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ROLE OF WOMEN IN HOUSEHOLD FOOD SECURITY IN ODIGBO LOCAL GOVERNMENT AREA, ONDO STATE, NIGERIA

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Abstract
Food security remains a critical challenge in many developing Countries, particularly in rural communities where women play a significant role in agricultural production and household nutrition. This study analyzed the role of women in household food security in Odigbo Local Government Area, Ondo State, Nigeria. A multi-stage sampling procedures was used to select 140 respondents, data were collected using structured questionnaires and analyzed using descriptive statistics such as frequency counts, percentages and mean, food security index based on daily per calorie requirement, Chi-square and logistic regression analysis. Results indicated that respondents had a mean age of 48.6 years with a mean household size of 5 persons. Most of the respondents were literate (76%) and had a mean farming experience of 12.1 years. The result further revealed that 74.3% of farmers were married and had farming (77.2%) as their primary occupation, and members of cooperative society (67%). Specific activities performed by women farmers were storage (71.4%) and Marketing (82.9).Food security result indicates that about 80% of women household were food secure. The logistic regression results identified marital status, years spent in school, farming experience, and total income positively influence food security while age of women, household size, and daily consumption cost negatively influenced food security. Relationship between women role and food security shows that handcraft, teaching, nursing and laundry were all significant. Among the coping strategies adopted by women farmers against food insecurity include reducing meal portions, skipping meals, and seeking alternative income sources to manage food shortages. The study concludes that women play a crucial role in ensuring household food security despite the challenges they face. It recommends training and resources should be provided specifically for younger farmers to help them develop skills and knowledge. Also, there should be support programme for married farmers to increase farmers' productivity.
Keywords: Household, Food security, Women and Calorie intake

Introduction

More than 800 million people, especially in developing countries, suffer from food insecurity despite significant increases in global food supplies (Rahaman, Kumari, Zeng, Khalifa, Farooq, Singh, and Aadil 2021). Key challenges such as limited access to food, inadequate household and national incomes, instability of supply and demand, and both natural and man-made disasters contribute to this issue (Smyth, Phillips, and Kerr 2016). Addressing global hunger requires urgent and coordinated efforts, particularly as growing populations and strained natural resources exacerbate the situation (Adepoju, Ogunniyi, and Agbedeyi 2015). Hunger remains a persistent challenge, and providing adequate nutrition will continue to be a major concern for policymakers in developing nations (Stamoulis, 2004). Report has highlighted how the global food crisis exposed vulnerabilities, with sharp rises in cereal prices and reduced food aid impacting poor countries the most (FAO, 2020). Food security is achieved when all individuals have physical and economic access to sufficient, safe, and nutritious food for an active, healthy life. This encompasses availability, access, utilization, and stability (FAO, 2020). Ejiohuo, Onyeaka, Unegbu, Chikezie, Odeyemi, Lawal, and Odeyemi (2024) emphasized food security as the consistent ability to obtain nourishing food.

One important aspect of the wealth of a nation is the ability to make food available for the

populace. In this connection, food security therefore becomes an important factor in any consideration of sustaining the wealth of the nation (Haile, Alemu, and Kudhlande 2005). Food security actually depends on whether households can afford to buy food given their prices and their income and or whether they can produce enough to cater for their food needs (Haile *et al.,* 2015). Access to food is ensured when individuals within these households have sufficient resources to obtain appropriate food either through production, purchase or as gift for a nutritious diet (Stamoulis, 2004). Food security, being one of the major issues of the present development dialogue, has been prioritized in domestic economic policies of many developing countries like Nigeria and also in the agendas of many international organizations especially in Food and Agriculture Organization (FAO, 2022).

Women play a crucial role in ensuring household food security. They are primarily responsible for managing and maintaining food production, processing, and preparation within their households. However, despite their indispensable contributions, women face numerous challenges and limitations that hinder their ability to fulfill this role effectively. One of the primary issues is the inadequate understanding and recognition of the vital role women play in household food security (Kassie, Ndiritu, and Stage 2014). These inequalities effectively curtail women's capacity to participate in agricultural endeavors, avail themselves of market opportunities, and exercise autonomy in determining food production and distribution within their own households (Choithani, 2020).

