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Comparison tests of Socio demographic profile and psychometric characteristics of Locals on conservation of Yankari game reserve, Bauchi, Nigeria.

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ABSTRACT: Yankari game reserve being a prominent biodiversity and ecological hotspot in Nigeria that attract more than 20,000 tourists from over 100 countries around the globe, the reserve need to be properly managed and maintained for future generation to benefit. Therefore, testing the socio-demographic (gender, membership to environmentally related association, age category, educational category and income category) characteristics and psychometric (awareness, perception and attitude) characteristics of local people's from adjoining communities of Yankari game reserve will give a clue on which set or group of the respondent have a significant or has no significant difference when compared. The t-test was conducted to compare the difference between gender groups and the respondent's membership to environmental associated associations on awareness, perception and attitude on the conservation of YGR. while a one way Anova test was piloted to compare the difference between age groups,education categories and compare the difference between income categories of the respondents on awareness, perception and attitude with regards to the conservation of YGR Face to face questionnaire interview was administered to 422 respondents from adjourning communities of the reserve and the result finding indicates showed that there is significant difference between male and female, and between "No" response and "Yes" on awareness, perceptionand attitude. Furthermore, there is significant difference between respondent's age group and education categories on awareness, perception and attitude, but, there is no significant difference between respondents on attitude and education categories andthere is significant difference between non-formal education and primary educationusing Turkey HSD post-hoc multiple comparison test.While, the result shows that there is no significant difference between respondent's category of income on awareness,perception and attitude. This finding will give a guide towards designing a good reserve management and adjoining community programs and relationship policies for sustainable conservation of YGR.

Keywords - Adjoining community,Anova, Attitudes,Awareness, Conservation, Perceptions, T-test,Yankari game reserve

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I. INTRODUCTION

Attitudes are molded mostly by awareness levelon goals and characteristics in relation to their socioeconomic features. Studies of awareness, perceptions and attitudes are usually used to evaluate some events or entity in a positive or negative state [1][2] and when relate to social demographic characteristics, they are aim at identifying the level of significance and non-significance in a relationship since they are susceptibility and cannot be seen or assess directly, therefore there is needs for elicitation of such characteristics attributesfrom individuals' and the responses to the psyche and socio demographic question will be tested using

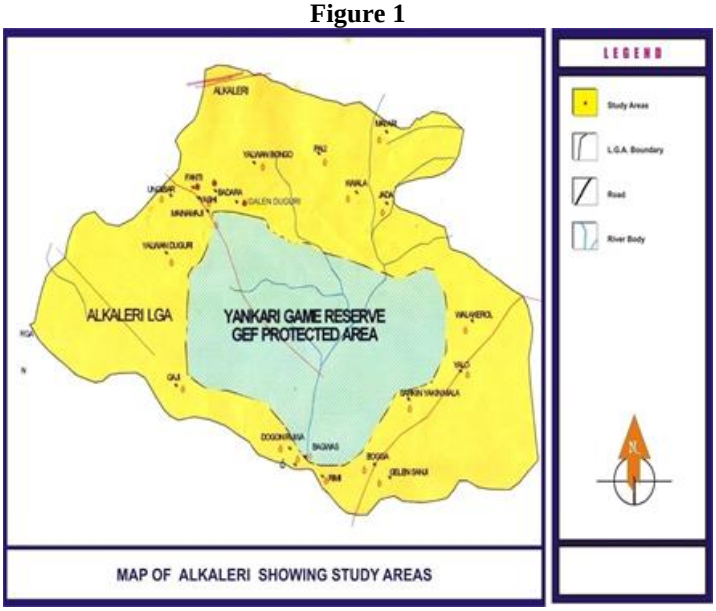
t-test or Anova. And these responses will be transformed from overt behavior and explicit voiced statements (e.g., answers to a psychometric question) to exterior of the person's cognizance. These responses can be used to infer the significance or non-significance of the respondent awareness, perceptions and attitudes in relation to their socio demographic characteristics.

II. METHODOLOGY

Study area

The adjoining settlements of Yankari game reserve is the study area of these research, while the main socio economic activities engaged by populace of these communities varies scale farming, domestications of animals and some forms of informal trading and micro entrepreneurship activities [3].

Figure 1



Population

Yankari game reserve is located at Alkaleri local government area of Bauchi State, northeastern Nigeria and the Local government has a population of 328,284 people and 54,714 households [4]. The targeted respondents are all members of the adjoining communities that falls within the age of eighteen (18) years and above.

