Table 2:The Extent of Utilization of the Post-harvest Management Practices in the area

Extent of utilization	Often	Sometimes	Seldom	Never	Total	Mean
Storage in wooden crates or woven cane baskets.	125 (500)	24 (72)	0(0) 0(0)	31 (31)	603	3.35
Storage on the floor.	26 (104)	87 (261)	36 (72)	31 (31)	468	2.60
Drying into low moisture content for storage	12 (48)	24 (72)	30 (60)	114 (114)	294	1.63
Cool storage under tree shades, thatch, among others	10(40)	40(120)	31(62)	99(99)	321	1.78
Cleaning/sorting/grading	21(84)	63(189)	0(0)	96(96)	369	2.05
Precooling after harvest	20(80)	39(117)	40(80)	81(81)	358	1.99
Calcium chloride application	26(104)	6(18)	17(34)	131(131)	287	1.59
Refrigeration storage processing into paste	20(80)	8(24)	4(8)	148(148)	260	1.44

Decision Rule of 2.5 and above (Numbers in parenthesis are weighted scores)

4.3 Effectiveness of utilization

Result Table 3 revealed that storage in wooden crates or woven cane baskets ($\bar{x}$=2.24), storage on the floor ($\bar{x}$=2.20), drying into low moisture content for storage ($\bar{x}$=2.10), and cool storage under tree shades, thatch, among others ($\bar{x}$=2.18). This finding confirms Asogwa *et al*. (2017) that the use of traditional postharvest practice is predominant in the study area, and was a source of income and employment to many rural farmers.

Table 3:Effectiveness in the Utilization of Post-harvest Management Practices of Tomatoes

Post-harvest practices	very effective	Effective	Not effective	Total	Mean
Storage in wooden crates or woven cane baskets.	76 (228)	71 (142)	33 (33)	403	2.24
Storage on the floor.	69 (207)	78 (156)	33 (33)	396	2.20
Drying into low moisture content for storage	61 (183)	76 (152)	43 (43)	378	2.10
Cool storage under tree shades, thatch, among others.	74 (222)	65 (130)	41 (41)	393	2.18
Cleaning/sorting/grading	37(111)	14(28)	129(129)	268	1.49
Precooling after harvest	31 (93)	20 (40)	129 (129)	262	1.46
Calcium Chloride (C_aCl_2) application.	35(105)	16(32)	129(129)	266	1.48
Refrigeration storage processing into paste.	23(69)	16(32)	141(141)	242	1.34

Decision Rule of 2.0 and above (Numbers in parenthesis are weighted scores)

Result of Z-test of difference in the extent of utilization of traditional and modern post-harvest management practices of tomatoes showed a significant difference in the utilization of traditional ($\bar{x}$= 2.7933) and modern ($\bar{x}$= 1.6071) postharvest practices, since Z-calculated of (3.208)*** was greater the than the Z-tabulated of (1.96), therefore, reject the null hypothesis and accept the alternative. This result shows that farmers utilized the traditional postharvest practices more than the modern practices. This could be due to not having a proper knowledge of modern practices. The finding is in tandem with Asogwa *et al*. (2017) that the use of traditional postharvest practices is predominant in the study area, and is a source of income and employment to many rural farmers.

Table 4: Z-test of Significant Difference in the Extent of Utilization of Post-Harvest Management Practices of Tomato

Type of management practices	N	mean	Standard deviation	Z-cal	Z-tab
Traditional	180	2.7933	1.13752	3.208***	1.96
Modern	180	1.6071	1.48206		

Result of Z-test of difference in the mean rating of effectiveness utilization of traditional and modern post-harvest management practices of tomatoes showed a significant difference in the effectiveness of traditional ($\bar{x}$=2.1792) and modern ($\bar{x}$=1.4361) utilization of postharvest management practices. Since Z-calculated of (3.413) was greater than the Z-tabulated, therefore, reject the null hypothesis which states that there is no difference in the mean rating of effectiveness utilization of traditional and modern post-harvest management practices of tomatoes and accept the alternative. The finding indicates that the traditional was more effective than the modern practices. This could be due to lack of proper information dissemination on post-harvest by extension agents. The finding conforms Chukwu (2013) that extension contact brings innovative information to farmers that in turns improve their yield thereby causing increasing in income which leads to improve standard of living.

