

## LIKELIHOOD OF POVERTY AND ENVIRONMENTAL BEHAVIOUR IN ANIOCHA NORTH LOCAL GOVERNMENT AREA DELTA STATE.

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### Abstract

*As human population increases, the demand for food rises. Poverty is the most appropriate word to describe the human condition in Nigeria today (if the index of poverty should be below one-dollar par day). And the World Commission on Environment and Development from the Brundtland report stated that "Poverty pollutes the environment, creating environmental stress in different ways" those who are poor and hungry destroy the immediate environment to survive. This study was therefore designed to investigate the influence of likelihood of poverty on environmental behaviour of residents of Aniocha-North Local Government Area of Delta State, Nigeria. To achieve the purpose of the study, two research questions was posed and two null hypotheses formulated and tested at 0.05 level of significance. The study adopted an ex-post facto research design. The sample size comprises of one hundred and twenty (120) inhabitants of Aniocha North LGA of Delta State Nigeria. The instrument for data collection was a 35-item structured questionnaire developed by the researcher. The instrument is titled "Poverty and Environment Behaviour Questionnaire (PEBQ)". The major sub-variables in the study includes: likelihood of poverty (poverty, population). While the dependent variable is environmental behavior in terms of, pollution, bush burning farming operations, and deforestation. One-way analysis of Variance analysis (ANOVA) was used to analyze the hypotheses. The finding of the study indicated that there is indeed a significant influence of poverty and population on environmental behavior in terms of pollution, bush burning farming, and deforestation. Based on the finding of the study, the researcher recommended as follows: that the. Secondly, there is need for the government to introduce birth control measures in the research area to reduce the rate of population increase. This may be possible through distribution of condoms or other birth control measure in the local hospitals or maternity centres in Aniocha North LGA, of Delta State*

**Keywords:** Likelihood, poverty, environmental behavior, Aniocha North Delta State



### Introduction

As human population increases, the demand for food multiplies, there appears to be an increase in the relationship between the rate at which the population of a country is growing and the standard of living of the people (Enger and Smith 2006; Igwebuike, 2014). Poverty is the most appropriate word with which to describe the condition of human in Nigeria today ( if the index

of poverty should be below one dollar per day) (WHO, 2018). And the World Commission On the Environment and Development, stated in Brundtland Report (1972) —Poverty pollute the environment, creating environmental stress in different ways. Those who are poor and hungry usually destroys the immediate environment in order to survive (Bisong, 2001). They will cut down forest, over stress a piece of land, litter the environment and in most cases over congest cities and enhances much pollution. The cumulative effect of these changes is so far reaching as to make poverty itself a major global scourge (WHO, 2013). People must either grow food themselves or purchase it. Most people in the developed societies purchase what they need and have more than enough food to eat, while those people in the less developed nations must grow their own food and have very little money to secure additional need, hence living below poverty line (Enger & Smith, 2016).

Typically, these poor farmers have very little supply. If crop fails, they starve. Even countries with the highest population (China and India), the majority of the population live on the land and farm; this is as a result of the fact that 59% of Chinese and 72% of Indians live in rural area (Enger & Smith 2016). Humans directly or indirectly depend on plants and animals for their survival and over exploitation with reference to environmental behavior of these environmental resources leading to destruction of the ecosystem (Igwebuike, Kujoh & Ayuk 2021)

As Rowland (2012) puts it forest management is the management of the forest for different benefits such as health, economic and social implications, that is to say that forest management enhances social, economic and environmental objectives. In 2007, the United Nations General Assembly, took on the non-legally binding instrument on a wide range of forest as respect to sustainability. The instrument being the first of its sort mirrored on strong global responsibility in advancing the implementation of forest sustainability through the approach of uniting all partners to take part (Rowland, 2012).

The environmental behaviour could impact the outcome of the environmental stability as in the case of pollution, bush burning farming operations, and deforestation. Is against this background that this study sought to investigate the influence of likelihood of poverty on environmental behaviour of residents of Aniocha-North Local Government Area of Delta State, Nigeria.