Sampling

In this study, the [5] sample size determining formula was applied and a sample size of 400 was realized, but (10%) additional questionnaires were added in other to curtail questionnaire rejection or poor return [6]. And also ten (10) adjoining communities of the reserve were selected according to their proximity from the reserve using Microsoft excel after stratifying the communities into strata and in selecting the respondents, systematic random sampling was used.

Data Collection

440 respondents were face-to-face interviewed using a well-structured and at the end 422 validly completed questionnaires were successfully retrieved.

Instrument Design

The direct face-to-face questionnaire interview method containing a likert scale psychometric questions on the respondents' awareness, perception and attitude towards YGR and their socio economic characteristics is used for elicitation of information.

III. RESULTS' AND DISCUSSION

Socio-demographic profile of the Respondents

The respondents socio demographic profile result shows that, male respondents constituting of 321 (76.1%) while that of female is 101 (23.9%) respondents which was associated to the socio cultural and religious belief

of typical northern Nigeria Muslims that mostly prevent their wives and female associate from staying outdoors and taking part on social activities.

The respondents age mean score is calculated to be 35 years, with those respondents ageing between 18-25 years constituting 107(25.4%), those ageing between 26-35 years constituting 119(28.3%), and those ageing between 36-45 years constituting 103(24.4%) respondents, while those ageing ranging from 46-55 years and 56 and above years constitutes 53(12.6%) and 40(9.5%) respectively.

The survey marital status result shows that those respondents that indicate their status as married constitutes 279(66.1%) while the non-married (singles) constitutes 143(33.9%). The respondent level of education indicates that 105(24.9%) attended a non-formal type of education, those with primary qualification were 83(19.7%), 187(44.3%) respondents have secondary school qualification which constitute majority of the research respondents and those that attended colleges, polytechnics and university (tertiary education) constitute only 47(11.1%) of the study respondents.

The occupational status result of the respondents shows that 95(22.5%) are been employed by government while those that are self-employed were 128(30.3%), farmers constitutes 133(315%) of the respondents while unemployed and retirees respondents constitutes 51(12.1%) and 15(3.6%) of the total survey respondents respectively.

Membership to environmentally associated association by the respondents indicates that about 226(53.6%) belong to a particular association whereas those that do not belong to any association constitute only 196(46.4%). While the respondents gross monthly income earning shows that 167(39.6%) of the respondents earn between ₦10,000-₦20,000 monthly, 129(30,6%) earn between ₦21,000-₦30,000 while those earning between ₦31,000-₦40,000 were 97(23.0%) respondents and ₦ 41,000-₦ 50,000 were 23(5.5%) of the respondents. And those respondents with the highest monthly earning of ₦51,000 and above constitute only 6(1.4%) of the survey respondents. Therefore, ₦25,597 is calculated to be the mean gross monthly income of the respondents.

Table 1: Socio-demographic profile of the Respondents

Element	**Freq.**	**Percentage (%)**
Gender		
Male	321	76
Female	101	23.9
Age		
18-25	107	25.4
26-35	119	28.3
36-45	103	24.4
46-55	53	12.6
56 and above	40	9.5
Marital status		
Non married	143	33.9
Married	279	66.1
Educational level		
Non formal	105	24.9
Primary	83	19.7
Secondary	187	44.3
Tertiary	47	11.1
Occupation		
Government employed	92	22.5
Self-employed	128	30.3
Farmers	133	31.5
Unemployed	51	12.1
Retiree	13	3.6
Membership of Association		
Yes	226	53.6
No	196	46.4
Level of Income		
₦ 10,000-₦ 20,000	167	39.6
₦ 21,000-₦ 30,000	129	30.6
₦ 31,000-₦ 40,000	97	23.0

₦ 41,000-₦ 50,000	23	5.5
₦ 51,000 and above	6	1.6

Result of the Independent Sample t – test and ANOVA Test

An in-depth sample t-test was conducted to compare the difference between gender groups on awareness, perception and attitude of the respondents on the conservation of Yankari game reserve. Table 1 is illustrating the in-depth sample t-test. The result shows that, there is significant difference between male (M=3.56, SD=.94) and female (M=3.29, SD=1.02) on awareness t=2.422, p=.016). This finding is in line with finding of [7].

