Evaluating Poverty Status of Rural Rice Farmers in the Benue Valley

[1]Lucyann C.A., [2]Tyonongu D., [3]Akunna G.G.
[1]Department of Economics, Bowen University, Iwo Osun State, Nigeria.
[2]Department of Economics, Benue State University, Makurdi, Nigeria.
[3]Department of Anatomy, Benue State University, Makurdi, Nigeria.
Corresponding Author:[1] lucyannco4@gmail.com

DOI: 10.56201/ijefm.v8.no3.2023.pg1.15

ABSTRACT

An important part of the post-2015 MDG process and the African Union's Agenda 2063 is the eradication of extreme poverty. This study was carried out to offer empirical proof of the impact of rice growing on rural farm families' poverty status in Benue Valley, Benue State, Nigeria. Data were gathered from 254 farm families in the research area who were chosen at random. To analyze the data, descriptive and econometric approaches were also used. The findings indicate that a combination of very poor, moderately poor, and non-poor households can be found in the research area. Family size increased poverty, although age, educational achievement, and non-farm income by family heads decreased its prevalence. The study recommends strengthening and enhancing the farmers' educational status in light of these findings. Farmers are also urged to participate in other economic activities such petty trading and off-farm activities because these have a tendency to stabilize income and lower income volatility. Provision of educational facilities and equipping households with fundamental skills are two examples of specialized programs that are encouraged to lessen the occurrence of poverty.

INTRODUCTION

Today's development stakeholders have a significant challenge in reducing poverty in developing nations (UNDP, 2007). In recent decades, poverty levels around the world have significantly decreased. This development has been uneven, with drops of more than two percentage points annually occurring in China and the rest of East Asia.

With poverty rates falling at a rate of roughly one percentage point a year, India and the rest of South Asia have also made progress. In the past 20 years, South America and Africa have performed the worst, with rates of absolute poverty dropping very slowly or not at all. In comparison to other regions, Latin America and Africa have generally seen higher levels of inequality and slower rates of economic growth. When population size is taken into account, Africa has a worse burden of poverty than South Asia. Whereas 24.2% of people in South Asia live on less than $1.25 USD per day, 36.3% of people in Africa do (Chen and Ravallion, 1625; Turner et al., 2014).

Nigeria might be the nation most severely impacted by poverty, despite the fact that it is a worldwide problem. A concerning fact is that 67 million people, or more than 43% of the population, live below the poverty level (World Bank, 2013). According to Aridas & Pasquali's 2013 list of the richest and poorest countries, Nigeria is placed 140th out of 184 with a $2,883.44 Gross Domestic Product Based on Purchasing-Power-Parity (PPP) Per Capita (2013).

This ultimately demonstrates that the nation is impoverished; the state of poverty in Nigeria is alarming and has actually taken on a crisis dimension, according to Ajegi (2002); and "the worrisome aspect of the poverty crisis in Nigeria is not just the magnitude and the spread but its ever-rising profile" (Ajegi, 2002).

Nigeria's Benue state is incredibly underdeveloped. With its statistics, NBS (2012) attested to the poverty level in Benue State, which showed that the state's food poverty rate, absolute poverty rate, relative poverty rate, and dollar-per-day poverty rate were all higher than the corresponding national averages of 41.0%, 60.9%, 69.0%, and 67.2% for the same year.

Over the years, this trend has not changed. The majority of the population lives in rural areas, where the consequences are most acute. According to NPC (2006), 63.7% of the population of Nigeria lives in rural areas, making the country predominately rural.

For instance, just 31% of people lived in metropolitan regions in 1995, compared to 49% of people in rural areas. Also, the percentage of the poor living in rural regions increased slightly from 66% in 1992 to 68.9% in 1996, indicating that approximately 48 million Nigerians in rural areas were poor in that year (Anyanwu, 1997; Awoseyila, 1999; Azeez et al., 2015).

Similar efforts have been conducted in Benue State and many other States of the Federation to reduce rural poverty. Nevertheless, neither of these has produced the anticipated results. Benue State Economic Empowerment and Development Plan (BENSEEDS), 2004) argues that as a result of its high degree of underdeveloped rural villages and 70% rural landmass, which houses the same percentage of the inhabitants, the State is one of the poorest in the country (Yuwa, 2004).

In some places of the world, there has been a notable improvement in the reduction of poverty. In East Asia and the Pacific, where the percentage of the poor decreased from 30% in 1990 to 9% in 2004, the most improvement has been accomplished. Contrarily, the proportion of the poor in sub-Saharan Africa (including Nigeria) has reduced by slightly more than 5% but still exceeds 40%. (Ravallion et al., 2007). This rural poverty scenario is set against the backdrop of rural residents' lack of access to economic possibilities, as well as to social services like health, sanitization, and education, as well as to economic services like power and reliable water supplies.

