



ANALYSIS OF POVERTY STATUS OF FARMING HOUSEHOLDS AFFECTED BY BOKO HARAM SHOCK IN JERE LOCAL GOVERNMENT AREA OF BORNO STATE, NIGERIA

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ABSTRACT

This study analyzed the poverty status of farming households to Boko Haram shock in Jere local government area of Borno State, Nigeria. Primary data were collected from 358 households which were randomly selected across Jere and administered structured questionnaire. Descriptive statistics, FGT and Logit regression models were used for the data analysis. The result shows that majority (71.4%) of the respondents were male, 78.4% were married and the mean age is 39 years. The result also revealed that all the respondents have passed through a form of education and majority (87.7%) of the respondents were farmers. The result also shows that 49.6% of the respondents operate below poverty line, while 50.4% were above poverty line. Also, the Tobit regression model revealed that age, level of education, household size and total income were the significant variables influencing poverty in the study area. In conclusion, there is incidence of poverty among the farming households since insecurity has occasioned that the agricultural sector alone cannot be relied upon as the core activity for households as a means of improving livelihood and reducing poverty in the study area. The study recommends that since half of the households live below poverty line, there is need for policy makers to direct appropriate poverty alleviation programmes and projects on them.

Key Words: Poverty Status, Farming Households, Boko Haram and Borno State.

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INTRODUCTION

Poverty has remained a threat and a long existing challenge worldwide (Liu and Li, 2017). It is a global phenomenon, evidently affecting continents, nations and peoples differently. It afflicts people in various depths and levels at different times and phases of existence. Based on statistics released by World Bank in 2023, there are still almost 700 million people living in extreme poverty around the world including in Nigeria. Despite a plethora of poverty reduction strategies (provide

clean water, reducing poverty with resilience, human accumulation, infrastructure National Bureau of Statistics, 2023), investing in educational programs, providing access to affordable healthcare, stimulating inclusive economic growth etc) that have been adopted in Nigeria, poverty incident particularly in the rural areas is still very high as reports currently suggests it to be even more alarming. Empirical reports confirm that 133 million Nigerians are now living in extreme poverty which represent nearly 63% of the 215 million population (World Bank Survey, 2022). The increasing poverty incidence, both within and among locations, persisted, in spite of various resources and efforts exerted on poverty-related programme and schemes in the country. On regional basis, the North-west and North-east had the highest poverty incidence of 45.49 million and 20.47 million people living in poverty respectively.

According to Ucha (2017) poverty and insecurity in Nigeria is widespread and severe and it is a reality that shows lack of access to food, clothes, education and other basic amenities. The problem of poverty in Nigeria is synchronous with increasing pace of insecurity and dwindling economic growth. In recent years, Boko Haram insurgency in the north-eastern part of Nigeria has attempted to exploit the Northern region's low level of agricultural activities, infrastructure, public services, and security. According to United Nations High Commission for Refugees, the North-eastern Nigeria has witnessed several violent attacks since 2009 which have claimed lives and properties (UNHCR, 2014). Destruction of properties worth billions of naira and the consequence of which is the displacement of people, destruction of economic activities and social infrastructure and most importantly aggravating an unsecured livelihood among households. According to Recovery and Peace Building Assessments (RPBA) report 2018; Boko Haram attacks have affected all aspects of life, from economic growth to access to basic services, and resulted in the North's growing isolation most especially Borno State which is the main focus of this research. United Nations Development Programme (UNDP, 2018) stated that the crisis, have caused destruction of livelihoods and properties worth over \$5.9 billion, 25% of the households remain displaced, and only 14% are ready to return home.

Violence perpetrated by the Boko haram extremist group since 2009 has severely affected Borno State. The consequences of the insurgent group in Borno State, such as destruction of lives and properties, are serious issues that cannot be over emphasized. The group's incessant bombings and other activities no doubt impacts negatively on lives of the people in the affected areas, thus depriving farmers of their livelihoods as they seek refuge in safe areas. Most farmers in Borno State hardly go to farms for the fear of being ambushed and as a consequence, they tend to farm proximally to their dwelling most especially in the Jere cluster. Even where farmers are still able to produce, they face difficulties moving their harvest to the towns and cities where they are in demand because insurgents have sabotaged transportation infrastructures, and vehicles traveling on remote roads risk being attacked. This has resulted in widespread displacement and a growing humanitarian emergency, which led the inhabitant of the state to loose most of their livelihood capital thereby negatively affecting their adaptive capacity in an event of shock. The study therefore has the objective to estimate the poverty status of the respondents, the determinants of poverty among the respondents and the constraints faced by the respondents.

