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Demographic Variables and Forest Resources Conservation Practices Among the Ekois in Calabar Educational Zone of Cross River State, Nigeria

Asanye, G. I A
Email: loriaasanye77@gmail.com

Obi, R.O. B

Department of Environmental Education
Faculty of Arts and Social Science Education
University of Calabar, Calabar - Nigeria

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Correspondence

Abstract

The study investigated Demographic Variables and Forest Resources Conservation practices among the Ekois in Calabar Education Zone of Cross River State is a research work which is based on the anthropogenic activities such as deforestation, overgrazing, clean clearing and bush burning which have caused loss of forest resources among the ekois in Calabar educational zone. . To guide the study, two research questions were formulated, and two hypothesis were postulated from the six research question. The survey research design was adopted for the study and the research area is Calabar education zone of cross river state. The population of the study was the projected population the Ekois found in 28 communities of Calabar education zone which was 283,643 people. Techniques employed to select the sample for this study were purposive sampling technique, simple random sampling technique and proportionate sampling technique. The sample selected for the study was 1,355 respondents. Structured questionnaire was the instrument used for data collection. The data collected were analyzed using one-way analysis of variance. The purpose of the study is to determine the extent to which demographic variables can affect forest resources conservation practices among the Ekois in Calabar Education zone of Cross River State, Nigeria. The findings of the study is summarized shows that there was a significant influence of income level on forest resources conservation practices in the study area. Occupation significantly influences forest resource conservation in the study area.

Introduction and Background

The Nigerian rain forest is facing serious degradation. The rain forest is so highly deforested such that most parts of it have lost the value of even being described as a secondary forest. The increasing demand for forest lands and forest products, occasioned by increase in population is a serious contributing factor to the fast disappearance of the rain forest over the world. However, part of the remaining rain forest in Nigeria is found in Cross River State, especially within the Calabar Educational Zone, located at the equatorial rain forest zone of Nigeria.
Some natural resources are from the rain forest zone therefore it is obvious that, the forest should be conserved. Conservation means wise use of the resources.

Non-timber forest products (NTFPs)may not be the most important income generating products for local people living close to the forest, the contribute significantly to household income, food security, and household health care as well as provision for multiple social and cultural valves (Ojea, Loureiro, Allo, & Barrio, 2016 and Endaman, Angu, Akwah, Shepherd, & Ntumwel 2016). In spite of these roles, a major challenge persists in the accurate evaluation of the Non-Timber Forest Products (NTFPs) as a revenue component of indigenous people (Ngalim 2011).

The medium and high income people do not depend on the forest people. The medium and high income people may be these who are contended with what they have and also seek alternative live hood, thereby helping to minimally use forest resources which are conserved in the average. This finding is in tandem with canvendish (2002), Vedeld, Angelsen, Sjajstad, Bojo, & Kobugabe, (2004) who reported that it is expected that household with large income will invest more in other sectors of the economy rather than relying on non-timber forest product collection. Adding that household with high income usually have a strong purchasing power that enable them to buy more food to compensate for low harvest, while the low income household rely heavily on natural resources extraction from forest lands around them. In the developing Nations, non-timber forest products (NTFPs) are therefore considered a safety net that fills the gap due to short fall in agricultural production or other forms of emergencies (Shackleton and Shackleton 2004, Paumgarten 2005, Sunderland, Achdiawan, Angelsen, Babigumira, Jckowits, Paumgarten & Shively, 2014).

Many farmers rely on farming as their means of livelihood so they allow economy trees in the forest to grow along side their arable crops. Nsiah-Gyabaah (2016), Edwin (2006), Awudu (2022) and Gnado (2004) maintained that bush is burned in order to hunt for games or bush meat and to clear the land for farming. Fire is also a common land management practices in many agricultural areas of some countries including Nigeria where it is used to burn the byproducts of some agricultural crops such as Sugarcane waste, wheat or rice stubble and forest residue They also see many of the trees as medicine and harvest only the dead branches when they need wood for fuel. Some of the trees provide them with shade hence they are not