The role of women is crucial in achieving food security, as they are often key players in food production, distribution, and consumption, especially in rural and agricultural communities. Women make up a significant proportion of the agricultural workforce and are heavily involved in growing, harvesting, and processing food crops (FAO, 2022). Their contributions are not limited to labor, but extend to ensuring food availability for their families, managing household nutrition, and making vital decisions about food preparation and dietary choices (Adepoju *et al.,* 2015). Despite these contributions, women frequently face unequal access to resources such as land, credit, and education, which can limit their productivity and capacity to contribute fully to food security. When empowered with resources, knowledge, and equal opportunities, women can significantly enhance food production efficiency, improve nutritional outcomes, and ensure a stable food supply, contributing to the overall food security of households and communities (Adepoju *et al.,* 2015). Thus, empowering women is a critical factor in achieving sustainable food systems and eradicating hunger. It is against this backdrop that this study was carried out to: describe the socioeconomic characteristics of Women farmers in the study area; identify the specific activities performed by women farmers in the study area; determine the food security status of Women farmers in the study area; estimate factors influencing women food security in the study area; examine the relationship between household food security and selected roles played by women farmers in the study area and examine the coping strategies adopted to minimize food insecurity by women farmers in the study area;

Methodology

Study Area

The study was conducted in Odigbo Local Government Area. Ondo State, Nigeria. Odigbo Ondo State is situated in the Southwestern part of the country. Geographically, it lies between latitudes 6.78° N and longitudes 4.88° E. The area's climate is typically tropical, with a marked wet and dry season, which is conducive to diverse agricultural activities. Odigbo Local Government Area is a significant agricultural hub. The region is known for the cultivation of various crops, including cocoa, palm oil, cassava, maize, and yam. Cocoa production, in particular, is a prominent economic activity, contributing significantly to the livelihoods of the local population. In addition to agriculture, Odigbo Local Government Area also engages in other economic activities such as trading and small-scale manufacturing (Shagba, 2019).

Odigbo Local Government Area, is home to a diverse array of people and tribes, predominantly from the Yoruba ethnic group (Omotosho *et al.,*2020). Rainfall is generally

high, averaging between 1500 mm and 2500 mm annually. The soil type is primarily sandy and loamy, with varying proportions of sand, silt, and clay depending on the slope position. The local dialect spoken in the area is a variant of the Yoruba language, reflecting the rich linguistic heritage of the region. Within Odigbo, several sub-groups of the Yoruba people coexist, including the Ikale, Ondo, and Ilaje people. Each group contributes to the cultural diversity of the area through their unique traditions, festivals, and religious practices (Omotosho *et al.*,2020).

Sources and Method of Data Collection

Data for this study was gathered from primary source, using structure questionnaires administered to the respondents in the study area.

Sampling Procedure

A multi-stage sampling procedure was used for the study. Odigbo Local Government Area comprised of 11 wards.Hence, 6 wards were purposively selected from these eleven wards in the first stage due to their involvement in household food security. From each ward, one village was randomly selected in the second stage which include: Igbotako, Aba-Oyin, Araromi II, Akinfosile,Odigbo South and Ilado. In the third stage, a proportionate number of respondents (ranging from 23-24 per village) were then selected using simple random sampling techniques, which gives 140 respondents.

Method of Data Analysis

Both descriptive and inferential statistics were used to analyze data. Descriptive statistics such as frequency, percentage, mean and standard deviation. Inferential statistics such asFood Security Index (FSI) with the food security line used was based on the daily-recommended level of calories, which is 2260Kcal, logit regression model and Chi-square.

Model Specification

Food Security Index (FSI)

The food security line used in this study was based on the daily-recommended level of calories and protein, which are 2260 Kcal (Ojeleye, 2015).

In order to generate food security indices, the nutrient content of the food items consumed was used to derive calorie availability.

$$FSI = Zi = \frac{\text{Household per capita calorie availability}}{\text{Household's daily per capita calorie requirement}} \quad \ldots\ldots\ldots(1)$$

For a household to be food secured, Z_i_ must be greater than or equal to 1 (Z_i> 1). If Z_i is less than 1 (Z_i< 1), the household is food insecure. The quantity of rice consumed and other food items, purchased and received as gifts was converted to kilogram and further to calorie consumed per day per household and then compared with the standard (2260 kcal). The nutrient composition of commonly eaten foods in Nigeria adopted by Babatude *et al.* (2007) was used to estimate the calorie intake of household. On the other hand, the equivalent male adult scale to determine adjusted household size adopted by Ojeleye (2015) was used. The quantity of rice produced and other food items purchased for consumption was converted to kilogram and then to calorie and then divided by the adult equivalent household size, using FAO adult equivalent scale. To estimate the calorie consumed per day per household, the result was further be divided by 7 days and then compared with the FAO standard (2260 Kcal), for food secured individual (Ojeleye 2015). Those households whose daily per capita calorie was up to 2260 Kcal were regarded as food secure, while those below the food security line of 2260 Kcal were regarded as food insecure.