According to the CBN/World Bank research on poverty assessment and alleviation in Nigeria from 1999, the living conditions of rural poor households are getting worse. In Benue, rice farming provides the majority of income. Their primary occupation has been this as a result of the Benue Valley's advantageous location. According to Ajakaiye and Adeyeye (2001), in order to roughly construct sustainable poverty alleviation programs, a profound understanding of the essence of poverty is still necessary. So, in order for pro-poor development initiatives to be successful, it is necessary to have an awareness of rural household poverty situations. In order to

meaningfully articulate a corrective intervention and its financial implications, it is essential to know whether poverty is rising or falling and at what rate. Therefore, it is crucial to evaluate the severity and extent of poverty in order to fully comprehend the difficulties that the prevalence of poverty in these places presents.

It goes without saying that attempts to address either general or targeted poverty issues would call for a precise description of the state of poverty. The poverty measure is frequently used as the basis for determining how much money should be provided to which segment of the poor, which location and region (urban/rural), which sector (sub-sector), and/or targeted activities. Poverty measures can also be used to determine what alterations have been made to people's welfare as a result of the addition of a certain policy or program (Baulch and Hoddinott, 2000; Okumadewa, 2001; Azeez et al., 2015). In order to develop policies for its reduction, this study is therefore done to identify the variables that affect farm families' poverty status and to determine those that contribute to it.

MATERIALS AND METHODS

Three local governments in the state of Benue participated in the study (Gboko, Gwer East and Vandeikya). According to the 2006 census, Benue State, which is a state in North Central Nigeria, has a total population of 4,253,641 people, or 99 people per square kilometer. Benue is now Nigeria's ninth-most populous state as a result. Nonetheless, the population distribution by local government areas reveals pronounced dualism (NPC, 2022).

Guma, Gwer East, Ohimini, Katsina-Ala, Apa, Logo, and Agatu are among regions with low population density, each with less than 70 people per km2, while Vandeikya, Okpokwu, Ogbadibo, Obi, and Gboko have densities ranging from 160 to 200 people per km2. Around 380 people live in per km2 in Makurdi LGA. Males make up 49.8% of the population overall, while females make up 50.2%. Primary data came from a survey that was conducted using a standardized questionnaire in the research region in 2022.

A random sample of 254 rice farm families was taken. Rice farming and small-scale trading are the two main jobs held by the population. The study's analytical methods included descriptive (using percentages) and econometric methods (logit model). The extent of the poverty issue was determined using the poverty line. This was created using the average per-person household spending (MPCHHE). Logit analysis was utilized to determine the impact of specific factors on the poverty status of households. Equation uses the generic form of the logit model, which is based on the assumptions of Pindict and Rubenfeld (1982) and Bidani and Ravallion (1994). (1).

$$Pi = E(Y-1/Xi)$$

$$Pi = \frac{1}{1+e^{-zi}}$$

where Y = poverty status of household (probability of being poor).

Xi = vector of independent variables.
E = familiar base of the natural logarithm
zi = b1 + b2xi

Stated explicitly as: Y = f(x1, x2 … x9)……. (2)
Y = Probability of being poor (poverty level of household)
X1 = Age of household head(years)
X2 = Sex of household head (D = 1 if male, 0 = otherwise)
X3 = Household size (number of persons in the household)
X4 = educational status of household head (no. of years of formal schooling)
X5 = farm income in Naira/household
X6 = years in farming(number)
X7 = off-farm income of household in Naira
X8 = Type of farming activity (D = 1 if crop, 0– otherwise)

RESULTS AND DISCUSSION

Socio-Economic Characteristics

Tables 6–8 display the logit analysis's findings. R2's value demonstrates how well the data fit the model and how important it is. Nearly all factors considered in determining poverty show the anticipated patterns and are statistically significant at the given probability levels. Thus, the logit result offers significant support for the outcome of the already obtained descriptive analysis.

Age

There is a common misconception that a farmer's production rises with age, peaks around middle age, and then declines as they get older. The survival of beginning farmers, effective succession planning, and even the nation's farmers' competitiveness with farmers abroad are all impacted by an increase and then a decline in efficiency as a farmer ages. According to this study, there is a bad correlation between poverty and the age of the family head. In this case, the likelihood of poverty decreased as respondents' ages. Yet, this goes against a priori expectations.

The responders' average age, however, indicates that they are currently in their prime earning years. Hence, the respondents' capacity to work in order to generate cash that can be used to support their fundamental necessities. In terms of household size, the likelihood of being poor increases with household size. The majority of the household heads in the sample ranged in age from 20 to 60 (Table 1).

