Proceedings of the Annual Conference of the Agricultural Extension Society of Nigeria
Number: Thirty-First Annual Conference
Theme: Strengthening the Agricultural Extension Innovation Systems for Greater Development Impacts
Date: 12th to 15th April 2026
Venue: Michael Okpara University of Agriculture, Umudike, Abia State, Nigeria
ISSN: 1595 – 1421.
Website: https://info@ajol.org,
Email: agricultural.extension.nigeria@gmail.com; editorinchief@aesonnigeria.org

Coping Strategies against Food Insecurity among Rural Women in Kwara State, Nigeria

https://dx.doi.org/10.4314/jae.v31i1.38S

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Abstract

The study assessed the coping strategies used by rural women against food insecurity in Kwara State, Nigeria. A three-stage random sampling technique was used to select 120 women. Data were collected using a structured interview schedule and analysed using percentages, means, standard deviations, and multiple regression. Findings revealed that a rise in food prices ($\bar{x}$ = 4.75), low income/lack of money ($\bar{x}$ = 4.72), and large family size ($\bar{x}$ = 4.28) were the major perceived causes of food insecurity. The leading coping strategies adopted by rural women included proper storage of food after harvest ($\bar{x}$ = 3.52), purchase of cheaper and less preferred foods ($\bar{x}$ = 3.52), and reduction in food consumption during periods of scarcity ($\bar{x}$ = 3.33). Formal education (β = 0.12, t = 2.78) and annual income (β = 0.10, t = 2.82) significantly influenced coping strategies against food insecurity. The study concludes that rural women primarily rely on food preservation, dietary adjustments, and consumption-reduction strategies to cope with food insecurity. The study recommends that the government, through extension, should strengthen food storage practices, improve income-earning opportunities, and implement food price stabilisation measures to enhance household food security among rural women.

Keywords: Food insecurity, coping strategies, rural women

Introduction

Food is one of the most fundamental necessities of human life and occupies a central position among household needs. Its availability in both quantity and quality plays a significant role in determining the well-being and nutritional status of household members (Asaki et al.,2024). The survival, health, and development of human populations are fundamentally dependent on consistent access to sufficient, safe, and nutritious food, which acts as the primary fuel for bodily maintenance, energy production, and cognitive development. In recent years, academic research has reaffirmed that food security is not merely about caloric intake but also about the availability of nutrient-dense, diverse diets that prevent malnutrition and non-communicable diseases (Pereira, 2020).

Food security has been widely conceptualized as a situation in which all people, at all times, have both physical and economic access to sufficient, safe, and nutritious food that meets their dietary needs for an active and healthy life (Aduteye, 2022). A household is

considered food secure when food is available, accessible, affordable, properly utilized, and stable over time. When these conditions are absent or threatened, individuals may experience chronic or temporary inability to meet dietary needs, often leading to detrimental physical, mental, and social consequences (Kumar, 2023). Thus, the absence of food security leads directly to food insecurity, a growing global concern.

Food insecurity is defined as a household-level economic and social condition of limited or uncertain access to adequate, nutritious food, directly resulting in reduced food intake or altered eating patterns (Abdullahi et al., 2023). The consequences of food insecurity extend beyond hunger, encompassing a wide range of health and social challenges. Among children, food insecurity is associated with poor fetal development, iron deficiency anemia, impaired cognitive development, poor academic performance, and increased risk of mental health problems. For adults, food insecurity has been linked to higher risks of obesity, diabetes, and cardiovascular diseases (Sun et al., 2020). These widespread consequences highlight the severity of food insecurity and underscore its persistence as a major global development challenge.

Globally, the prevalence of food insecurity remains high, though recent reports show some signs of stabilization or modest improvement in certain indicators after the sharp rises during the COVID-19 pandemic (Alabi, 2023). The tension between rapid population growth and constrained food production capacity is a critical global challenge, with demand projected to increase significantly by 2050, this, coupled with environmental stressors and resource scarcity, threatens global food security (MONDAL, 2021). Rural populations are particularly vulnerable, as most people affected by hunger live in rural areas and depend heavily on agriculture for their livelihoods. However, rural food production is often limited by poor soil fertility, inadequate access to agricultural inputs, and limited financial resources for investment in improved farming practices (Bello, 2024). These challenges make it necessary for households, especially in rural areas, to adopt various mechanisms to cope with food shortages.

