Transdisciplianry Journal of Education and Sustainable Development Studies, *Vol. 2, No. 1,April 2026*
A publication of the Department of Education Geography & Sustainable Development Studies, University of Calabar, Nigeria. ISSN: 1595-8051 EISSN: 3092-9571

Population Growth and Forest Resources Exploitation in Ikom Education Zone, Cross River State, Nigeria

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Abstract

The main purpose of this study is to determine the relationship between population growth and forest resources exploitation in Ikom education zone, Cross River State, Nigeria. To achieve the purpose of the study, one research question was posed and one null hypothesis was formulated at .05 level of significant. The study adopted survey research design. The population of this study comprised 1,089,053 rural dwellers in the four selected areas (Boki, Etung, Ikom & Obubura, local government areas) Sample size of 659 rural dwellers was selected for the study using purposive and proportionate sample technique; purposive sample technique was used to select the sample. This technique was applied to select only 4 out of 6 local government Areas in the study area, the sample size was proportioned among the

DOI: https://doi.org/10.60787/tjesds.vol2no1.97

communities based on the ratio of their various populations. Questionnaire was used to collect data for the study, and was administered to 659 rural dwellers (336 male and 323 female) in only four different local government areas. The reliability coefficient, which ranges from .71 - .85 was determined using Cronbach Alpha Statistics. Data was analyzed using Pearson Product Moment Correlation and multiple regression analysis at 0.05 level of significance. The finding of the study showed a significant relationship between population growth and forest resources exploitation in Ikom education Zone, Cross River State, Nigeria. Based on the result of the study, recommendation were made which include; Family planning education and services should be made accessible to the local population to help manage population growth and reduce pressure on forest resources.
Key words: population growth, forest resources, forest exploitation

Introduction

The current trends in human demand for arable land for agriculture production and other forms of development has resulted in widespread deforestation and loss of biodiversity. The increasing pressure on the forest resources has led to the endangerment and extinction of various species of plants and animals. The need to conserve the forest and its resources has a long history with the adoption of various approaches including sensitization of citizens on the values of such resources with the aim of reducing human dependence on the scarce resources of the forest (Otukwa, 2018). The forest is an essential natural resource of the environment which comprises both timber and non-timber forest products with each playing a highly indispensable roles within the ecosystem, hence, the need to constantly utilize these resources in a manner that would ensure their availability at all times.

Population growth is a significant driver of forest resources exploitation, as increasing numbers of people put pressure on land and natural resources, leading to deforestation, habitat loss, and biodiversity decline. According to the United Nations, the world's population is projected to reach 9.7 billion by 2050, placing unprecedented pressure on the world's natural resources, including forests (UN, 2022). As populations grow, more land is needed for agriculture, urbanization, and other human activities, resulting in widespread deforestation and habitat destruction. The increasing demand for resources, including wood and other forest products, also contributes to over-exploitation and degradation of forests. Addressing population growth and promoting sustainable forest management practices is essential for reducing forest resources exploitation and promoting forest conservation. By adopting sustainable practices and reducing consumption patterns, we can help mitigate the impacts of population growth on forest ecosystems and ensure the long-term health and productivity of forests.

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ISSN: 1595-8051 EISSN: 3092-9571

Meyerson, (2023), carried out a study on population, biodiversity, and changing climate, highlighting the complex relationships between population growth, forest resources exploitation, and environmental degradation. According to the author, population growth is a significant driver of forest degradation and deforestation, particularly in tropical regions. The study analyzed data from multiple sources, including remote sensing and field observations, to assess the impact of population growth on forest ecosystems. The results revealed that population growth leads to increased demand for land, water, and forest resources, resulting in deforestation and habitat loss. The study's findings have important implications for sustainable forest management and conservation. The author emphasizes the importance of addressing population growth and consumption patterns to mitigate the impacts of forest resources exploitation. The results highlight the need for effective policies and regulations to support sustainable forest management and conservation. Meyerson's study provides valuable insights into the relationships between population growth, forest resources exploitation, and environmental degradation