However, the result indicated that there is no significance difference between female (M=3.46, SD=.73) and male (M=3.33, SD=.85) on perception (t=1.510, p=.133), which coincide with the findings of [8]. Similarly, [9] findings happens to be similar with the result of this study which also indicated that there is significant difference between female (M=3.76, SD=.770) and male (M=3.95, SD=.911) on attitude (t=-2.619, p=.009).

Table1: Independent Sample t – t of Gender with Awareness, Perception and Attitude

Variable	N	Mean	SD	df	t	P
Gender with Awareness				**420**	**2.422**	**.016**
Female	102	3.29	1.02			
Male	320	3.56	.94			
Gender with Perception				**420**	**1.510**	**.133**
Female	102	3.46	.73			
Male	320	3.33	.85			
Gender with Attitude				**420**	**-2.614**	**.009**
Female	102	3.76	.770			
Male	320	3.50	.911			

A sample t-test was conducted to relate the difference among the respondents membership to environmental associated associations on awareness, perception and attitude. Table 2 is showing the in-depth sample t-test. The result indicates that, there is significant difference between "No" response (M=3.36, SD=.93) and "Yes" response (M=3.64, SD=.99) on awareness. (t=2.890, p=.004), which in accordance with the findings of [10][11]. Nevertheless, this is in line with [11] study which reveals that, there is significance difference between "No" response (M=3.26, SD=.72) and "Yes" response (M=3.26, SD=.91) on perception (t=2.342, p=.020). Similarly, [10][11] found that there is significant difference between "No" response (M=3.45, SD=.82) and "Yes" response (M=3.66, SD=.99) on attitude (t=2.351, p=.019).

Table 2: Independent Sample t – t of Membership of Association with Awareness, Perception and Attitude

Variable	n	Mean	SD	Df	t	P
Membership of Association				**420**	**-2.890**	**.004**
No	196	3.36	.93			
Yes	226	3.64	.99			
Membership of Association				**420**	**-2.342**	**.020**
No	196	3.26	.71			
Yes	226	3.44	.91			
Membership of Association				**420**	**-2.351**	**.019**
No	196	3.45	.82			
Yes	226	3.66	.99			

A one way Anova test was piloted to compare the difference between age groups of respondents on awareness, perception and attitude on the conservation of Yankari game reserve. Table 3 is illustrating the in-depth Anova test. The result confirms that, there is significant difference between respondents age of group of 18-30 years (M=3.69, SD=.86), age of group of 31-45 years (M=3.56, SD=1.00), age of group of 46-60 years (M=3.02, SD=.95), and age of group of above 61 years (M=3.29, SD=1.14), awareness (F=10.077, p=.000).

This is consistent with the discoveries of [12][13]. Nevertheless, there is significant difference between respondents age of group of 18-30 years (M=3.46, SD=.75), age of group of 31-45 years (M=3.44, SD=.87), age of group of 46-60 years (M=3.02, SD=.86), and age of group of above 61 years (M=3.19, SD=.78), perception (F=5.457, p=.001). This is in agreement with studies of [14]. However, there is significant difference between respondents age of group of 18-30 years (M=3.69, SD=.78), age of group of 31-45 years (M=3.58, SD=.96), age of group of 46-60 years (M=3.28, SD=.90), and age of group of above 61 years (M=3.44, SD=.99), attitude (F=4.334, p=.005). Which is in accordance with the findings of [9][15].

Table 3: ANOVA Test of Age Categories with Awareness, Perception and Attitude

Variable	N	Mean	SD	df	F	p
Age with Awareness				**3**	**10.077**	**.000**
18 – 30 years	182	3.69	.86	**419**		
31 – 45 years	137	3.56	1.00			
46 – 60 years	80	3.02	.95			
61 and above years	23	3.29	1.14			
Age with Perception				**3**	**5.457**	**001**
18 – 30 years	182	3.46	.75	**419**		
31 – 45 years	137	3.44	.87			
46 – 60 years	80	3.05	.86			
61 and above years	23	3.19	.78			
Age with Attitude				**3**	**4.334**	**.005**
18 – 30 years	182	3.69	.78	**419**		
31 – 45 years	137	3.58	.96			
46 – 60 years	80	3.28	.90			
61 and above years	23	3.44	.99			