METHODOLOGY

The Study Area

The study was conducted in Jere Local Government Area of Borno State, North-east Nigeria with the headquarters of the LGA in the town of Khaddamari. Jere LGA lies between latitudes 11° 40' and 12° 05' N; longitudes 13° 50' and 12° 20' E with total land area of 169,000 square kilometers (Borno State Ministry of Land and Survey, 2006) and has an average temperature of 33°C. The average humidity level of the LGA is put at 29 percent while the total precipitation in the area is estimated at 850 mm of rainfall per annum. The projected population of Jere LGA according to National Population Commission projection of 3.4% for 2022 will be 293,800 (NPC, 2006) inhabitants with the area hosting members of diverse ethnic groups such as the Kanuri, Hausa, and the Fulani. The Hausa language is commonly spoken in the area while Islam is the commonly practiced religion in the area.

Jere LGA has farming as the major occupation of its inhabitants and crops such as onions, cowpea and sorghum are grown in the area. Trade also blossoms in Jere LGA with the area hosting a number of markets where a variety of commodities are bought and sold by the members of the LGA. A number of domestic animals such as camels and horses are also reared and sold in the area.

Sampling Procedure and Data Collection

Multi-stage sampling technique was used for the study. The first stage involves purposive selection of six farming communities, this includes: Alau, Lawanti, Gongolong, Bale-Galtimari, Jere and Mairi. The selection is due to large concentration of farming households' in the area. Using Raosoft sampling calculator, a sample size of 358 was estimated.

The research employed the use of primary data. The data was collected using a well-structured questionnaire with the assistance of trained enumerators. The data contains information on Poverty, determinants of poverty and all the constraints faced by the respondents in the study area.

Analytical Tools

Foster, Greer and Thorbecke (FGT) model, was used to determine the poverty status of the respondents in the study. Total per capita expenditure was used as a measure of the standard of living of the Households. In the study, total expenditure is considered as the sum of cash expenditure on consumption of goods and services, the value of own production of goods and services, transfers and remittances received and goods received on barter transactions. Although expenditure as a proxy for poverty measurement may not fully express the households' command over goods and services, it is however the most widely used in determining poverty line particularly because it reflects more of current well-being and it also makes measurement easier. This study adopts income indicator measures (FGT) in which the poverty line is going to be expressed simply as income or expenditure threshold.

P- alpha Poverty Measures

P- alpha measures proposed by Foster et al., (1984) was used in analysing poverty status of the respondents. They include the head count index P0, poverty gap index P1, and poverty severity index P2. The general formular for this class of poverty measures depends on a parameter α which takes a value of zero (0) for the head count, one (1) for the poverty gap and two (2) for the poverty squared gap. Foster Greer and Thorbecke Index (FGT Index) has found a wider application in scholarly works (Ayinde et al., 2002). The model is a class of additively decomposable measure

of poverty. The measure subsumes the headcount index and the poverty gap, and provides the distributional sensitive measure through the choice of a poverty aversion parameter “ α ”; the larger the value of the “ α ”, the greater the weight given by the index and severity of poverty (Anyawu, 1997). The general specification of the model is given as;

$$P_{\alpha} = \frac{1}{n} \sum_{i=1}^q \left[\frac{Z-Y_i}{Z} \right]^{\alpha} \quad (\alpha \geq 0) \dots\dots\dots(1)$$

- P_{α} = Foster Greer and Thorbecke index ($0 \geq P_{\alpha} \geq 1$)
- n = Total number of the sampled households under consideration
- z = Poverty line (1.25 US Dollar per day)
- Y_i = Daily per capita expenditure of i th households
- α = FGT parameter ($\mu \geq 0$)
- i = Individual households

The α takes on a value of 0, 1, 2, with different implications; When $\alpha = 0$, it measures poverty incidence. This translates to the headcount ratio (Anyawu, 1997), that is the proportions of the households below poverty level, 1 for poverty gap and 2 for the severity of poverty.

$$\text{Daily per Capita expenditure} = \frac{\text{Total household expenditure}}{\text{Household size}} \dots\dots\dots (2)$$

Headcount Index (P0)

This was used to measure the proportion of the population that is counted as poor, often denoted by P_0 .

Formally,

$$P_0 = \frac{1}{n} \sum_{i=1}^n I (y_i < z) \dots\dots\dots (3)$$

Here, I is an indicator function that takes a value of 1 if the bracketed expression is true, and 0 otherwise. So if expenditure (y_i) is less than the poverty line (z), then $I(.)$ equals 1 and the household would be counted as poor.