Ageism in farming is a current problem. There is some variation between nations. For instance, in Mexico, Peru, and Nigeria, the average age of a farming household head is about 53, although the average age of all agricultural people is about 45 (and 33 in Nigeria). The average age of household heads rises to 50 and the average age of all people to 41 if the term "farmer" is restricted to those who devote more than 50% of a typical workweek to farming.

The average farming household head is roughly 50 years old, while the average person engagedin farming is about 10 years younger, regardless of how the data is sliced and diced.

The results of a study by Tauer (1995) broadly confirm the idea that a farmer's efficiency rises and subsequently falls as they become older, but the efficiency loss is not as pronounced as earlier estimates would imply.

Sex

In the research region, there are 180 more homes led by men than by women (Figure 1). The agricultural industry continues to be essential to local and regional economies all over sub Saharan Africa. It is the cornerstone of food security and a significant employer, especially for women. Yet, research shows that female farmers produce their land at a lower rate than male farmers based on original investigation in five nations (Ethiopia, Malawi, Rwanda, Uganda, and United Republic of Tanzania), This policy brief demonstrates how access issues to agricultural inputs, such as family labor, high-yield crops, pesticides, and fertilizer, drive gender differences in agricultural productivity rather than women being less productive producers.

To close gender gaps in agricultural output, it is essential to equalize women's access to agricultural inputs, notably time-saving machinery, and increase the return on these inputs.

It also promises to result in significant social and economic benefits. It might increase agricultural and general GDP in all five of the countries, increase crop yield by up to 19%, and bring hundreds of thousands of people out of poverty (Mukasa and Salami, 2015).

Level of Education and Place of Residence

The research area's educational level reveals that a sizeable portion (46%) has no formal education, while the remaining 54% has completed elementary or post-primary school (Table 3). This demonstrates that there is still a low level of literacy in the region, which may be the cause of the rising level of farmer poverty.

The significance of education in agricultural development has been generally acknowledged since Schultz's ground-breaking work in 1964. Education improves farmers' farming talents and capacity for production (Weir, 1999). It allows them to adhere to written directions for the application of appropriate and suggested doses of chemical and other inputs. Once more, numerical skills enable them to weigh the advantages and disadvantages of implementing a certain farming technology.

This research backs up Schultz's claim that, for farmers who use current technology, education increases farm output (Paltasingh and Goyari, 2018). We propose that in order to spread modern technology widely and thereby reduce poverty in the study region, a farmers' field school program must be created in tandem with a strong extension network.

The fact that the population with higher education (12.2%) was more significant than even those with secondary education (7.8%) is another indicator from this study. This gave validity to the rumors that Benue natives love farming so much that many continue to work in low-paying agriculture even after completing higher school.

In spite of the fact that the percentage of people living in rural areas (92.5%) was still larger, this particular group may be to blame for the people living in urban areas (Figure 3), where the percentage is 7.5%. Unemployment may have also had a role in this.

Expectedly, the rate of job losses in rural areas outpaced those in urban areas, with the unemployment rate in the rural center rising by 7.5% and the unemployment rate in the urban center falling by 2.2%, respectively.

According to a study by Fawole and Ozkan (2019), the majority of unemployed adolescents (62.8%) were willing to engage in agriculture if given the necessary and sufficient resources (Fawole and Ozkan, 2019).

Household size

Large household sizes have the effect of lowering per capita household spending, which exacerbates poverty in the household. Most of the households among the respondents are between one and three members, with four and six people making up 78.9% of all households. A staggering 17.3% of respondents had a home that could fit 7 to 10 people (Table 2). High fertility has a negative impact on quality of life in rural Nigeria due to productivity issues. Although family size is large in rural Nigeria, data from multiple agricultural and demographic studies have showed that agricultural output and income are both poor.

As a result of low productivity and a large family size, almost all of the food produced by the home is consumed. The end result is a decrease in household income, minimal savings, and more people living in poverty. There doesn't seem to be much reason for keeping large families in order to boost productivity. The government should implement measures to deter excessive fertility if it wants to improve the quality of life in rural areas. This should result in higher productivity; more savings will be generated internally, amenities provided will be used more effectively, and the gap between rural and urban areas will be minimized. These measures should also encourage cooperative farming, increase the availability of agricultural loans to support capital-intensive agricultural production, and provide more fertilizers (Omideyi, 1988).

Hence, larger household sizes can be considered to increase poverty, especially when the members are not of working age.

While family size tends to decrease with capital investment, it can also increase depending on the proportion of adults to children and whether those people are employed, so boosting household requirements (income) and lowering poverty.