An Anova test was carried out to link the difference between the education categories of the respondents on awareness, perception and attitude with regards to the conservation of Yankari game reserve. Table 4 is explaining the detailed of the one way Anova test. The result shows that, there is significant difference between respondents with non-formal education (M=3.70, SD=.92), respondents with primary education (M=3.38, SD=.96), respondents with secondary education (M=3.46, SD=.98), and respondents with tertiary education (M=3.35, SD=.98), awareness (F=2.394, p=.068). This is in line with the revealed result findings of [16]. While the result indicates that, there is significant difference between respondents with non-formal education (M=3.58, SD=.87), respondents with primary education (M=3.14, SD=.88), respondents with secondary education (M=3.34, SD=.79), and respondents with tertiary education (M=3.30, SD=.69), perception (F=4.582, p=.004), which coincide with the findings of [16]. Whereas, this study coincide with the findings of [7][16] that shows that there is no significant difference between respondents with non-formal education (M=3.64, SD=.89), respondents with primary education (M=3.45, SD=.97), respondents with secondary education (M=3.64, SD=.83), and respondents with tertiary education (M=3.38, SD=.90), attitude (F=2.25, p=.110). Furthermore, post-hoc multiple comparison test using Turkey HSD shows that, there is significant difference between non-formal education and primary education (M=.45, SD=.12, p=.002).

Table 4: ANOVA Test of Education Categories with Awareness, Perception and Attitude

Variable	n	Mean	SD	df	F	p
Education with Awareness				**3**	**2.394**	**.068**
Non-Formal Education	105	3.70	.92	**418**		
Primary School	74	3.38	.96			
Secondary School	173	3.49	.98			
Tertiary Education	70	3.35	.98			
Education with Perception				**3**	**4.582**	**.004**
Non-Formal Education	105	3.58	.87	**418**		
Primary School	74	3.14	.88			
Secondary School	173	3.34	.79			
Tertiary Education	70	3.30	.69			
Education with Attitude				**3**	**2.025**	**.110**

Non-Formal Education	105	3.64	.89	**418**
Primary School	74	3.45	.97	
Secondary School	173	3.64	.83	
Tertiary Education	70	3.38	.90	

The result of the one way Anova test to compare the difference between income categories of the respondents on awareness, perception and attitude on the conservation of Yankari game reserve. Table 5 is showing the one way Anova test. The result coincide with that of [17][18] which shows that there is no significant difference between respondents category of income 10,000-40,000 (M=3.49, SD=.97 category of income 40,001-70,000 (M=3.46, SD=.95), and category of income 70,001-100,000 (M=3.80, SD=1.00), awareness (F=.688, p=.503). However, the findings of this study is in line with that of [17][18] which also indicates that there is no significant difference between respondents category of income 10,000-40,000 (M=3.37, SD=.83 category of income 40,001-70,000 (M=3.20, SD=.81), and category of income 70,001-100,000 (M=3.52, SD=.72), perception (F=1.256, p=.286). And also, there is no significant difference between respondents category of income 10,000-40,000 (M=3.58, SD=.87 category of income 40,001-70,000 (M=3.37, SD=.95), and category of income 70,001-100,000 (M=3.91, SD=.86), attitude (F=2.338, p=.098). this is in accordance with the findings of [17][18].

Table 5: ANOVA Test of Income Categories with Awareness, Perception and Attitude

Variable	**n**	**Mean**	**SD**	**df**	**F**	**p**
Income with Awareness				**2**	**.688**	**.503**
10,000-40,000	356	3.49	.97	**420**		
40,001-70,000	53	3.46	.95			
70,001-100,000	13	3.80	1.00			
Income with Perception				**2**	**1.256**	**.286**
10,000-40,000	356	3.37	.83	**420**		
40,001-70,000	53	3.20	.81			
70,001-100,000	13	3.52	.72			
Income with Attitude				**2**	**2.338**	**.098**
10,000-40,000	356	3.58	.87	**420**		
40,001-70,000	53	3.37	.95			
70,001-100,000	13	3.91	.86			

IV. CONCLUSION

Game reserves such as Yankari game reserve are aim at protecting plants and animal'sspecies and their habitats from illegal activities that may lead to their extinction. Knowing the socio economic variable and psychometric variables will give vital information onthe level of significance and non-significance relationship of the related characteristic variables. And such results will serve as a guide to policy makers, government, reserve manager, non-governmental organisations and the general public on the need for joining hand with people of adjoining communities in managing reserves such as YGR in other to curtail many negative human attitudes and activities that have for long being negatively affecting such conserve areas and making the plants and animals species more vulnerable and the land water areas degraded.

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