Pancasila International Journal of Applied Social Science
E-ISSN 2988-0750 P-ISSN 2988-0769
Volume 3 Issue 03, September 2025, Pp. 419-435
DOI: https://doi.org/10.59653/pancasila.v3i03.1802

An Empirical Analysis of Food Security and Poverty Status Among Rural Farming Households in Owo Local Government Area, Ondo State, Nigeria

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Received: 08-06-2025 *Reviewed: 10-07-2025* *Accepted: 25-08-2025*

Abstract

The study was conducted in the Owo Local Government Area of Ondo State, Nigeria, to analyze food security and poverty among rural farming households. A total of 120 households from six communities were selected using a multistage sampling technique. Primary data was collected through a structured questionnaire. Descriptive statistics, expenditure approach, and multiple regression analysis were used for data analysis. The study found that the average age of farmers was 37.8 years, indicating a young and potentially productive population. Approximately 70% of the rural farming households were male. The average household size was 7, and the average farm size was 1.28 hectares. The households had an average income of N230,005 and a food security index of 1.5, suggesting they were food secure. However, the households were moderately poor. Multiple regression analysis revealed that the gender of the household head, household size, income, and years of education were significant factors in explaining variations in food security, accounting for 70% of the variation. Correlation analysis indicated a significant negative relationship (-0.866) between food security and poverty status, implying that an increase in poverty would decrease food security. Based on these findings, it is recommended that rural households prioritize food production and other productive activities. Promoting formal education among rural households and providing credit facilities to encourage agricultural production would also enhance food security.

Keywords: Analysis**,** Food security, Poverty status, Farming household.

1. Introduction

Food security exist when all people have consistent access to safe, quality and adequate food resources to meet their dietary requirement and food preferences for a healthy and active life (Pinstrup-Anderson, 2009). In the context of this definition, food security has three vital dimensions: availability, accessibility and utilization. Food insecurity on the other hand, is said

to exist when there is uncertainty in the ability to acquire nutritionally adequate and safe foods in socially acceptable ways (Gillespie *et al*., 2016).

A critical examination of these definitions, especially in the context of smallholding farms, suggests that there are many factors embedded in food security or food insecurity. Rural households are characterized by low income generation, small size land, proper inputs and lack of resources, all of which decrease productivity and hence increase the probability of poverty(FAO, 2015) . Low level of managerial and technical skills and inadequate training were identified as major determinants of low level of productivity and household food insecurity. People living in poverty cannot produce or buy enough food to satisfy their needs and so are more susceptible to disease (Oni, L.B. 2014).

Poverty earns insecurity, powerlessness and exclusion of individuals, households and communities. It is broad, multidimensional, partly subjective phenomenon, often viewed as both the cause and symptom of under-development (World Bank, 2015). In the same light, it is seen as the result of the interaction of economic, political and social processes in an unfavorable way to generate deprivation and reductions in people's standard of living.(World Bank, 2015) has diverse dimension, this involve low income, lack of education, environmental degradation and gender inequality.

According to the Human Development Report by United Nations Development (2006), the poverty situation in Nigeria has been on the increase since, 1980. A study by Federal Office of Statistics (FOS, 1999) showed that the incidence of poverty was raised from 26.1% to 46.3% between 1980 and 1985 and 42.7% to 65.6% between 1992 and 1996, respectively. Though, the level of poverty dropped to 39.2 million impoverished people in 1992, the number of poor people rose swiftly to 67.1% in 1996. It was documented also that the number of poor increased by about two-third between 1970 and1985, and rose from 180million (47% of the population) in 1985 to 265million by the year 2000 (Aluyo,2012).

Poverty is engrossing more and more of the world's human population. The number of the poor in the world stood at about 1 billion in 1994, 1.3 billion in 1996, 1.74 billion in 1998, 2.04 billion in 2000, and 2.56 billion in 2002, and has continued to increase despite all developmental effort put in place by both the government and Non-Government Organizations (NGOs) to eradicate poverty (Angaye, 2015).

The Human Poverty Index HPI value for Nigeria of 38.8% ranks the country 75 among 103 developing countries (United Nations Development Programme, 2015; Etim, *et al.,* 2009).