Table 5: Z-test of Significant Difference in Effectiveness of Post-harvest Management Practices of Tomato

Effectiveness of post-harvest management practices of tomatoes	N	mean	Standard deviation	Z-cal	Z-tab
Traditional	180	2.1792	1.01588	3.413***	1.96
Modern	180	1.4361	1.20760		

5.0 Conclusion and Recommendations

The study revealed that traditional post-harvest management practices of tomatoes were the most effective and utilized post-harvest management practices of tomatoes in Benue State, Nigeria. It is recommended that government and technology developers should consolidate farmers' traditional or indigenous knowledge in developing technologies that are acceptable by farmers and government should build a processing factory where the tomatoes can be processed into paste to eliminate spoilage of the produce.

References.

Action Centre La Farm (ACF, 2014), Evaluation of semi qualitative de I'access

Adenuga, A.H., Muhammad-Lawal, A. and Rotimi, O.A. (2013). Economics and technical efficiency of dry season tomato production in selected areas in Kwara State, Nigeria. *Agris On-line Papers in Economics and Informatics,* 5(1):11-1 .

Akbudak, B., Akbudak, N., Seniz, V. and Eris, A. (2017). Sequential treatments of hot water and modified atmosphere packaging in cherry tomatoes. *Journal of Food Quality 30 (6): 896-910.*

Akinyele, D., (2017). Techno-economic design and performance analysis of Nano grid system for household in energy- poor village, *sustainable cities and society* 34(7), 335-357

Alam, T. and Goyal, G.K.(2017). Packaging and storage of tomato puree and paste Stewart Postharvest Review, 3(5): 1-8.

Anang. B.T., Zulkarnain Z.A. and Yusif, S. (2013) Production constraints and measures to enhance the competitiveness of the tomato industry in Wenchi Municipal District of Ghana. *American Journal of Experimental Agriculture 3(4): 824-838.*

Arah, I.k, Amaglo, H., Kumah, E.K. and Ofori, H. (2015). Preharvest and postharvest factors affecting the quality and shell life of harvested tomatoes: A mini review. *International Journal of Agronomy, 15 (4):14-26.*

Asoqwa, I.E., and Etim, O.E.,.(2017), Traditional budgeting in Today's Business Environment, *Journal of Applied finance and Banking, 7(3,), 111-120*

Beckles, D.M. (2012). Factors affecting the post-harvest soluble solids and sugar content of tomato fruits. Postharvest Biology and Technology, 63(1):129-140.

Burton, F. and Reimers, K. (2011). Tomato consumption and health. Emerging benefits *Amercian Journal of Lifestyle Medicine*.15(8) 2-14

Chukwu, G., (2013), Pedologists' approach to Agro-technology transfer, case study of Ikwuano, Abia State, Nigeria, *Academia Journal*

Genanew, T. (2013). Effect of Postharvest treatment on storage behavior and quality of toward fruits. *World Journal of Agricultural Sciences, 9 (1): 29-37.*

JOURNAL OF AGRICULTURAL ECONOMICS, EXTENSION & SCIENCES
Official Journal of the College of Agricultural Economics and Extension
www.jaees.org
www.uam.edu.ng
Jaees Vol. 12 No.1 2025, Page 274-290
ISSN (Print) 2545-5179, ISSN (Online) 2714-5018