Income from Farming Activities

A significant portion of respondents (48.6%) make between ₦1,000 and ₦4,000 per month, while 93 respondents make between ₦4,000 and ₦10,000 per month by producing rice (Table 4). Some 475 million smallholder farmers are thought to produce 80% of the world's food (Lowder et al., 2016; Emran et al., 2021). Yet, achieving the first two Sustainable Development Goals (SDGs), food security and ending poverty, will be extremely difficult for smallholder farmers.

Smallholder systems are extremely complicated and diversified, making it challenging to comprehend the main issues farmers confront and how limitations at various sizes prevent farmers from improving their living conditions. Due to the growing risks posed by climate change and extreme weather events, a variety of socioeconomic and biophysical constraints exist both locally (e.g., soil fertility, farm location, and access to capital, labor, inputs, and markets) and globally (Mainuddin and Kirby, 2015; Bhardwaj and Singh, 2020).

Prior studies have frequently concentrated on specific aspects of smallholder systems, such as examining disciplinary socioeconomic problems (Ellis, 1993), biophysical restrictions, or asset constraints like the availability of land, water, and labor.

Yet, there is growing acknowledgment that integrated methods are required to understand how a variety of on- and off-farm dynamics contribute to food security and poverty outcomes in order to build more successful agricultural development and extension programs (Emran et al., 2021).

Income from Non-Farming Activities, Household Expenditure and Poverty Status of Respondents

Compared to the other groups, more than 161 people earn between ₦4,001 and ₦10,000 from non-farming work (Table 5). Their spending on needs will be impacted by this. As a result, there is a lesser chance of being poor. The two biggest expenses for a household are food and education (Figure 2). Transport costs are the lowest.

This was expected given where more respondents were living. Far more than the former, social contributions were spent. As was predicted, since the majority of the respondents do not pay rent, the expenditure on housing was much lower.

The outcome also demonstrates that the chance of poverty decreases with increasing off-farm income. Gains from farming activities can be increased by using income from outside the farm.

Rural residents have diversified their means of subsistence and their sources of income to include both on- and off-farm work.

As a result, non-farm income-generating activities have become a crucial part of rural households' subsistence plans (Agbarevo and Nmeregini, 2019). The sorts of rural non-farm income producing activities vary between geopolitical areas and countries, according to Ovwigho (2014), which accounts for the apparent challenges in defining the effects of non-farm income generating activities on farmer welfare.

Also, there is a growing trend toward the development of village and rural industries, trade, and transportation to offer alternative employment options and to meet the growing need of the rural people (Nmeregini et al., 2019). Many social benefits could result from rural non-farm work, in addition to their economic advantages. Low productivity activities (like crafting) force people to choose between money and security while acting as a safety net in case of bad years for agriculture. Food insecurity may result from seasonality that produces peaks and troughs in labor usage on farms due to the mismatch between farm income streams and ongoing consumption requirements (Nmeregini et al., 2019; Azeez et al., 2015).

Moreover, non-farm income generating activities have a significant impact on improving the food security of rural residents by reducing income inequality and so breaking the cycle of poverty.

In order to categorize homes as poor or not, the total amount spent by each household on food and non-food goods was taken into account (Figure 4). The average monthly household per capita expenditure (MPCHHE) is ₦366.55.

Thus, ₦1,299.41 is the threshold for moderately poor households, whereas ₦1,949.12 and above is the threshold for non-poor households.

The poverty gap index, which represents or gauges the amount that would bring all local poor people's spending exactly up to the poverty line, eradicating poverty, is very high.

Hence, if payments were to be paid to poor households to raise them out of poverty, the amount of expenditure that the moderately poor would need to make in order to reach the poverty cut-off point would be ₦649.71. As a result, effective policy instruments and techniques should be developed to help farming households escape poverty in order to successfully reduce poverty in the region.

Land Tenureship

More over 63% of respondents inherited land for farming, compared to only 19.6% and 16.5% of respondents who either owned or rented the property, respectively (Table 6).

Our findings are consistent with those of Sanusi et al. (2021), who found that communal land tenure systems were commonly employed and that inheritance was a common method of acquiring land. Almost 94 percent of the land in Nigeria used for rice cultivation was discovered to have been acquired in this way.

The resultant total factor productivity of 62.18% shows that this resulted in a below-optimal productivity level. According to the findings, it is necessary to reform the current land use statute and policy to stop the simultaneous appropriation of agricultural land for non-agricultural uses in order to increase the availability and accessibility of land for agriculture and, as a result, lower cost.

Overall, there are statistically significant coefficients for household head's age, household size, head's educational level, off-farm income, and kind of farming activity. This means that those factors are the main causes of poverty in the research area.