destroyed. The civil servants also conserve forest because they do not depend mainly on forest products, they have other sources of livelihood. Other craft have business with the forest, these may include harvesting raw materials for their craft basket weaving, harvesting wood for chewing sticks and so on. These activities contributes to forest resources depletion. Business men and women appears to destroy the forest more especially those involved in timber businesses. They are involved in buying and selling of forest resources and also involve in acquiring large area of forest for industrial purposes. They are therefore the largest of forest resources users that is why their forest resource conservation is low. This finding is not in tandem with Sander, Shapiro & Ramaswamy (2016) who observed and maintained the bush burning is an agent in the process of deforestation owing to the low relative humidity of the semi-arid zone coupled with very dry hammttan wind adding that there is always a high incidence of bush fires every dry season. This may be why the findings of this research seems to differ, because incidence of bush fire do not occur in calabar education zone every dry season and the area is not semi-arid zone. Calabar Education Zone is formed in the south-south zone where the period of hammttan is not long and the area is not very dry. The finding is also not in harmony with the Omoogun (2004) who observed that shifting cultivation is the major causes of deforestation especially when farmers occupy large area which they later abandon for another land. This is because shifting cultivation is hardly practices in the ekois area of calabar education zone. The farmers in this area no longer migrate they settled, what they practices sometimes is land degradation.

Methodology

Hypotheses

1. Hypothesis one: income level does not significantly influence forest resource conservation practices.
2. There is no significant influence of occupation on forest resource conservation practices.

This research adopted Survey research design. The study was conducted in Calabar Education Zone of Cross River State, Nigeria which has 7 local government area located in the Southern Senatorial District of Cross River State Southern Senatorial District of Cross River State. The population consist of 283,643 people and a sample of 1355 was gotten from the population 28 communities in Calabar Education Zone where the Ekois are found. Instrument considered for data collection was a structural questionnaire titled `Demographic Variables and Forest Resources Conservation Practices Questionnaire` (DVFRCPQ). The instrument was divided into two sections. Section A and B.Section A focused on the demographic data of respondents which include Income and Occupation. While section B will be 25 item questions on the forest resources conservation practices. The instrument was validated by three experts in measurement and evaluation, while Cronbach Alpha was used to test the reliability and the co-efficient yielded 0.78-0.88. Data obtained through questionnaire administration were coded and anlysed via SPSS using one way Analysis of Variance (ANOVA)

Results

Ho: 1

Income level does not significantly influence forest resource conservation practices. The independent variable here was income levels categorized into (4), low income, medium income, high income and very high income. The dependent variable was forest resource conservation practices, one- way analysis of variance (ANOVA) was employed to test the hypothesis. The result is as shown in table 1

Table 1: One –way analysis of variance of the influence of income level on forest resource conservation practices.

Income level	**N**	**Mean**		**standard deviation**	
Low	588	98.764		15.200	
Medium	587	104.769		27.192	
High	90	117.500		7.542	
Very high	90	87.132		12.066	
Source of variance	**ss**	**df**	**MS**	**F-ratio**	**p-level**
Between groups	52365.390	3	17455.130	40.175	.000
Within groups	587841.603	1,353	434.473		
Total	640206.993	1,356			

- Significant at p<.05, F= 40.175, df = 3,

The result in table 1 shows that the calculated F-value was 40.175 with a significant p-value of .000. since the p-value was less than 0.05, it means that the calculated F-value was statistically significant at.05 level. This implies that income level significantly influence forest resource conservation practices among the Ekois in Calabar Education zone of Cross River State. To determine the point difference, a post hoc Comparism of the mean scores for the various income levels was carried out using Fishers Least Significant Difference (LSD). Procedure. The result is as presented in table 1

Table 2: Post Hoc Comparison of the mean scores of the influence of income level on forest resource conservation practices for the various level using Fishers LSD procedure.

