

ANALYSIS OF POVERTY AND COPING STRATEGY AMONG RURAL FARMERS IN JADA LOCAL GOVERNMENT AREA OF ADAMAWA STATE, NIGERIA

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ABSTRACT

The study analysed poverty and coping strategies among rural farmers in Jada Local Government Area of Adamawa State, Nigeria. Primary data were collected using interview schedule. Multi-stage sampling techniques was used to draw a total number of 164 respondents. Data were analyzed using descriptive statistics, FGT and logit regression model. The result revealed that, almost all of the respondents were male, many of them were between the ages of 30-60 years with an average age of 41 years. Most (91.46%) were married with 67.68% having average household size of 8 people per house, and a mean of 18 years of farming experience as an occupation. Majority (75.61%) of the respondents fall between ₦50,000 or below income with 42.68% have access to credit. The poverty estimates shown that 55% were actually poor with 23% of them deep in poverty with 12.2% in severe condition. The result of logistic regression shows that 41.38% of the probability of the poverty status of the respondents is explained by the variables included in the model. The result of the analysis; age, marital status and access to credit were found to be positively significant, while income was found from the result to be negatively significant which indicated that increase in monthly income will lead to increase in their likelihood of been out of poverty. Major poverty coping strategies employed by the respondents were selling their domestic animals, trading and crop production. The study recommend among others that different entrepreneurial skills through trainings and provision of start-up capital.

Keywords: Poverty, Coping Strategies, Rural, Farming households

INTRODUCTION

Poverty prevalence is one of the greatest challenges of mankind in the 21st century (Abimbola *et al.*, 2011). Poverty kills about 25,000 children each day especially in some of the poorest villages on earth. About 2.8 billion of the world population lives on less than \$2 daily and about 1.4 billion lives on \$1.9 per day (World Bank, 2016). In recent years, it is no more a doubt that it spreads like a wild fire especially in developing countries (Omoniyi, 2012). Nigeria's situation has been described as a paradox (Kolawole *et al.*, 2015) in the sense that poverty level in Nigeria contradicts the country's abundant wealth of both human and materials resources. Half (47%) of the country's population still live in poverty (World Poverty Clock, 2018); the African Development Bank Group (2018) estimates that eight out of 10 Nigerians are living on less than \$2 a day. Added to this was the worrisome nature of rural poverty, which National Bureau

of Statistics, NBS (2012) revealed to be high with 73% against 61% poverty incidence in the urban areas. The rate of the poverty differs with location (Ifelunini *et al.*, 2013).

The rural populace is the worst hit and this is evident by the backwardness, bad road, women and children walking barefooted and trekking long distances to get water and firewood, pupils studying under trees, dilapidated and ill equipped health centers, lack of facilities and natural disasters, crime and violence that characterize most of the rural areas in Nigeria (Omoniyi, 2012). Despite the fact that Nigeria's Constitution calls upon the state to ensure that its people have adequate shelter and food, a living wage, medical benefits, and other necessities, many citizens still grapple with limited access to basic goods and services. The poor development status of Nigeria, no doubt, breeds atmosphere of frustrated expectations and foster widespread indignation on the part of those that are trapped

in the circle of abject poverty (Odusote, 2016). In the face of this predicament, individuals and groups respond differently depending on situational factor and capacity. These responses are crystallized and find expression in various shades of anti-social behaviours including armed robbery, kidnapping and insurgency. In the midst of all these, Nigeria is confronted with daunting security challenges which include armed robbery, ethnic crisis, assassination, militancy, kidnapping and terrorism (Aminu *et al.*, 2015). Adamawa State is one of the most poorest states in Nigeria with about 74.2% of the population living below the poverty line of \$1.25 per day (NBS, 2013). In the rural part of the state where most of the populace dwell, the people are engaged in farming as their main source of livelihood, the rate of poverty could be much higher. To achieve poverty reduction, it is necessary to measure the poverty status and examine ways in which the poor cope with the situation. However, the data needed for such is not available or inadequate (NBS, 2012). It is against this background that this study intends to analyze poverty among rural farmers to fill the existing gap. The objective of the study was to analyse poverty among rural farmers in Jada Local Government Area of Adamawa state.

