

FOOD INSECURITY STATUS AMONG FEMALE HEADED HOUSEHOLDS IN NIGERIA

Waheed Mobolaji ASHAGIDIGBI¹, Olaniyi Adewale AFOLABI¹, Iyabo Bosede ADEOYE²

¹Federal University of Technology, Agricultural and Resource Economics department, Akure, Nigeria, Email: ashagidigbi2000@yahoo.co.uk

²Nigeria Horticultural Research Institute, P.M.B 5432, Ibadan, Nigeria

Corresponding author: ashagidigbi2000@yahoo.co.uk

Abstract

Previous studies have established high food insecurity status among women compared to their male counterpart. Thus, this study examined the factors responsible for the high level of food insecurity status among female headed households in Nigeria. Secondary data obtained from Harmonized Nigeria Living Standard Survey (HNLSS) conducted by the National Bureau of Statistics (NBS) was used for the study. Information from four thousand nine hundred and seventy nine (4,979) households was used for this study. The analytical techniques adopted include descriptive statistics, Foster Greer and Thorbeck and Tobit Regression Model. The results showed that most of the female headed households' ages lie within the range 18-60 years and 66.62% of the household were predominantly in the rural sectors. Findings revealed that 59.1% of female headed households are food insecure. Identified determinants of food insecurity among female headed households include: age of household head, household size, gender and marital status. Food availability remained below the required levels for larger parts of the rural populace identified. It is recommended that group specific safety net measure directed towards the food insecure female headed households who are predominantly widows should be an option in tackling food insecurity.

Key words: female headed households, food insecurity, tobit regression and Nigeria

INTRODUCTION

Gender differences in resource control, asset ownership, income earning, consumption and expenditure have been identified as important factors in household's food security [17].

Gender is especially important to food security, as women and men have different roles and resources when it comes to food production, different decision-making roles over food consumption and nutrition, and different coping skills when it comes to emergencies. Food security exists when all people, at all times, have physical, social, and economic access to the sufficient food which meets their dietary needs and food preferences for an active and healthy life [9]. Food insecurity on the other hand refers to a country's inability to provide and secure high quantity and quality of food to its people as a result of high demand, shortages in the supply of agricultural commodities, and low purchasing power [1]. Food security of a nation may be affected by decline in agricultural commodity output, population growth and trade liberalization

which leads to elimination of subsidies on agricultural inputs and trade restrictions [2].

Although women play significant roles in agriculture and food security in many developing countries, they continue to have a poorer command over a range of productive resources, including education, land, information, and financial resources [15]. In 2009, the UN estimated that 60 percent of the world's chronically hungry people are women and girls, 98% of which live in developing nations, when women have income, substantial evidence indicates that the income is more likely to be spent on food and children's needs. Women are often responsible for providing food to their families both in female-and male-headed households, they generally have less access to land than men, less access to education, and are expected to carry most of the burden for housework and childcare.

According to [7], female headed households were indeed more vulnerable to food insecurity than male headed households. Despite improvement in women's capabilities, gender gaps in entitlement, the resources which

women and men can command through available legal means, continue to persist [4]. This is usually reflected in unequal right between men and women for both natural and physical capital which leads to inadequate and appropriate use of resource, and limited alternative's, low income, poor diet and low standard of living.

Women play many roles in land use, production, distribution, processing, marketing accessing, trading and food availability. They often work as unpaid and self-employed workers on and off farm employees, entrepreneurs, traders, providers of services and caretakers of children and elderly, women farmers represent more than a quarter of the world population, comprising on average 43 percent of the agricultural workforces, ranging from 20 percent in Latin America to 50 percent in Asia and sub-Saharan Africa.

Reducing gender inequality and recognizing the contribution of women to agriculture is critical to achieving global food security. There is consistent and compelling evidence that when the status of women is improved, agricultural productivity increases, poverty is reduced and nutrition improves.

The main objective of this study is to examine determinant food insecurity status among Female-Headed Households (FHH) in Nigeria.

MATERIALS AND METHODS

The study area is Nigeria. Nigeria is made up of 36 States and the Federal Capital Territory (FCT), Abuja. It has 774 Local Government Areas (LGAs) [14]. Nigeria is located in West Africa on the Gulf of Guinea between Benin and Cameroon and lies between latitudes 4° 1" and 13° 9" N and longitudes 2° 2" and 14° 30" E. It has an area of 923,768 square kilometers and shares borders with Cameroon in the East, Chad in the Northeast, Niger in the North, and Benin in the West. Nigeria's climate is arid in the North, tropical in the center, and Equatorial in the South. Mean maximum temperatures are 30° C–32° C in the South and 33° C–35° C in the North. High humidity is characteristic from February to November in the South and from June to September in the North while low

humidity coincides with the dry season. Annual rainfall decreases Northward and rainfall ranges from about 2,000 millimeters in the coastal zone (averaging more than 3,550 millimeters in the Niger Delta) to 500–750 millimeters in the North.

