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Poverty and its Alleviating Strategies among Rural Farming Households in Benue State, Nigeria

Abstract. The study analysed rural farming households' poverty status and alleviating strategies in Benue State, Nigeria. The specific objectives of the study were to: describes the rural household heads' socio-economic characteristics; determine the poverty status of the respondents and its determinants; and identify poverty alleviating strategies of the respondents. Data for the study was collected from 420 respondents selected using a multi-stage sampling technique. Data collected were analysed using descriptive statistics, the Foster-Greer-Thorbecke poverty measurement index, and the Binary Logistic regression model. The findings of the study revealed a very high incidence of poverty (70%), having a gap of 0.34, and severity of 0.17. Poverty in the area is positively associated with the age of the household head and household size, while gender, educational level, off-farm activity, membership of a group, farm size, and land ownership are negatively associated with poverty. The common poverty alleviation strategies identified were agricultural wage labour (48.6%), rental services (45.0%), and transportation business (36.7%). Therefore, it was recommended that the government and other stakeholders should initiate sustainable social protection schemes that can assist rural residents in alleviating poverty until their condition improves.

Key words: poverty, alleviating strategies, rural, farming household, Nigeria

JEL Classification: R2

Introduction

In recent years, poverty and Nigeria have become synonymous owing to the nation's status of having the world's highest number of people living in extreme poverty (World Poverty Clock, 2020). Extreme poverty implies a situation whereby a person expends below \$1.90 USD a day in meeting basic needs. Currently, the nation has about 86.9 million people living in that condition. This unfortunate situation which has perpetuated as the world's leading development challenge has received tremendous global attention, making it topmost on the sustainable development goals (SDGs) scale of preference (World Bank, 2015; 2017). In other parts of the globe, substantial progress was made due to the quality of efforts from affected nations and other development partners (Beegle, 2016). However, in Nigeria, poverty across all indices of measurement has increased with both increases in population and the nation's economic status

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(Ucha, 2010; British Council Nigeria, 2012; Abur et al., 2013; Action Aid Nigeria, 2015; Taiwo & Agwu 2016; Wossen et al., 2019; Adepoju, 2019; Oladeebo et al., 2017).

As a consequence of the manifestation of this dehumanising condition, a large proportion of nations have been living in some extremely traumatizing situations that range from food insecurity, unemployment, poor health status resulting in low life expectancy and high infant mortality, poor quality of education, and conflicts/social vices among others (Ayegeba, 2015; Amnesty International, 2018; Owakoyi, 2019). Since the Nigeria's inception, various governments have demonstrated commitment towards poverty eradication (Anyebe, 2014; Williams, 2016). Hence, outcomes of the various regions of the country could be attributed to the discrepancies in the distribution of poor people in the country. Nigeria is made up of six geopolitical regions, with both the North and the South having three regions each. However, in terms of the distribution of poor people, the situation is much more severe in the Northern regions compared to the Southern regions (National Bureau of Statistics, NBS, 2020). Similarly, even across the three northern regions, poverty is least in Northcentral compared to the Northeast and Northwest.

Benue State is one of the most notable states in the Northcentral region of the country owing to its strategic position of being one of the links between the Northern and Southern regions, population size, and abundance of agricultural and mineral resources (Samuels et al., 2011). The State has an estimated population of about 5,741,800 people, (NBS, 2019), and has favourable climatic conditions, and fertile soil which is conducive for the production of a variety of crops and livestock. Common crops grown in the area include tubers like yam and cassava, cereals like maize, rice, and sorghum, and also legumes like groundnut, soya bean, and Beniseed. Similarly, tree crops like orange, banana, pineapple, cashew, etc. are also produced in large quantities. The state is located deep in the guinea savannah region, hence, it is rich in livestock like cattle, sheep, goats, and pigs which add to the rich fishery resources in the State (Benue State Agricultural and Rural Development Authority, BNARDA, 2012). Despite its agricultural potentials, poverty has remained pervasive in the state. The poverty headcount rate is 32.9% while the poverty gap is index 8.4% – all more than the national averages (NBS, 2020). Similarly, in tandem with the submission of the Oxford Poverty and Human Development Initiative, OPHI, (2017), the State has about 59.2% of its population experiencing various dimensions of poverty with an additional 18.2% living near (vulnerable) multidimensional poverty. In the same vein, poverty perception among the populace has remained high with about 54.6% of the populace considering themselves to be poor (Samuels et al., 2011). In the last decade, the State has made headlines across various news media as a result of the farmer/herder conflict that has complicated the poor status of most of its rural residents (Ikwuba, 2011; Saakuma, 2017; Amnesty International, 2018; NBS, 2019; Ogah et al., 2019). This is in addition to other climatic and economic risk factors like poor soil quality, the incidence of pests and diseases, climate change, and inflation among others (Anyebe, 2014; Williams, 2016).