Income level	**N**	**Low income**	**medium**	**high**	**Very high**
Low	588	6.005	-6.005	-18.736	30.368
Medium	587	18.736	12.731	-12.731	17.637
High	90	11.632	-17.637	-30.368	-11.632
Very high	90	30.368	17.637	11.637	6.005

- P<.05

The result shows that residents with very high income have the lowest mean score of 87.132 followed by those with low income level with mean score of 98.764, while residents with medium and high income level have mean score of 104.769 and 117.500 respectively.

Apparently the mean score of low income level and the very high income levels. Most importantly there exist a significant difference (p<.05) in the mean scores of each pair of income levels.

Ho: 2

There is no significant influence of occupation on forest resource conservation practices. The independent variable here was occupation categorized into (4) farming, business, civil services and other craft. The dependent variable was forest resource conservation practices. One- way analysis of variance (ANOVA) was used to test the hypothesis, The result is as presented in table 3.

Table 3: One-way analysis of variance of the influence of occupation on forest resource conservation practices.

Occupation	**N**	**Mean**		**standard deviation**	
Farming	180	113.500		8.547	
Business	408	89.069		19.488	
Civil service	360	112.870		20.882	
Other craft	407	106.159		19.560	
Source of variance	**ss**	**df**	**MS**	**F-ratio**	**p-level**
Between groups	159064.898	3	39766.224	11.742	.000
Within groups	481142.095	1353	355.874		
Total	640206.993	13562			

- Significant at p<.05, f=111.742, df=3, p-value =.000

The results in table 3 shows that the calculated f= value was 111.742 with a significant p-value of .000. since the latter was less than 0.05, it means that the calculated f-value was statistically significant at the 0.05 level. This implies that, occupation significantly influence forest resource conservation among the Ekois in Calabar Education Zone of Cross River State. Therefore the null hypothesis earlier stated was rejected. To determine the point of difference, a post hoc Comparism of the mean scores for the various occupation was done using Fishers Least Significant Difference (LSD) procedures. The result is as presented in table 4

Table 4: Post Hoc Comparism of the mean scores of the influence of occupation on forest resource conservation practices for the various occupation using Fisher (LSD) procedure.

Occupation	**N**	**Farming**	**Business**	**Civil Serv.**	**Other Crart**
Farming	180	-24.431	24.431	6.298	7.340
Business	408	-6.298	23.815	-23.802	17.091
Civil Service	360	-7.340	17.091	-6.710	6.710
Other Craft	407	7.340	17.091	6.710	7.340

- P<.05

The result indicated that residents involved in business as occupation have the lowest mean score of 89.069, followed by those involved in other craft (106.159) and those involved in civil service (112.870) while those involved in farming score the highest with the mean score of (113.500).
The mean score increases along side those with direct contact with vegetation. Most importantly, there exist a significant difference ($p<.05$) in the mean score of each pair of occupation.

Discussion of Findings
Income level and forest resource conservation practices

Hypothesis one: income level does not significantly influence forest resource conservation practices. The results in table 1 shows that the calculated f-value was 40.175 with a significant p-value of 0.00. since the p-value was less than 0.05, it means that the calculated f-value was statistically significant at the 0.05 level. This implies that income level significantly influence forest resource conservation practices among the Ekois in Calabar Education Zone of Cross River State. The result also indicated that residents with very high income have the lowest means score of 87.132 followed by those with low income level with mean score of 98.764, while residents with medium and high income level have mean scores of 104.769 and 117.500 respectively. This implies that the poor inhabitants destroys forest reserve without the very rich people. The very rich people may include external people outside the forest area who pay so much to exploit the forest resources especially the timber resources. Although non-timber forest products (NTFPs)may not be the most important income generating products for local people living close to the forest, the contribute significantly to household income, food security, and household health care as well as provision for multiple social and cultural valves (Ojea, Loureiro, Allo, & Barrio, 2016 and Endaman, Angu, Akwah, Shepherd, & Ntumwel 2016). In spite of these roles, a major challenge persists in the accurate evaluation of the Non-Timber Forest Products (NTFPs) as a revenue component of indigenous people (Ngalim 2011).

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(Shackleton and Shackleton 2004, Paumgarten 2005, Sunderland, Achdiawan, Angelsen, Babigumira, Jckowits, Paumgarten & Shively, 2014).
Occupation and forest resource conservation practices.