World Resources Institute's environmental resource portal *Earth Trends*, says about 71 percent of Nigerians live on less than $1 a day and about 92 percent live on less than $2 a day (Garcia, *et al.,*2006).

Recent evidence indicates that poverty in Africa and in all the regions of the world declined over the period 2005-2010. In Africa, the proportion of people living below the poverty line decreased to 40% in 2008 from 47% in 1990 (Africa Development Bank, 2010).

Nigeria's poverty rate had moved from 54.4 percent to 69 percent between 2004 and 2010 involving 112,518,507 Nigerians. (World Bank, 2015; NATIONAL BUREAU

STATISTIC, 2015). Although the country's Gross Domestic Growth (GDP) had grown sincethen, it had little impact on the poverty situation, (NBS, 2015).

Following Engel's law, that says there is high level of poverty in Nigeria, the percentage of Nigerians living in absolute poverty i.e. those who can afford only the basic essentials of food, shelter and clothing rose from 54.7 percent in 2004 to 60.9 percent in 2010. National Bureau of Statistic (NBS) stated that although Nigeria's economy is projected to continue growing, poverty is likely to get worse as the gap between the rich and the poor continue. The poverty situation in Nigeria is quite disturbing, both the quantitative and qualitative measurements attest to the growing incidence and depth of poverty in the country (Okunmadewa, *et al.,*2005).

Oluwatayo, (2008), made it clear that given the rich natural resources, the level of poverty in Nigeria is remarkably high. While data on Nigeria's poverty over time remains scattered, there is some evidence that Nigeria's poverty has actually increased over time. Although predicted poverty reduction scenarios vary greatly depending upon the rate and nature of poverty related policies, actual evidence suggests that the depth and severity of poverty is still at its worst state in Nigeria, south Asia and Sub-Saharan Africa (Okunmadewa, *et al.,* 2005).

1.1 Problem statement

Nigeria is one of the most resource-endowed nations in the world. But socio-economically, Nigerians are also among the poorest in the world (Etim, *et al.,*2009). Hence, there is a persisting paradox of a rich country inhabited by poor people, which has been the subject of great concern for many years, but more especially in the last decade(Etim and Patrick, 2010).

Poor households are more in agricultural occupation and participation in agriculture is found to be more predominant in rural areas where majority are small-holder farmers. For many households in Nigeria, especially in the rural areas and peri-urban areas, agriculture is the main activity, previous and current analysis of poverty has shown that poverty is disproportionately concentrated among households whose primary livelihood lie in agricultural activities (Federal Republic of Nigeria, 2017).

Given that the majority of the rural Nigeria households are largely dependent directly or indirectly on agriculture for their food and livelihood needs (Liverpool-Tasie *et al*., 2011), the poor performance of the sector creates food availability and accessibility problems for the households, thereby, putting them at high risk of unbalanced nutrition, limited access to food and overall food insecurity. Orewa and Iyangbe (2010) corroborate this, when they mentioned that as much as 71% of rural households in Nigeria are food insecure, and such households have constrained physical and economic capacity, to maintain their present level of well-being.

Therefore, there is need for the vulnerable farming households to examine their food security status vis-à-vis their poverty status. It was against this background that the study sought answers to the following questions:

i. What are the socio-economic characteristics of rural farmers in the study area?

ii, What is the food security status of respondents in the study area?

iii. What is the poverty status of respondents in the study area?

iv. What are the determinants of food security among respondents in the study area?

v. What is the effect of poverty status on food security among the respondents in the study area?