Poverty studies in the region over the years have concentrated on its determinants (Etim and Udoh, 2013; Abu and Soom, 2016; Omotesho et al., 2016; Adepoju, 2019; Nwibo et al., 2019). However, the assessment of poverty-alleviating strategies has not been prominent in these studies. These strategies are deliberate measures taken to overcome or cushion the effects of poverty on the individual or household (Maniriho and Nilsson, 2018). In light of this, therefore, this study assessed poverty and its alleviating strategies among rural farming households in Benue State, Nigeria. This study sought to specifically: describe the respondents' socioeconomic characteristics; ascertain the prevalence of poverty and its determinants in the study area; and also, identify the respondents' poverty alleviation strategies.

Methodology

Benue State is composed of 23 Local Government Areas, covering a landmass of 34,059 square kilometres and delineated into three agricultural zones (BNARDA, 2004). A total of 420 rural household heads from 20 communities spread across 10 Local Government Areas were selected using a simple random sampling technique. The respondents were selected from the list of registered rural farm families (413, 159) obtained from families from the Benue State Agricultural and Rural Development Authority. A semi-structured questionnaire was administered to the selected respondents who are household heads. The study was conducted over a span of three months (September-December, 2019). In the collection of the data, five research assistants were employed to handle four communities each. The assistants were selected due to their familiarity with the terrains of the study area, and experience in data collection using the local language of the people.

The respondents' socioeconomic characteristics and poverty alleviating strategies were assessed using descriptive statistics. The Foster-Greer-Thorbecke (FGT) model was used in analysing the respondents' poverty status. The poverty indices measured were the incidence, depth, and severity. The FGT measure for the i^{th} subgroup ($P_{\alpha i}$) is given below;

$$P_{\alpha i} = \frac{1}{n} \sum_{i=1}^q \left(\frac{z-y}{z} \right)^\alpha \quad (1)$$

Where:

$P_{\alpha i}$ = Measure of poverty;

Z = Poverty line;

y = per capital expenditure (PCE) of the i^{th} household;

q = the number of poor households below the poverty line;

n = the total number of sampled rural farming households;

α = the poverty aversion parameter that takes a value of 0, 1, 2 for incidence, depth, and severity respectively.

The study used the total per capita expenditure as a measure of the standard of living of the rural farming households. The poverty line was \$1.90 USD which was equivalent to N = 665 based on the prevailing official exchange rate by the Central Bank of Nigeria. Households' total expenditure is the sum of cash expenditure on the consumption of goods and services.

Also, factors influencing the respondents' poverty status were identified using the Binary Logit regression model. The Binary logit regression model is specified explicitly as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 \dots \dots \dots + \beta_{12} X_{12} + U \quad (2)$$

Where:

Y = Poverty status (1 = non-poor, 0 = poor);

β_0 = Constant;

X_1 = Age (years);

X_2 = Gender (male = 1: female = 0);

X_3 = Marital status (married = 1, otherwise = 0).

X_4 = Household size (Number of people);

X_5 = Educational Level (Number of years spent in school);

- X_6 = Off-Farm Activity (Yes = 1, No = 0);
 X_7 = Membership of self-help group (Yes = 1: No = 0);
 X_8 = Assistance from any poverty alleviation programme (Yes = 1: No = 0);
 X_9 = Receive Remittance from relatives (Estimated monetary value in ₦);
 X_{10} = Farm size (ha);
 X_{11} = Access to Formal Credit (1 = can access, 0 = otherwise);
 X_{12} = Land ownership (Yes = 1, No = 0);
 U = Error term.