The rainforest communities in the study area are richer in forest resources materials which attracts the influx of people from many locations to engage in business in these communities. Population growth rate in rural communities is becoming alarming due to influx of people, industries, business men who are engaged in timber business and the market women who are also buying from the rural farmers. Some are also engaged in farming activities and buying from the local markets. During the process of urban development, the tropical rainforest is cleared and swamps are reclaimed for agriculture, industries, settlement (housing) or any developmental purposes. Social status is seen as a means influencing the rainforest because the rural dwellers operate at a subsistence level thereby putting a lot of pressure on the tropical rainforest to meet their daily needs such as food items, fuel woods, medicinal herbs, bush meats, chewing sticks, ropes, raffia, fruits, water sheds, timbers, nut, resins, honeys, wildlife, cane among others which are becoming scare (Marco, 2021).

UNEP (2024) carried out a study on the global resources outlook, highlighting the urgent need for sustainable resource management and conservation. According to the authors, the world's natural resources are being consumed at unsustainable rates, driven by population growth, economic development, and consumption patterns. The study analyzed data from multiple sources, including remote sensing and field observations, to assess the impacts of resource exploitation on the environment. The results revealed that resource extraction could rise by 60% from 2020 levels by 2060, driving increasing damage and risks to the environment. The study's findings have important implications for sustainable resource management and conservation. The authors emphasize the importance of promoting

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sustainable consumption patterns, reducing waste, and improving resource efficiency to mitigate the impacts of resource exploitation. The results highlight the need for effective policies and regulations to support sustainable resource management and conservation. The study provides valuable insights into the impacts of resource exploitation on the environment and highlights the need for sustainable management practices. The authors conclude that urgent action is needed to address the growing environmental challenges faced by communities worldwide. The study's results have important implications for policy and decision-making processes related to environmental conservation and sustainable development. The importance of promoting sustainable resource management cannot be overstated. Effective management of resources requires a comprehensive approach that balances economic, social, and environmental considerations.

Forest conservation help conserve ecosystems that provide habitats, shelter, food, raw materials, genetic materials, a barrier against disaster, a stable source of resources and many other ecosystem goods and services and thus can have an important role in helping species, people and countries adapt to climate change. By virtue of their protective status, these forests should remain free from destructive human interventions. They can thus continue to serve as a natural storehouse of goods and services into the future. Forest areas may provide ecosystem services such as drinking water, carbon storage and fossil stabilization, harbour, sacred sites for different faith groups and hold important gene reservoirs of value in medicine, agriculture and forestry. In the face of climate change, these roles all become more critical to enhance the adaptive capacity of local people to cope with climate change (Simms, 2015). An understanding of integral role of forest in the earth life support system could be better understood from the ecological and socio-economic services which they provide to both the environment and mankind (Shibu, Alarape & Bichi, 2018).

Notwithstanding the importance of forest resources, major challenges facing the forest resources include decline of forest biodiversity population, structural change due to forest removal and conversion of forest land to other uses, forest fragmentation, forest practices, climate change, disease conditions, pests, atmospheric pollutions, population growths and so on (Bisong, 2023).

The rainforest communities in the study area are richer in forest resources materials which attracts the influx of people from many locations to engage in business in these communities. Population growth rate in rural communities is becoming alarming due to influx of people, industries, business men who are engaged in unsustainable exploitation of forest activities and the market women who are also buying farm produces from the rural farmers. Some are also engaged in farming activities and buying from the local markets. During the process of

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urban development, the tropical rainforest is cleared and swamps are reclaimed for agriculture, industries, settlement (housing) or any developmental purposes. Social status is seen as a means influencing the rainforest because the rural dwellers operate at a subsistence level thereby putting a lot of pressure on the tropical rainforest to meet their daily needs such as food items, fuel woods, medicinal herbs, bush meats, chewing sticks, ropes, raffia, fruits, water sheds, timbers, nut, resins, honeys, wildlife, cane among others which are becoming scare (Marco, 2021). Therefore, based on the premise that population growths could probably be related with exploitation of forest resources, this study ascertained population growths as a correlate exploitation of forest resources in Ikom Education Zone of Cross River State, Nigeria.