1.2 Objectives of the Study

The main objective of this research work was to analyze the relationship between food security and poverty status among households in Owo Local Government of Ondo State. The specific objectives of the study were to:

i. describes the socio-economic characteristics of respondents in the study area;

ii. determine the food security status among the respondents in the study area;

iii. determine the poverty status among the respondents in the study area;

iv. examine the determinants of food security among the respondents in the study area

v. examine the relationship between food security and poverty status among the respondents in the study area

1.3 Justification

Poor households are more related to agriculture and related enterprises which are predominant in rural areas where majority are small-scale farmers. For many households in Nigeria, especially in the rural areas and peri-urban areas, agriculture is the main activity. Previous and current analysis of poverty has shown that poverty is disproportionately concentrated among households whose primary livelihood lie in agricultural activities (Federal Republic of Nigeria, 2017). The poverty incidence in Sub-Saharan Africa in 2005 was recorded to be 50.7 per cent with the poverty gap ratio rising up to 20.6 per cent (Millenium Development Goals, 2009) but in 2008, the share of the population living in extreme poverty in sub- Saharan Africa was 48 per cent (United Nation Development Programme, 2012). According to Action Aid Nigeria (2009 – 2013), the issues of employment and underemployment are major challenges in the country. Majority of the workforce are self-employed in subsistence agriculture and the informal economy or unskilled occupation. Nigeria still has a generalized manifestation of poverty and inequality in the distribution of income. The poor spend more of their income on food.

In view of the fact that food security and poverty status are linked in ways that are relevant to development and human wellbeing, this study seeks to analyze the relationship between food security and poverty in Owo Local Government Area of Ondo State. The result of this study will fill literature gap, the findings of this study will inform policy makers, which will enable them to design appropriate policies that can mitigate food insecurity in rural Nigeria.

2.0 Research Method

2.1 The Study Area

This research was carried out in Owo Local Government Area of Ondo State, Nigeria. The local government is situated entirely within the tropics with coordinates $5^0$35'. The local government is located at the southern edge of the Yoruba Hills (elevation 1,130 feet [344m]), at the intersection of the roads from Akure, Kabba, Benin City and Siluko. Owo is situated half way between the towns of Ile-Ife and Benin-City. It enjoys tropical climate with two distinct seasons of raining season (April-October) and dry season (November-March). Temperature ranges from 21^0 – 28^0 C with high humidity. The population of Owo local government was estimated to be 222, 262 people (National Population Commission (NPC, 2006). The primary occupation of the people is farming, while some engage in trading, weaving, handicraft and governmental jobs. The major food crops are yam, maize, cassava and cash crops such as cocoa, kola nut, cashew and oil palm are also cultivated in the study area.

