



Dynamics of Poverty and Food Security in Minna Niger State Nigeria

NMADU, J.N.; GAJERE, R.A.; ODINE, A.I. and SALLAWU, H.

Department of Agricultural Economics and Extension Technology, Federal University of Technology,
Minna, Niger State, Nigeria

ABSTRACT

This study examined the dynamics of poverty and food security in using data obtained from a 2 staged sampling of 1 households in Minna Niger state. Data was analysed through the use of descriptive statistics, Food Security Index Foster, Greer and Thorbecke and the ordinary least square regression. The result indicated that the household heads were mostly (98.1%) men that were married (78.7%). Also, the results revealed that the household had access to food 2 to 3 times daily and majority (67.6% and 84.3%) of the households were food secured and lived below the poverty line respectively. The regression results revealed that poverty in the study area was influenced by the food security status of the household $P < 0.01$, educational level $P < 0.05$ and working experience $P < 0.1$. The study therefore recommends that mass literacy programmes should be introduced and encouraged and also programmes targeted at reducing food insecurity and poverty should be intensified in order to further increase the number of people that are food secured and live above the poverty line.

Keywords: Food Security Index, Poverty, Foster Greer and Thorbecke

INTRODUCTION

Nigeria's economy is mainly driven by agriculture and its resources which provide opportunity for expansion for all spheres of the economy however; the farming households who are the bedrock of agricultural production happen to be the ones most affected by food insecurity and poverty in Africa Kuwornu *et al.* (2013). West Africa Insight (2010) reported that over 53 million Nigerians were living in hunger and they represent about 30 percent of the country's total population of roughly 150 million; also, National Bureau of Statistics (NBS, 2010) reported that 60.9% of the population was living in absolute poverty and about 70% of Nigerians live below the poverty line (\$1.25 /day) which according to World Bank (1996), is the minimum cash and non-cash expenditure needed to be made by a person or household in order to be able to consume the minimum number of calories (food) plus a small number of essential nonfood items such as housing, clothing and health care.

Poverty entails inadequate income and absence of basic necessities such as education, health services, food, clean water and sanitation that are necessary for human

survival and dignity (World Bank, 2007). It denies victims the most basic needs (food, water, clothing and shelter) for survival. World Bank (1992) viewed a poor person as one who is undernourished and cannot care for himself. Food security on the other hand is reported to be a situation where all people, at all times, have access to sufficient, safe and nutritious food to meet dietary needs and food preferences for an active and healthy life (Food and Agriculture Organization (FAO), 2006). Food security involves, food availability, food accessibility and food affordability Furthermore, Oriola (2009) defined food security as producing food that will go round every citizen both in quantity and quality.

Achieving food security in Sub-Saharan Africa remains a difficult challenge because of widespread poverty, surging world food prices, changing climatic patterns resulting in global warming (Misselhorn, 2005; Kuwornu *et al.*, 2005). London *et al.* (2005) reported that rural people face a threat of food insecurity due to income inadequacy, poverty and limited access to production resources among others. Adewuyi and Hayatu (2011), is also of the view

that there is a linkage between poverty and malnutrition because most of the people with little or no access to rich nourishing food are rural dwellers who are engaged in subsistence farming which provides little income for the farmers. Food expenditure according to Olagunju *et al.* (2012) forms a large share of the spending of poor households, making them relatively more vulnerable to the impacts of food price inflation. They went further to state that food shortages are likely to be more prevalent in low income households than the wealthier households. More so, Labour productivity and income per capita in rural areas have lagged behind than in urban areas, increasing the concentration of poverty among the rural population (Fan *et al.* 2005). However, Baulch and Hoddinott, (2000) observed that poverty status changes among households and has led to the increasing recognition that there are considerable flow in and out of the poverty pool implying that the poverty status of household is not static but dynamic. This means that, while some households live permanently in poverty, others only experience it temporary due to negative shocks resulting from sudden loss of welfare. In calculating poverty, there is varying approach. Some of the approaches as outlined by Muhammad (2009) include

- i. The Calorie Intake Approach which puts into consideration the calorie requirements. The sufficiency of calorie is used as a standard of welfare and the most useful measure of absolute poverty.
- ii. The basic Need Approach; with this method one calculates the poverty line by constructing

a "food poverty line" which is based on an idea of the minimum amount of money required by a household to purchase basic needed food bundle. If cost of basic needs is estimated, then the food poverty line added to the non-food needs will equal the overall poverty line.

- iii. Relative Poverty; Relative line is not fixed over the domain of poverty comparisons. Poverty line is related to average income or consumption in a country/region of reference. This line is in relation to the average standard of living of a particular society at a certain time changes with the average earnings of the households.

In Nigeria, poverty gap is widening and a greater percentage of the nation is becoming food insecure since household food security depends substantially on household income and asset (or wealth) status. In view of this, it is vital to examine the level of poverty and food insecurity so as to come up with strategies to reduce the effect of poverty and food insecurity in Nigeria. Against this background, the broad objective of the study is to examine the dynamics of poverty and food security in Minna, Niger state, Nigeria by specifically describing the socio-economic characteristics of the respondents; determining the poverty status of household in the study area; determining the level of food security and the percentage of respondents that are not food secured; and determining the relationship between the level of poverty and the status of food security in the study area.

METHODOLOGY

Study Area: The study was carried out in Minna, Niger State. It is located between Latitude 8°22'N and 11°30'N and Longitude 3°30'E and 7°20'E. The State is bordered to the North by Zamfara State, to the Northwest by Kebbi State, to the South by Kogi State, to Southwest by Kwara State; while Kaduna State and Federal Capital territory border the state to Northeast and Southeast respectively. Furthermore, the State shares a common international boundary with the Republic of Benin at Babanna in Borgu Local Government area of the state. Currently the state covers a total land area of 74,244 sq.km, or about 8% of Nigeria's total land area. Niger State has a total

3,950,249 with a total land area of 74,244sq.km. The soil in Niger State is the flood plain type rich in minerals and could be used for agriculture and manufacturing of various products.