IMPLICIT ASSUMPTION OF POLICY

Provision of appropriate educational facilities and providing rural families with basic skills must be the cornerstones of policies intended to minimize the prevalence of poverty. This will increase their capacity to generate non-farm income.

Moreover, family planning programs should be implemented, and individuals need to be made aware of the value of having a modest family size and how poverty is increased as families get larger, suggesting a severe dependence impact.

SUMMARY

It was also shown that key factors influencing poverty include age, household size, education, and off-farm income. Promoting and enhancing educational opportunities can therefore be helpful in reducing or eliminating poverty in Benue State.

In order to diversify their source of income, farmers are recommended to participate in various non-farm economic activity. It is abundantly obvious from the facts that broad-based agricultural development offers a successful strategy for decreasing poverty and boosting economic growth.

This is often accomplished by raising producer and farm worker wages as well as by increasing demand for non-tradable items, specifically services and locally produced goods.

Table 1: Socio-Economic Variables: Household Size (Persons)

S/N	Age	Freq.	%
1	<20 years	39	15.3
2	20-40	123	48.2
3	41-60	60	23.5
4	>60	32	12.5
	TOTAL	**254**	

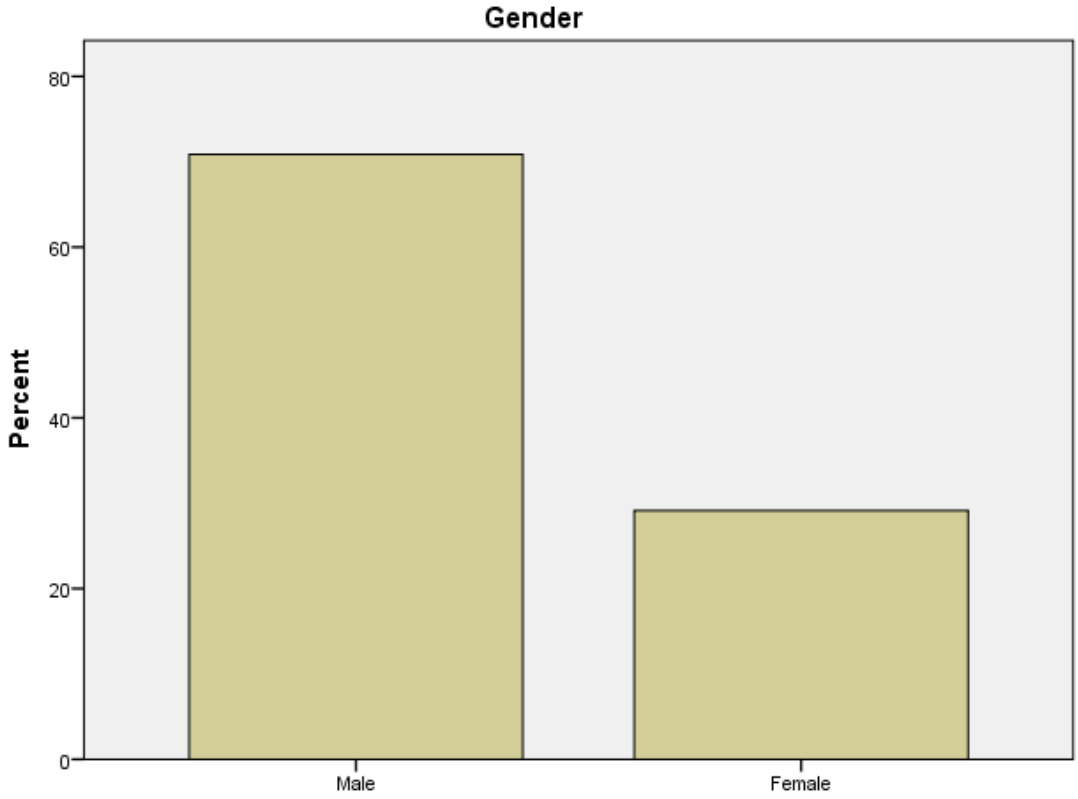

Figure 1: Showing the gender of respondents

Table 2: Socio-Economic Variables: Household Size (Persons)

S/N	Size	Freq.	%
1	1-3	69	27.1
2	4-6	132	51.8
3	7-10	42	17.3
4	>11	9	3.5
	TOTAL	**254**	

Table 3: Socio-Economic Variables: Educational Level of Household Heads

S/N	Level	Freq.	%
1	No Formal Education	118	46.3
2	Primary	85	33.3
3	Secondary	20	7.8
4	Higher Institution	31	12.2
	TOTAL	**254**	