Logit-regression model

The study employed the logistic regression model in line with previous researchers. The cumulative logistic probability model can be econometrically stated as:

$Yi = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + b_4X_4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + eu \ldots\ldots\ldots\ldots\ldots\ldots(2)$

Where Yi = the probability of an ith household been food secured, stands for dummy,

Xi = vector of independent variables, which are defined as:

Where:

Y= Food security status (1 = Food secure; 0 = Food insecure)

X_1 = Age of women farmers in a household (years)

X_2 = Marital status (0 =Single; 1 = Married)
X_3 = Years Spent in formal Schooling (Years)
X_4 = Membership of Cooperative (1 = Yes; 0 = No)
X_5 = Primary Occupation (0 = Farming; 1 = Civil Servant; 3 = Business)
X_6= Household Size (Numbers)
X_7 = Years of Experience in Farming (Years)
X_8 = Total Income (Naira)
X_9 = Food Daily Consumption Cost (Naira)

Results and discussion

Socio-economic Characteristics of Women in the Study Area

The age distribution of women reveals that middle-aged and older women dominate farming activities, with 48.6% aged 41-50 years and 39.3% above 50 years. The mean age of 48.6 years indicates most of the farmers are above their active age. However, younger women are significantly under-represented, with only 2.4% in the 25-30 age group and 10% aged 31-40 years. The dominance of older women in agriculture aligns with the findings of Ogunlela and Mukhtar (2009), who observed that the aging farming population in Nigeria is a growing concern for sustainable agricultural development.

Household size significantly affects food security, with 69.3% of households having 1-5 members, while 30.7% have 6-10 members with a mean household size of5persons. This study aligns with Amaza *et al.,* (2006) which highlighted the complex relationship between household size and food security, emphasizing the need for tailored interventions. Experience in farming and food production enhances efficiency and productivity. The result indicates that women farmer's exhibit varied experience levels, with 34.3% having 6-10 years of farming experience, 20.7% were in the 1-5 and 11-15-year categories, while 20% exceeded 21 years. The mean experience level is 12.1 years. This finding aligns with the work of Antwi-Agyei and Stringer (2021), who emphasized that farming experience contributes to higher efficiency and better adaptation to changing agricultural conditions. According to Adepoju *et al.,* (2015) had previously reported that women farmers were quite experience in the study area, with a mean work experience of 7 years.

Marital status plays a significant role in women's access to land, labour, and financial resources. The result shows that 74.3% were married, 14.3% widowed, 7.1% divorced, and 4.3% single. Married women generally have better access to land, labor, and capital, which enhances their agricultural productivity. These findings align with studies by Adepoju *et al.,* (2015), who noted that marital status shows that about 65% of the women farmers were married while others were single, widowed or separated.Education is a key factor that influences women's decision-making capacity and adoption of modern agricultural practices. Majority of respondents (70%) attained secondary level of education, 24% had no formal education, 5.4% attained tertiary education, while 0.6% has completed primary education. This implies that majority of the farmers had one form of education or the other. This finding does not align with the work of Naz *et al.,* (2014), which shows that more than one third (34.1%) of the respondents were illiterate, more than one fourth (30.0%) of the respondents had primary level (up to 5 years of schooling) of education.

The primary occupation of women farmers affects their level of engagement in food production. The result indicates that farming is the primary occupation for 77.2% of respondents, indicating a heavy reliance on agriculture for livelihood. In contrast, only 7.1% are engaged in civil service roles, 13.6% in trading, and 2.1% in artisanal work. Similar trends have been documented in rural Nigeria, where farming remains the mainstay for women, emphasizing both the opportunities and vulnerabilities associated with an agriculture-based livelihood (Deep, 2023).Membership in cooperative societies provides women with access to collective resources, credit, and extension services. The result shows that 67% of respondents are members of cooperative societies, while 33% were not. These findings are in line with those of Adepoju *et al.,* (2015), which demonstrated that participation in cooperatives significantly, contribute to the empowerment and improved livelihoods of rural women, and it was revealed that 70.8% of women farmers belong to various cooperative societies, this is to help their needs as it arise.