Data collection

Secondary data obtained from the Harmonized Nigeria Living Standard Survey (HNLSS) conducted by the National Bureau of Statistics [13] comprising of 4,979 female headed households was used for the study. Other sources of information were from journals, books and publications.

Methods

Descriptive statistics was used to examine the socio-economic characteristics of the households in Nigeria and to profile the food insecurity status of the respondents by selected socio-economic variables. The descriptive tools used include means, frequencies and percentages. Foster Greer and Thorbeck measure of food insecurity which has been found to be widely used in several empirical studies ([10]; [8]; [16]) was used to estimate the food insecurity line for rural households in Nigeria.

Hence, the food security line was estimated as the two-thirds of the mean-per capita yearly expenditure on food of all households. A food insecure household is that whose per-capita yearly food expenditure falls below two-thirds of the mean yearly per-capita food expenditure while a food secure household is that whose per-capita yearly food expenditure is above or is equal to threshold. Adopting the method of estimation of the Foster, Greer and Thorbecke poverty index, the food security index was estimated as:

$$P_{\alpha_i} = \frac{1}{n} \sum_{i=1}^q \left[\frac{Z - Y_i}{Z} \right]^{\alpha}$$

Z = food security line (2/3 mean per-capita food expenditure)

q = number of households below the food security line

n = total number of households in the population

yi = per capita food expenditure in increasing order for all households

α = is the aversion parameter that takes values of zero, one or two.

Setting α equal to zero, P^0 is the head count index measuring the incidence of food insecurity. That is, the proportion of food insecure people from the total population. Setting α equal to one.

P^1 is the food insecurity gap, measuring the depth of food insecurity. That is, on the average, how far the food insecure households are from the food security line.

Setting α equal to two, P^2 is the severity of food insecurity among households. That is, the depth of food insecurity and inequality among the poor.

Regression Model

Tobit regression model was adopted in analyzing the determinants of food insecurity status among female headed households in Nigeria. The tobit regression model follows normal distribution with a homoscedastic error component [11].

A food poverty line (FPL) was constructed to disaggregate the households into food secure and food insecure group.

The regressand takes the value '1' and '0' for food secure and food insecure households respectively.

The tobit regression model follows normal distribution with a homoscedastic error component [11].

The model is specified below

$$Y_i^* = \beta_1 X_i + e_i \dots \dots \dots (1)$$

$$Y_i^* = Y_i \text{ if } 0 < Y_i < 1 \dots \dots \dots (2)$$

$$Y_i^* = Y_i \text{ if } Y_i = 0 \dots \dots \dots (3)$$

Where Y_i^* is the limited dependent variable which represent food insecurity gap of households

Y_i =the observed dependent (censored) variable

X_i =the vector of independent variables

β = vector of unknown parameters

e_i = disturbance term assumed to be independently and normally distributed with zero mean and constant.

The explanatory variables included in the model are:

X_1 =Marital status (1 if married; 0 otherwise),

X_2 =Age of household head (Years)

X_3 =Household size (Number),

X_4 =North-Central (1, if Yes; 0 otherwise),

X_5 =North-East (1, if Yes; 0 otherwise),

X_6 =North-West (1, if Yes; 0 otherwise),

X_7 =South-East (1, if Yes; 0 otherwise),

X_8 =South-West (1, if Yes; 0 otherwise),

X_9 =Rural(1, if yes; 0 otherwise)

X_{10} = Sector (Rural = 1, urban = 0)

RESULTS AND DISCUSSIONS

Socio-Economics Characteristics of Households in Nigeria

The study revealed that 0.32% of the female headed households in Nigeria was within 1 – 18 years of age, while 64.95% fell within the age range of 18 – 60 years.

About 34.73% are 60 years and above. Most households in the rural areas (65.18%) and urban areas (64.50%) falls within the age range of 18-60 years of age.

This indicates that most of the female headed households in Nigeria lie within 18- 60 years suggesting that the female headed household in Nigeria were predominantly in their middle age and are independent.

Result revealed that 23.20% among the female headed household in Nigeria were married monogamous, 1.37% were married polygamous.

A greater percentage, (62.66%) are widows. Similar trends were obtained in the rural and urban areas in which 64.88% and 58.42% of the rural and urban female headed households had lost their husbands.

This could be a germane reason why food insecurity is high among the female headed households in Nigeria.

Majority of the respondents in Nigeria

(71.46%) and across rural and urban sectors

(70.03% and 74.31%) respectively have a household size of 1-3 members, with the mean household size being 3 persons.

Households' food insecurity status across sectors

Result showed that 51.90% of female headed households in Nigeria are below the food security line. In the urban sector, 53% of the households were food insecure, which is 1.6% higher than those in rural sector. This is in contrary with the findings of [12] that most food insecure households live in the rural area.