Sampling Techniques and Sample Size: The study respondents were selected using a two-staged sampling technique. In the first stage Minna was purposively selected due to its cosmopolitan nature and because it inhabits both the rural and urban dwellers that face both poverty and food security challenges. Minna metropolis consists of three adjoining local government area (LGAs), namely Chanchaga, Bosso and Paikoro. The second stage

involved the systematic selection of 36 households from each of the local government area making a total of 108 households.

Method of Data Collection: Primary data was collected with the use of questionnaire and interview schedules and the data was collected within 5 months. The questionnaire was structured to collect the data on income, expenditure and consumption of the household in the study area.

Method of Data Analysis: The study data were analyzed using a combination of descriptive statistics, Foster, Greer and Thorbecke (FGT), food security index and regression model. Descriptive statistics such as means, frequency distribution, percentages and tables was used to describe the socio-economic characteristics and also present other findings of the study.

Foster, Greer and Thorbecke (FGT): The FGT was used to determine the incidence and severity of poverty in the study area. The model is a class of additively decomposable measure of poverty. The measure subsumes the headcount index and the poverty gap, and provides the distributional sensitive measure through the choice of a poverty aversion parameter "α"; the larger the value of the "α", the greater the weight given by the index to the severity of poverty (Anyawu, 1997). The model is specified as;

$$P_{\alpha} = \frac{1}{N} \sum_{i=1}^q \left[\frac{z - y_i}{z} \right]^{\alpha} \dots\dots\dots(1)$$

Where;

P_{α} = Foster, Greer and Thorbecke index (0d" P_d" 1)

N = total number of sampled household in the study area

Z = poverty per capita expenditure of ith household

α = FGT parameter (μe"0) poverty aversion parameter

i = individual or household

y_i = consumption (income) for the ith household

Food Security Index (FSI): The FSI was used to establish the food security status of various households. The households were classified into food secure and food insecure households using the FSIx. A food secured household is one whose per capita monthly food expenditure falls above or is equal to two-third of the mean per capita food expenditure. On the other hand, food insecure households are those whose per capita food expenditure falls below two-third of the mean monthly per capita food expenditure (Omonona and Agoi, 2007).

It is given by;

$$F_i = \frac{\text{Per capita food expenditure for the } i^{\text{th}} \text{ household}}{2/3 \text{ mean per capita food expenditure of all households}} \dots(2)$$

Where F_i = food security index

When F_i e" 1 = food secure ith household

F_i d" 1 = food insecure ith household

The Regression Model: Ordinary least squares (OLS) was used to determine the effect of food security on the poverty status of the household and the model is specified as;

$$Y = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + u \dots\dots(3)$$

Y = Foster, Greer and Thorbecke index (0d" P_d" 1)

X₁ = Age of respondent (years)

X₂ = household food security (food security index)

X₃ = household size (number of persons)

X₄ = educational status of respondent (formal education otherwise 0)

X₅ = work experience (years)

X₆ = farming experience (years)

X₇ = Assets Ownership (e.g house, land, car, motorcycle)

b₀ = constant

b₁ - b₁₇ = coefficients to be estimated

u = error term.

RESULTS AND DISCUSSION

This study examined the dynamics of poverty and food security in Minna and the result and interpretations is presented in this section. The study revealed as shown on table 1 that most (63%) of the household heads were between ages 31 and 50 years which is the active age for

production and it increases their chances of engaged various forms of livelihood activities. However, only (3.8%) were 20years or less and above 60years and when they have the tendency of been dependent on others and also have less responsibilities. Majorities (98.1%)

the household heads were males that were married (78.7%) and this connotes respect and responsibility to self and family. Also shown on table 1 is the educational level of the household heads. It shows only 7.4% had no formal education while some (28.5%) had tertiary education. Education according to Shaikh (2007), enhances individual's capacity to process and apply the information passed on to them while FAO (2012) posited that lower educational levels hinders access to livelihood activities and reduces the ability of the individual to manage his/her enterprise adequately.

Furthermore, table 1 revealed that the household size in the study area was between 6 and 15 persons as 50% of the household heads reported that they were catering for 6-10 persons while 22.5% of them were responsible for 10-15 persons. The implication is that there is a high probability of the members of the household putting pressure on consumption rather than production of the household. However, this depends on the ratio of the household size to the number of working members in the household (Kuwornu *et al.*, 2013).

Table 1: Descriptive Statistics of Respondents

Description	Frequency	Percentage
Age		
≤ 20	1	0.9
21-30	16	14.8
31-40	34	31.5
41-50	34	31.5
51-60	0	0.0
> 60	1	0.9
Gender		
Male	106	1.9
Female	2	1.9
Marital status		
Married	85	78.7
Single	5	4.6
Separated	8	7.4
Divorced	10	9.3
Educational level		
None	8	7.4
Adult education	39	31.6
Primary	20	18.5
Secondary	10	9.3
Tertiary	31	28.7
Occupation		
Artisans	36	33.3
Civil service	36	33.3
Farming	36	33.3
Household size		
1-5	22	20.4
6-10	54	50.0
11-15	24	22.2
16-20	5	4.6
>20	3	2.8

Source; field survey 2013

Food Security Status of the Household: The study also sought information on the number of times respondents ate in a day. The response as shown on table 2 shows

that 50.1% of the respondents ate trice per day while only 48.1% ate twice daily. This implies is that majority of the respondents had access to three square meals a day which