Table 1: Socio-economic Characteristics of Women in the Distribution (n=140)

	Frequency	Percentage	Mean (Standard Deviation)
Age			
21 – 30	3	2.4	
31 – 40	14	10.0	
41 – 50	68	48.6	
51 and above	55	39.3	48.6(7.03)
Household Size			
1 – 5	97	69.3	
6 – 10	43	30.7	4.54(2.31)
Years of Experience			
1 – 5	29	20.7	
6 – 10	48	34.3	
11 – 15	29	20.7	
16 – 20	6	4.3	
21 and above	28	20.0	12.1(7.7)
Marital Status			
Single	6	4.3	
Married	104	74.3	
Widowed	20	14.3	
Divorced	10	7.1	
Level of Education			
No Formal Education	34	24	
Primary	1	0.6	
Secondary	98	70	
Tertiary	7	5.4	
Primary Occupation			
Farming	108	77.2	
Civil Service	10	7.1	
Trading	19	13.6	
Artisan	03	2.1	
Membership Status			
Member	94	67	
Not a Member	46	33	
Total	**140**	**100**	

Source: Field Survey, 2025

Specific Activities Performed by Women Farmers in the Study Area

Table 2 presents the frequency distribution of respondents' participation in various farming and non-farming livelihood activities. The analysis highlights the breadth of engagement in economic activities among women, with particular emphasis on how diversified livelihood strategies contribute to overall food security and household welfare. Participation in key agricultural activities such as land clearing (29.3%), planting (34.3%), weeding (30.0%), spraying (35.7%), and harvesting (45.0%) indicates moderate involvement of respondents in core farming practices. These activities form the foundation of household food production and reflect a consistent pattern of agricultural labor participation among rural women. Notably, storage (71.4%) and marketing (82.9%) recorded the highest participation rates among all agricultural activities.

Diversification through animal production also emerged as a key livelihood strategy. A significant proportion of respondents (59.3%) engaged in animal husbandry, while 42.9% were involved in livestock rearing. Findings further reveal meaningful participation in non-

agricultural economic activities. Business ventures accounted for a substantial 38.6% of respondents, demonstrating the growing reliance on off-farm income to support household needs. Other skilled occupations such as sewing (5.7%), teaching (5.7%), and nursing (2.9%) though limited in frequency reflect an emerging trend of income diversification through specialized services. Conversely, there was no recorded participation in handcraft activities (0.0%), which suggests limited access to training, tools, or market demand for such skills within the study area.

Participation in labour-intensive and informal economic activities was minimal. Laundry services accounted for 7.9% of respondents, while only 0.7% reported working as labourers. Thislow frequency, low-income jobs often reflect limited opportunities and economic vulnerability. While such activities may serve as fall-back options during periods of economic stress, they do not offer sustainable income or upward mobility, further underscoring the disparity in economic opportunities available to food-insecure women.The overall findings affirm that engagement in diverse farming and non-farming activities is closely associated with improved food security and economic well-being. The high levels of participation in marketing, storage, animal husbandry, and business suggest that households with multiple income sources and stronger links to agricultural value chains are better positioned to maintain stable food access.

Table 2: Specific Activities Performed by Women in the Study Area (n=140)

Activity	Frequency	Percentage (%)
Land Clearing	41	29.3%
Planting	48	34.3%
Weeding	42	30.0%
Spraying	50	35.7%
Harvesting	63	45.0%
Storage	100	71.4%
Marketing	116	82.9%
Animal Husbandry	83	59.3%
Sewing	8	5.7%
Business	54	38.6%
Handcraft	0	0.0%
Teaching	8	5.7%
Nursing	4	2.9%
Laundry	11	7.9%
Livestock	60	42.9%
Labourer	1	0.7%