Table 4: Socio-Economic Variables: Monthly income from Farming

S/N	Amount (₦)	Freq.	%
1	<1,000	15	5.9
2	1,000-4,000	124	48.6
3	4,001-10,000	93	36.5
4	10,001-15,000	19	7.5
5	>15,000	3	1.2
	TOTAL	**254**	

Table 5: Socio-Economic Variables: Monthly income from non-Farming activity

S/N	Amount (₦)	Frequency	%
1	<1,000	5	2
2	1,000-4,000	47	18.4
3	4,001-10,000	162	63.5
4	10,001-15,000	32	12.5
5	>15,000	8	3.1
	TOTAL	**254**	

Table 6: Socio-Economic Variables: Land Tenureship

S/N	Tenureship	Frequency	%
1	Owned land	50	19.6
2	Family land	162	63.5
3	Lease	42	16.5
	TOTAL	**254**	

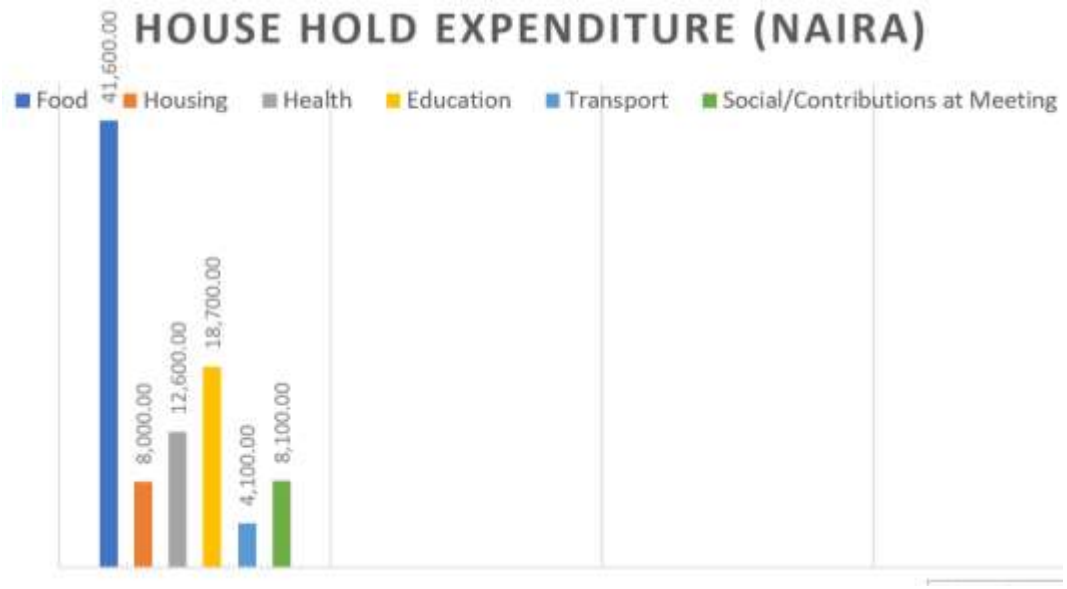

Figure 2: Showing the household Expenditure on a monthly basis.

