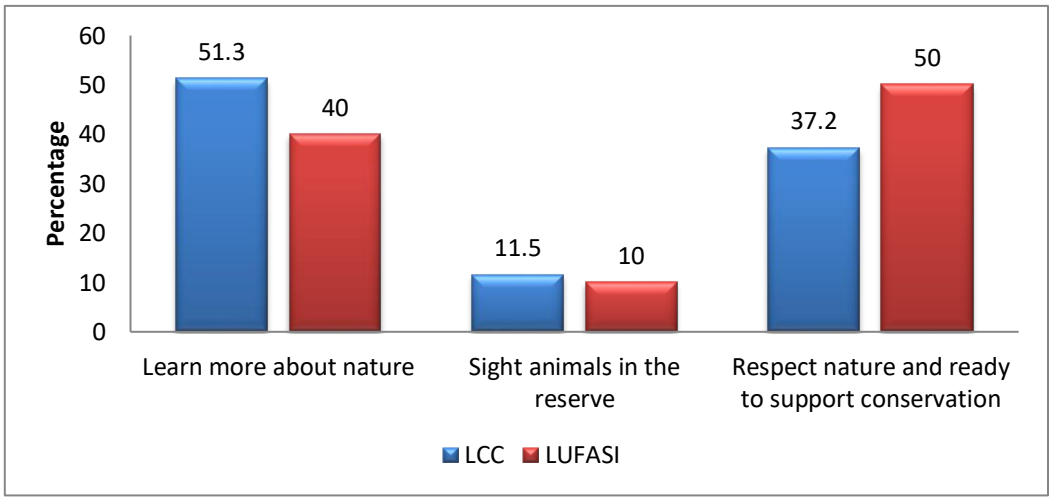

Figure (8): Influence of tour in the reserve on tourists

In figure (9) below, 54.9% of respondents posited that the canopy walkway interest them the most at LCC reserve while 54.4% of respondents in LUFASI agreed that the beautiful and serene environment interest their visit to the reserve.

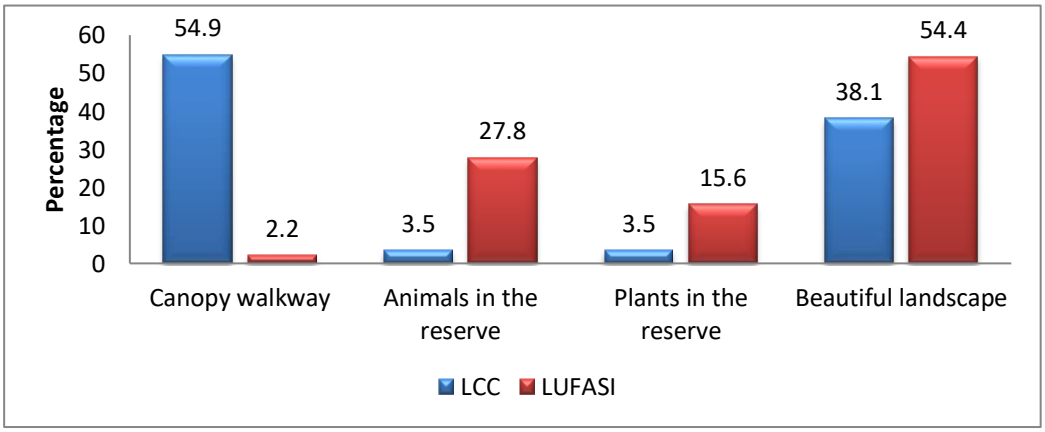

Figure (9): The major features that interest tourists in the reserves

Table (12): Difference in tourists' satisfaction at LCC and LUFASI nature reserves

Variable	Sites	N	Mean	SD	t	df	p-value	Decision
Tourist satisfaction	LCC	113	63.14	9.45	2.54	201	0.01	S
	LUFASI	90	59.78	9.29				

* $p \leq 0.05$=significant

4. Discussion

Demographic variables of all respondents (managers) show that 58.8% of the respondents are males while 41.2% are females, with 23% between the age group of 30-40. All the respondents for this research are educated with a minimum qualification of OND/HND, while about 23.5% of the respondents had M.Sc. Majority (94.1%) of respondents are Nigerian and 5.9% are foreigners.