In response to food shortages and limited access to adequate food, households often adopt various coping strategies. Coping strategies refer to the mechanisms or actions taken by individuals or households to manage situations in which they are unable to access sufficient food (Byker Shanks et al., 2022). Households facing food unavailability (insecurity) employ a variety of adaptive behaviors to manage risks, which can be categorized into food-based and non-food-based mechanisms. These strategies often serve as a hierarchy of severity, where households transition from dietary changes to more extreme measures (e.g., asset liquidation) as vulnerability increases (Ulimwengu, 2025). Rural households commonly cope with food insecurity through food rationing, consumption of cheaper and less preferred foods, reduced dietary quality, meal skipping, and disposal of household assets to meet food needs (Byker Shanks et al., 2022). In some cases, households may also cultivate fast-growing crops as a short-term response to food shortages (Heck et al., 2020). However, the choice and extent of these strategies are not uniform across households.

The selection and intensity of coping strategies vary across households and are often influenced by socio-economic conditions and the severity of food insecurity. Greater exposure to food shortages is associated with increased reliance on diverse coping mechanisms aimed at protecting household food availability and consumption (Adetuye, 2022). Although these strategies may provide temporary relief, they rarely address the underlying causes of food insecurity, thereby underscoring the need for more comprehensive and sustainable solutions (Fanzo, 2025). This situation brings particular

attention to vulnerable groups, especially rural women, who play a central role in household food systems.

While coping strategies against food insecurity have been reported in previous studies, limited empirical evidence exists on the coping responses of rural women in Kwara State and the socioeconomic factors influencing their adoption. This study therefore provides context-specific evidence from rural women in the study area. Despite their significant contributions, rural women often face numerous constraints, including limited access to productive resources, land, credit, and agricultural technologies. These constraints increase their vulnerability to food insecurity and influence the coping mechanisms they adopt. Therefore, examining the coping strategies used by rural women provides valuable insights into the socio-economic realities of food insecurity and helps inform policies to improve household food security and rural livelihoods.

This study therefore examines the coping strategies used by rural women in Kwara State, Nigeria, to address food insecurity. The specific objectives were to:

i. assess their knowledge of food insecurity,

ii. identify perceived causes of food insecurity,

iii. Examine the coping strategies engaged by the rural women.

The study hypothesised that selected socio-economic characteristics of respondents have no significant influence on coping strategies against food insecurity

Methodology

The study was carried out in Kwara State, Nigeria. The state is located between latitudes 74°5 north and 93°7 north and longitudes 2°30 east and 6°25 east, with a total land area of 3,68,500 hectares and 247,975 farm families, most of whom live in rural areas (National Bureau of Statistics [NBS], 2022). Descriptive statistics including frequency counts, percentages, mean and standard deviation were used to analyze respondents' socio-economic characteristics, knowledge of food insecurity, perceived causes, and coping strategies against food insecurity. Multiple linear regression analysis was used to determine the socioeconomic factors influencing coping strategies against food insecurity. A three-stage random sampling technique was used for the study. The first stage involved the random selection of 25% of the sixteen (16) Local Government Areas (LGAs) in Kwara State, resulting in four LGAs: Moro, Ilorin East, Irepodun, and Oke-Ero. The second stage involved the random selection of two rural communities from the list of rural communities in each selected LGA, for a total of eight communities: Oke-Oyi, Alalubosa, Arandun, Idofian, Illofa, Ayedun, Molete, and Bode-Saadu. The third stage involved the random selection of 15 rural women from the sampling frame of identified rural women in each selected community, giving a total sample size of 120 rural women. Data for the study were obtained through a well-structured interview schedule.

Multiple linear regression analysis was used to determine socioeconomic factors influencing coping strategies against food insecurity.

The regression model is specified as:

$$Y=\beta_0+\beta_1X_1+\beta_2X_2+\beta_3X_3+\cdots+\beta_7X_7+e$$

Where:

Y = Coping strategies against food insecurity

$\mathbf{X_1}$ = Age in years
$\mathbf{X_2}$ = Marital status (1 = married, 0 = otherwise)
$\mathbf{X_3}$ = Years of formal education
$\mathbf{X_4}$ = Household size (number of persons)
$\mathbf{X_5}$ = Farming experience (years)
$\mathbf{X_6}$ = Farm size (hectares)
$\mathbf{X_7}$ = Annual income (₦)
β_0 = Constant term
$\beta_1 – \beta_7$ = Regression coefficients
e = Error term