ANALYSIS OF FOOD SECURITY STATUS AMONG FARMING HOUSEHOLDS IN OGBADIBO LOCAL GOVERNMENT AREA OF BENUE STATE, NIGERIA

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Abstract

The study analyzed food security status among farming households in Ogbadibo Local Government Area of Benue State, Nigeria. A multi-stage sampling technique was employed to select 100 respondents for the study. Data were collected through structured questionnaire and analyzed using descriptive statistics and logit regression. The result of socio-economic characteristics revealed that majority (67.0%) of the respondents were males, 64.1% were married, with mean age and household size of 35years and 4 persons, respectively. Majority (82.0%) of the respondents had farming experience of between 28 to 38 years. About 46.0% of the respondents were primarily civil servants as their major occupation, with mean annual income of ₦196,526.30. The result of the food security status revealed that,47.0% of the respondents consumed twice per day, 46.0% sometimes consumed meal with fish, egg or meat, 44.0% lack stable meal, while 53.0% sometimes consumed meal with vegetables. The result of logit regression revealed income (P<0.05), farming experience (P<0,05) and household size (P<0.01) were the significant factors influencing food security status of rural households. The result further revealed that, major coping strategies used by farming household against food insecurity were improvement in literacy (4.10), extension visits (3.76), sourcing for credit (3.57) and family planning (3.54). It was concluded that variables such as income, farming experience and household size significantly affected food security status of the respondents. It was recommended that Government should subsidize farming inputs, such as seeds and fertilizers and provide support for farmers to adopt climate-resilient farming practices.

Keywords: Analysis, farming, households, food, security status

1.0 Introduction

Recently, focus has been on food security and poverty eradication the world over, it is the first target of Millennium Development Goal among others. In the 1996 world food summit was to halve the proportion of people who suffered from extreme hunger between 1990 and 2015. But little or no improvement and change has been recorded of people who suffered from extreme hunger. Food insecurity is often rooted in poverty, a major obstacle and has a long-term effect on the ability of families, communities and countries to develop and prosper. Today, more than 800 million people across the globe go to bed hungry every night, most of them small-holder farmers who depend on agriculture to make a living and feed their families. Despite a fast rise in urban slums over the last decade, nearly 75% of poor people in developing countries live in rural areas, consume a starchier diet and are more likely to engage in extreme coping strategies (like going a whole day without food) deal with food shortages (Biam and Tervashima,2020).

The main goal of food security is for individuals to be able to have access to adequate food supply at all times, and to be able to utilize the food to meet the body needs. World Bank (2001) identified three pillars depicting food security. These are food availability, food accessibility, and food utilization. This means that a nation whose food production level is unable to meet these criteria is said to be food insecure. Food is necessary for life processes as such it is fundamental for its availability to sustain life and for development of a nation. Food security is therefore defined as a situation when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for a healthy and active life" (Food and Agriculture Organisation, 1996) while food insecurity on the other hand, is defined as a situation of " limited or uncertain availability of nutritionally adequate and safe foods or limited or uncertain ability to acquire acceptable foods is socially acceptable way. According to Helen (2002) food security maintains political stability and ensures peaceful coexistence among people while food insecurity results in poor health and reduced performance of both children and adults.

It is quite surprising that farming households are mostly affected in terms of food insecurity and poverty in Nigeria especially the smallholder farming households though the rest of the population depends on their production. According to Cruz (2010) and Valdés *et al.* (2010), most smallholder farmers in the world are food insecured and depends on land as their primary source of livelihoods. Three out of every four poor people live in rural areas and depend on agriculture either directly or indirectly for their Livelihood (World Bank, 2008). Food security of farming households is of serious concern if Nigeria wants to consolidate her macroeconomic gains because; farmers who are vulnerable to food and nutritional insecurity have limited capacity to respond to agricultural programmes. In Nigeria, the issue of food insecurity is of a major concern. This is particularly more in the northern Sudan Savannah and Sahel zones which have the highest prevalence of under nutrition (FAO, 1998). Fakiyesi (2001) estimated that about 66% of Nigeria's populations live below poverty line as portrayed by their level of food security. Fakiyesi (2001) also maintained that Nigeria's domestic food supply has been far short of the population. This could result in reduced consumption among the poor. Consequently, these categories of persons belong to the low-income groups and are therefore most vulnerable to food insecurity.

