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Factors Affecting the Rural Poverty and its Vulnerability

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Abstract

The study assessed the determinants and vulnerability to rural poverty in Nigeria using 2018-2019 Nigerian Living Standards Survey data. Binary probit regression model was used to ascertain the determinants of poverty and probability of the household being vulnerable to poverty. Linear regression model was used to ascertain how various kinds of households' characteristics impact on the likelihood that the household will fall into poverty. The probit estimates showed that economic growth, debt, inflation, investment, corruption, life expectancy, and unemployment rate were major determinants of poverty in Nigeria as they have potential to aggravate poverty. It was found that lower household size is associated with low vulnerability to poverty. The odd ratios of the probit model showed that household characteristics of age, household size, female-headed households and households located in northern zones of the country are significantly correlated with poverty and are major socio-economic determinants of household vulnerability to poverty. The rate of decrease in vulnerability is marginal in all other northern zones relative to north east but larger in the southern geopolitical zones. Vulnerability to poverty is a more serious issue in Nigeria, particularly in the north-eastern part of the country. The research recommends creation of enabling environment that encourages small and medium scale business to thrive in order to reduce the level of unemployment which has pervasive effect on poverty.

Keywords: Determinants, Expenditure, Households, Nigeria, Poverty, Vulnerability

1. Introduction

Poverty is a global threat, plaguing both developed and developing nations. It has a devastating effect on developing nations generally but sub-Saharan Africa in particular (Addae-Korankye, 2014). Poverty has become pervasive in Nigeria in the last four decades despite the economic boom of the 1970s (Mohammed-Hashim, 2008; Obi, 2007). According to Nigeria Economic Report (NER), Nigeria had one of the world's highest economic growth rates averaging 7.4 percent in 2014 (NER, 2019). Following the oil price collapse in 2014-2016, combined with negative production shocks, the Gross Domestic Product (GDP) growth rate dropped to 2.7 percent in 2015. In 2016, the economy contracted by 1.6 percent (World Bank, 2019). Poverty remains significant at 33.1 percent in Nigeria. Despite the country's massive wealth and a huge population to support commerce, Nigeria still witnessed high level of poverty (World Bank, 2011). However, poverty may have been overestimated due to the lack of information on the extremely huge informal sector of the economy. In Nigeria, the nature of the determinants of poverty can be traced to low or declining level of economic growth, income inequalities, unemployment, corruption, bad governance, inappropriate macroeconomic policies among others. Poverty can also arise through structural deficiencies such as environmental degradation, increasing crimes and violence as well as the neglect of the agricultural sector and non-development of infrastructural facilities (Ajakaiye and Adeyeye, 2001).

Poverty became prevalent in Nigeria beginning in 1985 and was seen as an obstacle or limitation to economic growth. The poverty gap calculated on the basis of $2 per day as the mean shortfall below the poverty line indicated that 90.8% of Nigerians earned income that put them below the poverty line (Mohammed-Hashim, 2008). Similarly,

Aigbokhan (2012) and Yusuf (2011)estimated that about 60 percent of Nigerians live in poverty despite the country's enormous oil wealth. As of 2018, population growth rate is higher than the economic growth rate, leading to a slow rise in poverty (Sparks, 2018). According to a 2018 report by the World Bank, almost half the population in Nigeria is living below the international poverty line (US$ 2 per day), and unemployment, peaked at 23.1 percent(World Bank, 2018). Recently, the poverty head count was estimated at 40.09 percent with a poverty gap index of 12.9 and Gini coefficient of 35.1 (Nigerian Living Standards Survey, 2019). This implies that, in Nigeria 40.1 percent of the total population were classified poor. In other words, on average, 4 out of 10 individuals in Nigeria has per capita expenditure below N137, 430 per year implying that individuals living in households whose per capita annual consumption is below N137, 430 are considered poor. This translates to over 82.9 million poor Nigerians who are considered poor by national standards). Poverty in Nigeria worsened since the 1980s and became pervasive in the 1990s. Studies showed that the number of those in poverty increased from 27 percent in 1980 to 46 percent in 1985; it declined slightly to 42 percent in 1992 and increased very sharply to 67 percent in 1996 (Ogwumike, 2001). This has continued such that every measure of poverty ranks Nigeria at the bottom list of nations. There are growing concerns that poverty is not reducing due to lack of understanding of its dynamic nature and vulnerability to poverty (Adepoju and Yusuf, 2012).

