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Determinants of Rural Households' Food Poverty Status in Obafemi Owode Local Government Area of Ogun State

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ABSTRACT

This paper attempts to study the determinants of food poverty status among rural farming households in Obafemi Owode Local Government Area of ogun State. A multi-stage sampling technique was used to obtain primary data from a total of 200 rural households. Of the 200 copies of the structured questionnaire administered on rural households, 195 were properly filled and returned for analytical purposes. Data analysis was done using Foster-Greer-Thorbecke (FGT) indices, Logit regression model and the Coping Strategy Index (CSI). The FGT indices showed that 75.1% of the rural farming households were food poor. The age of the household head ($p < 0.01$), marital status of the household head ($p < 0.05$), highest educational qualification of household head ($p < 0.1$), access to credit ($p < 0.1$) and household farm size ($p< 0.05$) all significantly affected household food poverty status. The CSI showed that about 75.0% of the rural households were hungry in varying degree. The study recommends better access to land for rural farmers and intensified extension services, in order to break free households from the clutch of food poverty.

Keywords: FGT indices, poverty, logit, hunger, rural

.INTRODUCTION

Nigeria has over time had to grapple with the problem of poverty in its manifold manifestations with its attendant problem. The National Bureau of Statistics (NBS, 2011) pointed out that more than 50% of the populace lived in chronic poverty. This situation did not just spring up recently but had been an on-going phenomenon for some time now. In fact, the Partnership For Development (PFD, 2002) conducted a micro-nutrient survey in Kano State, over a decade ago, sponsored by UNICEF, using a Participatory Rural Appraisal (PRA) approach, studied household food security and nutrition and found out that Nigerians were hungry then more than ever before. By the year 2010, 41% of the Nigerian population lived in food poverty, a type of poverty which defines the population living on less than 3000 calories (BGL, 2011). According to the NBS (2011), by geographical difference, food poverty was more prevalent in rural Nigeria (48.3%) than in the urban areas (26.7%).

The problem however, with hunger and poverty, is that they have serious implications for economic development (Davies, 2011). This is so because it is believed that these twin evils have been known to militate against economic development (Davies, 2011). According to The Hunger Project (2008), there is familiarity between both hunger and poverty. Hunger is a condition of discomfort arising from deprivation of food; its implications and consequences though varied, can be devastating (The Hunger Project, 2008; Langworthy *et al.*, 2003). Hunger can be captured through various means such as the Coping Strategy Index (CSI), Household Food Insecurity Access Scale (HFIAS) etc in order to determine the severity or otherwise of the hunger as experienced by the individual. Maxwell and Caldwell (2008) posited that the CSI answers the poser "what do you do when you do not have enough food and do not have enough money to buy food?" The answers to which comprise the basis of the CSI tool. The implication really is that, the more people have to cope, the less food secure they are. In order to understand the ensuing problem of hunger, the Coping Strategy Index (CSI) was developed.

Poverty, on the other hand is measured in diverse ways, one of which is the food poverty measure. Of course, not every poor person is hungry, but almost all hungry people are poor, therefore hunger is viewed as a dimension of extreme poverty, in welfare economics called food poverty (The Hunger Project, 2008). Omotesho, Adewumi and Fadimula (2011) and Alderman and Garcia (2009) believed that the problem of food insecurity (a manifestation of food poverty), is perhaps exacerbated among the rural populace contingent upon the fact that the rural people do not produce sufficient food as well as lack the requisite financial power to meet their food needs.

Striking a similar chord as Omotesho et al (2011), the Federal Ministry of Agriculture and Water Resources (FMAWR, 2008) pointed out that 90% of agricultural output in Nigeria is accounted for by households with less than 2ha of land under cultivation, as well as low fertilizer consumption of 7kg/ha even by sub Saharan African standard. Of course, 70% of these producers are from rural areas. The specific objectives of this research are to identify the determinants of rural farming households' food poverty status and to determine the severity of hunger among the rural farming households.

Food Poverty measure is one out of the four measures of poverty in welfare economics. It is a measure which defines the proportion of the population living on less than 3000 calories of food per day. This proportion for Nigeria, as at 2010, stood at 48.3%, while the other portion of the

population living on more than 3000 calories still had those who were at serious risks of being food poor i.e. food vulnerable, though the percentage was not specified. For Ibadan metropolis, Odusina and Afolami (2013) found out that 70.4% were vulnerable to food poverty in 2011.