Several studies have contributed to the understanding of food security in Nigeria. For instance, Babatunde and Qaim (2010) investigated the impact of off-farm income on food security and nutrition in Nigeria, highlighting the importance of diversified income sources. Omotesho et al. (2006) examined the food security situation of rural households in Kwara State, focusing on the role of socioeconomic factors. Additionally, Matemilola and Elegbede (2017) explored the challenges of food security in Nigeria, emphasizing the need for sustainable agricultural practices. However, these studies have often focused on specific aspects or limited geographical areas, leaving a gap in our understanding of the complex interplay of factors affecting food security across rural Nigeria. This research aims to address this gap by providing a comprehensive analysis of food security status among rural households in Ogbadibo Local Government area of Benue State, Nigeria

2.0 Objectives of the Study

The broad objective of this study was to analyze food security status of farming households in Ogbadibo Local Government Area of Benue State, Nigeria. The specific objectives were to:

i. describe the socio-economic characteristics of farming households;
ii. determine the food security status of the rural farming households
iii. examine the determinants of household food security among rural farming households;
iv. identify the coping strategies used by farming Households to combat food insecurity

3.0 Methodology

3.1 The Study Area

The study was conducted in Ogbadibo Local Government Area of Benue State Nigeria. The LGA derives its name from a stream called Ogbadibo in the area and it headquarter is at Otukpa. The LGA is located on latitude 7.25° N and longitude approximately 8.33° E. It has a land mass of about 550sqkm and population of 90,000 people. The Local Government Area has three districts; Owukpa, Orokam and Otukpa. It shares boundaries with different Local Government Areas: Udenu and Igbo-Eze North Local Government Areas of Anambra State to the West, Okpokwu Local Government Area to the East, Olamaboro Local Government Area of Kogi State to the West and Isi-Uzo Local Government Area to the south.

The people of the Ogbadibo Local Government Area predominantly speak Idoma language. The topography of the area features a mix of hilly terrains and valleys, which provides a varied landscape suitable for agriculture and habitation. The land is primarily used for farming, with many residents engaged in subsistence agriculture. Ogbadibo LGA experiences a tropical climate, characterized by distinct wet and dry seasons. The wet season typically lasts from May to October, with heavy rainfall that supports agricultural activities, while the dry season runs from November to April, during which temperatures can be relatively high. The average temperatures generally range from 20°C to 30°C (68°F to 86°F), with variations depending on the time of year. Ogbadibo's geographic and climatic conditions make it suitable for agriculture, which is a major part of the local economy.

The combination of fertile land and a tropical climate supports the cultivation of various crops, contributing to the livelihoods of the residents. The local government area is rich with mineral deposits such as coal and kaolin. The predominant occupation of the area is farming and their agricultural produce includes cassava, millet, palm wine, yam, maize and palm oil among others in commercial quantities and they also farm beniseed, bambara nut, melon and also rearing of poultry, sheep and goats.

A multi-stage sampling technique was employed to select respondents for the study. First stage involved purposive sampling of 2 communities each from the three districts: Olachagbaha and Umarichi from Otukpa district, Ipole Oko and Ugbogidi from Orokam and Eupi and Ukeke from Owukpa district. Finally, a proportion allocation of 0.15 was used to select sample size from sample frame giving a total sample size of 100 respondents for the study.