METHODOLOGY

The Study Area

The study was conducted in Jada Local Government Area of Adamawa State, Nigeria. It lies between latitudes 8°27' to 8°54'N and longitudes 11°55' to 12°48'E of the Greenwich Meridian with a land mass of 2,926.11km² (Adebayo, Tukur and Zemba, 2020). The Local Government headquarters is about 96 Km from Yola, the state capital. It has a current projected population of 462,695 people based on 2006 census (NPC, 2006). The eastern part of the Local Government Area shares an international boundary with the Republic of Cameroun. It also shares boundary with some Local Government Areas of Adamawa State, such as Mayo- Belwa, Fufure and Ganye to the north west, north and south respectively. The climate of the area is broadly divided into wet and dry seasons of the tropical type. The rainy season begins mostly in April and ends in November, while the dry season lasts between November and March. The average annual rainfall of 1,149mm, and the soil in the area falls in the category of lithosols i.e. clay and loam (Adebayo *et al.*, 2020). The vegetation is mainly the Sudan type, which implies a

grassland vegetation interspersed by short and tall trees mainly eucalyptus, acacia albida and shear butter (Burmamu, 2006). The Local Government is dominated with tribes such as Fulani, Chamba, Leko, Mumuye among others. The major activity of people in the area is farming (that is cultivation of crops mainly cowpea, maize, groundnut, etc. and rearing of animals), other occupations include trading, other enterprises and civil service.

Data and Sampling Technique

Primary data were used for this study, it was generated using interview schedule. Multi-stage sampling technique was used to obtain the sample size in the study area. In the first stage, five out of the eleven wards were randomly selected in the study area. In the second stage, three (3) rural communities were selected randomly from each ward. In the third stage, 20% (165) of the farmers were selected randomly in proportion to their number in the selected villages. This is in line with Smith (2015) who indicated that 15-20% of a given population is sufficient to be a representative of that population and be used for social science researches.

Data Analysis

Descriptive and inferential statistics were used to analyze the data. Foster-Greer-Thorbecke (FGT) Poverty Measures was also used to analyze the poverty status of the respondents. While Binary logistic regression model was employed to determine the influence of socio-economic variables on poverty status of the respondents.

Poverty Index:

Foster-Greer-Thorbecke (1984) was used to determine the poverty status of the respondents. The poverty line was determined using average per capita expenditure of the households head (NBS, 2012). The model is specified as:

$$P\alpha = \frac{1}{N} \sum_{i=1}^n \left(\frac{Z-Y}{Z} \right)^{\alpha} \quad (1)$$

Poverty line is given as;

$$Z = \frac{2}{3}(Y)$$

Head Count Index is given as

$$H = \frac{Np}{N}$$

Where:

Z = Poverty line (average household expenditure)

N = Total Sample

H = The number of poor (below poverty line).

α = Poverty index which takes value of 0, 1 and 2

N_p = Number of Poor

Y = Average household monthly per capita expenditure

Given that;

Mean capita household expenditure =

$$\frac{\text{Total per capita household expenditure}}{\text{Total number of household}} \text{ --- (2)}$$

Per capitaincome =

$$\frac{\text{Total monthly household expenditure}}{\text{Household Size}} \text{ -----(3)}$$

Logistic Regression

The logit regression model is characterized by a binary dependent variable with mutually exclusive and exhaustive outcomes. The dependent variable is the poverty status of the respondents, which is one(1) if non-poor and zero (0) if poor. The model is expressed as:

$$Y_i = \log \frac{p_i}{1-p_i} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \mu \text{ ---- (4)}$$

Y_i = Poverty Status (non-poor=1; poor=0); X_1 = Age (years); X_2 = Marital Status (married=1; single=0); X_3 = Education Level (Number of years spent in school); X_4 = Farm Size (Hectares); X_5 = Farming Experience (Years); X_6 = Access to Credit (Yes=1; No=0); and X_7 = Monthly Income (₦).