Source: Field Survey, 2025 Multiple responses

Food Security Status of Respondents

The food security status of respondents, as shown in Table 3, indicates that a significant proportion of households (80%) were food secure, while 20% are food insecure. This suggests that Women household plays a crucial role in enhancing food security among households in the study area. The relatively low percentage (20%) of food-insecure households may be attributed to factors such as limited access to productive resources, low farm productivity, and inadequate access to credit facilities. Research has shown that food security is influenced by household income, farm size, and access to extension services (Abu & Soom, 2016). Households with smaller farm sizes or lower yields may struggle to produce enough food for consumption and market sales, which in turn affects their food security status (Giller, Delaune, Silva, van Wijk, Hammond, Descheemaeker & Andersson, 2021)

The results further estimated the food security indices for food-secure and food-insecure households to be 1.5 and 0.7, respectively. An index value of 1.5 for food-secure households indicates a surplus index of 0.5, signifying that

these households consumed more calories than the recommended level of 2260 Kcal. An index value of 0.7 for food insecure household indicate a shortfall index of 0.3, signifying that those household consumed less calories than the recommended level of 2260 Kcal. The shortfall/surplus index measures the extent of deviation from the food security line, further reflecting the nutritional sufficiency of food-secure households and nutritional insufficiency for food insecure households.

The average daily calorie consumption for food-secure households was 3469 Kcal, demonstrating an excess of 1209 Kcal above the recommended dietary allowance. On the other hand, food-insecure households, with a food security index of 0.7, revealed a shortage index of 0.3, indicating that these households need to increase their calorie intake to meet the recommended level. The average daily calorie consumption for food-insecure households was 1660 Kcal, reflecting a calorie deficit of 600 Kcal. The percentage distribution further highlights the disparity in food security among women households, with 80% being food secure and 20% food insecure. This result is consistent with the findings of Keku (2017), who reported that 66.0% of sampled farm households in Kaduna State were food secure, emphasizing the role of efficient agricultural production in ensuring household food security.

Table 3: Summary of Food Security Status Women

Variable in Average	
Food secured households	**112**
Food security index	1.5
Surplus index	0.5
Average household daily calorie consumption for food secured households	**3469**
Average calorie consumption in excess of recommended (2260Kcal)	1209
Percentage of food secured household	80%
Food insecure households	**28**
Food insecurity index	0.7
Shortage index	0.3
Average household daily calorie consumption (Kcal) for food insecure households	**1660**
Average calorie consumption in shortage of recommended (2260Kcal)	600
Percentage of food insecure household	20%

Source: Field Survey, 2025

Factors Influencing Women Food Security in the Study Area

The factors influencing food security of women in the study area were analyzed using binary logit regression model. The Pseudo R-square of 0.9047 implies that all the explanatory variables included in the model were able to explain 90.47% of the variation in food security status of the respondents. The log-likelihood ratio (LR) test was significant at one percent (1%) meaning that the model was adequate in explaining the probability of the effect of the explanatory variables on women food security status. The result of the model is given in the Table below and it was revealed that marital status, years spent in school, years of farming experience and total income were positively significant to the respondent's food security status; while age, household size and daily food consumption cost were inversely related to household food security index.

Age of household head is expected to have impact on his labour supply for food production. It is also expected to have impacts on ability to seek and obtain off-farm jobs and income, which could increase household income. The result shows that age (X_1) variable had negative effect on food security and was significant at 5%. The negative sign implies that a unit increase in age of women farmers will decrease the probability of being food secure by 0.7497905 units; this thus suggests that as farmers grow older, they tend to be less productive and thus less food secured. This is in agreement with Babatunde *et al.*, (2007), who reported that the older the

household heads, the lower the probability that the household would be food secure. Marital status (X_2), the variable was significant at 10% and had a positive relationship with women food security status which indicated that the probability of being food secure will increase with increasing number of household food security increases with married household heads. Specifically, married household heads increased the probability of being food secure by 320.496. The result align with the finding by Adepoju *et al.,* (2015) which shows that 67.5% of the respondents were married.