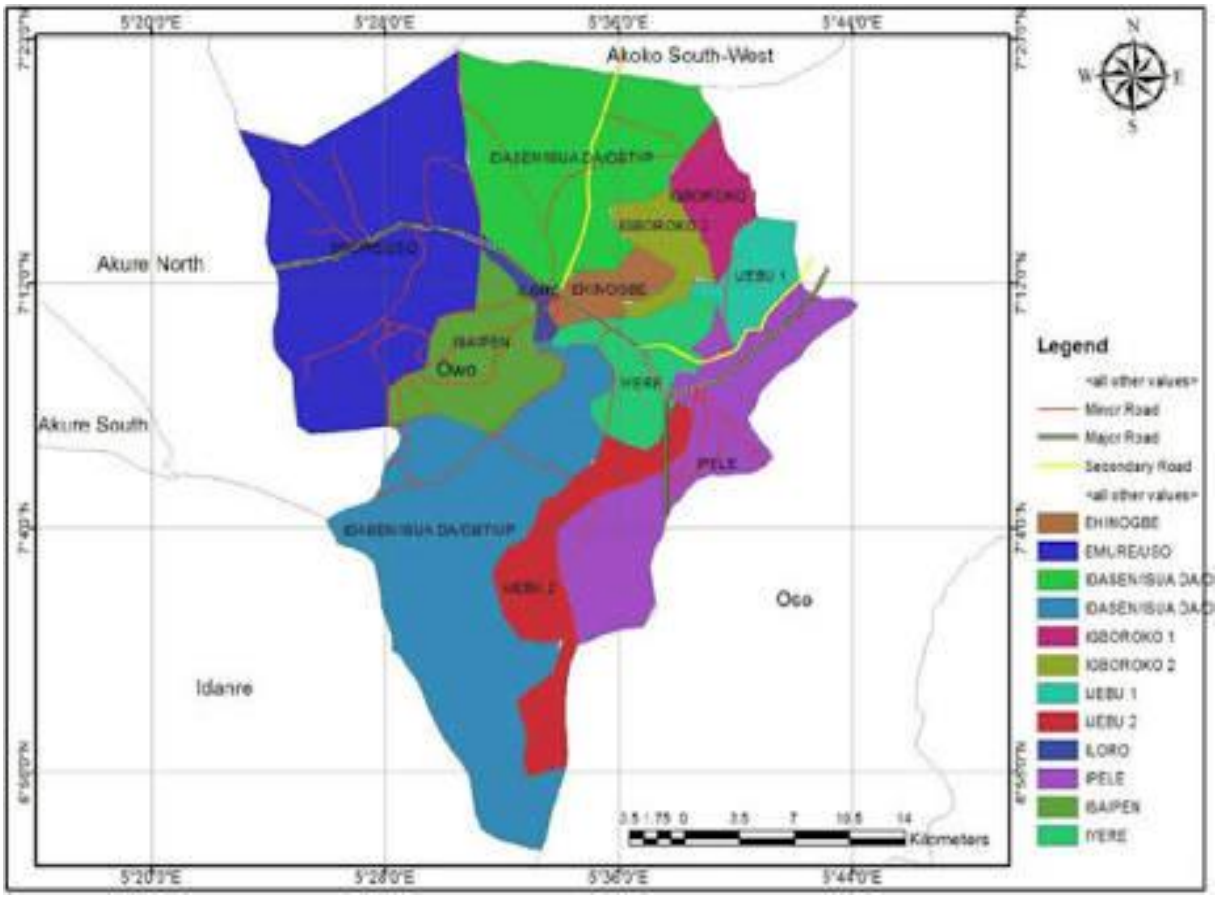

Figure 1: Map of Owo local government area

Source: Wikipedia.org

2.2 Sampling Technique

Owo LGA was chosen because of the heavy concentration of food crops in the area. Multi-stage sampling was used to select samples for the study. The first stage involved the purposive selection of one local government from the eighteen local government areas that

make up the entire Ondo state while the second stage involved a simple random selection of six (6) out of thirteen (13) communities in the local government area . The last stage involved a random selection of twenty (20) rural farmers from each selected community, which totaled one hundred and twenty (120) rural farmers in all the selected communities.

2.3 Data Analysis

Data for analysis were generated primarily using interview scheduled and structured questionnaires administered to one hundred and twenty (120) respondents selected for the study.

2.4 Analytical Technique

Data for the study were analyzed using both descriptive and inferential statistics. Objective (i) was analyzed using descriptive statistics such as mean, percentages and frequency distribution. Objective (ii) was analyzed using Food Security Indicators. Objective (iii) was analyzed using Expenditure Approach. Objective (iv) was analyzed using Ordinary Least Square(OLS) model while objective (v) was analyzed using the Spearman Correlation Coefficient model**.**

2.5 Model Specification

Household food security analysis is based on two indicators, namely, the Food Consumption Score (FCS) and the Household Hunger Scale (HHS).

I. Food Consumption Score (FCS)

The FCS was developed by the World Food Program as a frequency weighted dietary diversity score (Leroy *et al.,* 2015) The Food Consumption Score (FCS) is calculated as specified below (Jones *et al.,* 2013):

$FCS = a_1b_2 + a_2b_2 + \ldots + a_8b_8$ ……..(1)

where a = frequency (1-week recall period),

1–8 = food group, and

b = weight.

The weights are as follows: meat, milk, and fish = 4, pulses = 3, staples = 2, vegetables and fruits = 1, oil and sugar = 0.5. The cut-off points for the FCS that classify households into one of the following categories are poor (< 21.5), borderline (21.5–35) and acceptable (> 35).

II. Household Hunger Scale (HHS)

The HHS was developed by Food and Nutrition Technical Assistance. It is a cross-cultural validated food security indicator that captures elements of cultural experiences and severe food insecurity (Jone *et al.,* 2013; Deitchler *et al.,* 2011). A four-week recall period is set as the standard in data collection.

The HHS questionnaire comprises three questions as follows:

i) Was there ever no food at all in your household because there were no resources to get more?

ii) Did you or any household member go to sleep at night hungry because there was not enough food?

iii) Did you or any household member go a whole day and night without eating anything because there was not enough food?