Results obtained from respondents on elements of context show that control of pressures and threat in the two-nature reserve are adequately carried out. Protection from illegal hunting or collection of flora from the reserve with 64% in assessment is ensured. However, threat as a result of negative impact of tourist activities such as camping, motorized vehicle use and other types of recreational activities can be managed through development of tourist policy and constant monitoring especially during peak periods of the year which is as a result of high influx of tourists.

Liu et al., (2012) observed that tractable threats such as activities which are a result of impacts of tourism, can probably be contained by making some systematic tourism laws, improving visitors' facilities, providing educational materials, and increasing the number and capability of members of park staff.

The reserve provides habitat for endangered species of fauna such as hooded vulture, which is on IUCN red list, also endemic species of iron wood tree can be found in the reserve. It was also observed that there are endemic species in the area. Also, the lakes (lake Nora and lake Moses) harbour rich and abundant species of fishes such as tilapia, catfish, and others yet to be identified. In addition, LUFASI runs an animal rescue sanctuary which helps to rehabilitate different species of wild animals before reintroducing them back into the wild. Some of the species of fauna in their rehabilitation centre includes: ferret cat, tortoise, monkey, donkey and wild horse. Findings during this research was that some of these animals have been successfully re-introduced into the wild. However, abundant species of Mona monkey inhabit LCC reserve and abundant species of birds, crocodile and different species of aquatic animals such as fishes, prawn, crabs among others inhabit in LCC nature reserve.

Terborgh et al., (2002) insinuated that the full list of potential threats which is facing protected areas is very long. Nevertheless, threats which recur constantly warrants closer investigation. These threats are poaching of animals and NTFPs, the invasion of alien plants, tourist activities, logging and encroachment.

However, LCC and LUFASI, being a private reserve, ensures proper boundary demarcation and adequate security personnel that ensures constant monitoring of the reserve. In addition to security personnel, LUFASI installed CCTV cameras around the reserve to ensure proper and constant monitoring.

Site design and planning of the reserves is consistent with the objectives of the reserve, which optimizes conservation of biodiversity. Also, the two nature reserves ensures that core zones of the reserve are properly managed. However, land use surrounding the reserves does not support conservation effort. This is due to the fact that the reserves are surrounded by residential area and some areas are still under construction. This is in line with the findings of Ervin (2003) which stated that some intractable threats, such as isolation of protected areas, goes well beyond the intervention of a protected area manager or administrator. Such requires broad-scale reformation of one or more sectors also with a link to another protected area. This also involves large-scale processes, including those caused by anthropogenic factors (e.g., pollution and introduction of alien species) and those resulting from natural processes intensified by human influences (e.g., catastrophic fires).

Findings from this research also indicate that in the nearest future, LCC and LUFASI nature reserves might face threat of being an isolated island in the mist of fully developed busy urban area, due to the fact that the surrounding land use is rapidly developing into residential, industrial area, like most protected areas. This is in line with the findings of DeFries et al, (2007) and Goodman, (2003). This conforms with assessment of the management effectiveness of 110 protected areas across KwaZulu Natal, South Africa, which indicated that protected area isolation was one of the major threats to bio-diversity conservation within protected areas.

Omoregie et al., (2013) equally observed that, the major identified threats facing LCC were unsustainable adjacent land use which may result in isolation of the reserve in the future. The construction of housing units by Chevron Nigeria Limited and private individuals around LCC had affected its water table and salinity.

To an extent, LCC's number of qualified personnel is on average while the major staffing weakness in LUFASI was number of permanent qualified personnel. Some of their members of staff work with the reserve temporarily which in turn affect the staff strength during the peak period of the year when tourists visit. This is consistent with the assertion of Brandon et al., (1998) and Terborgh et al., (2002) that inadequate staffing is a very common phenomenon in many protected area systems, especially in the developing world.

It was found out that LCC and LUFASI provide equipment and organised workshops and training for their members of staff in and outside of the reserve from time to time, which helps to improve their skills and experience.

