

**FOOD INSECURITY AMONG VULNERABLE HOUSEHOLDS:
IMPLICATIONS ON POVERTY PERPETUATION IN IMO STATE**

Joy Ugomma Udogaranya^{1*}, Agnes Osita-Njoku² & Okechukwu Anyaoha³

^{1,2,3}Department of Sociology, Imo State University, Owerri, Nigeria

*joyamechim@gmail.com

ABSTRACT: This study examined food insecurity among vulnerable households in Imo State, Nigeria, with particular attention to income disparities, asset ownership, and household expenditure patterns. Using the Household Food Insecurity Access Scale (HFIAS), the study assessed the severity of food insecurity and explored how economic constraints shape household coping strategies. A descriptive survey design was adopted, involving 484 respondents drawn from vulnerable communities across eight Local Government Areas in Imo State. The study population comprised low-income households, female-headed households, widows, elderly persons living alone, and residents of rural and peri-urban areas. Data were collected through a structured questionnaire and analysed using both descriptive and multivariate techniques. Findings indicate that food insecurity is widespread and severe among vulnerable households, with a substantial proportion experiencing chronic food shortages. Food insecurity was strongly associated with low income levels and was found to undermine household asset ownership and distort expenditure priorities. Many households adopted adverse coping strategies, including skipping meals, reducing meal portions, and selling productive assets, actions that further entrenched their vulnerability and weakened long-term economic resilience. The study concludes that food insecurity in Imo State is not merely a short-term welfare issue but a structural challenge closely linked to poverty and livelihood instability. Addressing this challenge requires integrated policy responses that go beyond food aid. The study recommends targeted income-support programmes, household-level food subsidy initiatives, and community-based agricultural interventions to strengthen livelihoods, protect household assets, and enhance sustainable food access among vulnerable populations.

Keywords: Food Insecurity, Vulnerable Households, Poverty Perpetuation, Imo State

INTRODUCTION

Food insecurity remains one of the most pressing challenges facing vulnerable populations globally, with significant implications for poverty, health, and social development. In Nigeria, and particularly in southeastern states like Imo, food insecurity has become more widespread due to persistent poverty, inflation, environmental challenges, and weak agricultural systems (Adesoye & Adepoju, 2020). The vulnerability of households to food insecurity in this region is compounded by a high dependence on subsistence farming, limited access to land, and climate-related risks, which undermine food availability and affordability (Ajao et al., 2023). Food insecurity is not merely the absence of food but encompasses the lack of access to sufficient, safe, and nutritious food necessary for a healthy life, and it is strongly influenced by social and economic factors (Ajetunmobi, 2024).

Vulnerable households, such as those headed by women, the elderly, or individuals with low income, are particularly exposed to this crisis, often engaging in negative coping mechanisms such as meal skipping and food rationing to survive (Ezeama et al., 2021). The cyclical nature of poverty in Imo State is largely perpetuated by persistent food insecurity, where poor nutrition reduces productivity and economic participation, thereby limiting opportunities for income generation and upward mobility (Fasakin, Fonsah, & Oni, 2024). Even in urban centres within the state, income shocks, unemployment, and rising food prices have increased vulnerability among low-income earners who spend a disproportionate share of their income on food, exposing them to poverty traps (Esheya, Ibeabuchi, & Peter, 2024).

Furthermore, the relationship between food insecurity and poverty is widely recognised as bi-directional: while poverty constrains households' ability to access adequate food, chronic food insecurity simultaneously deepens poverty by weakening human capital and limiting investment in education, health, and productive assets (Kassy et al., 2021). The implications of this dynamic are particularly severe in Imo State, where high unemployment, inflationary pressures, and socio-political instability further erode household resilience. Rural households engaged in small-scale agriculture often lack access to credit, extension services, and basic infrastructure, making it difficult to break out of the poverty–food insecurity cycle. Although food insecurity has historically been more pronounced in northern Nigeria, recent evidence indicates a growing spread to the south-east due to economic downturns and structural weaknesses in food supply chains (Adesoye & Adepoju, 2020).

This study advances the central argument that food insecurity is not only a consequence of poverty in Imo State but a critical mechanism through which poverty is reproduced and sustained among vulnerable households. By framing food insecurity as a driver of long-term economic vulnerability rather than merely a welfare outcome, the study positions food access and dietary adequacy as foundational to poverty reduction efforts in the state.