In most rural communities of Delta State, about 80% of residents depend solely on fuel wood as source of energy for cooking and heating of Water thereby placing an unsustainable burden on the forest and depleting gradually the sequestration capacity of the forest. The climate change department seeks to cut down the level of greenhouse gas emissions through cooking and heating by introducing to these communities' clean cook-stoves (Eco- stoves) that are energy efficient than the traditional tripod burners that waste energy. As an effort by the government to save the environment, the climate change Department carried out this project in three rural communities in Delta State Producing and distributing over 2500 Eco stoves in these communities. In urban and semi urban cities, the department embarks on installations of solar installations in primary healthcare centers and biogas digesters that turn kitchen waste to cooking gas (Igwebuike, 2014)

### **Statement of the problem**

In recent times the attitude of the average rural community dwellers towards the environment is on the negative side. This attitude that culminate into environmental behavior is a problem that exists particularly in adults, that grows up with already formed and established negative environmental behavior which may be difficult to change. Most of the problems of environmental degradation in Aniocha North Local Government Area of Delta State is viewed to be caused by man due to their environmental ethics which ultimately influences their environmental behavior. In this development most, people argue that we need to be

environmentally responsible, while some think that hence the environment is their last resort, they have to explore it not considering its impact on the environment.

Due to the level of poverty in Aniocha-North as well as poor environmental and water management have turned the delta into one of the largest polluted areas on the planet. Millions of people and migrating birds are at risk of exposure to waterborne contaminants. When human need food, they convert natural ecosystem to artificially maintained agricultural ecosystem. The natural mix of plants and animals are destroyed and replaced with species useful to human. If this agricultural ecosystem is mismanaged, the regions total productivity may fall below that of the original ecosystem. Based on the aforementioned, the researcher was poised to ask — if there is any significant influence of poverty on environmental behavior of the residents of Aniocha-North Local Government Area?

### **Theoretical background**

#### **The vicious cycle theory by Lord and Living Stone (1969)**

This theory was propounded by Lord and Living Stone (1969) stating that low income enhances low investment and in turn, low, investment promote low income. Through the income capability urban dweller are comparatively higher than the rural dwellers in terms of productivity. We see that this low level of investment due to excessive financial incapacities, especially in the rural areas, low increase in capital stock and the capability to produce persistently kept income at the lowest level a situation which is typical in Aniocha North LGA, of Delta State,

By implication to the present work, due to the poor saving culture as practiced in the rural area, which is as a result of low income, investment has been on a low side and this subsequently enhances poverty. Presently, land is far from being productive again because of the over cropping. There has being an acute deforestation, bush burning and overgrazing of the land. The cost of living in the rural areas has risen tremendously and this has led to many forms of crime, like robbery, rape and other forms of social vices. As these factors are interrelated containing a cyclical form, thus supporting the theory of vicious cycle, the feed back will result in poverty. In this contribution, the United States Council of Economic Development in their 1964 report, stated that vicious cycle in which poverty breeds poverty takes place through time and transmits itself through generation (Enger and Smith, 2006). Coaste and Silburn (1890) equally stated that poverty constitutes an interrelated network of deprivation, because poverty not only breeds but also nurtures poverty in a clinical form.

#### **The concept of poverty and environmental behavior**

Sequel to increase in human population, the demand for food subsequently increased, when human need food, they convert natural ecosystem to artificially maintained ecosystem due to agricultural use (Enger & Smith, 2006). The concept of poverty could be viewed from as many points: social, cultural, economic and environmental. Likewise, the question as to who are the poor? remains difficult to answer because poverty is a social concept whose definition depends on many factors, among which are culture, level of social development and the background of individuals trying to define the poor (Olanrewaju, 2004). Two of the major problems that are facing the world today are poverty and environmental degradation. Man interacts with the environment in the quest for satisfying his daily needs. This process of man- environment interaction causes some damages to the environment. Apart from these anthropogenic damages, some unanticipated consequences of natural disasters impinge seriously upon the environment. These problems are compounded by lack of material resources, inadequate loans and subsidies, illiteracy and lack of environmental awareness and consciousness. The environment becomes degraded, causing threats to the existence and survival of man. A positive change in attitude towards the environment is needed in order to save the most cherished flora and fauna A major problem that inhibits sustainable development is poverty. It is like a disease that saps the vitality of people and nations. Poverty is caused by social, cultural, economic and political factors that

can be recognized and remedied if and when the resources and means are available. The major causes of poverty need to be identified as well as the steps that could be taken to combat them. Hence this research raises awareness about the threats facing the environment as a result of poverty. It proposes steps that could be taken in order to halt the damage that modernization is inflicting on the environment. It equally explains the constraints that poor people face in their attempt to escape from poverty. More importantly, possible ways out of poverty are suggested.