Results and Discussion

Socio-Economic Characteristics of the Respondents

People's social and economic characteristics have a great influence on their poverty status (Danaan, 2018). In this study, the respondents' socioeconomic characteristics are presented in Table 1. Findings of the study revealed that the mean age of the household heads was 43.6 years and they are mostly (78.8%) males, married (82.9%), and having an average household size of eight people. This finding suggests that the bulk of the respondents were not advanced in age and could be able to adopt strategies that can enable them to alleviate poverty. Similarly, having persons of the male gender being dominant in the distribution of the household heads could not be unconnected to the largely patriarchal setting of most African rural areas giving most authority, control, and ultimate decision-making across social institutions to men (Bammeke, 2007; Akanle and Ejiade, 2012). In terms of educational attainment, the majority (89.8%) at some point attended formal schools. Literacy level plays a significant role in determining poverty status or means of combating it (Owuor et al., 2007).

Similarly, farming is another significant determinant of rural poverty in Nigeria (Shehu et al., 2010). In this study, the average farm size was 2.7 hectares, implying that the majority of the respondents are small-scale farmers who may not be able to depend solely on farming for sustenance (Arene et al., 2010; Akinsuyi, 2011). This is because the rapid increase in population in the area substantially promotes the fragmentation of landholdings leading to a decrease in farm size and subsequently income from farming activities. Also, this study indicated that the majority (88.6%) of the respondents belong to one form of a self-help group or another. This high participation in self-help activities is common among rural farmers because of the absence or difficulty of assessing available government and other financial institutions' loanable funds (Ezekiel, 2014).

Table 1. Socio-Economic Characteristics of the Respondents (N = 420)

Variable	Frequency	Percentage
Age (Years)		
<30	34	8.1
30-39	97	23.1
40-49	129	30.7
50-59	114	27.1
60 and above	46	8.1
Mean	46.3	
Sex		
Female	85	20.2
Male	335	79.8
Marital Status		
Married	348	82.9
Single	42	10.0
Divorced	19	4.5
Widowed	11	2.6
Household Size (People)		
1-5	100	35.5
6-10	149	70.0
11-15	86	20.5
>15	77	18.3
Mean	8	
Education Status		
Non-Formal Education	43	10.2
Primary	74	17.6
Secondary	180	42.9
Tertiary	123	29.3
Farm Size (Ha)		
<1	98	23.3
1-2	110	26.2
3-4	116	27.6
5-6	70	16.7
>6	26	6.2
Mean	2.39	
Membership of Self-help Group		
Non-Member	48	11.4
Member	372	88.6

Source: Field Survey, 2019.

Poverty Status of the Respondents

The distribution of the respondents' poverty status is presented in Table 2, and the result indicated a very high poverty incidence among the majority (70%) of the respondents. This implies that poverty in the area at the time of the study far outweighed the national average. It also implies that poverty is increasing at a faster pace in the area. This finding lends credence to the submission of OPHI (2017) and NBS (2020) who reported a high incidence of poverty in the area. The result also presented the respondents' poverty gap index (P₁) which provides information on the difference between the poor's income or expenditure and the score was 0.34. This indicates that an average poor farming household head would require 34% of the poverty line to get out of poverty. Similarly, the poverty gap among the poor was 0.15 indicating that the poverty severity of the rural farming households was 15%. This result means that rural farming households need about 15% increases in per capita expenditure to push them away from severe poverty. This finding agrees with that of Anyanwu (2013) which stated that poverty in Nigeria is largely a rural phenomenon.

Table 2. Respondents' Poverty Status

Indices	Measure
Poverty Incidence (P ₀)	0.70
Poverty Gap (P ₁)	0.34
Poverty Severity (P ₂)	0.17
Poverty Line	1.90 USD

Source: Field Survey, 2019.