Vulnerability to poverty appears to be one of the major challenges many households face in developing economies especially in the sub-Saharan Africa. As a result, this issues have become central in policy agenda owing to rise in food prices due largely to flood and drought in many parts of the world as many households have fallen deep into poverty, while many others have become poor (Okosun et al., 2012 and Kolawole et al., 2015).The importance of analyzing vulnerability to poverty in Nigeria has continued to gain interest because a significant proportion of the world population is poor, and with increasing population growth, rapid urbanization, environmental degradation and the frequency and magnitude of natural disaster, vulnerability is no longer a concept that can be ignored. Gunther and Harttgen (2009) studied the impact of idiosyncratic and covariate shocks on households' vulnerability in Madagascar and found that whereas covariate and idiosyncratic shocks have both substantial impacts on rural household vulnerability, urban household vulnerability is largely determined by idiosyncratic shocks. Alemi and Dereje (2014) studied the determinants of vulnerability to poverty in female headed households in rural Ethiopia and found that female headed households are more vulnerable to poverty than male headed households in the study area. Chaudhuri (2003) assessed the level of vulnerability to poverty in Nigeria and showed that 87 percent of Nigerians were vulnerable to poverty and that 68.5 percent of the population was highly vulnerable, whereas only 31.5 percent of the population had low mean vulnerability. The study suggested that building a strong and virile governance structure can help reduce vulnerability in Nigeria. Similarly, Oni and Yusuf (2008) examined the determinants of expected poverty among rural households in Nigeria and found that both idiosyncratic and covariate factors affect the expected log per capita consumption of rural Nigerians. However, there are relatively few empirical studies on vulnerability to poverty in Nigeria and almost none of them focus on how household level characteristics impact on vulnerability to poverty. This study on factors affecting the poverty and its vulnerability fills this gap. The research broadly assesses poverty determinants and vulnerability to poverty in Nigeria. It specifically estimates the determinants of poverty in Nigeria, ascertains how various kinds of household characteristics determine the household's vulnerability to poverty, ascertain how various kinds of household characteristics impact on the likelihood that the household will fall into poverty as well as ascertain the socio-economic determinants of households' vulnerability to poverty.

Theoretical Framework

The concept of vulnerability to poverty implies people that are presently not in poverty and those currently in poverty will be considered vulnerable to poverty. Household vulnerability is classified by the chances or risk that a household will either fall under the poverty line or if already poor, remain in poverty (Ogwumike and Ozughahu, 2018). If a household has 50 percent or more odds of falling into poverty or staying in poverty, there are considered to be vulnerable to poverty. The three groups of vulnerability to poverty are: the permanent poor due to temporary abnormal events occurring; those becoming poor because of predictable events, and those who become poor because of economic damages that usually involve loss of profits, loss of wages and earnings. The three main terminologies adopted to classify poverty are: Vulnerability as Expected Poverty (VEP), Vulnerability as Low Expected Utility (VEU) and Vulnerability as Uninsured Exposure to risk (VER).