Theoretical background

Expectancy Theory (1964)

Victor Vroom propounded the Expectancy Theory in 1964 by posting that an individual would be motivated to endeavor reach a goal if he had a belief in the value of the goal (Vroom 1964). However, any individual could be motivated to become proactive towards the attainment of a goal if he believes that the attainment would lead to the attainment of desired outcomes. In other words, an individual will be motivated to engage in a specific activity if he believes that there will be a positive correlation between his effort and the reward (s) to be gotten during the processes or on the completion of attaining the goal. Based on the foregoing, it can be deduce that an individual's mindset towards engaging in a specified behavior would depend on the person's perception of what to expect on completion or attainment of the desired activities (Parijat & Bagga, 2014).

The basic assumption of the theory includes:

i. An individual would develop a perception about possible consequences which would arise from his behavioral action (s) and the casual relationship among the expected outcomes, (the perception about the possible consequences is what is referred to as expectancies) based on unsustainable utilization of forest resources.
ii. Individuals have pre-emptive reactions to certain outcomes. A pre-emptive reaction depicts the valence (an individual's positive/negative placement of value) or outcomes (Lunenburg, 2011). From the assumptions, it could be seen that an individual would at first perceive possible implications which would arise from his intended behavioral actions. Furthermore, the individual would weigh the causal relationship among the expected outcome(s) of his intended behavioral actions(s).

In conclusion, the individual would develop a pre-emptive reaction to the expected outcomes, and the pre-emptive reaction which are concerned with the positive/negative value that he places on the outcome of his behavioral action(s). Base on the premises deduced from the

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theory assumptions; the theory is basically applied to the study in form posers and the posers and connected with the studies (population growth). In the area under investigation, how will farmer's perception of the possible consequences of the intended behavioral action(s) be enhanced, so that at the end of the "expectancy thinking" process, they would place a positive value towards engaging in sustainable exploitation of forest resources. On the other hand, could it be that in the area under investigation, farmers' motivators are influenced in ways which make them place negative values towards engaging in sustainable exploitation of forest resources. Though, the implication of the theory to this study is that enhancing rural dwellers expectancy thinking process towards engaging in sustainable exploitation of forest products would most likely influence them to actually engage in such activities that are sustainable to the rainforests in their communities.

Statement of the problem

The tropical rainforest in Ikom Education Zone, Cross River State, Nigeria, had for the past years been full of important fauna and flora and other valuable forest resources, based on the unsustainable extraction of forest resources, in the recent time, the forest is at the brink of collapse due to rampant environmental degradation carried out by human activities (population growth). The relentless human population has pushed the forest ecosystem to the edge. Unsustainable human activities in the forest have ravaged the forest, causing widespread deforestation and forest degradation, and resulting in the loss of biodiversity and ecosystem imbalance. Increasing human population has also taken a toll on the forest, as vast tracts of land are cleared for agricultural purposes, leaving behind a trail of destruction.

Despite the grave and alarming reports concerning biodiversity loss in the state's tropical forests in recent times (most especially in the area under investigation, researchers have continuously revealed reports of unchecked forest clearings for development, agricultural land uses, indiscriminate bush burnings for farmland planting and many crude agricultural practices as ways in which the state's biodiversity have been managed from an agro-based dimension. In addition to the agricultural issues, large scale fuel-wood extraction, unauthorized and illegal logging activities, unsustainable harvesting of non-timber forest products, unauthorized and wide-scale grazing are ways which have been reported of how biodiversity has been impacted upon by other increasing human activities. It is as a result of the worrying issues stated above that this study ascertained the relationship between population growth and forest resources exploitation in Ikom education zone, Cross River State, Nigeria.

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Purpose of the study

Specifically, this study sought to:

1. Identify the extent to which population growth relate to forest resources exploitation in Ikom education zone of Cross River State.