Determinants of Poverty among the Rural Farming Households

The result of the binary logistic regression identifying the factors influencing poverty in the area is presented in Table 3. The model has a pseudo R² of 0.545 which implies that 54.5% of the variation in the poverty status of the respondents could be explained by the independent variables used. The LR statistics was 277.5963 and is statistically significant at a 1% probability level, and this indicated model fitness. The result indicated that only eight predictors were statistically significant at different levels of significance. Consistent with a priori expectation and findings from previous studies, age (X₁) and household size (X₄) had a significantly negative relationship with the probability of being non-poor at 1% and 5% levels respectively. This indicates that the likelihood of experiencing poverty in different dimensions increases with advancement in age and vice versa. This is expected as the younger farmers tend to be more productive and can move away from poverty, implying that their likelihood of being poor also decreases. This finding agrees with the Life-cycle Hypothesis theory that poverty is relatively high at young ages, decreases during middle age, and then increases again at old age (Rodriguez, 2002; Gang et al., 2004). In the context of household size, several studies (Gang et al., 2002; Bokosi, 2006; Anyanwu and Erhijakpor, 2010) lay credence to the findings of this study that a larger household size increases the likelihood of poverty due to the high chances of having more dependents who can drain

resources in meeting their basic needs of food, clothing, school fees, medical bills, etc. Large household size is common among rural farmers in the study area because of the absence of well-developed social security systems and low savings. Fertility rates particularly among the poor are high in order for the parents to have some economic support from the children when they reach old age. Across most rural contexts in Nigeria, poverty status is being influenced by gender as in other climes (Bastos et al., 2009). Based on the result presented, gender (X₂) has a significant (at 5%) influence on the status of poverty of the respondents. This finding implies that households headed by females tend to be more likely to be in poverty compared to the households headed by males.

Table 3. Determinants of Poverty among Rural Households

Variable	Coefficient	Std. Error	Z-statistic
Age (X ₁)	-0.108555	0.022468	-4.827610***
Gender (X ₂)	1.660414	0.791889	2.096776**
Marital Status (X ₃)	-0.656489	1.109656	-0.591615
Household Size (X ₄)	-0.225853	0.092540	-2.440605**
Educational Level (X ₅)	0.146993	0.039296	3.740666***
Off-farm Activity (X ₆)	0.249593	0.143033	1.745010*
Membership of Group (X ₇)	0.486366	0.131819	3.689634***
Access to Social Protection (X ₈)	1.02E-07	2.45E-06	0.041620*
Received Remittance (X ₉)	2.93E-06	1.93E-06	1.518180
Farm Size (X ₁₀)	2.043940	0.371258	5.505445***
Access to Credit (X ₁₁)	-0.000577	0.425491	-0.001356
Land Ownership (X ₁₂)	1.131277	0.414148	2.731575**
Constant	-0.482072	1.778125	-0.271113

***, **, * Significant at 1, 5 and 10%, respectively

Source: Field Survey, 2019.

Years of formal education (X₅) were also positively signed and significant at 1%. This suggests that an increase in the level of education may reduce the chances of being poor and vice versa. This is because education increases the stock of human capital, which in turn increases labour productivity and wages. The study also revealed that undertaking off-farm activities (X₆) showed a positive and statistically significant (at 10%) relationship with the likelihood of being non-poor in the study area. The result presents a direct positive relationship between the number of off-farm activities and the possibility of being non-poor. Off-farm activities help the rural poor to complement yield and income from agriculture to meet the social welfare needs of their families. This finding lends credence to the submission of Obinna and Onu (2017) who reported that rural residents engage in off-farm activities to supplement income to reduce the risk associated with income generated solely from

agricultural activities. The finding of the study also revealed that the coefficient of the self-help group (X7) was positive and significant at a 1% probability level. This suggests that respondents who belong to such groups may be less likely to be poor compared to non-members. This is because such groups utilize members with increased social capital who can then be relied upon to access productive resources. As opined by Apata et al. (2009) and Alimi (2012), farming is a significant determinant of poverty in rural areas in Nigeria. Similarly, the study also established that farm size (X10) showed a positive and statistically significant (at 1%) relationship with being non-poor in the study area. This means that the larger the farm size the lower would be the likelihood of being poor *ceteris paribus*. This finding collaborates with that of Etim and Udoh (2013) who concluded that an increase in cultivable farmland with a subsequent increase in output will decrease poverty. Also, this study established that land ownership (X12) has a positive and statistically significant (1%) relationship with the possibility of being non-poor in the study area. This is as expected since owning will reduce the production cost of the farmer and increase the profit margin.