In Nigeria, those most at risk of poverty and financially insecure are widows (particularly ones

without adult children), orphans, the physically challenged, and migrants. The likeliness of poverty in rural areas of Nigeria is higher with those of household's characteristics such as the number of people in a household, education level and production. Another determining factor of vulnerability to poverty is food poverty, which is sometimes considered the root of all poverty. The vulnerability of food poverty varies across the urban/rural and geographical zones throughout Nigeria. Altogether, 61.68 percent of Nigerians are vulnerable to food poverty while 40.10% of the total population were classified as poor (Ogwumike and Ozughahu, 2013; NLSS, 2019). A quantitative and qualitative assessment of vulnerability to poverty in Nigeria showed that 87% of Nigerians were vulnerable to poverty, whereas only 31.5% of the population had low mean vulnerability (Alayande and Alayande, 2016). A study on poverty and vulnerable on rural south-west Nigeria revealed that 55.7% of rural households in the study area were vulnerable to poverty (Adepoju and Yusuf, 2012).

2. Materials and methods

The research utilized dataset from the generalized household survey for Nigeria conducted by the National Bureau of Statistics (NBS, 2019). Data were also procured from CBN Statistical Bulletin and Amnesty International Corruption Perspective and the internet. The Slow-Swan growth model, vulnerability index and probit models were used.

2.1 Estimation of models

The Solow-Swan growth model adopted from Aigbokhan (2000) was used to ascertain the determinants of poverty in Nigeria. The model specifies the econometric equation as:

POV. = ao+ a1GDP +a2UMP + a3LXP +a4COR + a5INF + a6SSE + a7INV + a8DEBT+μt…… (1)

Where;

POV = poverty index
GDP = economic growth
UMP = unemployment rate
LXP = life expectancy rate
COR = corruption index
INF = inflation rate
SSE= secondary school enrolment (proxy for human capital development)
INV = investment (proxied by gross capital formation)
DEBT = internal and external debts
a1….a8 = parameters to be estimated
μt = stochastic error term
ao constant term

The study also follows Chaudhuri et al. (2002) which defined vulnerability as Expected Poverty (VER) as the probability that a household will fall into poverty in future. To ascertain the correlation between vulnerability, poverty and household characteristics. Two models were formulated.

Model 1 ascertains how various household characteristics determine the household's vulnerability to poverty. The model is specified as follows: Vuln. = βo + β1gender_head + β2 m-stat. +β3hhsize + β4rural +ψ age - dummy + ψ regional - dummy+μ …….…… (2)

Model 2 ascertains how various kinds of household characteristics impact on the likelihood that the household will fall into poverty. This is specified thus: Vuln. = βo + β1 m-stat. +β2hhsize + β3rural + ψ regional _dummy + μ……...….....(3)

Where;

Gender_ head = 1 if the household head is female and 0 otherwise
M-stat. = marital status showing the effect of different kinds of marital status on household vulnerability (married =1, 0 otherwise)
HH size = Household size (number)
Rural = 1 if rural, 0 otherwise
Age _ dummy = dummy variable used to capture whether there is age specific effect on vulnerability to poverty.
Regional _dummy = this captures the vulnerability characteristics of the sex geographical zones of Nigeria
Ψ = vector of parameter to estimated minus the base dummy
μ = error term

Following Chaudhuri et al. (2002) vulnerability can be calculated as:

$$Vh=Pr(InConh<Inz|Xh)=\emptyset\left[\frac{InZ-Xh\beta}{\sqrt{X\theta}}\right] \quad \ldots\ldots\ldots\ldots (4)$$

Where;

∅= is the cumulative density function of the standard normal distribution
In z = the natural log of poverty line. The poverty line for this studyis N137, 430. (NBS, 2019).
Vh= lies between 0 and 1. Following Gunther and Harttgen (2006), vulnerable households are those which have a 50% or higher probability to fall below the poverty line. (Vh =or>0.5)
In Conh= natural log of household consumption expenditure

Assumptions

Vh> = 0.5, implies highly vulnerable group,
Vh< 0.5, relatively vulnerable group

In order to ascertain how various types of risks and household characteristics affect vulnerability to poverty, the following probit model was specified:

Pri (Y = 1/X) = F (XiTβ) …… (**5**)
Where;
Pr = denotes probability of the ith household being vulnerable to poverty
Y= the response variable denoting 1, if vulnerable and 0, otherwise
X = the vector of the dependent variable explaining vulnerability
β = the parameter to be estimated.
X5 = Farm size (measured in hectares)
X6 = Occupational status (dummy variable: full time farming = 1, part-time = 0)
X7 = Farming experience (in years)
X8 =Income (N)
X9 = Extension contact (number of contacts in last 6 months)
X10 = perception of benefits of technology (total score on perception)
X11 = awareness of any rice-cum-fish technology (aware = 1, not aware = 0)

3. Results and discussion

3.1 Unit root test

The Augmented Dickey Fuller (ADF) test were used to ascertain the order of integration of the variables. The result shows all the variables were integrated of order one 1(1) except inflation rate that was stationary and integrated of order zero 1(0). The variables were further investigated to determine whether their linear combinations were stationary. The co-integration test in line with Johasen was used and the results are shown in Tables 1 and 2.

3.2 Determinants of Poverty in Nigeria

The results of the Least Square estimate showed that the coefficient of determination R^2 was 0.87, meaning that the explanatory variables in the model explained over 87% of the variation in the dependent variable, hence the model exhibits good fit. The F- statistic of 16.67showed the overall performance of the model and was statistically significant (P =0.05), while the Durbin-Watson statistics of 1.72 shows absence of serial correlation in the model. The result of regression estimates (Table 3) showed that economic growth, corruption, debt, inflation, investment, life expectancy and unemployment rate are major determinants of poverty in Nigeria while secondary school enrolment is not considered as determinant of poverty in Nigeria.

Economic growth has a negative relationship with poverty. The coefficient is negative (-1.5E-05) and is statistically significant (P=0.1), implying that a 1% increase in economic growth would lead to about 1.51% reduction in poverty in Nigeria. Thus, economic growth could lead to reduction in poverty as the benefit of growth should ideally trickle down to the poor. Corruption is positively (3.03) related with poverty and statistically significant (P=0.01), meaning that it has a potential to aggravate poverty in Nigeria. The results indicated that a 1% increase in corruption would lead to 3% increase in poverty. A possible explanation is that ill-gotten wealth from corrupt practices are not invested such that the poor could benefit, rather the wealth is confined within the hands of the perpetrators thus worsening the plight of the poor in Nigeria. The coefficient of debt variable is negative (-2.73E-06) and was statistically significant (P = 0.1), indicating that a 1% increase in debt would lead to about 3% reduction in poverty. This shows that debt has the tendency to reduce poverty in Nigeria. This is because borrowings especially from external sources are been invested on viable projects that generate more income to improve the economy and living standard of the populace in general.

Table 3further showed that Inflation has the power to aggravate poverty in Nigeria. The coefficient (0.24) is positively correlated with poverty and was statistically significant (P = 0.05). This indicates that a 1% increase in inflation would lead to 0.24% increase in poverty. High inflation rate is reflected in high increases in price of commodities which is likely to increase the plight of the poor in Nigeria. Furthermore, investment exhibits a negative (-1.6E04) and statistically significant (P= 0.01) relationship with poverty, implying that a 1% increase in investment would lead to 0.02% reduction in poverty. This suggests that investment is a powerful tool in moving the economy to a higher level such that the poor subsequently benefit from its spill-over. Life expectancy is positively (4.52) correlated with poverty and was statistically significant (P= 0.01), meaning that a unit increase in life expectancy may lead to about 5.0% increase in poverty. This is because further increase in life expectancy may create additional unemployed old people who may become dependent on working class employees , or that the quality of life of the old people may decline such that more people fall below the poverty line; hence, the level of poverty increases(Aigbokhan, 2000).