Data were collected using primary sources. The instrument used for data collection was a structured questionnaire. The questionnaire was given to the respondents and guided by the enumerator so as to give correct response. Data collected were analyzed using both descriptive and inferential statistics. Descriptive statistics such as frequencies, percentages and mean were used to analyze objective (i) and (iv). Objective (ii) and (iii) were achieved using logit regression analysis

The logit model was used to estimate factors that determine food security among farming households. The implicit form of the logit model is specified as:

$Z_i = \beta_o + \beta_i x_{ik} + u_i$……..……………………………………………… (2)

The explicit form of the model is specified as:

$Z_i = \text{In}P_i$ …………...………………………….………………………(3)

$1 – P_i = \beta_o + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5$ ……… $+ \beta_9 x_9 + u_i$…………. (4)

where:

Z_i = food security status (dummy variable, 1 = household is food secure, 0 = otherwise)

β_o = constant term

β_n = parameters to be estimated

$X_{n=}$the set of the explanatory variable which are

$X_{1=}$major occupation

X_2=household Size

X_3=number of years spent in school

X_4= farm size in hectares

X_5= farm experience in years

X_6= age in years

X_7= gender (Male 0, female 1)

X_8=income (N) per year

X_9=quantity of food from own production (output)in kg
U_i=random disturbance term

4.0 Results and Discussion

4.1 Socioeconomic Characteristics of the Respondents

Table 1 shows that majority (67%) of the respondents were males, while 33% were females. This means that majority of respondents were male. This result agrees with Munonye *et al.,* (2023) that cultural and religious inclinations confer household headship on males and most importantly the responsibility of sustaining the household.

Table 1 further reveals that 44.21% of the respondents were aged between 29 and 39 years, 32.63% were less than or equal to 29 years, 12.63% were between 40 and 50 years, while 10.53% were aged between 51 and 60 years. The mean age of the respondents was 34.64 years. This indicates that most of the household heads were in their middle ages, which is an active and productive stage of life. This result is similar to the findings of Tolulope *et al.* (2017) that the mean age of respondents was 43 years.

On marital status, majority (64.0%) of the respondents were married, 28.0% were single, 8.0% were widows and widowers. This implied that most (64.0%) of the respondents were married. Married people who have large family diversify their source of livelihood in order to meet up with family needs to enhance food security. The result is similar to findings of Tolupe *et al.* (2017) who found that 70.3% of rural households were married.

The result further reveals that respondents acquired education up to senior secondary (45.0%), 27.0% had no education, 10.0% were only up to primary school level and 18.0% acquired tertiary education. This implies that the educational status of the respondents was moderate. Education has shown to be a factor which can affect the food security and poverty status of the respondents. This agrees with the findings of Munonye *et al*. (2023). Most (91.0%) of the respondents had household size of 5 to 6 persons, 8.0% had 3 to 4 people, while 1.0% of the respondents had more than 1 to 2 members in their households. The mean household size was 4 persons. This implies that farmers had large households, which could supply farm labour. This result is in line with the findings of Mukaila *et al*. (2020) that large households had enough members to use as family labour.

Result in Table 1 also reveals that 44.0% of the respondents had farming experience of 28 to 38 years, 30.0% had 6 to 16 years, of experience in farming, 16.0% had farming experience of 17 to 27 years and 10.0% had at least 5 years of experience in farming. The mean years of experience was 11.8. This implies that household heads were experienced farmers. This result is in line with findings of Munonye *et al.* (2023) that household heads are quite experienced farmers. About 46.0% of the respondents were in the civil service, 30.0% were into other occupation (petty trading, teaching profession, nurse and skills). This shows that people in the civil service were the major occupation of the respondents.

On annual income, Table 1 shows that 31.52% of the respondents had annual income of between N250,001 to N350,000, 27.17% earned between N50,001 to N150,000 annually, 19.57% had annual income of less than or equal to N50,000, 8.70% earned between N150,001 to N250,000 annually, 6.0% earned between N350,001 to N450,000 annually, 2.17% earned N450,001 to N550,000 annually: while 4.0% earned at least N550,001 annually. The mean annual income of the respondents stood at N196,526.00. This implied that most of the respondents were moderate income earners. Households with higher incomes were more likely to have better access to nutritious food, highlighting the importance of economic empowerment in improving food security. This result is in line with the findings of Adewale and Adebayo (2017). On membership of association, most (95.0%) of the respondents belong to farmers' cooperative/association while 5.0% do not belong to any association.