Poverty Gap Index (P1)

This measures the extent to which individuals on average fall below the poverty line, and expresses it as percentage of households that are poor. More specifically defined, the poverty gap (G_i) as the poverty line (z) less actual income (y_i) for poor individuals; the gap is considered to be zero for everyone else. Using the index function, we have;

$$G_i = (z-y_i) \times I (y_i < z)$$

Then the poverty gap index (P_1) may be written as;

$$P_1 = \frac{1}{n} \sum_{i=1}^q G_i / Z \dots\dots\dots (4)$$

Squared Poverty Gap (P2)

This measures the amount in which each household that is tagged poor have to make up in other to cover the poverty gap. The squares of the poverty gaps relative to the poverty line is also one of the Foster Greer and Thorbecke (FGT) classes of poverty measures that may be written as;

$$P_2 = SPG = \frac{1}{n} \sum_{i=1}^q \left[\frac{Z-Y_i}{Z} \right]^2 \dots\dots\dots (5)$$

Where n is the size of the sample, z is the poverty line, $G_i = Z-Y$ is the poverty gap and α is a parameter: when α is larger the index puts more weight on the position of the poorest.

Factors Influencing Households Poverty Status

Logit regression analysis was used to achieve objective (iv); analysing the determinants of poverty among the respondents in the study area. The logit regression model is characterised by a binary dependent variable with mutually exclusive and exhaustive outcomes. In this study, the dependent variable is the poverty status of the respondents, which is one (1) if poor and zero (0) otherwise. Following Maddala (1990) and Babcock *et al.*, (1995), the model is specified as follows;

$$Y_i = F(X_1, X_2, \dots, X_n) \dots\dots\dots (6)$$

Where;

Y_i = Dependent Variable

X_1 - X_n = Independent Variables

Implicit form of Logit Regression Model

$$Y = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, U) \dots\dots\dots (7)$$

The Explicit of the linear functional form will be specified as follows;

$$Y = \alpha + B_1X_1 + B_2X_2 + B_3X_3 + B_4X_4 + B_5X_5 + B_6X_6 + B_7X_7 + B_8X_8 + B_9X_9 + U \dots\dots\dots (8)$$

Where;

Y = Poverty Status of the respondent, (Poor = 1, Non poor =0)

X_1 = Sex of household head (1 if female, 0 if male)

X_2 = Age of household head (in years),

X_3 = Marital status of household head (1 if married, 0 if otherwise)

X_4 = Educational status of household head (Years in school)

X_5 = Household size (number)

X_6 = Contacts with developmental agents (1 if yes, 0 if otherwise)

X_7 = Main occupation

X_8 = Farm Size (Number of hectares)

X_9 = Income per households (₦)

U = error term

α = constant

β_i = regression coefficients

RESULTS AND DISCUSSION

Poverty Status of the Respondents

The variables presented in Table 1 are poverty incidence, depth and severity among the respondents. Poverty line and mean per capital household expenditure (MPCHHE) for both poor and non-poor households as presented in Table 1 showed that any household whose expenditure falls below the moderate poverty line (2/3 mean per capita household expenditure) is regarded as being poor while those above it are regarded as non-poor. The result shows that 49.6% of the respondents operate below poverty line while 50.4% were above the poverty line, this implies that almost half of the farming households are poor. This finding differs with what Omonona (2010) who reported that poverty incidence in the northeast states of Nigeria was 76.4%. This means that there is high level of poverty in the area despite all the efforts by NGOs and Government to improve the household's livelihood.

The result further shows that the Poverty Gap Index (P1) and Squared Poverty Gap (P2) of the poor among the respondents was 0.226 and 0.136 respectively. The P1 value of 0.226 shows the shortfall in the expenditure of the poor respondents indicating how deep they are from poverty

line. Therefore, bringing them out of poverty requires raising their income by 22.6%. The severity of poverty index for the poor is 0.136. This implies that poverty is severe among farming households. Also, the non-poor households are not far above poverty line, they may easily fall into poverty as a result of shock and disasters. The result also agrees with the poverty reported by NBS (2012) which stated that most of the Nigerian poor live in the northern part of the country.