Results and Discussion

Knowledge Level of Rural Women about Food Insecurity

Table 1 reveals the information on respondents' knowledge of food insecurity. Findings reveal that all (100%) the respondents had the knowledge that food insecurity is when you don't have sufficient money to buy enough food, skipping meals because of lack of food, eating food of less quality because you cannot afford better food, and relying only on one type of food due to financial difficulties. About 99% reported that when you eat less than expected, you are considered food insecure. Other knowledge variables and their percentage scores are listed as follow: worrying about where your next meal will come from is food insecurity (98.3%), food insecurity can lead to poor school performance in children due to lack of energy (99.2%), consuming only staple foods like rice or maize without proteins and vegetables is food insecurity (96.7%), food insecurity can lead to under nutrition and obesity due to reliance on low cost, high calorie foods (98.3%) and relying strictly on processed food is a sign of food insecurity (66.7%). Findings imply that rural women in the study area have good understanding of food insecurity and its implication on health and education of their children. Good knowledge of food insecurity is expected to favourably influence use of coping strategies when the situation arises in their households. According to report by Kemboi (2024), the number of coping strategies was significantly higher in the food-insecure group of women.

Table 1: Knowledge of food insecurity by rural women

Knowledge items	Yes
Eating less than expected as an indication of food insecurity	99.2
Food insecurity involves insufficient money to purchase adequate food	100
Skipping meals due to lack of food is an indication of food insecurity	100
Worrying about the next meal is an indication of food insecurity	98.3
Eating lower quality food due to inability to afford better food indicates food insecurity	100
Food insecurity can lead to poor school performance in children due to inadequate energy intake	99.2
Reliance on one type of food due to financial difficulties indicates food insecurity	100
Consuming only staple foods such as rice or maize without proteins and vegetables indicates food insecurity	96.7
Food insecurity can lead to undernutrition and obesity due to dependence on low-cost, high-calorie foods	98.3
Reliance on processed foods is an indication of food insecurity	66.7

Source: Field survey, 2025

Causes of Food Insecurity

Respondents' perceived causes of food insecurity are presented in Table 2. Rise in food prices ($\bar{x}$ = 4.75 ± 0.43) ranked first, indicating that food affordability is the major driver of food insecurity among rural women. This suggests that market instability directly constrains household food access. Low income/lack of money ($\bar{x}$ = 4.72 ± 0.55) ranked second, implying that limited purchasing power reduces households' ability to secure adequate food, highlighting poverty as a key determinant of food insecurity. Large family size ($\bar{x}$ = 4.28 ± 0.79) ranked third, suggesting that larger households place greater pressure on available food resources. This contributes to knowledge by demonstrating the role of household demographic burden in food insecurity. Conflict, insecurity or violence **(**$\bar{x}$ = 4.25 ± 0.70) ranked fourth, indicating that instability disrupts farming, food production, and market access. Poor storage facilities leading **to** post-harvest losses **(**$\bar{x}$ = 4.18 ± 0.76) ranked fifth, implying that food insecurity is influenced not only by food production but also by post-harvest management challenges. Other important causes identified include natural disasters such as drought and flooding ($\bar{x}$ = 4.03 ± 0.95)**,** which affect agricultural productivity; poor roads/lack of transportation ($\bar{x}$ = 3.98 ± 1.05**)**, which limit access to food markets; and lack of access to farmland ($\bar{x}$ = 3.75 ± 1.05), which constrains food production opportunities among rural women. Cultural-related barriers ($\bar{x}$ = 3.28 ± 1.15) ranked lowest, suggesting that although cultural factors contribute to food insecurity, they are less influential than economic and structural constraints in the study area. Overall, the findings contribute to knowledge by showing that food insecurity among rural women is driven mainly by **economic** pressures**,** demographic factors, insecurity, and infrastructural constraints, indicating the need for multidimensional interventions targeted at improving food access, income, agricultural production, and rural infrastructure.

Table 2: Perceived causes of food insecurity

Causes	Mean ± SD	Rank
Rise in food prices	4.75 ± 0.43	1st
Low income/ Lack of money	4.72 ± 0.55	2nd
Large family size	4.28 ± 0.79	3rd
Conflict, insecurity or violence	4.25 ± 0.70	4th
Poor storage facilities, leading to post-harvest losses	4.18 ± 0.76	5th
Natural disasters (drought, flooding)	4.03 ± 0.95	6th
Poor road/ Lack of transportation preventing easy access to food markets	3.98 ± 1.05	7th
Lack of access to Farmland	3.75 ± 1.05	8th
Cultural related barriers	3.28 ± 1.15	10th