Table 1: Socio-economic Characteristics of the Respondents(n=100)

Variables	Frequency	Percentage	Mean
Sex			
Male	67	67.00	
Female	33	33.00	
Age (years)			
>29	32.63	32.63	
29-39	42	44.21	34.64 years
40-50	12	12.63	
51-60	10	10.53	
Education level non			
No education	27	27.00	
Primary	10	10.00	5.8 years
Secondary	45	45.00	
Tertiary	18	18.00	
Marital Status			
Single	28	28.00	
Married	64	64.00	
Divorced	8	8.00	
Household size			
1-2	1	1.00	
3-4	8	8.00	4 Persons
5-6	91	91.00	
Farming Experience (years)			
>5	10	10.00	
6-16	30	30.00	
17-27	16	16.00	11.8 years
28-38	44	44.00	
Major Occupation			
Farming	24	24.00	
Civil servant	46	46.00	
Others	30	30.00	
Annual income			
>50000	18	19.57	
50001-150000	25	27.17	
150001-250000	8	8.70	
250001-350000	29	31.52	? 196526.3
350001-450000	6	6.52	
4500001-550000	2	2.17	
Above 550000	4	4.35	

Source: Field survey, (2024).

4.2 Food Security Status of Farmers

Table 2 further reveals that 46.0% of the respondents sometimes consumed their meal with fish, eggs or meat, 40.0% consumed their meal without fish, eggs or meat, while 14.0% always consumed their meal with fish, eggs or meat. The result revealed that about 13% of the respondents had stable foods including rice, maize and wheat, 43% sometimes had stable foods, while 44% of the respondents had no stable foods in their residence. The results revealed that 18% of the respondents always had meal with vegetables, 52.0% of the respondents sometimes had meal with vegetables, while 30.0% had meal intake without vegetables. This result is consistent with the findings of Okonkwo *et al.* (2018) that significant proportion of households experienced moderate to severe food insecurity,

Table 2: Food Security Status of the Respondents (n=100)

Variables	Frequency	Percentage
Enough Food	90	90
Lack of food	67	67
Mean time		
Once	12	12
Twice	47	47
Thrice	41	41
Meal with fish, egg or meat		
Yes always	14	14
Sometimes	46	46
No	40	40
Stable food (rice, maize, wheat)		
Yes always	13	13
Sometimes	43	43
No	44	44
Meal with vegetables		
Yes always	18	18
Sometimes	52	52
No	30	30

Source: Field survey (2024).

4.3 Determinants of Household Food Security among Rural Farming Households

Table 3 revealed that 3 independent variables contributed to food security status of the respondents. The log likelihood value was -46.1057; and the associated chi-square value was significant at 1% level of probability. This implies that model can be relied upon to explain probability of food security. The result reveals that coefficient of income (1.0761) was positive and significant at 5% probability level. The implication is that increase in income will increase food security status by 1.0761 units. This is not surprising as increased income is expected to increase the level of food availability thereby leading to improve food security. This result is consistent with the findings of Akinola *et al.* (2018) that a positive association between higher household income and improved food security outcomes, underscoring the importance of economic empowerment in addressing food insecurity.

The coefficient of farming experience (0.0577) was positive and significant at 5% level. The implication is that increase in farming experience will increase food security status by 0.0577 units. This result is consistent with the findings of Abdulkadir and Ibrahim (2020). The result further showed that the coefficient of household size (-1.3915) was negative and significant at 1% probability level. This implies that increase in household size would decrease food security status by -1.3915 units. This could be due to the fact that as household increases in size without corresponding increase in food production, the average food consumption per each household member may decrease leading to low calorie intake, hence decrease food security status. This result is in line with the findings of Bello *et al.* (2017) that larger households faced greater challenges in meeting food needs due to resource constraints and higher food demand, suggesting and the need for tailored interventions for larger families.