Hypothesis two: there is no significant influence of occupation on forest resource conservation practices. The result in table l shows that the calculated f- value was 111.742 with a significant p-value of 0.000. Since the p-value was less than 0.05, it means that the calculated f-value was statistically significant at the 0.05 level. This implies that occupation significantly influence forest resource conservation practices among the Ekois in calabar education zone in cross river state. Therefore the null hypothesis stated earlier was rejected. From the analysis, farmers conserved more forest resource than civil servants, other craft and business men and women respectively. This can be attributed to the fact that, some farmers in the study area practice taungya farming system which is a special arrangement between the forestry department and farmers, the system combines the production of both arable forest tree crops simultaneously on a piece of land. It help in conserving forest resources because it is a kind of agro forestry. Many farmers in the study area rely on farming as their means of livelihood so they allow economy trees in the forest to grow along side their arable crops. Nsiah-Gyabaah (2016), Edwin (2006), Awudu (2022) and Gnado (2004) maintained that bush is burned in order to hunt for games or bush meat and to clear the land for farming. Fire is also a common land management practices in many agricultural areas of some countries including Nigeria where it is used to burn the byproducts of some agricultural crops such as Sugarcane waste, wheat or rice stubble and forest residue They also see many of the trees as medicine and harvest only the dead branches when they need wood for fuel. Some of the trees provide them with shade hence they are not destroyed. The civil servants also conserve forest because they do not depend mainly on forest products, they have other sources of livelihood. Other craft have business with the forest, these may include harvesting raw materials for their craft basket weaving, harvesting wood for chewing sticks and so on. These activities contributes to forest resources depletion. Business men and women appears to destroy the forest more especially those involved in timber businesses. They are involved in buying and selling of forest resources and also involve in acquiring large area of forest for industrial purposes. They are therefore the largest of forest resources users that is why their forest resource conservation is low. This finding is not in tandem with Sander, Shapiro & Ramaswamy (2016) who observed and maintained the bush burning is an agent in the process of deforestation owing to the low relative humidity of the semi-arid zone coupled with very dry hammttan wind adding that there is always a high incidence of bush fires every dry season. This may be why the findings of this research seems to differ, because incidence of bush fire do not occur in calabar education zone every dry season and the area is not semi-arid zone. Calabar Education Zone is formed in the south-south zone where the period of hammttan is not long and the area is not very dry. The finding is also not in harmony with the Omoogun (2004) who observed that shifting cultivation is the major causes of deforestation especially when farmers occupy large area which they later abandon for another land. This is because shifting cultivation is hardly practices in the ekois

area of calabar education zone. The farmers in this area no longer migrate they settled, what they practices sometimes is land.

Conclusion

Based on the findings of this study, it was concluded that;

Forest resource conversation practices also increases as income level increases, comes to a maximum and falls as the level of income causes people to destroy rather than conserve forest resources and seek alternatives but as income escalated very high the tendency to exploit the forest resources increase more.

The nature of residents occupation also influence forest resource conservation. Farmers have more regards to forest resource and so tends to conserve forest resources higher than other users of the forest resources. Farmers are involved in many practices that helps in restoring lost resources in the forest. Business men and women are the worst destroyers of forest resources. They practice less conservation because almost all the forest resources are exploited for business which might include industrial establishments, construction companies and so forth.

Recommendations

Based on the findings and conclusion of the study, the researcher made the following recommendations;

i. Government and other environmental stake holders organizing environmental awareness programme should involve both males and females in resource conservation practices.

ii Government and environmental stake holders should organize seminars, conferences and other awareness creation programme to educate people in population control. Families should have a medium size members that would be able to practice forest resource conservation effectively.

iii Emphasis should be place on education especially environmental education which will help to encourage and motivate residents positively towards forest resource conservation practices.

iv Residents should be educated and empowered to be self sufficient in order to reduce much dependency in forest resources.

v Government and environmental stake holders should educate and encourage people to register their business before operating especially in the forest and business that flaunt forest regulation should be fined or punished.

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