The responses to the questions are classified as rare with the values of 0 (twice a month), sometimes = 1 (3 to 10 times) and often = 2 (> 10 times). The values are added up for the three questions and range from 0 to 6.

The HHS categories are little to no hunger (scores 0–1), moderate hunger (scores 2–3) and severe hunger (scores 4–6) (Leroy *et al.,* 2015).

2.6 Estimating Poverty line through the Expenditure approach

According to Oluwatusin (2010) expenditure approach was used to determine the poverty line for the sampled farmers in the study area. It was calculated from the household expenditure. This was done to separate households into poor and non-poor groups. As a benchmark, two-third of the mean per-capita expenditure was used as a threshold. Households whose mean per-capita expenditure fall below the poverty line are regarded as being poor while those with their per-capita expenditure is on or above the benchmark are non-poor.

Household per Capital Expenditure (HPCE) = Household Expenditure/Household Size (HHS)

Total Household per Capital Expenditure (THPCE) = Summation of HPCE

Mean Total per Capital Expenditure (MTHPCE) = THPCE/n

Then poverty line (PL) = $\left(\frac{2}{3}\right)$ (MTHPCE) ……(2)

2.7. Ordinary Least Square Regression Model

Determinants of food security was analyzed at the farming household level. It was targeted at evaluating the effects of some socio-economic factors on the extent of food security of each household.

The model is specified as:

$$Y = f(\beta X + \mu_i) \ldots\ldots\ldots (3)$$

Where:

Y_i = Food Consumption Score

β = a vector of estimated coefficient of the explanatory variables

X = a vector of explanatory variables

U_i = disturbance term

Explicitly

The model is specified as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \mu_i \ldots\ldots (4)$$

Where:

Y= Food Consumption Score

The explanatory variables to be used in the analysis are:

X_1 = Age of household head (years)

X_2 = Household size (number of persons in the household)

X_3= Household head monthly income (₦)

X_4= Credit access (Yes = 1, No = 0)

X_5 = Membership of cooperative (Yes = 1, No = 0)

X_6 = Years of Education

X_7 = poverty status (1=poor; 0=non-poor)

X_8 = sex

X_9 = marital status

X_{10} = experience (years)

X_{11} = pry occupation

X_{12} = farm size

X_{13} = land acquisition

X_{14} = access to extension agent

X_{15} = cooperative society (yes/no)

X_{16} = source of labour

X_{17} = method of production

2.8. The Spearman Correlation Coefficient

The Spearman Correlation Coefficient was used to measure the relationship between food security and poverty status of the respondents.

The formula for r was as follows:

$$r = \frac{\sum\left(X_i - \widehat{\widehat{X}}\right)(Y_i - \hat{Y})}{\sqrt{\sum\left(X_i - \widehat{X}\right)^2 - \sum(Y_i - \hat{Y})^2}}$$

Where

X_i = Poverty status of individual farming household

$\widehat{X}$= Mean of poverty status of all farming household

Y_i = Food security status of individual farming household

$\hat{Y}$ = Mean of food security status of all farming household

3. Result and Discussion

3.1 Socio-economic characteristics

The socio-economic characteristics of the respondents considered were age, marital status household size, gender, credit access, cooperative membership, extension services, other occupation, income, frequency of meals per day, amount spent on food per month.

The results show that 13.3% of the respondents were below 30 years, 24.2% were within the 31 and 40 years of age, 60.8% were within 41 and 50 years, and 1.7% respondents were above 50 years of age. The mean age was 37.8 years. The majority (85.0%) of the respondents were between the ages of 31 and 50 years which imply that they were in their productivity ages. Production activities are efficient when respondents have the strength to carry out the task of production. The result implies that most of the respondents were of middle age; signifying that both the categories of the respondents were within the agricultural productive age range of 30- 50 years quoted by Food and Agriculture Organization (FAO, 2002).