Though there is no significant difference in the food insecurity status between rural and urban households, the latter is, however, higher than the former (Table 2).

The per capita expenditure on food in the pooled data is ₦38849.73. Mean per capita expenditure on food in the rural sector was ₦37930.85 while ₦ 40683.64 was expended on food in the urban sector. This revealed that urban households spent more on food than their rural counterpart in Nigeria.

Households' per capital expenditure on food across sectors

Table 1. Socioeconomic characteristics of respondents

Variables	Pooled		Rural		Urban	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
Age						
<18	16	0.321	12	0.362	4	0.241
18-60	3,234	64.953	2,162	65.179	1,072	64.501
>60	1,729	34.726	1,143	34.459	586	35.259
Mean	54.20305					
Standard Deviation	16.65002					
Marital Status						
Married Monogamous	1,155	23.197	744	22.430	411	24.730
Married Polygamous	68	1.366	33	0.995	35	2.106
Living Together	76	1.526	51	1.538	25	1.504
Divorced/separated	560	11.247	337	10.160	223	13.418
Widow	3,120	62.663	2,152	64.878	968	58.243
Household Size						
≤3	3,558	71.460	2,323	70.033	1,235	74.308
4-6	1,152	23.137	799	24.088	353	21.239
>6	269	5.403	195	5.879	74	4.452
Mean	2.787508					
Standard Deviation	1.944343					

Table 2. Households' food insecurity status across sectors

ALL		RURAL		URBAN		T-value
Food Secure	Food Insecure	Food Secure	Food Insecure	Food Secure	Food Insecure	RU-UR
0.481	0.519	0.486	0.514	0.470	0.530	5.34

Table 3. Per capita food expenditure across sectors

	All	Rural	Urban
	Yearly expenditure per adult equivalent (₦)	Yearly expenditure per adult equivalent (₦)	Yearly expenditure per adult equivalent (₦)
Food	38849.73	37930.85	40683.64

Determinants of households' food insecurity status

The result of the Tobit Regression Model revealed that Sector, household size, North East, North West, South East, and South-South are significant at 1% level of probability and were the factors determining food insecurity status among female headed households in Nigeria. The food insecurity status of female headed households, increased by 0.308, for

female headed households residing in the rural sector relative to those in the urban sector. This indicates that respondents in the rural sector have higher proportion of food insecure households than those in the urban sector. This is in consonance with the work of [5] who reported that, there are overwhelmingly large proportions of Nigerians who are food insecure that spread across both urban and rural

communities, though most of the foods insecure are found in the rural areas.

Table 4. Determinants of Households' Food Insecurity Status using Tobit Regression Model

Food insecurity determinant	Coefficients	T value
Sector	.3080876	5.34***
Household Size	.3350534	26.30***
Household Age	.0007081	0.41
Marital status	-.025343	-0.43
North Central	-.1364856	-1.52
North East	-.6454686	-5.20***
North West	-.4209082	-3.33***
South East	-.827433	-11.63***
South South	-.4189578	-5.67***
Constant	-1.577032	-12.56***
Sigma	1.704543	
LR chi2 (9)	751.71	
Prob > chi2	0.0000	

Household size was significant and positive related to food insecurity. This is an indication that an additional member to a household would increase respondents' food insecurity status by 0.335; implying that increase in household size favours female headed households' food insecurity. The result showed consistency with the findings of [7], [16] and [6] which revealed that the impact of large family size is such that it reduces the per-capita food expenditure of the family thereby aggravating food insecurity in that household. Thus the incidence of food insecurity increased with increase in household size.

Food insecurity status is reduced by 0.645, 0.421, 0.827 and 0.419 for female headed households residing in North East, North West, South East, and South-South zones relative to those in the South West zone. The implication of this is that respondents in these zones are more food secure than those in South-West zone. This may probably be due to the impact of social safety nets programs targeted towards women in the northern zones.

CONCLUSIONS

Most of the female headed households were in the age range of 18-60 years and had household size of 1-3 members. Study revealed that 51.90% of female headed household in Nigeria

is below the food security line. Also, 51.40% of the rural population of female headed households is food insecure. The urban sector, however, had 53.01% of its population of female headed households being food insecure. The study has shown that the incidence of food insecurity is not only prevalent among rural households but also applicable to the urban sector. Factors that affect food insecurity status in Nigeria among female headed households are household age, household size, marital status and sector.

Based on the findings from the study, the following are recommended:

-Since food insecure respondents cut across both rural and urban sectors, a holistic food policy measure should be adopted to tackle the food insecurity scourge among female headed households.

-Identified food insecure female headed households who are predominantly widows should be specifically targeted for safety nets which could be in form of income smoothening policy measure

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