Table 3: Determinants of Household Food Security among Rural Farming Household (n=100)

Determinants	Coefficient	Standard Error	Z	P>|Z|
Income	1.0761**	0.0000	0.83	0.041
Sex	0.0320	0.5294	0.0594	0.594
Age	0.0217	0.0271	0.94	0.347
Household size	-1.3915***	0.0599	-2.63	0.009
Farm experience	0.0577**	0.0231	2.13	0.033
Farm size	0.1476	0.1036	1.43	0.154
Log likelihood	-46.1057			
Prob> chi^2	0.0055			
Constant	-2.8243	1.3801	-2.05	0.041

Source: field survey, 2024, ***, ** and * represent significant at 1%, 5% and 10%, respectively.

4.5 Coping Strategies used against Food Insecurity

Table 4 shows the major coping strategies used by farming household against food insecurity. The result indicated that improvement in literacy (4.10), extension visits (3.76), sourcing for credit (3.57) and family planning (3.54) were some major coping strategies used against food insecurity in the study area. This implies that improvement in literacy was the major coping strategy against food insecurity in the study area. Crop rotation (3.48) and irrigation management (3.32) were moderate coping strategies. This implies that crop rotation practice helps maintain soil fertility and reduces crop failure risks and irrigation management helps households adapt to climate variability. Diversification of income (2.87) and formation of cooperative societies (2.94) were less effective coping strategies. This implies that despite its potential benefits, diversification of income was not widely adopted among the surveyed households and food preservation techniques were not widely used, possibly due to limited knowledge or resources. Cooperative societies were not as effective in helping households cope with food insecurity, possibly due to management or structural issues. This is in line with the findings of Ellis (2000) who noted livelihood diversification as a coping strategy to improve standard of living.

Table 4: Coping Strategies Used against Food Insecurity (n=100)

Strategies	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Mean
Sourcing for credit	44(44%)	21(21%)	7(7%)	4(4%)	24(24%)	3.57
Family planning practice	44(44%)	19(19%)	4(4%)	13(13%)	20(20%)	3.54
Improvement in literacy	44(44%)	30(30%)	18(18%)	8(8%)	0(0%)	4.10
Extension visits	44(44%)	27(27%)	8(8%)	3(3%)	18(18%)	3.76
Irrigation management	28(28%)	21(21%)	25(25%)	7(7%)	19(19%)	3.32
Food preservation	16(16%)	21(21%)	19(19%)	24(24%)	20(20%)	2.89
Diversification of income	16(16%)	19(19%)	28(28%)	10(10%)	27(27%)	2.87
Crop rotation	16(16%)	29(29%)	45(45%)	7(7%)	3(3%)	3.48
Formation of cooperative societies	16(16%)	33(33%)	14(14%)	3(3%)	34(34%)	2.94

Source: Field survey, 2024. The values in the parentheses (%) are the percentages.

5.0 Conclusion and Recommendations

5.1 Conclusion

Based on the findings of the study, it was concluded that income, farming experience and household size were the determinants of food security status among farming households. The major coping strategies used by farming household against food insecurity were improvement in literacy, extension visits, sourcing for credit and family planning.

5.2 Recommendations

Based on the findings of this study, the following recommendations were made:

i. Policy makers should implement initiatives to increase household income, such as vocational training programs and access to microfinance, to improve food security among rural farming households.

ii. Infrastructure development, such as storage facilities and irrigation systems, should be prioritized to address price fluctuations and climate change constraints.

iii. Stakeholders should establish and strengthen farmers' cooperative societies to enhance market linkages, improve access to credit, and promote collective bargaining power among rural farming

References

290Abur, C. C. (2014). Assessment of food security status of rural farming households in Human Local Government Area of Benue State, Nigeria. *International Journal of Research in Humanities and Social Studies*, 1:34-42

Abdullahi, R .(2018). Household Size and Food Stability in Rural Nigeria. *Development Studies Quarterly,* 6(4): 75-88.