Research questions

The following questions were posed to guide the study;

1. To what extent does population growth relate to forest resources exploitation in Ikom education zone of Cross River State?

Statement of hypotheses

The following null hypotheses were formulated to guide the study;

1. There is no significant relationship between population growth and forest resources exploitation in Ikom education zone of Cross River State

Methodology

The study adopted survey research design. The population of the study comprised rural farmers in Ikom Education Zone, Cross River State, Nigeria. The sample for the study was 659 (336 males and 323 females), and purposive sampling technique was employed for the study. A questionnaire was used to elicit data for the study, the questionnaire was tagged the "Population Growth and Forest Resources Exploitation Questionnaire (LOTAFREQ). The Cronbach Alpha method was used to calculate the reliability indices of the instrument. The reliability estimates ranged from .71 to .85, indicating a moderate to high level of reliability. The data was analysed using Pearson Product Moment Correlation.

Presentation of results

The result of the study was presented, based on the hypothesis of the study.

HO_1

There is no significant relationship between population growth and forest resources exploitation in Ikom Education Zone of Cross River State.

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Table 1: Pearson Product Moment Correlation (PPMC) of relationship between population growth and forest resources exploitation in Ikom Education Zone of Cross River State (N=659)

Variables	$\bar{x}$	SD	r-ratio	Df	p-level
Population growth (X)	18.324	1.87192	.128*	657	.000
Forest resources exploitation (Y)	26.460	2.10173			

*Significant at .05 level; p<.05.

The result of data analysis is presented in Table 13. The finding Table 10 showed that population growth had a mean score of 18.324 with a standard deviation of 1.872 while forest resources exploitation had a mean score of 26.460 with standard deviation of 2.1017. The outcome further showed that the r-calculated value of 0.128 is significant at .05 level of significance and 657degrees of freedom. Also, the p<.000 is less than p<.05. Sequel to this result, the null hypothesis which stated there is no significant relationship between population growth and forest resources exploitation in Ikom Education Zone of Cross River State was rejected showing that there is a significant relationship between population growth and forest resources exploitation in Ikom Education zone of Cross River State.

Discussion of findings

It was equally discovered from hypothesis five analyses that the null hypothesis was rejected. This implies that there is a significant relationship between population growth and forest resources exploitation in Ikom education zone of Cross River State. This conclusion therefore means the more the population, the more they relay of the forest resources for survival leading to forest resources exploitation in the research area This conclusion is in line with Meyerson (2023), who carried out a study on populations, biodiversity, and changing climate, highlighting the complex relationships between population growth, forest resources exploitation, and environmental degradation. According to the author, population growth is a significant driver of forest degradation and deforestation, particularly in tropical regions. The study analyzed data from multiple sources, including remote sensing and field observations, to assess the impact of population growth on forest ecosystems. The results revealed that population growth leads to increased demand for land, water, and forest resources, resulting in deforestation and habitat loss. The study's findings have important implications for sustainable forest management and conservation. The author emphasizes the importance of addressing population growth and consumption patterns to mitigate the impacts of forest resources exploitation. The results highlight the need for effective policies and regulations to support sustainable forest management and conservation. Meyerson's study provides valuable

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insights into the relationships between population growth, forest resources exploitation, and environmental degradation.

Conclusion

In conclusion, this study has established a significant relationship between human activities such as population growth, and forest resources exploitation in Ikom education zone of Cross River State, Nigeria. The findings highlight the need for sustainable forest management practices and effective conservation measures to mitigate the effects of these human activities on forest resources. The study's results have implications for policymakers, forest managers, and stakeholders in developing strategies to address forest resources exploitation. The significant joint effect of the predictor variables on forest resources exploitation underscores the complexity of the issue and the need for a comprehensive approach to address it. Ultimately, this study contributes to the understanding of the drivers of forest resources exploitation and provides a basis for developing evidence-based solutions to conserve Nigeria's forest resources...

Recommendations

Based on the finding and the conclusion of the study, the researchers recommended the following;

1. Family planning education and services should be made accessible to the local population to help manage population growth and reduce pressure on forest resources.

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