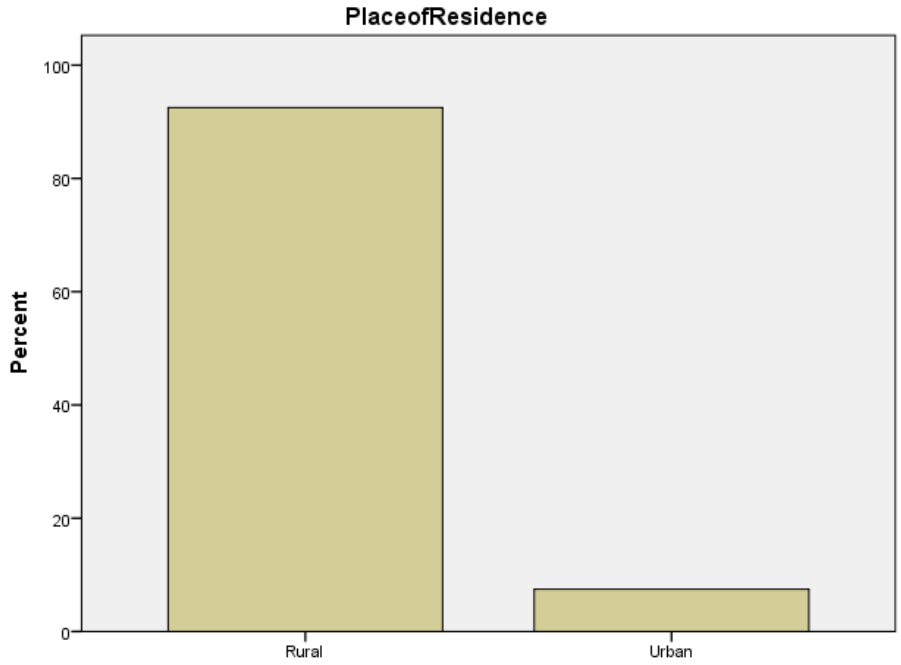

Figure 3: Showing the place of residents

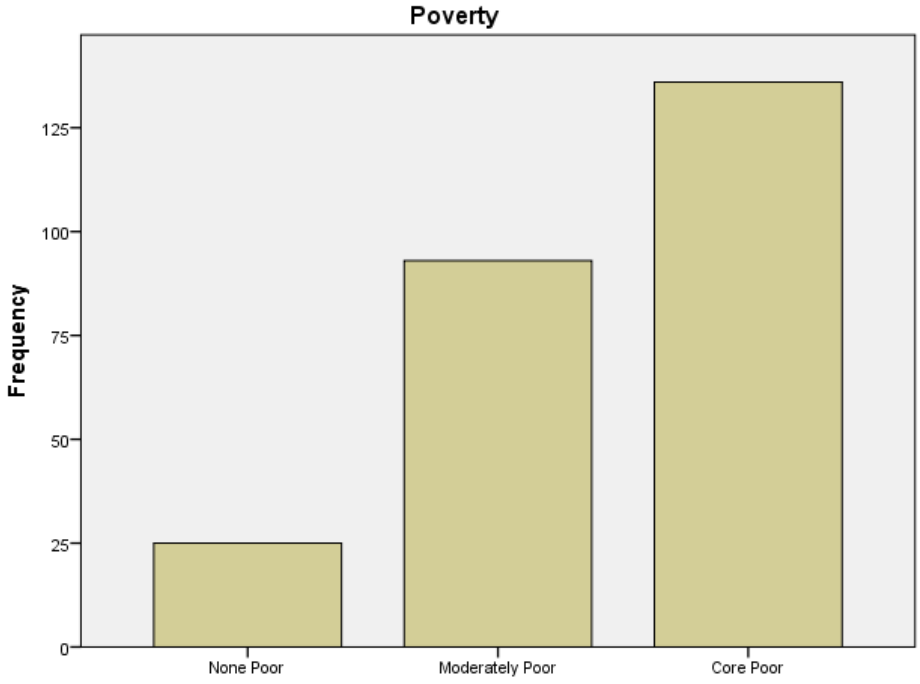

Figure 4: Showing the poverty level of the respondents

Table 7: Socio-Economic Variables: Logit model result for households

S/N	Socio-Economic Variables	Estimated Parameters
A1	Age of Family Heads	-26.152±0.885*
A2	Gender of Family Heads	2.091±0.455
A3	Household Size	3.879±0.766*
A4	Educational level of Household Head	1.012±0.768*
A5	Land Tenureship	-2.445±0.602
A6	Farm Income	-14.030±0.768
A7	Non-Farm Income	-13.685±0.718
A8	Place of Residence	-4.964±0.311

Person X2 = 328.907
Log likelihood Ratio = 328.907
P = 0.951
N = 254
R2 = 0.5475
Estimated Poverty Probability = 0.95

Table 7: Model Fitting information

Model	-2 Log Likelihood	Chi-Square	Chi-Square
Intercept Only	328.907		
Final	0.000	20	0.000

Table 8: Goodness-of-fit

Model	-2 Log Likelihood	Chi-Square	Chi-Square
Pearson	0.001	20	1.000
Deviance	0.001	20	1.000

Table 9: Pseudo R-Square

Cox and Snell	0.726
Nagelkerke	0.951
McFadden	0.899

REFERENCES

Agbarevo, M.N.B. and Nmeregini, D.C (2019). Effect of non-farm income-generating activities on poverty reduction among rural households in Abia State, Nigeria. International Journal of Agriculture and Research, 2(1): 15 -25.

Ajakaiye, D. O and Adeyeye, V. O., 2001. The Nature of Poverty in Nigeria. Nigeria Institute of Social and Economic Research (NISER). Ibadan: NISER Monograph Series No. 31.

Ajegi, S.O. (2002). The affluence of poverty: a critical evaluation of Nigeria's poverty reduction programmes. *Journal of Economic & Social Research*. Vol.1, No.1.

Anyanwu, J. C., 1997. "Poverty in Nigeria: Concepts, Measurement and Determinants". Selected Papers for the 1997 Annual Conference on Poverty Alleviation in Nigeria. Nigerian Economic Society.

Aridas, T. & Pasquali, V. (2013). The world's richest and poorest countries. *Global Finance Magazine*. https://www.gfmag.com/global-data/economic-data/worlds-richest-and-poorest-countries

Awoseyila, A. P., 1999. "The Dimensions of Poverty in Nigeria". Bullion 23 (4). Central Bank of Nigeria, Abuja.