Cut-off point = 3.00

Source: Field survey, 2025

Coping Strategies to Reduce Food Insecurity

Table 3 presents coping strategies used by rural women against food insecurity. The highest coping strategy was proper storage of food after harvest (mean = 3.52 ± 0.63), ranked first, indicating prioritization of food preservation to ensure availability during periods of scarcity. This was closely followed by buying cheaper and less preferred food (mean = 3.52 ± 0.55), reflecting dietary substitution as a cost-saving survival strategy. Reducing food consumption (mean = 3.33 ± 0.83) ranked third, suggesting that households cope through food rationing, with possible nutritional implications. Moderate adoption was recorded for seeking help from relatives or community members (mean = 2.88 ± 0.76), indicating limited reliance on informal support systems. Similarly, participation in food aid or government assistance (mean = 2.42 ± 0.76) and communal work for food (mean = 2.36 ± 0.68) were poorly utilized, reflecting weak institutional and collective coping mechanisms. Low adoption was further observed for sending children to eat elsewhere (mean = 2.26 ± 1.02), selling household assets (mean = 1.84 ± 0.89), and migration for food or work (mean = 1.65 ± 0.76), with migration being the least adopted strategy. This indicates that rural women largely avoid extreme coping strategies that could undermine household stability. These findings are consistent with studies reporting that reduced portion sizes and consumption of cheaper food alternatives are common coping strategies among vulnerable households (Nwaneri et al., 2024; Magwegwe et al., 2024).

Table 3: Coping strategies against food insecurity

Coping statements	Mean ± SD	Rank
Proper storage of food after harvest to ensure availability during period of shortage	3.52 ± 0.63	1st
Buying cheaper and less preferred food to manage cost	3.52 ± 0.55	2nd
Reducing food consumption in times of scarcity	3.33 ± 0.83	3rd
Seeking help from relatives, friends, or community members	2.88 ± 0.76	4th
Participating in food aid programs or government assistance	2.42 ± 0.76	5th
Engaging in communal work or shared resources to get food	2.36 ± 0.68	6th
Sending children to eat at relatives or neighbors' houses during difficult times	2.26 ± 1.02	7th
Selling household assets or personal belongings to afford food	1.84 ± 0.89	8th
Migrating to other areas to find food or work	1.65 ± 0.76	9th

Source: Field survey, 2025

Socioeconomic Determinants of Coping Strategies Used by Rural Women

Table 4 presents the regression analysis of socioeconomic determinants of coping strategies used by rural women. The model shows a statistically significant relationship, $F(1, 299) = 6.327$, $p < 0.001$, indicating that the model significantly predicts the use of coping strategies among respondents. The coefficient of determination **(**$R^2 = 0.435$**) s**hows that 43.5% of the variation in coping strategies is explained by the socioeconomic variables, while 56.5% is due to other factors not included in the model. The result further reveals that years of formal education ($\beta = 0.12$, $t = 2.78$, $p < 0.005$) and annual income ($\beta = 0.10$, $t = 2.82$, $p < 0.001$) were significant positive predictors

of coping strategies. This implies that higher education and income levels enhance the likelihood of adopting coping strategies. Consequently, the null hypothesis was rejected.

Table 4: Socioeconomic determinants of coping strategies used by rural women

Variables	Beta coefficient	Std. error	t-value
Constant		1.93	14.37
Age in years	-0.13	0.04	-1.15
Marital status (married 1 otherwise 0)	0.08	0.74	0.86
Years of formal education	-0.29	0.04	2.78*
Household size in person	-0.08	0.04	-0.85
Year of farming experience	0.02	0.03	0.13
Size of farmland in hectares	0.12	0.12	1.29
Income in naira	-0.26	0.00	2.82*

*P ≤ 0.05

Source: Field survey, 2025

Conclusion and Recommendations

The study concludes that rural women in Kwara State experience food insecurity driven mainly by socio-economic constraints. The major perceived causes include rising food prices, low income, large household size, insecurity, and post-harvest losses. These factors significantly affect household food availability and access. In response, rural women adopt coping strategies such as proper storage of food after harvest, consumption of cheaper and less preferred foods, and reduction in food intake. These strategies indicate reliance on short-term household-level responses to manage food shortages. However, less severe strategies such as migration and asset depletion are rarely used, suggesting effort to preserve long-term household stability**.**

The regression results further show that education and income significantly influence coping strategies, indicating that socioeconomic conditions play an important role in determining how households respond to food insecurity. Based on these findings, it is recommended that interventions should prioritize improving income levels of rural women through accessible livelihood support and microcredit opportunities, as this will enhance their capacity to manage food insecurity. In addition, efforts should focus on stabilizing food prices through appropriate agricultural and market policies to reduce affordability challenges. Strengthening rural security systems is also necessary to ensure uninterrupted agricultural production and food distribution. Furthermore, investment in improved food storage technologies should be encouraged to reduce post-harvest losses and enhance household food availability.

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