The human and therefore moral and religious challenges of our times are to halt the destruction of our environment and heal where possible, the damages which have already been inflicted on the planet. Sean (2004) viewed the environment from religious perspective and argued that the earth is the Lords and that our role is to look after this precious gift and not to destroy it. Hence, a combination of environmental awareness and management is required to save the planet earth. Beyond environmental awareness, participatory democracy is critical to addressing environmental issues (CEE, 1994).

- **Poverty index**

A poverty index measures the level of poverty in a society. In measuring the level of poverty, a poverty line or poverty threshold, usually stated in terms of income, is defined to divide the society into two separate groups. An individual is poor if that individual lives below the poverty line. An index that measures the percentage of households in a country deprived along three dimensions –monetary poverty, education, and basic infrastructure services – to capture a more complete picture of poverty. The Human Poverty Index was an indication of the poverty of community in a country, developed by the United Nations to complement the Human Development Index and was first reported as part of the Human Development Report in 1997 UNDP

### **The concept of population and environmental behavior**

The rapid growing population and economic development is leading to a number of environmental issues in Nigeria because of the uncontrolled growth of urbanization and industrialization, expansion and massive intensification of agriculture, and the destruction of forests. Major environmental issues are forest and agricultural degradation of land, resource depletion (water, mineral, forest, sand, rocks etc.), environmental degradation, public health, loss of biodiversity, loss of resilience in ecosystems, livelihood security for the poor (Igwebuike, 2007)

Population is an important source of development, yet it is a major source of environmental degradation when it exceeds the threshold limits of the support systems. Unless the relationship between the multiplying population and the life support system can be stabilized, development programs, howsoever, innovative are not likely to yield desired results. Population impacts on the environment primarily through the use of natural resources and production of wastes and is associated with environmental stresses like loss of biodiversity, air and water pollution and increased pressure on arable land. Human population issues are extremely important when it comes to our way of life and our future on this planet (Ishita, 2011).

Individuals are said to be affected in their actions and behaviour by their personal environment they are exposed to. The personal environment in turn is influenced by the properties of the total population of people. This influence may differ between individuals and cultural groups through the action filter, particularly the economic and cultural filter (Bisong, 2001).

### **Scope of the study**

This study was conducted in Aniocha north LGA of Delta State. The sub-variables of independent variable (likelihood of poverty) is poverty and population. The dependent variable is environmental behaviour in terms of pollution, bush burning farming operations, and deforestation.

**Purpose of the study**

The main purpose of this study is to investigate the influence of likelihood of poverty on environmental behaviour of residents of Aniocha-North Local Government Area of Delta State, Nigeria. Specifically, the purpose of this study therefore sought to:

1. determine the influence of poverty on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation
2. examine the influence of population on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation

**Sample of the study**

The sample of the study comprises of one hundred and twenty (120) inhabitants of Aniocha North LGA of Delta State Nigeria

**Research questions**

The following research questions are raised for investigation:

1. How does poverty influence environmental behaviour in terms of pollution, bush burning farming operations, and deforestation?
2. To what extent does population influence environmental behaviour in terms of pollution, bush burning farming operations, and deforestation?

**Statement of hypotheses**

The following research hypotheses serve as a guide to this study:

1. There is no significant influence of poverty on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation.
2. There is no significant influence population on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation

**Methodology****Research Design**

Ex-post facto design was adopted for this study. Isangedighi, Joshua, Asim and Ekuri (2004) asserted that "ex-post facto research design involves the collection of data to accurately and objectively describe existing phenomena. Studies that make use of this design are employed to obtain a picture of the present condition of a particular phenomenon. Ex-post facto research design is therefore very useful for opinion and attitude studies because it depends basically on questionnaire and interview as means of data collection. This research design is therefore considered appropriate for this study because it will allow the researcher to make use of a representative sample of the population from where generalization of the study result will be made.

**Procedures for data collection**

The questionnaire titled "Poverty and Environmental Behaviour Questionnaire (PEBQ) was the instrument used for data collection. This was administered in the identified study areas. The researcher first introduced himself to the respondents and informed them of the exercise and the essence of giving objective responses to the items. The researcher equally advised the respondents to be honest in their responses to the items as the information obtained will be treated with all amount of confidentiality and also used as data for the research only.