RESULTS AND DISCUSSION

Socio-Economic Characteristics of the Respondents

The distribution of the respondents by their socio-economic characteristics revealed in Table 2 that majority (92.7%) of the respondents were male. This could be attributed to the fact that farming is a tedious and hard job that most women can not endured the stress, another reason is because men have more access to agricultural assets, inputs and services as well as rural employment opportunities in developing countries. This implies that farming is dominated by males while females were left behind as a result of the above reasons. Majority (64.63%) of the respondents were between the ages of 30-50 years. Those that were within the age range of 20-29 years and 60 years above accounted for 14.02% and 9.16% respectively. The mean age of the respondents in the study area was 41 years. This implies that majority of the respondents are within their

active and productive age and could be more desirous in changing their poverty status.

The result in Table 2, further indicated that 91.46% of the respondents were married, 7.32% were single and 0.61% were widow and divorced respectively. The result shows that married individuals dominated the farming activities in the study area. This may be as a result of culture or religion of the respondents, marriage is also regarded a mark of honour which is held in high esteem in the area. This might positively affect their poverty status by making them poor as a result of more responsibility such as feeding, clothing, healthcare, educating the younger dependants among others which may not be the same for the unmarried category. On housedhold size as presented indicated that 37.19% of the respondents had between 1-5 persons, 30.49% have household size of 6-10 persons, 25% have 11-15 persons while only 3.66% had 16-20 and above 20 persons average household size of the respondents was 8 persons in the study area. This implies that majority (67.68%) of the respondents in the study area have a household size of less than 10 persons signifying that they have less responsibility to cater and there would be less availability of household labor for increased activities coping with poverty which may positively affect their poverty situation.

The result in Table 1, showed that respondents with no formal education constituted 33.54%, 23.78% had primary, 24.39% had secondary, 15.24% had diploma and only 3.05% had HND/First degree. This indicates that majority (57.32%) of the respondents had no formal or primary education. This implies that majority of the respondents, do not have sufficient knowledge/skills that can help them boost their livelihood activities. Furthermore, respondents' years of experience in farming, revealed that 26.83% of the respondents had less than 10 years of experience, 32.32% had between 10-19 years of experience, 23.17% had 20-29 years of experience, 11.58% had 30-39 and only 6.58% had 40 years and above of experience with a mean of 18 years' experience. This indicated that most (73.17%) of the respondents had more than 10 years' experience in farming. This will make them more conversant with the system, improve their productivity and have proper management of time and resources. Distribution of respondents on the basis of farm size revealed that 65.85% of the respondents

had a farm size of 3ha below, with a mean of 3.2 hectares. This implies that the respondents are small scale farmers who usually depend on the use of their energy and crude implements for production activities and operating at subsistence level. Also majority (57.32%) of the respondents have no access to credit while 42.68% have access to credit from different sources. This implies that the production capacity of the respondent would be affected by lack of access to financial support for the acquisition of needed production inputs and this will affect his income which will lead to increase in poverty situation. On contact with

extension agents in the last farming season, it was indicated only 4.88% had contact with them. This implies that there is inadequate extension services in the area and farmers are still operating with local practices and inputs which would affect their productivity and lead them to be poor. The study shows that majority of the respondents (73.78%) do not belong to farmers association of any kind. The fact that majority are not members of any association or group which means access to funds through group or association to reduce their poverty status could be difficult.

Table 1: Distribution of the Respondents Based on their Socio-Economic Characteristics