Other measures of poverty include the absolute poverty measure which defines the population living on below defined minimum standards of food, clothing, health services and housing facilities. There is also the relative poverty measure which defines those living below the living standards of majority in a given society. Finally, there is the dollar/day measure which defines those living below US $1/day based on the World Banks Purchasing Power Parity (PPP) index (BGL, 2011). A brief capture of all these measures as supplied by the NBS in 2011 is shown table 1 for the year 2010.

Table 1: Distribution of Poverty Incidence by type (2010)

Zone	Food Poor	Absolute Poor	Relative Poor	Dollar/day
North Central	38.6	59.5	67.5	59.7
North East	51.5	69.0	76.3	69.1
North West	51.8	70.0	77.7	70.4
South East	41.0	58.7	67.0	59.2
South South	35.5	55.9	63.8	56.1
South West	25.4	49.8	59.1	50.1
Average	40.6	60.5	68.6	60.7

Source: NBS (Culled from BGL, 2011)

METHODOLOGY

The study area is Obafemi Owode LGA in Ogun State. The LGA is bound in the north by Odeda LGA and Oyo State, in the east by Sagamu and Ikenne LGAs and in the south by Ifo LGA and Lagos state. It has a land mass of 104,787.07 ha of largely agricultural land and is proudly referred to as the land of OFADA RICE (ogunstatebiz.tripod.com, 2015). The LGA has 203 Community Development Areas (CDAs) with 1204 towns and villages between them (akeran.town.ng, 2015). Its people are predominantly farmers of arable crops, cash crops and tree crops while some engage in livestock and fisheries.

Obafemi Owode LGA is politically divided into three political zones of 4 wards each. These zones are

i. Owode Zone: Owode, Ajura, Ofada and Mokoloki
ii. Obafemi Zone: Alapako-oni, Kajola, Obafemi and Ajebo
iii. Oba Zone: Egbeda, onidundu, Moloki-asipa and Oba

The least in size of these zones is Oba zone. A multi-stage sampling technique was used to obtain a total of 200 respondents for the research. The sample frame consisted mainly of all rural farming households in Obafemi Owode LGA. Firstly, a random sampling technique was used to select wards from each of the three political zones. Of Oba zone being the smallest in size and in number of CDAs, only one ward was randomly selected, while from each of Owode and Obafemi Zones, two wards were randomly selected. This makes a total of five wards randomly selected. These wards are Ofada, Mokoloki, Kajola, Ajebo and Onidundu. Thereafter, 50 rural farming households were randomly selected from each of the selected wards using a list of farming households supplied by agricultural extension agents in the area. After this, a structured questionnaire was administered to the primary care-giver within the household who is saddled with responsibility of food preparation and food sharing, in most cases the mother of the house, who answered mostly from memory recall. Coupled with the questionnaire on food consumption of the household, a coping strategy index questionnaire was also administered to determine households' severity of hunger. Of the 200 questionnaires administered, 195 were found useful while 5 was found to be lacking in the requisite information for the purpose of analysis.

The logit regression model was stated to determine which factors increased or decreased the odds in favour of household food poverty. The model was stated as follows (1):

$$Y=\text{Log}\frac{p(x)}{1-p(x)}=\beta_0 + B_iX_i \quad \text{.....(1)}$$

Y=1 is food poor and Y=0 is non-food poor

Food Poor are those whose food consumption expenditure (valued for consumed home production and purchased household consumption) fall below the amount determined by the NBS(2011) as the amount required to obtain the minimum 3000 calories per capita/day (3,317 NGN)

i= 1, 2,.....,11

X_1=Age of Household Head

X_2=Household Size

X_3= Marital Status

X_4=Number of working adult male

X_5= Level of education of household head

X_6= education of spouse

X_7=household total income

X_8= Access to credit

X_9= Amount of credit last accessed
X_{10}=farm size
X_{11}= farming experience

The FGT indices were used to determine the various degree of food poverty among the rural farming population in Obafemi-Owode LGA. This is given as (2)

$$P\alpha = \frac{1}{N}\sum_{i=1}^{N}\left(\frac{G}{Z}\right)\alpha \quad \ldots (2)$$

Where N is the population size
α= 0, 1, 2 for poverty headcount, gap and severity respectively.
G= gap between household food expenditure and established food poverty benchmark
Z= established food poverty benchmark which in this case is taken as the consumption expenditure required to secure the minimum 3000 calories. This amount is 39,579.49 Nigerian Naira (NGN) per capita/annum and 3,317 NGN per capita/ month
The headcount index (P_0) measures the proportion of the population that is food poor;
The poverty gap index(P_1) measures the extent to which individuals fall below the poverty line as a proportion of the poverty line;
The squared poverty gap(P_2) is poverty severity and it averages the squares of the poverty gaps relative to the poverty line.