The coefficient of unemployment rate (0.83) shows a positive and significant (P= 0.1) relationship with poverty, meaning that it may aggravate the level of poverty. It shows that a 1% increase in the rate of unemployment may cause an increase of about 0.83% in poverty in Nigeria. Secondary school enrolment exhibits a negative relationship with poverty, meaning it has the tendency to reduce poverty through improved level of human capital development. Though the claim is not dependable as the variable failed to be statistically significant.

Table 1. Augmented Dickey- Fuller (Unit root test)

Variable	Level	1st difference	2nd difference	Order of Integration	Test critical values
GDP	-	-5.362375	-	1(1)	-
POV	-	-5.455372	-	1(1)	-
COR		-5.297768	-	1(1)	-
UMP	-	-4.881662	-	1(1)	-
INF	-3.021235	-	-	1(0)	-
SSE	-	-9.470417	-	1(1)	-
INV	-	-3.859044	-	1(1)	-
LXP	-	-5.647763	-	1(1)	-
DEBT	-	-3.524527	-	1(1)	-
ECM	-3.551022	-	-	1(0)	-
1% level	-	-	-	-	-3.561772
5% level	-	-	-	-	-2.871412
10% level	-	-	-	-	-2.718251

GDP = gross domestic product; POV =poverty index; COR = corruption; UMP = unemployment; INF = SSE = secondary school enrolment; INV = investment; LXP = life expectancy; DEBT =debt; ECM = error correction model

Table 2. Co-integration test (maximum eigenvalue)

Hypothesized number of CE (s)	Unrestricted Co-integration rank test (maximum eigenvalue)			Prob.**
	Eigenvalue	Max. Eigen statistic	Critical value (0.05)	
None*	0.996777	177.7012	65.61468	0.0000
At most 1*	0.996117	168.4456	58.34472	0.0000
At most 2*	0.986402	145.1263	51.44364	0.0000
At most 3*	0.941664	88.21130	48.23115	0.0000
At most 4*	0.890134	71.66713	42.00776	0.0000
At most 5*	0.774462	47.34245	31.88714	0.0010
At most 6*	0.676674	36.11854	28.65334	0.0020
At most 7*	0.550132	26.96155	21.12267	0.0141
At most 8	0.251455	8.997453	14.22459	0.2872
At most 9	0.019384	0.538834	3.881556	0.4368

"Max. Eigenvalue test" indicates eight co-integrating equations at 0.05 level. CE(s), co-integrated equation; Prob. = Probability, at the 0.05 level. **, Mackinnon-Haug-Michelis 1999 *P*-values

Table 3. Least Square Estimates Showing Determinants of Poverty in Nigeria

Variable	Coefficient	Std. error	t-statistic	Prob.
Constant	-156.5864	55.600734	-2.816265	0.0066**
GDP	-1.51E-05	7.68E-06	-1.966146	0.1000*
COR	3.026650	2.9430641	1.028401	0.0316***
DEBT	-2.81E-06	1.38E-06	-2.036232	0.0544*
INF	0.236651	0.085050	2.782486	0.0102**
INV	-0.000160	4.4E-05	-3.592755	0.0012**
LXP	4.522705	1.090107	4.148865	0.0002***
SSE	-0.166566	0.251576	-0.662091	0.5115
UMP	0.826622	0.450004	1.836779	0.0566*
R^2	0.86611	Mean dependent variable	-	55.3831
Adjusted R^2	0.787867	S.D dependent variable	-	13.2027
S.E of regression	6.33586	Akaike info. Criterion	-	6.7127
Log likelihood	-108.2036	Hannan –Quinn criterion	-	6.7715
F-statistics	16.66812	Durbin-Watson statistic	-	1.7268
Prob.(F-statistic)	0.0000	-		-

Dependent variable= POV; Note: * (P= 0.1), ** (P=0.05), *** (P= 0.01)
Source: Author's Computation 2020