However, it was found out from this research that there is a difference in the availability of equipment to perform effective monitoring of LCC and LUFASI. LCC has well managed and effective equipment to work on the field when compared to LUFASI.

Shackley (2001) identified a variety of potential financing mechanisms for protected areas. Of note are annual allocations, park visitor fees, fines obtained from illegal activities, international donor contributions and conservation trust funds.

However, in most cases, LCC's sources of revenue is majorly financed by Chevron, club membership, private donors and revenue generated from tourist entrance fee with extra charges for the canopy walkway while LUFASI generate funds from entrance fee, charges for group use of the buffer area for recreational activities, club membership and donors. Although developing a comprehensive and long-term financial strategy is more important for private protected areas in order to ensure proper management.

Findings from tourist satisfaction while visiting the nature reserve shows that the road network to the two nature reserves is good; however, it was observed during field work that the road is a major road connecting various route along Lekki axis thereby experiencing very heavy traffic to and out of the reserve.

It was observed that the level of communication between tour guide and tourists is effective. Tourists expressed high rate of satisfaction during their tour of the reserves and applauded their tour guides for job well done.

LCC and LUFASI have an excellent parking space for the tourists with adequate security in place, and proper monitoring of activities in and out of the reserves.

All the respondents, both young and adults agreed that the nature reserves are unique and attractive with beautiful landscape and above all, rendering quality ecosystem services.

However, it was noted during this research that most of the tourists had no idea about the quality of services rendered at the restaurant, but for those who visited the restaurants, a majority believed that the services rendered were very good.

Majority of respondents appreciate the environmental quality and the ecosystem services rendered by the nature reserve in an urbanised city of Lagos and wish to see more nature reserves in Lagos.

LCC and LUFASI have quality recreational area with environmentally friendly facilities on ground for relaxation of children and also for adults. However, some of the tourists who are fun seekers demand more facilities to be added to the ones on the ground, such as a football pitch, bouncing castle for children in addition to facilities such as swings, table tennis, life size games at LCC such as Ludo, Chess, Drafts among others.

Also, a majority of tourists rate shopping areas as good, it was observed that the gift shops at both LCC and LUFASI are located far from a recreational area which makes it difficult for tourist to identify or locate.

Conservation awareness of respondents in LCC and LUFASI shows that 55.8% of respondents in LCC read about nature on the internet while most of the respondents in LUFASI got information about nature through the internet and family and friends. A majority of respondents from LCC and LUFASI support conservation by educating others about what conservation is all about during and after their tour to the reserves. Also, a majority of respondents watch programmes about protection of nature reserves and were also ready to support conservation effort of the reserve.

Averagely, most of the respondents did not comply with rules of the reserves such as playing of music while on tour, plucking of leaves and littering the environment. Larger percentage of respondents in the two reserves read signs in the reserve and recommend the nature reserve to friends and nature lovers.

According to the respondents, a visit to the reserve had influenced them positively in learning more about nature, respect and protect nature and also read to support conservation of the natural resources around. The canopy walkway and the beautiful landscape is most interesting for most of the tourists at LCC while in LUFASI, the beautiful, quiet environment and the animals in the rehabilitation centre interest the tourist most.

From this study, it can be inferred that effective protected area management is a very important tool in handling current and future threats to biodiversity, especially when evaluation results in improving management is implemented.

5. Conclusions and Recommendations

It can be concluded based on the findings of this research that in spite of insufficient staff strength and funding, Lekki Conservation Centre (LCC) and Lekki Urban Forest Animal Sanctuary Initiatives (LUFASI) nature reserve are achieving success in the management of the reserves. Of note is the protection of the reserves from poachers and loggers and also improvement on quality of service provided which they have been able to achieve through proper boundary demarcation and ensuring maximum and adequate security at all times.

This research therefore recommends that regular assessments with proper documentation of all protected areas (privates and public nature reserves) should be carried out by the government across the nation in order to determine the strength and challenging areas of the reserves. Also, financial support and provision of more equipment from private individuals will assist in continued protection of the reserves.

Acknowledgement

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