Variable	Frequency	Percentage	Mean
Sex			
Male	152	92.70	
Female	12	7.30	
Age			
20-29	23	14.02	41
30-39	64	39.02	
40-49	42	25.61	
50-59	20	12.19	
60 Above	15	9.16	
Marital Status			
Single	12	7.32	
Married	150	91.46	
Divorced	1	0.61	
Widow/Widower	1	0.61	
Household Size			
1-5	61	37.19	8
6-10	50	30.49	
11-15	41	25.00	
16-20	6	3.66	
Above 20	6	3.66	
Education Level			
Non-Formal	55	33.54	
Primary	39	23.78	
Secondary	40	24.39	
Diploma	25	15.24	
Years of Experience in Farming			
<10	44	26.83	18
10-19	53	32.32	
20-29	38	23.17	
30-39	19	11.58	
40 Above	10	6.58	
Farm Size (ha)			
< 1	33	20.12	3.21
1.1-2.0	33	20.12	
2.1-3.0	42	25.61	
3.1-4.0	21	12.80	
4.1-5.0	16	9.76	
Above 5.0	19	11.59	
Credit Source			
None	94	57.32	
Commercial Banks	8	4.88	
Agric Bank	11	6.71	
Friends	17	10.36	
Family	19	11.58	
Money Lenders	9	5.49	
Co-operative	6	3.66	
Extension Contact			
Yes	8	4.88	
No	156	95.12	
Membership			
Yes	43	26.22	
No	121	73.78	
Total	164	100.00	

Source: Field Survey, 2022

Monthly Expenditure of the Respondents

Expenditure is one of the most important determinant of poverty status, as most of the low spending individuals are mostly poor among other individuals. The result in

Table 3 presented the monthly expenditure of the respondents in the study area and revealed that 75.61% of the respondents' expenditure was ₦50,000.00 or below. From the result also 19.51% spent between ₦51,000.00 to

₦100,000.00, while only 2.44% of the respondents spent between ₦100,000.00 to ₦150,000.00 and ₦200,000.00 above monthly. with average monthly expenditure of ₦45,593.29. This indicates that majority (75.61%) of the respondents' expenditure was ₦50,000.00 or below. The implication of this is that most of respondents in the area were low spending individual which can be associated to poverty. The result is in line with the study of Onu *et al.* (2016); Sa'adu *et al.* (2022) where majority of the farmers spend less than ₦40,000.00 monthly.

Poverty status of the Respondents

The household monthly expenditure was used to establish the poverty line. A mean

Table 2: Distribution of the Respondents Based on their Poverty Status

Status	Frequency	Percentage
Poor	91	55.49
Non-Poor	73	44.51
Total	164	100.00

Source: Field Survey, 2022

Poverty Measurement of the Respondents

To determine and describe the extent and manifestations of poverty among all respondents (i.e. poor and non-poor households), the FGT measures of poverty was employed (FGT, 1984). The FGT model allowed the estimation of the headcount, the poverty incidence and the poverty gap for the sample. Table 3. presents the results of the poverty analysis using the FGT model. When $\alpha=0$, it implies that there is zero concern for poverty incidence or depth. The poverty

per capita monthly expenditure of about ₦7,353.83 with a poverty line of ₦4,902.55 was used to classify the rural households either as non-poor or poor. Majority of the households surveyed (55.49%) are found to be poor while about 44.51% are non-poor. The result shows that a reasonable proportion of the population requires thenecessary support to overcome poverty. The respondents' poverty status is presented in Table 2, this concurred with the study of Tafida *et al.* (2013) and Sa'adu *et al.* (2019) who found that majority (60%) of the farm household are poor, also Obisesan (2013) revealed that 66.7% of all the households were poor and Moyib *et al.* (2017) indicated that 81.70% of the host communities were poor.

measure given by then reduces to the headcount measure of poverty. For the poor respondents, the value was 0.55. This implies that 55 percent of the respondents households were actually poor.

Table 3: Distribution of the Respondents' Foster-Greer-Thorbecke (FGT) Class of Poverty Measures

FGT Measures	Poor Households
1. When $\alpha=0$,	$\frac{91}{164} = 0.55$
2. When $\alpha=1$,	$\frac{37}{164} = 0.23$
3. When $\alpha=2$,	$\frac{20}{164} = 0.12$

Source: Field Survey, 2022.