3.3 Vulnerability by Various Household Characteristics across Geographical Zones

Table 4 shows the average household per capita consumption expenditure and mean vulnerability by various household characteristics. The result of the regression model shows that high vulnerability by household characteristics is higher in urban than rural areas. It shows that lower household size is associated with low vulnerability to poverty. When household size is above 6-10, the household becomes highly vulnerable to poverty especially in rural areas. Also female-headed households are highly vulnerable while male-headed households have low vulnerability to poverty. Geographically, households that are located in the northern zones are highly vulnerable to poverty while households in the southern zones face moderate to low vulnerability to poverty. The plausible explanation could be that average household size tends to be higher in the northern zones because of prevalence of polygamous marriage and the fact that women in most cases are not allowed to participate openly in economic activities. Higher educational level of households is negatively associated with poverty. Those households who have spent more years in schooling were less likely to be poor while households without formal education are highly vulnerable to poverty both in urban and rural areas. National level estimates shows that vulnerability to poverty is higher in rural areas than in urban areas.

3.4 Determinants of Household's Vulnerability to Poverty

Table 5 shows the results of binary probit regression estimates. The results shows that overall, the model predicted 78.54% of the sample correctly. The coefficients of all the variables (except female) are negative and were statistically significant (P= 0.1), indicating they are all associated with high vulnerability to poverty in Nigeria. The result shows that having an additional member of household reduces vulnerability to poverty by 3.23%, on the average. A plausible explanation maybe because an extra member of household, especially a working class household member, could help to get extra income for the family. The result also indicated that having a female as household head increases vulnerability to poverty by 1.58% points. This suggests that male household might be a better position to work more and provide for the family than their female counterparts. No significant effect is observed in vulnerability to poverty between rural and urban areas.

Table 4. Average Household per Capita Consumption Expenditure and Mean Vulnerability to Poverty by various Household Characteristics

Household characteristics	Urban		Rural	
	Per capita consumption	Vulnerability	Per capita consumption	Vulnerability
Gender of head				
Male	134542.90	0.198	72442.75	0.488
Female	126447.42	0.196	67538.76	0.518
Household size				
1-2	258038.7	0.084	133866.2	0.281
3-5	136617.6	0.138	85325.8	0.392
6-10	91958.68	0.218	60614.43	0.507
Above 10	107433.4	0.382	51816.41	0.686
Geographical zone				
North-central	100482.4	0.278	63884.17	0.526
North east	113034.6	0.227	53588.73	0.571
North west	110035.5	0.245	67044.37	0.511
South east	144036.6	0.149	65761.81	0.406
South -south	123595.9	0.190	101163.60	0.418
South west	122213.2	0.154	78798.40	0.376
Household Head's level of education				
No education	112652.1	0.678	66985.6	1.099
Primary	133263.6	0.3851	80370.3	0.830
Secondary	185538.3	0.2417	47830.9	0.548
Tertiary (Post-secondary)	186611.8	0.1228	109293.9	0.414
National	121194.6	0.196	69438.1	0.498

Source: Author's Computation, 2020.

Table 5. Binary Probit Regression Estimates of Socio-economic determinants of households' Vulnerability to poverty

Variables	Coefficients	Standard errors	t-ratios	Marginal and Impact effect (dF/dx)
Constant	-0.1384236	0.1637775	-0.845193	-0.06185***
Gender (female)	1.2108244	0.5194446	2.330998	0.01580***
Household size	-4.2151472	2.0627975	-2.043413	-0.03225***
Rural (urban)	-0.0113240	0.0099073	1.142997	-0.00379
North-central	0.0552611	0.0525625	-1.051339	0.0112****
North-east	-0.0775462	0.0757693	-1.023447	-0.06712***
North-west	0.8382432	0.5959573	-1.406549	0.02822***
South-east	-1.0088743	0.5529763	-1.824444	-0.01851***
South-south	-0.4276714	1.0179235	-0.420141	-0.08453***
South-west	-0.7555776	3.2300960	-0.233918	-0.02772***
Years in School	-0.0100755	0.0036772	2.740000	-0.00501***
Age groups				
25-34	-0.1875453	0.8035991	-0.2333818	-0.02350***
35-44	-1.7067035	7.3140581	-0.2334563	-0.02311***
45-54	-0.0176884	0.0403701	-0.4381550	-0.01663***
55-64	-0.2503818	0.4695744	-0.5332101	-0.01192***
(65 and above)	8.7644022	2.0763647	4.22103211	0.00224***
Pseudo R^2	0.7854			
Log likelihood	-24.09014			