Azeez A. Ademola; S. O. Abang. Analysis Of Poverty Status of Rural Farm Families In Akwa Ibom State, Nigeria. Global Journal of Agricultural Sciences Vol. 14, 2015: 45-50.

Bhardwaj P, Singh O. Climatological characteristics of Bay of Bengal tropical cyclones: 1972–2017.Theor Appl Climatol. 2020; 139: 615–629.

Ceres 2030. To end hunger, science must change its focus. Nature. 2020; 586: 336. https://doi.org/10.1038/d41586-020-02849-6 PMID: 33046881.

Ellis F. Peasant Economics: Farm Households and Agrarian Development, 309. Cambridge Cam-bridge Univ Press. 1993.

Emran S-A, Krupnik TJ, Aravindakshan S, Kumar V, Pittelkow CM (2021) Factors contributing to farm-level productivity and household income generation in coastal Bangladesh's rice-based farming systems. PLoS ONE 16(9): e0256694

Loren Tauer. Age and Farmer Productivity. Review of Agricultural Economics Vol. 17, No. 1 (Jan., 1995), pp. 63-69 (7 pages) Published By: Oxford University Press .

Lowder SK, Skoet J, Raney T. The Number, Size, and Distribution of Farms, Smallholder Farms, and Family Farms Worldwide. World Dev. 2016; 87: 16–29. https://doi.org/10.1016/j.worlddev.2015.10.041.

Mainuddin M, Kirby M. National food security in Bangladesh to 2050. Food Secur. 2015;7: 633–646.https://doi.org/10.1007/s12571-015-0465-6.

Mukasa, Adamon N. and Salami, Adeleke O. (2015), Gender productivity differentials among smallholder farmers in Africa: A cross-country comparison, Working Paper Series N° 231, African Development Bank, Abidjan, Côte d'Ivoire.

National Bureau of Statistics. (2012). Nigeria poverty profile 2010.

National Population Commission. "National Population Census Statistics". National Population Commission, 2022.

Nmeregini, Daniel Chinomso; Nzeakor, Felix Chibueze; Ekweanya, Ndidiamaka Martha. Non-farm Income Generating Activities of Rural Households in Abia State, Nigeria. Journal of Agricultural Extension. Vol. 23 (4) October, 2019

Omideyi AK. Family size and productivity of rural households in Nigeria. Janasamkhya. 1988 Jun;6(1):29-48. PMID: 12315558.

Ovwigho, B. O, (2014). Factors influencing involvement in non-farm income generating activities among local farmers: The Case of Ughelli South Local Government Area of Delta State, Nigeria. Sustainable Agriculture Research, 3(1): 76 – 84

Paltasingh, K.R., Goyari, P. Impact of farmer education on farm productivity under varying technologies: case of paddy growers in India. *Agric Econ* **6**, 7 (2018).

Ravallion, M., Chen, S and Sangraula, P., 2007. New Evidence on the Urbanisation of Global Poverty. Washington D.C. World Bank

Sanusi, Saheed Olakunle. Madaki, Musa Janga; David, Hyelni Seth; Adole, Sharon Ocheinehi. Land Tenure Systems and Agricultural Productivity in Nigeria: A Case of Rice Production. https://orcid.org/0000-0002-0531-643X

Sara Turner, Jakkie Cilliers and Barry Hughes. Reducing poverty in Africa. Realistic targets for the post-2015 MDGs and Agenda 2063. AUGUST 2014 African Futures Paper 10

Schultz TW (1964) Transforming traditional agriculture. Yale University Press, New Haven

Shaohua Chen; Martin Ravallion. The developing world is poorer than we thought, but no less successful in the fight against poverty, *The Quarterly Journal of Economics*, 125:4, 2010, 1577–1625.

United Nations Development Programme(UNDP)., 2007. The Millennium Development Goals Report, New York.

Wasiu Olayinka Fawole; Burhan Ozkan. Examining the willingness of youths to participate in agriculture to halt the rising rate of unemployment in South Western Nigeria. Journal of Economic Studies Vol. 46 No. 3, 2019. pp. 578-590.

Weir S (1999) The effects of education on farmer productivity in rural Ethiopia. Centre for the Study of African Economies Working Paper no. WPS/99–7, Oxford University, Oxford.

World Bank., 2013. World Development Indicators. Washington D.C., World Bank.

Yuwa, E.I (2004). Executive Summary. In P. Ogiji (ed). *The food basket myth: implications for food security and agricultural policy reform in Nigeria*. *Essays in Honour of David Iornongo Ker*.