



DETERMINANTS OF FOOD SECURITY STATUS AMONG RURAL HOUSEHOLDS IN OKUNLAND OF KOGI STATE, NIGERIA

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ABSTRACT

This study assessed the factors that influenced the food security status of rural households in Okunland of Kogi State, Nigeria. A multi-stage sampling technique was adopted in selecting the one hundred and fifty respondents used for the study. Data were collected through the use of a structured questionnaire and interview schedule. One hundred and fifty copies of the questionnaire were randomly administered to respondents in the study area. Both descriptive statistics and logistic regression model were used to analyze the collected data. From the study, the findings revealed that 47.33% of the respondents were married while only 8.67% were single. It was also discovered that 52% of the respondents were between 41-60 years of age. Findings further revealed that 53.33% of the respondents were food secure, while 46.67% were food insecure. The result of the logistic regression showed that age, farm income, non-farm income, household size and farm size significantly influenced food security status of rural households in the study area. Consequent upon this, it is therefore recommended that stakeholders in rural development, especially the government, should develop and support non-farm income-generating activities of farmers, so as to help rural households diversify their income streams, thereby reducing dependency on farm income alone. In addition, government should facilitate farmers' access to land through land reform policies or support for land acquisition, to enable farmers' expand their production and potentially increase their income generation.

Keywords: Food Security, Status, Rural, and Household

INTRODUCTION

Globally, there are four threats that have significant implications for food security. These are global warming, loss of biodiversity, globalization of injustice and population explosions (Matuschke, 2009). Malnutrition in Africa, according to FAO (2011), has risen from 17.6% in 2014 to 19.1% in 2019. Consequent upon this, it is safe to say that the continent of Africa is not yet on the path to eliminate hunger by 2030. In Nigeria, the question of appropriate food security has remained a critical subject for consideration by successive government administrations (Ejikeme, 2017; Osabohien *et al.* 2020). Several interventions to enhance agricultural productivity and ensure food security have been developed by different government regimes in Nigeria since independence. Some of these policies and programs were Operation Feed the Nation (OFN), National Agricultural and Land Development Authority (NALDA), The Green Revolution and Lower Niger River Basin Development Authority (LNRBDA). But, according to Aderinoye-Abdulwahab, (2020), significant number of these programs could not succeed owing to weak institutional foundation, corruption, and poor implementation. Food security occurs when all people at all times have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life (FAO, 2012). In order



to achieve food security, food must be available, accessible and properly utilized at all times. Availability relates to the supply of food through production, distribution and exchange while food access refers to the affordability of and allocation of food as well as the preferences of individuals and households (FAO, 2014). Even when people are able to obtain food, it must be properly utilized- that is, it must be able to satisfy their dietary needs and preferences. The term utilized means the use of food for the body's nutrition.

The increasing spate of food insecurity in country calls for urgent and necessary action. According to Osabohien *et al.* (2020), not less than 21.4% of Nigerian families were experiencing serious food scarcity in 2020. In the same vein, Erokhin and Gao (2020) stated that 50% of the Nigerian population are living below poverty line of 1.9 USD. The Global Food Security Index (GFSI) rating shows that Nigeria ranked 94th out of 113 nations in 2019 with a 48.4/100 score, putting the country below Cameroon, Ethiopia and Niger (Ayinde *et al.* 2020). According to Amzatand Aminu (2020), Nigeria's food insecurity is worsened by rapid population growth. The country is therefore faced with the challenge of feeding its ever-increasing human population, which currently estimated to be over 200 million people. It is against this backdrop that this study was carried out to assess the food security status, examine the determinants of food security and identify the constraints faced by the people in their quest to achieve food security in the study area.

METHODOLOGY

Study Area

The study was carried out in Okun Area of Kogi State. The area comprises Ijumu, Kabba-Bunu, Yagba West, Yagba East, and Mopa-Muro Local Government Areas of the state. Kogi State is situated within the North-Central zone of Nigeria. It is the most centrally located of all the States of the Federation, with a population of 3,595,789 (NPC, 2006). It comprises Igala, Ebira, Kabba, Yoruba and Kogi divisions of former Kabba Province with Yoruba, Nupe and Bassa as the main ethnic groups and Yoruba, Nupe and Ebira as the major languages spoken. The State has two distinct seasons (the wet and dry seasons) and a humid tropical climate prevails over the State. The study was carried out in selected sawmills and timber markets in West Senatorial District of the State, which forms the Yoruba speaking part of Kogi State.