Source: Author's Computation, 2020. *** (P= 0.1)

Strong regional effect was observed in vulnerability to poverty. On average, living in south-south region of Nigeria reduces household vulnerability to poverty by 8.45% points compared to a household that lives in the North central (1.12%) Similarly, households that resides in South west are 2.77% points less likely to be vulnerable to poverty when compared to their counterparts that live in the North-central. Also living in the South-eastern part of Nigeria reduces vulnerability to poverty by 1.85% points on the average, when compared to the North Central. The same advantageous position is observed for the North East and North West relative to North Central. Among all geographical Zones in Nigeria, South-south has the lowest level of vulnerability to poverty, while the North-Central has the highest level of vulnerability. More so, educational level of household heads reduces vulnerability to poverty by 0.5% points, implying that those who have spent more years schooling are less likely to be vulnerable to poverty.

The age group variables revealed that household whose head falls into working class age group are less likely to be vulnerable to poverty. The more a household head is able to work, the more such head is able to provide for the family, and reduces the chances of falling into poverty trap. Having a household head within the 25-34 age groups reduces vulnerability to poverty by 2.35% points on the average compared to a household head that falls into the retirement age group of 65 and above (0.23%)(Oni and Yusuf, 2008).

4. Conclusions and recommendations

Based on the results, the study concluded that vulnerability to poverty is a more serious issue in Nigeria and particularly in the north-eastern part of the country. The important determinants of poverty in Nigeria were economic growth (GDP), debt (DEBT), inflation (INF), investment (INV), corruption (COR), life expectancy (LXP), and unemployment rate (UMP) and therefore, have potential to aggravate poverty in Nigeria. Geographically, households that are located in the northern zones are highly vulnerable to poverty while households in the southern zones face moderate to low vulnerability to poverty. The plausible explanation could be that average household size tends to be higher in the northern zones because of prevalence of polygamous marriage and the fact that women in most cases are not allowed to participate openly in economic activities.

The main findings emerging from this study indicated that household size, gender of household heads, and location affect vulnerability to poverty. However, at regional level, the study found that north-east region is most vulnerable whilst south-western region is least vulnerable to poverty which may be attributed to the issues of insurgencies and

other related social issues. Based on the conclusion, the study recommends that:

Nigeria government should increase their debt from especially from external sources but should be advised to invest on viable projects that will generate more income to improve the economy and living standard of the populaceas debt has been shown to have the tendency to reduce poverty in Nigeria.

Household size can be reduced through public enlightenment program on family planning since findings confirmed the negative effect of increased family size on household's vulnerability.

More importantly, creation of enabling environment that encourages small and medium scale business to thrive so as to reduce the level of unemployment which has pervasive effect on poverty.

References

1. Addae-Korankye, A. (2014). Causes of poverty in Africa: A review of literature. American International Journal of Social Science,3(7); 147-153.

2. Adepoju, A. O. and Yusuf, S. A. (2012). Poverty and vulnerability in rural south-west Nigeria. ARPN Journal of Agricultural and Biological Science, 7(6); 430-437.

3. Aigbokhan, B. E. (2000). Determinants of regional poverty in Nigeria. Working Paper No.22, March, Development Policy Centre, Ibadan.

4. Aigbokhan, B. E. (2012). "Poverty, growth and inequality in Nigeria. African Economic Research Consortium (AERC) Research Paper (RP) No. 120.

5. Ajakaiye, D. O. and Adeyeye, V. A. (2001). "Concepts, measurement and causes of poverty in Nigeria: CBN Economic and Financial Review, 39(4): 1-17.