A questionnaire was used to elicit responses from the rural households, especially the women, who are perceived as primary care-givers and decision makers with respect to food resource allocation, distribution and utilisation, especially among married households. Coupled with the questionnaire, the CSI questionnaire of the type adopted in Kenya was included for the research purpose. The CSI is scored in such a way that the weighted averages for each of the coping strategies were arrived at after a session of interview for each of 10 focus groups (2 focus groups per ward) on how severely they viewed their condition(s) of hunger when coping strategy(s) was used. An average of the focus groups averages was found and used to determine the severity of hunger situation among the households. Based on the total score for coping strategies of respondents, three cut-offs were developed for the "not hungry", "relatively hungry" and "very hungry".

RESULTS AND DISCUSSION

Table 2 shows that the age of the household head significantly reduced the probability of households being food poor ($p < 0.01$). This means that households with older heads tended to be more food secure than those with younger heads. This agrees with the life cycle hypothesis of income which postulates that wealth tends to be gathered over a person's life time and as such the wealth base of older headed households could account for their being non-food poor. Households with married head tended to be significantly food poor ($p < 0.05$), perhaps due to larger household sizes. It was also discovered that the higher the educational qualification of a household head, the probability of the household being food poor was significantly reduced ($p < 0.1$), owing perhaps to ensuing better job opportunities and hence improved ability to meet food needs outside of local household food production. Increasing household farm size ($p< 0.05$) was found to have decreased significantly the probability of households being food poor.

Table 2: Logit regression analysis of determinants of rural household's food poverty status
Convergence achieved after 4 iterations

Variable name	B	T-values
Age of household head	-0.553 ***	-3.072
	(0.1808)	
Household size	0.212E-01	0.835E-01
	(0.2542)	
Marital Status	0.773**	2.017
	(0.383)	
Educational level of spouse	0.208	1.248
	(0.166)	
Number of working adult male	-0.578	-1.519
	(0.381)	
Household head's education	-0.310*	-1.657
	(0.187)	
Household total income	0.811E-05	0.445
	(0.188E-04)	
Access to credit	0.305*	1.706
	(0.179)	
Credit accessed	0.430	0.444
	(0,964)	
Farm size	-0.566**	2.022
	(0.280)	
Farming experience	-0.154	-0.659
	(0.234)	
Constant	2.914	2.629
	(1.108)	

Source: Field Analysis, 2015.
Cragg-Uhlers' R-Squared= 0.12917; Scale Factor= 0.24950

Table 3 shows that out of the 195 households interviewed, only about 25.0% were found to be non-food poor while, 42.1% were relatively hungry and 32.3% were very hungry. Table 4 shows the incidence of food poverty, its gap and the severity of food poverty. From the table it can be seen that 75.1% in the study area were food poor (those whose consumption fell below the poverty line per capita expenditure of 3,317 NGN per capita per month) compared to the 75.0% that were hungry in Table 3. Also, it shows a poverty depth of 55.83% which represents those whose average consumption expenditure was below the food poverty line. The severity of the food poverty index was 46.0% representing the poorest of the total population with respect to food consumption.

Table 3: Frequency Distribution of Severity of Hunger

Hunger type	Frequency	Percentage
Not Hungry	50	25.0
Relatively Hungry	82	42.1
Very Hungry	63	32.3
Total	195	100.0

Source: Field Analysis, 2015

Table 4: Foster- Greer- Thorbecke Indices

Food Poverty Indices	
Po	0.7510
P1	0.5583
P2	0.4603
	Poverty Line US $2/day (Alternative approach)

Source: Field Analysis, 2015.

CONCLUSION AND RECOMMENDATION

Based on the results of this study, it is concluded that education is a useful tool in combating food poverty given the fact that households with heads who had higher educational qualification had less probability of being food poor. Access to larger farm size significantly reduced the probability of households being food poor. This also confirmed the assertion of FMAWR (2008) that majority of food produced in the country were produced by farmers who cultivate less than 2ha of land. It is therefore recommended that policies that would free up land and its access to those interested in farming at little cost so that output can be boosted and food security ensured. This can be done by reviewing the Land Use Act so that access to land in adequate quantity for farming is not hindered. Also, land for agricultural purposes may be made free for use by communities and even by government such that agricultural activities would be greatly encouraged and enhanced. It is also recommended that extension services be intensified in rural areas in order to encourage adoption of innovations capable of transforming rural agriculture

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