This proportion invariably represents the poverty incidence among the respondents, and expectedly agreed with the earlier estimation of the proportion of the poor households (i.e. 55.49 percent) in the sample based on the poverty line definition. When $\alpha=1$, it conveys that there is uniform concern for poverty depth among the study sample. The

value for the poor households in the sample was 0.23. The value of the poverty gap for the poor households in the sample is thus ₦1,470.15 (or 0.23 multiplied by ₦63,91.97 per month). Finally, when $\alpha=2$, it implies that a distinction is made between the poor and the poorest. This followssince the poverty gap or depth is not sensitive to re-distribution among

the poor. The assumption with the poverty gap is that a Naira gained by the poor would have the same effect on poverty as that gained by the moderately poor. As such, to capture the sensitivity to income re-distribution among the poor and non-poor, there exists the need to estimate the severity of poverty among the study sample. The $\alpha = 2$ value for the poor using the FGT model was 0.124. This conveys that the severity of poverty among the poor households in the study area is 12.39 percent.

Determinants of Poverty Status of the Respondents

The determinants of poverty status of the respondents from the binary logistic analysis (Table 4) indicated that 41.38% of the probability of the respondents being poor is explained by the variables included in the model namely; age, marital status, level of education, farm size, household size, farming experience, access to credit, as well as monthly income of the respondents. Four variables were thus found to be significant. Age of the respondents is positively significant at 1% level of probability which implies that increase in age of the respondents will increase their likelihood of being poor. This means that older people are more vulnerable to poverty than youth. This is in line with the study of Duniya and Rekwot (2015) and Stephen and James (2015) which revealed that there is positive relationship between age of the respondents and their poverty status. Marital status of the respondents also has a positive coefficient and is statistically significant at 5% level which means that increase marital status of the household will

increases his dependants which increase their likelihood of being poor. This is similar with the result of Salami and Atiman (2013) and Peter *et al.* (2018) where marital status showed a positive and significant effect on the poverty status of the household heads in the host communities. poor of access to credit facilities by the respondents also has a positively significant at 5% level. This implies that increase inaccessibility to credit will increase their likelihood of being poor. This consonate with the findings of Akinlade *et al.* (2015) who indicated access to loan facilities negatively influenced poverty level of the respondents. Monthly income of the respondents was also negatively significant at 1% probability level, which means that an increase in monthly income of the respondents will increase their likelihood of being out of poverty. This corroborated with the result of Abur and Torruam (2012) and Margwa *et al.* (2015) on analysis of poverty level among rural households in Mubi region of Adamawa State, Nigeria who revealed that there is an inverse relationship between income and the poverty status of the respondents.

Table 4: Determinant of Poverty Status of the Respondents

Variable	Coefficient	Std. Error	z-Statistic
Constant	-1.782401	1.155464	-1.542585
Age X ₁	0.083177	0.029526	2.817110*
Marital Status X ₂	1.786542	0.895902	1.994126**
Education Level X ₃	-0.033225	0.044657	-0.744009
Farm Size X ₄	0.122468	0.131860	0.928766
Farming Experience X ₅	0.039615	0.029125	1.360169
Access to Credit X ₆	0.879012	0.446305	1.969533**
Monthly Income X ₇	-8.55E-05	1.61E-05	-5.311089*
McFadden R-squared	0.413766		
LR statistic	93.25150		
Prob(LR statistic)	0.000000		

Source: Field Survey, 2022

* = 1% significant, ** = 5% significant

Result from the findings revealed that respondents in the study area were mostly male and in their active and productive age with one form of formal education or the other. Most of the respondents were married with large household size and were experienced farmers. Majority of the farmers do not have access to credit and extension contact; and do not belong to any farmers' group or association of any kind. Based on the findings of the study majority of the respondents are poor. Age, marital status, access to credit and monthly income had significant effect on their poverty status.

Based on the findings of this study, the following recommendations were made; 1) relevant authorities should take the responsibility of sensitizing families by community health workers on the need of keeping moderate family sizes through different health education programmes, 2) farmers should be encouraged to form formidable cooperatives to manage production and marketing related problems. This will enable them to have access to credit from different organisations and 3) government should provide loans to farmers with less/no interest and simple collaterals that are affordable to farmers. 4) Also, there is need for encouragement of different entrepreneurial skills through trainings and provision of start-up capital where possible most especially to younger ones to reduce dependency ratio and as a result increase the household income.

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