Table 1: Poverty Incidence among Households (n=357)

Poverty Status	Frequency	Percentages	P0 (Incidence)	P1(Depth)	P2 (Severity)
Poor	177	49.6	0.492	0.226	0.136
Non-Poor	180	50.4	0	0	0
Poverty Line	₦ 34, 486				

Source: Field Survey, 2021

Determinants of Poverty

The logit regression estimates in Table 2 shows that four (4) out of the variables included in the model were significant in explaining the socio-economic determinants of poverty among households in the study area. The age, level of education, household size and total income were the significant variables influencing poverty status in the study area. The age was significantly related to poverty status of the respondents at 5% ($P < 0.05$). This implies that age negatively influence poverty status, as the age increases the weaker the person may be and cannot involve actively in income generating activity thus losing their means of livelihood and as a consequence it may increase their level of poverty. The finding contradicts that of Omonana (2010) inferring that age is considered not important variable in determining poverty status. Omonana reported that as age increases, welfare improves in household in northern Nigeria irrespective of their diverse challenges including insecurity currently experienced in the region.

The household size of the households was significant at 5% ($P < 0.05$). This implies that larger household size has direct influence on the poverty status of the sampled population indicating that as the household increase in size 0.038 (3.8%) chance of them falling into poverty increases. This is in agreement with findings of Akelere and Adewuyi (2011) that increase in dependency ratios will increase probability of poverty situation. Oloransanya et al. (2011) also noted that increase in household size results in inability of the resources available to household to satisfy their needs.

A significant negative relationship exists between access to formal education and poverty status at 1% ($P < 0.01$) confidence level. The educated households' heads acquire knowledge which gives them an edge in finding other lucrative income generating outcomes that helps them mitigate against poverty, it is well known that residents with households' head that are not educated may likely experience poverty more than the ones who are headed by educated persons. This is consistent with the apriori expectation and some author's findings such as Nwaru (2004), Sengul and Tuncer (2005), Elijah and Ogunlade (2006) and Owuor et al. (2007) that as level of education of the household head increases, poverty level decreases. Education enhances the ability to derive, decode and evaluate useful information as well as improves the quality of labour as viewed by Onyenweaku (1991). The total income reveals a highly significant relationship at 1% ($P < 0.01\%$). This suggest that each additional naira earn by households would decrease the probability of being poor.

Table 2: Determinants of poverty

Variables	Coefficient	Standard Error	Sig.
Sex	.279	.262	.288NS
Age	.030	.014	.033**
Marital Status	-.042	.168	.802NS
Level of Education	-.393	.135	.004*
Household Size	-.075	.038	.047**
Contacts With Development Agent	-.173	.251	.490NS
Main Occupation	-.039	.101	.699NS
FarmSize	-.016	.021	.437NS
income_y2	-2.679	.371	.000*
-2 Log likelihood	399.138a		
Nagelkerke (R2)	.314		

Source: Field Survey, 2021 *Significant at 1%. ** Significant at 5%, NS = not significant.

Constraints Faced by Farming Households

Various constraints were found faced by the farming households in the area which militate against improving their poverty status. The results revealed that households were affected by several constraints and challenges which include inadequate infrastructural facilities, Insecurity, high cost of living standard, high rate of unemployment, inadequate start-up capital as shown in Table 3. The result shows that inadequate infrastructural facilities (73.4%) was ranked 1st as the most important problem affecting the farming households' in the study area. Access to infrastructure such as electricity, running water, roads, local public transport can lower poverty intensity than those that had less access. The issue of insecurity (55.2%) which caused widespread displacement, high cost of living (10.1%) due to inaccessibility of farmlands caused by insecurity and poor government policies that push more households into poverty, households have to buy even what they can produce because they can no longer go to farms like before, high rate of unemployment (2.2%), inadequate start-up capital (1.4%), was ranked 2nd, 3rd, 4th and 5th respectively.

Table 3: Constraints Faced by Farming Households (n=357)

Variables	Frequency	Percentage (%)*	Rank
Inadequate Infrastructural Facilities	262	73.4	1 st
Insecurity	197	55.2	2 nd
High cost of living standard	36	10.1	3 rd
High rate of unemployment	8	2.2	4 th
Inadequate start-up capital	5	1.4	5 th

Source: Field Survey, 2021

*Multiple responses recorded

CONCLUSION AND RECOMMENDATION

Based on the findings of the research, it can be seen that poverty among farming households is widespread in the area with about 49.6% of the household in the study area live below poverty line. There is need for policy makers to identify the poor so as to direct appropriate poverty alleviation measures that will affect them positively and consequently bring them out of poverty. Also, factors influencing poverty among the farming households in the study area were age, level of education, household size and total income which were found to be the significant variables influencing poverty status in the study area. Therefore, it can be recommended that policy makers should direct appropriate poverty alleviation measures on the households living below the poverty line.

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