Adebayo, B., & Ojo, S. (2019). Food Availability and Food Security in Rural Nigeria. *Food Policy Perspectives,* 15(3):78-92.

Agarwal, B. (1991). Social security and the family: Coping with seasonality and calamity in rural India. In E. Ahmad, J. Drèze, J. Hills, & A. Sen (Eds.), Social security in developing countries (pp. 171-244). Oxford University Press.

Agrawal, A., & Perrin, N. (2009). Climate adaptation, local institutions and rural livelihoods. In W. N. Adger, I. Lorenzoni, & K. L. O'Brien (Eds.), Adapting to climate change: Thresholds, values, governance (pp. 350-367). Cambridge University Press.

Akande, S. (2018). Poverty and food security among rural farming households in Nigeria. *Journal of Agricultural Economics*, 12(3), 45-60.

Aker, J. C. (2011). Dial "A" for agriculture: A review of information and communication technologies for agricultural extension in developing countries. *Agricultural Economics*, 42(6): 631-647.

Aker, J. C., & Mbiti, I. M. (2010). Mobile phones and economic development in Africa. *Journal of Economic Perspectives,* 24(3):207-232.

Babatunde, R. O., & Qaim, M. (2010). Impact of off-farm income on food security and nutrition in Nigeria. *Food Policy*, 35(4), 303-311.)

Biam, CK, and Tavershima, T. (2020). Food security status of rural farming household in Benue State, Nigeria. *African Journal of Food and Agriculture*, 2(2): 15677-15694.

Ellis, F. (2000). Rural livelihoods and diversity in developing countries. Oxford University Press.

FAO. (2019). The State of Food Security and Nutrition in the World 2019. FAO, IFAD, UNICEF, WFP, WHO.

Food and Agriculture Organization (FAO). (2020). The State of Food Security and Nutrition in the World 2020. FAO.

Grivetti, L. E., & Ogle, B. M. (2000). Value of traditional foods in meeting macro- and micronutrient needs: The wild plant connection. *Nutrition Research Reviews*, 13(1): 31-46.

Hadley, C., Mulder, M. B., & Fitzherbert, E. (2007). Seasonal food insecurity and perceived social support in rural Tanzania. *Public Health Nutrition*, 10(6): 544-551.

Ibrahim,A, (2023). Impact of Food Security Interventions on Nutritional Outcomes in Rural Nigeria. *Food Policy Research Review*, 8(2): 110-125.

Ibrahim, M., & Aliyu, A. (2020). Utilization of Food Among Rural Farming Households in Nigeria: Implications for Food Security. *Nutrition and Health Research Journal*, 12(4):110-125

Matemilola, S., & Elegbede, I. (2017). The challenges of food security in Nigeria. *Open Access Library Journal,* 4(12):1-22.)

Okonkwo, U. (2018). Food Security Status of Rural Farming Households in Nigeria: A Quantitative Survey. *Journal of Agriculture and Rural Development*, 10(2): 45-58

Omotesho, O. A., Adewumi, M. O., & Fadimula, K. S. (2006). Food security and poverty of the rural households in Kwara State, Nigeria. AAAE Conference Proceedings, 571-575.)

Tolulope Olayemi Oyekale, Adedayo Oladipo Ayegbokiki, and Temitayo Yemisi Adebayo (2017). Analysis of Rural Households' Food Security Status in Ogun State, Nigeria. *Journal of Agribusiness and Rural Development*. Vol. 1(43): 2017,

World Bank. (n.d.). What is Food Security? There are Four Dimensions. Retrieved from https://www.worldbank.org/en/topic/agriculture/brief/food-security-update/what-is-food-security