The result showed that 2.5% of the respondents were single, 2.5% were widowed, and the majority (95%) been married. Majority of the respondents were married implies that there could be the availability of labour for production. It is however noted that marital status is a function of a household size of respondents. Those that are single may rely on hired labour to perform production activities. The result revealed that the larger percentage of the respondents were married. This is an indication that farming activities were dominated by married farmers in the study area. According to Omolehin, et al., (2007), the marital status of a farmer could have significant influence on production decisions which will invariably improve their food security and reduce their poverty status.

The educational levels of the respondents were defined as follows, 3.3% had no formal education, 21.6% had primary education and 41.7% had secondary education, while 31.7% had tertiary education. This implies that majority of the respondents were marginally educated, thus, the possibility of observing efficiency in the production of food among the respondents that are educated.

The gender distributions of the respondents revealed that majority (70.0%) were male, while the remaining (30.0%) were female. It implies that food production were dominated by male. Hence male seem to be better producers of food than their female counterparts.

The household size distribution of the respondents showed that 31.7% had household size between 1 and 5, 62.5% had household size between 6 and 10, 5% had household size in the range of 11 to 15, while 0.8% had household size above 15. The mean household size was 7, implying a fair large household size, and thus, availability of free family labour if farmers employ their family in the activities and this will invariably increase food production in the study area.

The distribution access to credit facilities of the respondents showed that 53.3% did not have access to credit facilities, while 46.7% had access to credit facilities. This unavailability of credit facilities had discouraged majority of the respondents from engaging in agricultural productive activities that could boost food production and reduce their poverty status within the study area as opined by Oyinbo and Olaleye,(2016).

The distribution of respondents by membership of cooperative showed that 62.5% of the respondents were member of cooperative while the remaining 37.5% of the respondents were non-member of cooperative. This result implied that majority of the respondents were involved in cooperative membership, which had the relationship to improve their food security and poverty status. Gashaw et al (2013) found that membership of cooperatives enhances members 'efficiency by easing access to productive inputs and facilitating extension linkage compared to those who were not members.

The distribution of respondents by extensions visit showed that 54,2% of the respondents did not receive extension services, 6.7% of the respondents received extension services every six months that is twice a year, 22.5% received extension services quarterly, 16.6% received extension service yearly. This result showed poor extension services received by the respondents and thus, it may have negative influence on food production and security since they will not be well informed about improved technology and practices in agriculture and this could hamper their production and livelihood. This conformed with the findings of Ifeoma and Agwu, (2014) who reported that farming households in Nigeria did not have access to extension services.

The distribution of respondents according to their occupation showed that 23.3% of the population did not engage in any other livelihood endeavor other than farming, 12.2% diversified into artisanship alone, 37.8% diversified into trading alone, and 26.7% diversified into private work. This result showed that the rural farming households were highly engaged in other occupation to improve their food security and reduce poverty level in the study area

The distribution revealed the number of times the rural households feed per day. The result revealed that 2.5% of the respondents ate once per day, 16.7% ate twice per day, 77.7% of the respondents ate three times per day and 3.3% ate four times per day. This showed that the rural households in Owo Local Government Area were food secured.

Table 1: Socio-economic characteristics of the respondents (n =120)

Characteristics	Frequency	Percentage	Mean
Age (Years)			
Below 30	16	13.3	
31-40	29	24.2	
41-50	73	60.8	37.8
Above 50	2	1.7	
Marital Status			
Single	3	2.5	
Married	114	95	
Widowed	2	2.5	
Educational level			
No formal education	4	3.3	
Primary education	26	21.6	
Secondary education	50	41.7	
Tertiary education	38	31.7	
Other	2	1.7	
Gender			
Male	84	70	
Female	36	30	
Household size			
1-5	38	31.7	
6-10	75	62.5	7
11-15	6	5	
Above 15	1	0.8	
Access to credit			
Yes	56	46.7	
No	64	53.3	
Cooperative membership			
Yes	75	62.5	
No	45	37.5	
Extension services			
None	65	54.2	
Monthly	8	6.7	
Quarterly	27	22.5	
Yearly	20	16.6	
Income per annum			
Below ₦100,000	58.68	48.9	
₦100,000-₦500,000	46.68	38.9	
₦500,001-₦1,000,000	9.36	7.8	
Above ₦1,000,000	5.28	4.4	
Frequency of meals per day			
Once per day	3	2.5	
Twice per day	20	16.7	
Three times per day	93	77.5	

Four times per day	4	3.3
Amount spent on food per month		
Below ₦2,000	35	29.2
₦2001-₦5,000	81	67.5
Above ₦5,000	4	3.3

Source: Field survey, 2025.