Poverty Alleviation Strategies Adopted by the Rural Farmers

Poverty alleviating strategies are the deliberate actions adopted by households to help them reduce the negative effect of poverty (Maniriho and Nilsson, 2018). The distribution of the respondents' poverty alleviation strategies is presented in Table 4. The finding of the study indicated that the provision of agricultural wage labour is the most (48.6%) common strategy in the study area. Similarly, households in the area provide rental services (45%) for canopies, chairs, generating sets, and farming/building tools. Engaging in the transportation business (using motorcycle/okada, tricycle/Keke NAPEP, bus service) was also common with a participation rate of 36.7%. Across various parts of Nigeria, engaging actively in politics is a means of gaining a livelihood, and in this study also, 31.7% of the respondents consider it to be their poverty alleviation strategy. Other strategies identified include; sale of part of farm produce before harvesting time (29.5%), collecting farm inputs from middlemen/farmers on credit to pay during harvesting season (19.8%), and the sales of part of landed property (10.5%). This finding implies that the majority of the respondents adopt a range of strategies within their capacity, relying heavily on their social capital to access resources. As revealed by Alkire et al. (2014), instead of emphasizing specialisation within these existing portfolios, upgrading them to increase income could be a more realistic approach that will be more appropriate for poverty reduction.

Table 4. Respondents' Various Poverty Alleviation Strategies

Strategies	Frequency	Percentage	Ranking
Agriculture wage labour	204	48.6	1 st
Sales of part of farm produce before harvesting	124	29.5	5 th
Sales of part of landed property	44	10.5	7 th
Transportation business	154	36.7	3 rd
Rental services	189	45.0	2 nd
Active participation in politics	133	31.7	4 th
Collecting farm inputs from middlemen on credit to pay during harvesting season	83	19.8	6 th
Seasonal Migration	3	0.7	8 th

*Multiple Responses.

Source: Field Survey, 2019.

Conclusions and Recommendations

Poverty of all forms is pervasive in Benue state, especially among rural farmers who constitute the bulk of the state's populace. The findings from the study revealed that the rural parts of the State have a poverty incidence of about 70%. This outcome has a dire socio-economic consequence on the sustainable and inclusive growth of the state. The study established that household head's age, gender, household size, years of formal education, households' off-farm activities, membership of self-help groups, household farm size, and land ownership are the factors influencing poverty in the area. In order to reduce the negative impact of poverty in the area, various poverty alleviation strategies were adopted by the respondents. These strategies were community-based, relying mostly on the social capital of the person concerned. But, considering the socio-economic status of the respondents, their social capital base may not be effective enough to facilitate the adoption of a poverty reduction strategy that can safeguard their economic future sustainably. Based on the findings of the study, the following are recommended:

- i. The government and other stakeholders should initiate sustainable social protection schemes that can assist rural residents in alleviating poverty until their condition improves. The need for social production is to facilitate empowerment so the beneficiaries can seize opportunities both on-farm and off-farm and be productive. This will promote inclusion and reduce inequality for long-term sustainable growth of individuals and households.
- ii. The government should make farm inputs available to the farmers at affordable prices since this will enhance production, which can in turn increase income from the farming activities on which their livelihood is heavily reliant. Agriculture is the main livelihood of the people, and it can positively influence their poverty status if it is productively carried out. Currently, the inflation rate is very high and most farmers

cannot afford to procure the needed farm inputs at the prevailing price due to poverty. Hence, the government should ensure that subsidised farm inputs are purchased by small-scale farmers only. This can enable farmers to become more productive and increase farm size.

- iii. Self-Help Groups in the area should be supported with capacity-building and access to capital for them to be viable and support their members. The role of self-help groups among farmers, especially those in rural areas cannot be overemphasised. Generally, lack of capital is the major limitation to agricultural productivity in Nigeria. However, farmers are prominent among the financially excluded segment of the nation's population. Therefore, membership of an active self-help group can empower farmers by facilitating access to capital from individuals and financial institutions or organisations. The groups also facilitate farmers' access to education, health, and sanitation, among others. This will substantially ease poverty reduction in the area.

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