## Procedure for data analysis

In analyzing the data, each hypothesis of the variables was identified, followed by the statistical tool employed. One-Way Analysis of Variance (ANOVA) was used for data analysis of both variable at .05 level of significance and 2 and 117 degrees of freedom

## Results

### Hypothesis one

There is no significant influence of poverty on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation. The independent variable (x) is poverty while the dependent variable (y) is environmental behaviour in terms of pollution, bush burning farming operations, and deforestation. To test the hypothesis, One Way Analysis of Variance (ANOVA) was used. The result is presented in Table 1

**Table1**

One Way Analysis of Variance (ANOVA) of influence of poverty on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation in Aniocha-North Local Government Area of Delta State

Poverty		N	$\bar{X}$	Std. Deviation		
Pollution	Low	23	12.1332	3.01156		
	Average	57	14.7118	210612		
	High	40	13.1662	3.49241		
	Total	120	15.8665	2.04977		
Bush burning	Low	37	14.3441	2.19422		
	Average	45	13.0337	3.58332		
	High	38	14.7765	2.92016		
	Total	120	15.5443	2.36926		
deforestation	Low	33	14.3559	2.33874		
	Average	44	13.2921	2.73311		
	High	43	13.5172	2.20766		
	Total	<b>120</b>	<b>13.6604</b>	3.84063		
		Sum of Squares		Mean Square	F	P-value
Pollution	Between Groups	103.612	2	106.563	20.158	.000
	Within Groups	2010.233	117	3.703		
	Total	2113.845	119			
Bush burning	Between Groups	81.122	2	67.146	31.118	.000
	Within Groups	2099.209	117	9.345		
	Total	2180.331	119			
deforestation	Between Groups	71.531	2	56.801	17.332	.000
	Within Groups	2031.469	117	4.210		
	Total	2103.133	119			

\*P <.05; df 2 & 117; critical f = 3.29

The upper part of Table 1 shows the sizes, means and standard deviation for the three groups of respondents based on their responses on poverty influence. The actual results of ANOVA that compared the three group mean values are shown in the lower part of Table 1. The comparison yielded F-ratios of 20.158, 31.118 and 17.332 for pollution, bush burning and deforestation respectively. Three of the F-ratios (pollution, bush burning and deforestation) are each higher than the critical F-ratio of 3.29 at .05 level of significance, with 2 and 117 degrees of freedom. With these results, the null hypothesis is rejected in each of the three instances of pollution, bush burning and deforestation. This implies that there is a significant influence of poverty on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation in Aniocha-North Local Government Area of Delta State.

### Hypothesis two

There is no significant influence of population on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation.

The independent variable (x) is population while the dependent variable (y) is environmental behaviour in terms of pollution, bush burning farming operations, and deforestation. To test the hypothesis, One Way Analysis of Variance (ANOVA) was used. The result is presented in Table

**Table 2**

One Way Analysis of Variance (ANOVA) analysis of influence of population on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation in Aniocha-North Local Government Area of Delta State

Population		N	Mean	Std. Deviation
Pollution	Low	21	13.2223	2.41334
	Average	58	16.1251	2.71333
	High	41	13.7123	3.81322
	Total	120	15.6133	2.57122
Bush burning	Low	39	14.2337	2.81441
	Average	46	13.1182	2.13323
	High	35	13.6721	2.18852
	Total	120	15.1322	2.23244
deforestation	Low	30	14.3559	2.23315
	Average	48	14.3819	2.52234
	High	42	13.6612	2.31123
	Total	120	14.7122	3.11322

		Sum of Squares	Df	Mean Square	F	Sig.
Pollution	Between Groups	98.177	2	172.113	23.162	.000
	Within Groups	2015.668	117	8.799		
	Total	2113.845	119			
Bush burning	Between Groups	103.877	2	71.148	32.243	.000
	Within Groups	2076.454	117	10.133		
	Total	2180.331	119			

deforestation	Between Groups	98.721	2	78.821	19.433	.000
	Within Groups	2004.412	117	7.222		
	Total	2103.133	119			

\*P <.05; df 2 & 117; critical f = 3.29

The upper part of Table 2 shows the sizes, means and standard deviation for the three groups of respondents based on their responses on population influence. The actual results of ANOVA that compared the three group mean values are shown in the lower part of Table 2. The comparison yielded F-ratios of 23.162, 36.243 and 19.433 for pollution, bush burning and deforestation respectively. Three of the F-ratios (pollution, bush burning and deforestation) are each higher than the critical F-ratio of 3.29 at .05 level of significance, with 2 and 117 degrees of freedom. With these results, the null hypothesis is rejected in each of the three instances of pollution, bush burning and deforestation. This implies that there is a significant influence of population on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation in Aniocha-North Local Government Area of Delta State

## Discussion of findings

### Poverty and environmental behaviour

Hypothesis one revealed that there is a significant influence of population on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation in Aniocha-North Local Government Area of Delta State.