Sampling Technique and Method of Data Collection

A multistage sampling procedure was adopted in this study. The first stage involved the random selection of three LGAs out of the six LGAs in the region. The second stage involved the random selection of two communities each from the LGAs selected, making a total of six (6) communities selected. The third stage involved the random selection of 25 respondents from each of the selected communities. In all, 150 respondents were selected for the study.

Data Collection

Data were collected through the use of structured questionnaire. The data collected include socio-economic characteristics which include information on gender, age, marital status, household size, savings pattern and specific poverty indices such as household income and expenditure.

Analytical Technique

The analytical tools used in analyzing the data were descriptive statistics, and inferential statistics such as Logistic regression model.

In order to estimate the food security status of the people in the study area, the approach used

by
 Omonona and Agoi.(2007) was adopted; where
 Food Security index formula is given as;

$$Fi = \frac{\text{Per Capital Food Expenditure for } i\text{th household}}{\text{Mean per Capita Food Expenditure of all Households}} \quad (1)$$

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Where Fi = food security index; When $Fi \geq 1$ = i th household is food secure; If $Fi \leq 1$, i th household is food insecure

Logistic regression model was used to estimate the determinants of food security.

$$Y_i = f(x_{ij}, \mu_i) \quad (2)$$

Where

$Y_i = \ln(f_i/1-f_i)$, P_i – households food security status (0 if food insecure, 1 if food secure); X_{ij} =

vector of socio-economic variables of household; μ_i = random error term The explicit form of the equation is expressed as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_{10} X_{10} + \mu$$

X_1 = Age; X_2 = Education Status; X_3 = household size; X_4 = membership of association X_5 = access to credit; X_6 = farm size; X_7 = farming experience; X_8 = access to extension services; X_9 = non- farm income; X_{10} = gender and μ = stochastic error term.

RESULTS AND DISCUSSION

From Table1, the results revealed that more than half (52%) of the respondents were between the age of 41 and 60 years with a mean of 55 years. With this age range, the respondents are expected to be very active on the farm in order to enhance agricultural activities and production. This corroborates Anyanwu (2010) that young people are more likely to be energetic and have the capacity to use innovation. That is, the younger the farmer is, the higher the desire and will to diversify into more lucrative farming activities that will assist in running away from poverty and guarantee food security. The results also revealed that majority (60%) of the respondents were male while 40% were female in the study area. The distribution of respondents by their marital status shows that less than half (47.33%) of the respondents were married, while only less than 9% of them were still single. This is an indication that majority of the respondents had more responsibilities to cater for in the study area. This therefore corroborates the work of Gordon and Craig, (2001) where it was stated that rural household was dominated by married couples. The married are able to take joint decision affecting the farm and the farm households' food security more efficiently. Consequent upon this, they are more likely to be preoccupied on how to provide food for their families and ensure that they are food secured.

The results from the table further revealed that the respondents had one form of formal education or the other, with 30% of them having access to secondary education. This implies that majority of the respondents had formal education and it is expected that education would provide people with opportunities to access information and gain knowledge on how to make themselves and their families food secured. Furthermore, the results also showed that 47.33% of the respondents in the study area have household sizes of between 1 and 5 persons with a mean household size of 3 people. This implies that most of the respondents in the study area have a fairly small number of people within their individual households. The implication of this is that households' ability to provide the needed labour to



work on the farm to guarantee adequate food availability so as reduce poverty and food insecurity may be affected. This possibly explains while large number (72%) of them had farm size of 5 acres or below, since there were few members of households to work on the farms. The number of years of farming of the respondents showed that about 29% of the respondents had farming experience of 20 years or less while majority (71%) had farming experience of above 20 years. This implied that most respondents have significant knowledge about farming and how to produce sufficient food for their families so that they can have enough food to eat.