3.2 Food Security Status of the Rural Farming Households

The results showed that the sum of food expenditure of the respondents is ₦2,758,750, the Per capital food expenditure is ₦22,989 which was obtained by dividing the sum of food expenditure by the number of respondents (120). Then 2/3 mean per capital food expenditure is ₦15,326 which was obtained by multiplying per capital food expenditure by 2/3. Then food security index was obtained by dividing per capital food expenditure by 2/3 of the per capital food expenditure giving the food security index to be 1.5. Thirty (30) percent of the population of the respondents were food insecure, while seventy (70) percent are food secured. The mean value of food security status among the respondents is 1.5, this indicates that the households were food secured. This agreed with the findings of Echebiri (2017), Ganiyu and Omotayo (2016) which reported that farming households in Nigeria are food secured. The food security can be caused by varying factors, some of which are household size, age and capital Nasa (2010).

Table 2: Distribution of food security status of the respondents

Status	**Frequency**	**Percentage**
Food insure	36	30
Food secured	84	70
Total	120	100

Sum of Food expenditure	₦2,758,750
Per capita Food expenditure	₦22,989
2/3 mean Per capita Food expenditure	₦15,326
Z (Food security index)	1.5 Food secured

Source: Field survey, 2025.

3.3 Poverty status of the Respondents

The mean per capita household expenditure (MPCHE) of the respondents ranges from <488.421 for the extremely poor respondent, 488.42≤1 976.842 for the moderately poor respondents and >976.842 for the non-poor.

The poverty status of the respondents are represented in table 3.The results show that 29.2% of the respondents are non-poor, they spent above N976.842. This implies that they are food secured and are able to attend to other socioeconomic needs. About 30% of the respondents are extremely poor, they spent less than N488.421. This implies that they are food insecure and thus they are not able to take care of their basic needs. Almost average of 40.8% of the respondents are moderately poor, they spent between 488.421 to 976.842. This shows they are food secured but could not take care of some other basic and socio-economical needs. This is in line with the findings of NBS (2018) which shows that there is appreciable decrease in poverty rate between 1996 and 2017

Table 3: Distribution of poverty status of the respondents

Poverty Group	MPCHE N	Frequency	Percentage
Extremely Poor	488.421	36	30
Moderately Poor	488.21≤976.842	49	40.8
Non Poor	>976.842	35	29.2

Source: Field survey, 2025.

3.4 Determinants of Food Security among the Rural Farming Households

The coefficient of regression was 0.7001 implying that the independent variables (gender, age, household size, income, and access to credit facilities, membership of cooperative society, marital status and years of formal education) could account for seventy (70) percent of the total variation, while the rest (30%) could be ascribed to error term. The overall result was significant at 1% statistical level. Gender had a positive relationship with food security of the rural households by a coefficient of 0.008, which means an increase in the number of males will give relationship that food security would increase by 0.8 percent. Gender was statistically significant at 10% level. The result followed a-prior expectation; Ganiyu and Omotayo (2016), because men were mainly the household head and decision maker, so they can decide to be food secured.

Age had a negative coefficient of -0.0001 against livelihood diversification. This showed that as the age of the household head increase by 1 year, there is relationship that food security would reduce by 0.01 percent. This can be because the household head was more concerned about his basic family needs and other things that are paramount to him/her such as his/her health. Likewise, Onunka *et al*., (2017) reported farming and diversification required strength and may involve drudgery which the farmer may not be able to cope with as a result of his/her age.

The size of the rural household determined their food security by a positive coefficient of 0.001. This implied that 1 person increase in the household size will give a relationship of 0.1 percent increase in the livelihood diversification. The result was statistically significant at 1% which indicates that household size was a strong determinant of livelihood diversification.