6. Alayande, B. and Alayande, O. (2004). A quantitative and qualitative assessment of vulnerability to poverty in Nigeria. A Paper Submitted for Presentation of CSAE Conference on Poverty Reduction and Human Development in Africa, March, 2004.

7. Alemi, N. M. and Dereje, F. D. (2014). Determinants of Vulnerability to Poverty in Female Headed Households in Rural Ethiopia. Global Journal of Human-Social Science, 14(5): 9-15.

8. Chaudhuri, S. (2003). Assessing Household Vulnerability to Poverty: Concepts, Empirical Methods and Illustrative Examples. Mimeo: Columbia University New York.

9. Chaudhuri, S., Jalan, J. and Suryahadi, A. (2002). Assessing Household Vulnerability to Poverty: A Methodology and Estimates for Indonesia, Columbia University Department of Economics Discussion Paper No. 0102-52, New York: Columbia University.

10. Gunther, I. and Harttgen, K. (2006). Households Vulnerability to Covariate and Idiosyncratic shocks (Preliminary Draft). India: RED Data.

11. Gunther, I. and Harttgen, K. (2009). Estimating vulnerability to idiosyncratic and covariate shocks. World Development, 37(7):1222-1234.

12. Kolawole, B. O., Omobitan, A. O. and Yaqub, J. O. (2015). Poverty, inequality and rising growth in Nigeria: Further empirical evidence. International Journal of Economics and Finance, 7(2): 51-62.

13. Mohammed-Hashim, Y. (2008). "Incidence of poverty in Nigeria: Causes and consequences. Journal of Research in National Development, 6(1); 22-30.

14. National Bureau of Statistics [NBS] (2019). Poverty Profile for Nigeria, Abuja.

15. Nigeria Economic Report [NER] (2014). Improved Economic Outlook in 2014 and Prospects for Continued Growth Look Good: World Bank. Retrieved 2020-05-27.

16. Nigerian Living Standards Survey [NLSS] (2019). Poverty and Inequality in Nigeria. National Bureau of Statistics Report.

17. Obi, B. O. (2007). Fiscal policy and poverty alleviation: Some policy options for Nigeria: AERC Research Paper 164, African Economic Consortium, Nairobi.

18. Ogwumike, F. O. (2001). An appraisal of poverty reduction strategies in Nigeria. Central Bank of Nigeria. Economic and Financial Review (CBN), 39(4): 111-134.

19. Ogwumike, F. O. and Ozughahu, U. (2013). Vulnerability to Food Poverty in Nigeria. African Development Review, 25(3): 243-255.

20. Ogwumike, F. O. and Ozughahu, U. (2018). "Empirical Evidence of Child Poverty and Deprivation in Nigeria". African Development Review, 77(1): 12-22.

21. Okosun, I., Siwar, C., Hadi, S. A. and Nor, R. M. (2012). Urban poverty in Nigeria and approaches to poverty alleviation: A review. African Journal of Political Science and International Relations,6(1): 8-14.

22. Oni, A. O. and Yusuf, S. A. (2008). Determinants of Expected Poverty among Rural Households in Nigeria. African Economic Research Consortium (AERC) Research Paper (RP) No. 183.

23. Sparks, D. (2018). The Informal Sector in sub-Saharan Africa. Out of the Shadow to Foster Sustainable Employment and Equity. International Business and Economic Research Journal, 8(11): 222-228.

24. World Bank. (2011). World Development Report 2011: Reshaping Economic Geography. Washington, DC: World Bank.

25. World Bank. (2019). The World Bank In Nigeria. Overview, Available on the: https://www.worldbank.org/en/country/nigeria/overview

26. Yusuf, A. (2011). A Theoretical Analysis of the Concept of Informal Economy and Informality in Developing Countries. Europeans Journal of Social Science, 20(4): 44-52.