Number of years spent in school (X_4) was statistically significant at 10% and exhibited a positive relationship with food security status. This implies that, increase in the number of years spent in school increases the probability of a household becoming food secure by 17.60732. Educated farmers have the ability to adopt new innovation which will lead to an increase in production and translate to improving the food security status of women. This finding disagree with those of Adepoju *et al.,* (2015), which shows that had a Years of education negative and statistically significant at 10% level of significant on household food security; this implies that a unit increase in years of education of the women will reduce household food security by 0.013. Household size (X_6) of the respondents was statistically significant at 5% and exhibited a negative relationship with food security status. This implies that a unit increase in household size will decrease the probability of being food secure by 0.0002144. The result align with the finding by Adepoju *et al.,* (2015), which shows that household size is negative and significant at the level of 1% on household food security. Therefore, an increase in household size will leads to 0.061 decreases in food security. The coefficient for farmers experience was significant and positively related with the probability of being food secure at 5%. This signifies that for a unit increase in farming experience, the level of food security will increase by 578.3854. This implies that, an increase in the years of farming experience will increase the probability of a household becoming food secure. This is due to the fact that highly experienced farmers might have acquired a lot of knowledge on farming practices which they can leverage on to increase their productivity and in turn increases their food security status. This finding disagree with those of Adepoju *et al.,* (2015) which did not identify years of farming experience as a determinant of food security. Total income (X_8) is positive and significant at 5% level. This implies that a unit increase in the total income of the respondent will probably increase food security status by 117.102. Economically as the income of the farmers' increases, the farmer can expand its production or diversify his production to generate more income. Food daily consumption cost (X_9) is negative and significant at 5% level of probability. This implies that a unit increase daily food consumption cost of the household decrease the food security status of the respondent by 0.0317222 (Akosikumah *et al.,* 2025).

Table 4: Logistics Regression Result for Factor Influencing Women Food Security

Variables	Odds Ratio	Std. Err.	Z – Statistics	P>|z|
Age of women in a household (X_1)	.7497905**	.0989597	-2.18	0.029
Marital status (X_2)	320.496*	981.4181	1.88	0.060
Years spent in school (X_3)	17.60732*	26.63241	1.90	0.058
Membership of cooperative (X_4)	1.623091	1.005181	0.78	0.434
Primary Occupation (X_5)	1.482803	.6009568	0.97	0.331
Household size (X_6)	.0002144**	.0009164	-1.98	0.048
Years of Farming experience (X_7)	578.3854**	1652.327	2.23	0.026
Total income (X_8)	117.1026**	260.6646	2.14	0.032
Food daily consumption cost (X_9)	.0317222**	.0548016	-2.00	0.046
Constant	14.60218	99.41272	0.39	0.694
Number of obs	140			
LR $chi^2(9)$	169.72			
Prob > chi^2	0.0000			
Pseudo R^2	0.9047			

Source: Field survey, 2025 *** sign at 1%, ** sig at 5% and * sig at 10%

Relationship between Women's Roles and Food Security Status

The analysis demonstrates that women's economic activities play a crucial role in shaping household food security. While formal professions such as teaching and nursing contribute positively to food security due to stable incomes, informal occupations such as business ownership and livestock rearing require additional support to become viable sources of food security. The Chi-square test results presented in the Table below indicates that certain occupations performed by women have a statistically significant relationship with food security status. Specifically, handcraft ($p < 0.001$), teaching ($p = 0.0031$), nursing ($p = 0.0011$), and laundry ($p = 0.0268$) were found to have a significant association with food security. This suggests that women engaged in these professions have higher financial stability, which enhances their ability to secure food for their households (Galhena *et al.*, 2013).

Among these, handcraft demonstrated the strongest association with food security, with a Chi-square value of 83.314 and a p-value of less than 2.2e-16. This result indicates that women involved in handcraft-related work may experience varying income levels that directly impact their food security status. Similarly, teaching and nursing, which are formal employment sectors, provide stable incomes, thereby ensuring consistent food availability in their households.

Significant Roles: The significant association between food security and activities such as handcraft, teaching, nursing, and laundry suggests that these roles provide more stable and sufficient earnings. Teaching and nursing, being formal professions, offer steady salaries, benefits, and job security, which translate into better household food availability. The high significance of handcraft activities indicates that, while earnings may vary, women engaged in this field still achieve better food security than those in other informal occupations. Laundry services, which also showed a significant impact, might contribute positively due to their demand-driven nature, which ensures a relatively stable income.

Table 5: Chi-square Test Results for Women's Roles and Food Security

Role	Chi-Square Value	df	p-value	Significance (p<0.05)
Sewing	0.449	1	0.5027	Not Significant
Business	0.526	1	0.4684	Not Significant
Handcraft	83.314	1	<2.2e-16	Significant
Teaching	8.757	1	0.0031	Significant
Nursing	10.610	1	0.0011	Significant
Laundry	4.903	1	0.0268	Significant
Livestock	0.037	1	0.8480	Not Significant
Labourer	1.64E-30	1	1.0000	Not Significant

Source: Field Survey, 2025

Coping Strategies Adopted by Women in the study Area

The coping mechanisms adopted by women in food-insecure households reveal the depth and dynamics of their food-related vulnerabilities. The strategies were analyzed using a three-point Likert scale (Always = 3, Occasionally = 2, Never = 1), and ranked based on mean scores to determine their frequency of use as shown below.