Income was a determinant of food security as revealed by its statistical level of 10%. It had a positive relationship with food security by a coefficient of 2.57, this implied that one

naira increase in the earnings of the rural household gives a relationship to increase food security by 257 percent. The result followed the findings of Sekumade and Osundare (2014) who reported that income was a major determinant of diversification, also agreed with a-prior expectation because for a rational man he gets to diversify to earn more income. Access to credit facilities and cooperative membership has a coefficient of 0.024 and 0.003 respectively. This implied that an increase in credit access will lead to 2.4 percent relationship increase in livelihood diversification, likewise an increase in the number of cooperative membership will lead to 0.3 percent relationship increase in food security. This followed a-prior expectation and the findings of Ifeoma and Agwu (2014) who reported that cooperative membership was positively related to food security of farming households.Marital Status followed the a-prior expectation and the findings of Sekumade and Osundare (2014); Ahmed *et al*., (2015) who reported that rural households increase their food security by getting married. The result showed a positive relationship between getting married and food security. An increase in marriage led 5 percent relationship increase in food security. Similarly, years spent in acquiring formal education have positive relationship with food security. It had a coefficient of 0.001 implying that one-year increase in formal education will give 0.1 percent relationship increase in food security and it was statistically significant at 1%.

Table 4: Distribution of food security determinants among the respondents

Variables	Coefficient	Standard Error	P value
Gender	0.008*	0.005	0.056
Age	0.000	0.001	0.859
Household size	0.001***	0.001	0.004
Income	2.57*	1.618	0.058
Credit Access	0.024	0.023	0.309
Cooperative membership	0.003	0.023	0.912
Marital Status	0.005	0.038	0.892
Years of education	0.001***	0.000	0.003
Constant	0.37	0.094	0.000
LR chi^2 (8)=12.84			
Prob. > chi^2 =0.0042			
Log relationship=184.681745			
Adjusted R^2 =0.7001			

Dependent variable: Food security
Significant: *represents 10% significant level, **represents 5% significant level, ***represents 1% significant level
Source: Field survey, 2025

3.5 Relationship between Food security and Poverty Status of the Farmers

The spearman correlation analysis result presented in (Table 5) revealed that there was significant negative relationship between food security and poverty status of the farmers (rs[120] = 0.866, p< 1.000). Squaring the correlation coefficients indicated that 75.0% of the variance in the food security was explained by the poverty status of the respondents. Similarly, 75.0% of the variance in the poverty status was explained by food security. Also, the result implied that as poverty status increases, food security status of the respondents also decreases. Food security had been reported to cause a significant increase in total household livelihood, which would, in turn, decrease household poverty status. This result was like that of Ifeoma and Agwu (2014) who found that food security among farming households was influenced by poverty level. Hence, the higher the level of poverty level ceteris paribus, the lower the food security status was expected to be.

Table 5: Distribution relationship between food security and poverty status of the farmers

C	O	R	E L A T I O N S		
			Food security	Poverty status	
Spearman 's rho	Food security	Corelation coefficient	1000	-0.866	
		Sig(2-tailed)		0.003	
		N	120	120	
	Poverty status	Coralation coefficient	-0.866	1000	
		Sig(2-tailed)	0.003		
		N	120	120	

Source: Field survey, 2025.

4.0 Conclusion and Recommendation

The study concluded that rural farming households in Owo Local Government were young, married and literate. The study further concluded that the rural farming households had large household size and belonged to cooperative organizations. They did not have access to credit facilities and extension services. They sourced for capital from personal savings, cooperative society and banks.

Furthermore, the study concluded that rural farming households were food secured and moderately poor, which is negatively related. The determinants of food security among rural farming households were gender, household size, income and the years of education. The study therefore recommends that, there is negative relationship between food security and poverty, hence, there is need to encourage rural households to produce food and engage in productive enterprises. Also, educational level of household head was a significant determinant of food security status of the farm households. Hence, there is need for formal education to be promoted

as a means of improving food security as it opens more income earning opportunities for the farm households especially in the non-farm sector. Policies should be aimed at ensuring that institutional credit sources reduce the current high interest rates of 13.5% on loans and the procedural difficulties in securing credit facilities, to encourage farmers access to such credit facilities for increased agricultural production and hence, food security.

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