Table1: Socio-economic characteristics of Respondents

Variable	Frequency	Percentage	Mean
Age(in years)			52.4
Less or equal to 40	23	15.33	
41-50	39	26.00	
51-60	39	26.00	
61-70	26	17.33	
Above 70	23	15.33	
Total	150	100	
Marital Status			
Single	13	8.67	
Married	71	47.33	
Separated	28	18.67	
Divorced	17	11.33	
Widowed	21	14.00	
Total	150	100	
Household Size			6.4
1-5	71	47.33	
6-10	54	36.00	
Above10	25	16.67	
Total Gender	150	100	
Male	90	60.00	
Female	60	40.00	
Total	150	100	
Education			
No Formal	32	21.33	
Primary	40	26.67	
Secondary	45	30.00	
Tertiary	33	22.00	
Total	150	100	
Farm Size(Acres)			3.4
1-5	108	72	
6-10	32	21.33	
Above10	10	6.67	
Total	150	100	
Farming Experience(Years)			33.2
Less or equal to 10	16	10.67	
11-20	28	18.67	
21-30	28	18.67	
31-40	36	24.00	
Above 40	42	28.00	
Total	150	100	



Food security status was estimated following the approach used by Omonona and Agoi (2007). This involves the use of Food index formula (Fi) which is given as per capital food expenditure for the ithhousehold divided by 2/3 means per capital food expenditure of all households. Therefore, any household with Food Security Index equal or greater than one(1) is said to be food secured, while households with food security index less than one is said to be food insecure. The results in Table 2 revealed that 53% of the sampled households are food secure while47% of them are not. This implies more than of the rural households in the study area have good food security, little need to be done to remove the rest households from insecure level.

Table 2: Food Security Status of farming households

Food Security Status	Frequency	Percentage
Food Secured	80	53.33
Food Insecure	70	46.67
Total	150	100

Table 3 reveals the results of the Logistic Regression for the determinant of food security among households. It shows that age of household head was negative and significant ($P<0.05$) in influencing the food security status of rural households. This implies that with increase in the age of household head, there is the likelihood that the household will be food insecure and vice-versa. Similarly, household size is negative and significant ($P<0.005$) in influencing rural household food security. That is, with an increase in the number of household members, the odds of the household being food insecure will also increase by a factor of 0.9985. This may not be unconnected to the fact that an increase in number of household will increase the number of consumers, thereby mounting pressure on household food, thereby making such household susceptible to food insecurity.

In addition, coefficient of farm income is positive and significant ($P<0.005$) in influencing rural household food security. This means that as household farm income increases, the likelihood of such household becoming food insecure decreases. Similarly, households with access to credit facilities have more chance to be food secure than households with no access to credit facilities Furthermore, farm size was positive and significant in influencing rural household food security. This implies that with increase in farm size, households have tendency of improving their food security status. In other words, households with larger farm sizes tend to be more food secure than those with smaller sizes. That is an increase in farm size by one hectare of cultivated land, the odds that the households will be food secure increases by 8.281. Likewise, with increase in non-farm income, households are less likely to be food insecure. That is with increase in non-farm income accruable to households, the likelihood that the households will be food secure increases by a factor of 9.3156

Table 3: Determinant of Food Security among Households

Variables	Coefficients	Standard Error	Odds Ratio	Significance
Age	-0.1220	1.543	0.8851	0.043*
Education	0.0031	2.653	1.0031	1.000
Household size	-0.0015	4.123	0.9985	0.001*
Membership of Association	0.3421	2.542	1.4079	0.680
Access to Credit	7.2311	1.549	1.381	0.160
Farm Size	2.1140	1.1301	8.281	0.005*
Farming Experience	3.1210	1.747	22.6690	0.681
Access to Extension	0.0040	1.344	1.0051	1.000
Non-farm Income	2.2317	0.881	9.3156	0.031*
Gender	3.223	1.721	25.1033	0.223
Farm Income	4.012	1.547	55.2572	0.004*

CONCLUSION AND RECOMMENDATIONS

It could be concluded that more than half of the respondents in the study area are food secure. Also the factors that influenced their food security status were age, household size, farm income and non -farm income. In view of this, it is therefore recommended that

- stakeholders in rural development, especially the government, should develop and support non-farm income-generating activities of farmers, so as to help rural households diversify their income streams, thereby reducing dependency on farm income alone.
- government should facilitate farmers' access to land through land reform policies or support for land acquisition, to enable farmers' expand their production and potentially increase their income generation.
- training should be provided to farmers on modern farming practices, including crop rotation, soil fertility management, and pest control to enhance their productivity and consequently ensure food security.
- farmers with large families should be provided with targeted support such as subsidies for essential food items and resources to help improve their agricultural production
- programs should be created to attract younger generations to agriculture by providing incentives, training, and access to technology. This can help in sustaining agricultural productivity and food security.

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