This assertion agrees with the work of Enger and Smith (2006) that stated that sequel to increase in human population, the demand for food subsequently increased, when human need food, they convert natural ecosystem to artificially maintained ecosystem due to agricultural use. The ascertainment is equally in line with Olanrewaju (2004) explaining that the concept of poverty could be viewed from as many points: social, cultural, economic and environmental. Likewise, the question as to who are the poor? remains difficult to answer because poverty is a social concept whose definition depends on many factors, among which are culture, level of social development and the background of individuals trying to define the poor.

### Population and environmental behaviour

Hypothesis two revealed that there is a significant influence of population on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation. This result is in line with Igwebuike (2010) who stated that rapid growing population and economic development is leading to a number of environmental issues because of the uncontrolled growth of urbanization and industrialization, expansion and massive intensification of agriculture, and the destruction of forests. Major environmental issues are forest and agricultural degradation of land, resource depletion (water, mineral, forest, sand, rocks etc.), environmental degradation, public health, loss of biodiversity, loss of resilience in ecosystems, livelihood security for the poor.

## Conclusion

Based on the result of the results of analyses and the subsequent findings, the following conclusion was reached: that there is a significant influence of poverty on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation in Aniocha- North Local Government Area of Delta State. It was equally discovered that there is a significant influence of population on environmental behaviour in terms of pollution, bush burning farming operations, and deforestation in the research area.



## Recommendations

The following recommendations were drawn from the result of the study

1. The government should provide employment opportunities to the mass of unemployed population in Aniocha North LGA to enhance their economic status
2. In addition to job creation, there is need for the government to introduce birth control measures in the research area to reduce the rate of population increase. This may be possible through distribution of condoms of other birth control measure in the local hospitals or maternity centres in Aniocha North LGA, of Delta State.

## References

- Anija-Obi, F. N (2001). *Environmental protection and Management*. Calabar: University of Calabar Press
- Council for Environmental Education (CEE) (1994): —Environmental Education: On the Fringe of the Machine. *CEE Annual Review* 1-68
- Enger, D. E, & Smith B. F. (2016). *Environmental Science. A study of interrelationship*. USA: McGrey-Hill Publication
- Igwebuike, O. (2015). Outward based learning and sustainable forest conservation in Delta State. An unpublished Master's degree Thesis, University of Calabar, Cross River State, Nigeria.
- Igwebuike, O. (2010). Poverty and Environmental Behavior in Aniocha North L.G.A Delta State. An unpublished PGD thesis, carried out Environmental Education Department Faculty of Education University of Calabar, Calabar Cross River State.
- Igwebuike, O. (2014). Outdoor Education and Environmental Sustainability in Calabar Education Zone. An unpublished Master's degree (M.Ed) thesis, carried out in Curriculum and Teaching Department (Environmental Education unit), Faculty of Education University of Calabar, Calabar, Cross River State.
- Igwebuike, O., Kujoh, J. U & Ayuk, G.O (2021). E-learning facilities and implementation of educational technology curriculum in colleges of education in Cross River State, Nigeria. *EVAIA: International Journal of Ethics and Values*, 2(1) 231-234,
- Isangedighi, A. J. Joshua, M.T., Asim, A. E. & Ekuri E.E. (2004). *Fundamentals of research and statistics in education and social sciences*. Calabar: University of Calabar press.
- Ishita, A. R. (2011). Impact of Population Growth on Environmental Degradation: Case of India, *Journal of Economics and Sustainable Development*, 2(8), 2222-285
- Olanrewaju, D.O. (2004). —Town Planning: A Veritable Means for Poverty Reduction. Inaugural Lecture Series 38, Federal University of Technology, Akure, Nigeria.
- Sean, M. (2004). *Living Highly on the Earth*. London, Catholic Institute for International Relations (CIR).
- United Nations Development Programme (UNDP) (1997). Human Development Report in 1997, <https://hdr.undp.org/content/human-development-report-1997>
- World Bank (1996). *Study on Poverty Assessment and Alleviation in Nigeria*, Washington, D.C. World Bank