The highest-ranked coping strategies include selling household assets (mean = 2.99), withdrawing children from school (mean = 2.98), migrating for food or work (mean = 2.96), begging for food (mean = 2.96), and gathering wild fruits (mean = 2.94). These are desperation-driven mechanisms, suggesting chronic food insecurity. Their high frequency highlights the intensity of economic distress that affected households face, where irreversible or high-risk options are the primary survival tools.

The second category includes reducing meals to once a day (mean = 2.69), eating less food (mean = 2.69), engaging in livestock farming (mean = 2.46), purchasing food on credit (mean = 2.32), reducing food quantity (mean = 2.29), reducing food preference (mean = 2.21), and substituting with cheaper foods (mean = 2.20). These are less damaging but indicative of

moderate food stress, often used as transitional or temporary measures (Ademola *et al.*, 2021).

Livestock farming appears as both a coping strategy and a potential income-generating activity.

The least adopted mechanisms were borrowing money for food (mean = 2.10), reducing children's food intake (mean = 1.67), and rationing food consumption (mean = 1.26). The low usage of these strategies could stem from multiple factors: Social stigma or moral constraints, especially regarding children's welfare; Inadequate credit access, particularly among women with limited financial autonomy or collateral; Lack of surplus food stocks, making rationing unfeasible for already deprived households.

Table 6: Coping Strategies Adopted by Women in Response to Food Insecurity

Coping Strategy	Always Used	Occasionally Used	Never Used	Mean Score	Rank
Selling assets	138	2	0	2.99	1st
Withdrawing children from school	138	1	1	2.98	2nd
Migration for work	134	6	0	2.96	3rd
Begging for food	134	6	0	2.96	4th
Consumption of wild fruits	132	7	1	2.94	5th
Reducing meal portion to once a day	102	32	6	2.69	6th
Eating less food	99	38	3	2.69	7th
Engaging in livestock farming	71	63	6	2.46	8th
Purchasing food on credit	52	88	5	2.32	9th
Reducing quantity of food	45	91	4	2.29	10th
Reducing food preference	36	98	6	2.21	11th
Substituting with less expensive foods	38	92	10	2.20	12th
Borrowing money for food	18	118	4	2.10	13th
Reducing food for children	20	54	66	1.67	14th
Rationing food consumption	7	22	111	1.26	15th

Source: Field Survey, 2025

Conclusion and Recommendations

This study has established that women play a critical role in household food security in Odigbo Local Government Area, Ondo State, Nigeria. Women are actively involved in various agricultural and food-related activities, including farming, food processing, storage, and marketing, all of which contribute significantly to food availability and accessibility. Despite their substantial contributions, the study found that a significant proportion of households (80%) were food secure, while only (20%) were food insecure.

Findings further indicate that factors such as income levels, access to farmland, credit facilities, and education play a crucial role in determining household food security. Women with higher incomes, larger farmland, and access to financial resources were more likely to be food-secure. Conversely, women with limited resources faced greater challenges in ensuring food availability, leading to food insecurity. Although women have developed coping strategies such as engaging in petty trading, wage labor, and borrowing food or money, these measures are often short-term solutions that do not address the root causes of food insecurity. Therefore, improving women's access to land, financial support, agricultural inputs, and education is essential for enhancing household food security in the region. The study Concludes that majority of women farmers were food secured and emphasized the need for targeted policies and interventions to empower women and improve their capacity to sustain food security in the study area. The following recommendations evolved from findings of this study.

i. Education and training programmes should be organized to help Women farmers specifically younger ones improve their skills and knowledge
ii. Mentorship programmes should be provided that will pair experienced farmers with less experience farmers as well as support programme for married

farmers, such as family counseling or financial planning services to increase farmers productivity

iii. Resources and support for financial planning should be provided to help farmers manage income, household budgets and expenses

iv. Health education and resources on nutrition and healthy eating should be offered to help farmers make informed food choices.

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