Despite ongoing interventions by government and development agencies, vulnerable households in Imo State continue to experience chronic food shortages, limited dietary diversity, and unstable income sources. Many households survive on fewer than two meals per day, rely heavily on calorie-dense but nutrient-poor foods, and adopt extreme coping strategies such as withdrawing children from school or liquidating productive assets. These practices not only undermine immediate well-being but also compromise future economic prospects. However, empirical research examining the specific pathways through which food insecurity perpetuates poverty in southeastern Nigeria remains limited, with most existing studies focusing on national trends or northern regions.

The theoretical contribution of this study lies in its application of the poverty–food insecurity nexus to a sub-national, context-specific setting, highlighting how local socio-economic and institutional conditions shape household vulnerability. From a policy perspective, the study provides evidence to support integrated interventions that link food security initiatives with employment creation, social protection, and agricultural support systems tailored to vulnerable households in Imo State. By generating context-sensitive data, the study aims to inform more targeted and sustainable policies capable of disrupting the intergenerational cycle of food insecurity and poverty in southeastern Nigeria.

Objectives of the Study

The specific objectives are to:

1. To assess the level of food insecurity among vulnerable households in Imo State using HFIAS and dietary patterns.
2. To examine the relationship between household food insecurity and income level among vulnerable households.
3. To determine how food insecurity contributes to poverty perpetuation through its effect on asset ownership and household expenditures.

Research Questions

1. What is the extent of food insecurity experienced by vulnerable households in Imo State?
2. How does food insecurity relate to the income levels of vulnerable households?
3. In what ways does food insecurity influence asset ownership and household spending?

Research Hypotheses

H₁: There is a significant level of food insecurity among vulnerable households in Imo State.

H₂: There is a significant relationship between food insecurity and household income levels.

H₃: Food insecurity significantly affects asset ownership and household expenditure patterns.

LITERATURE REVIEW

Conceptualising Food Insecurity, Vulnerability, and Poverty: An Analytical Perspective

Food insecurity refers to the inability of individuals or households to consistently access sufficient, safe, and nutritious food necessary for an active and healthy life. Beyond mere food availability, it encompasses affordability, dietary quality, and stability of access over time (Adesoye & Adepoju, 2020). In Nigeria, food insecurity manifests through reduced meal frequency, poor dietary diversity, and reliance on coping mechanisms that undermine long-term nutritional and economic outcomes (Otekunrin et al., 2021). Empirical studies show that households experiencing food insecurity often prioritise short-term survival strategies—such as skipping meals or consuming calorie-dense but nutrient-poor foods—which gradually erode health and productivity (Oderinde, Ilesanmi, & Afolabi, 2023).

Vulnerability to food insecurity is shaped by structural socio-economic disadvantages that limit households' ability to absorb shocks. Vulnerable households—commonly including low-income earners, female-headed households, widows, elderly persons, and rural dwellers—often possess limited human, physical, and financial capital (Johnson, 2020). In Nigeria, such households typically experience insecure livelihoods, high dependency ratios, and restricted access to education, healthcare, and agricultural inputs, all of which reduce adaptive capacity in times of

crisis (Popoola, Adeniyi, & Omolehin, 2023; Ajetunmobi, 2024). Rather than being temporary conditions, vulnerability and food insecurity reinforce one another, creating persistent exposure to deprivation.

Poverty, in this context, is understood as a multidimensional phenomenon involving deprivation in income, nutrition, health, education, and living standards (Okpala, Manning, & Baines, 2023). While poverty is a major driver of food insecurity, the relationship is increasingly recognised as bidirectional. Food insecurity constrains labour productivity, weakens human capital development, and limits households' capacity to invest in productive activities, thereby deepening poverty over time (Ajao et al., 2023). This interaction establishes a self-reinforcing cycle in which poverty and food insecurity mutually sustain one another.

Food Insecurity and the Perpetuation of Poverty

Poverty perpetuation occurs when households remain trapped in deprivation across generations due to structural and systemic constraints. Food insecurity plays a critical role in this process by undermining both present welfare and future economic prospects. Studies indicate that chronic food insecurity reduces physical and cognitive development, increases vulnerability to illness, and diminishes educational attainment, particularly among children (Nwaka, Akadiri, & Uma, 2020). These outcomes weaken future earning potential and ensure the transmission of poverty from one generation to the next.

Moreover, food-insecure households often adopt economically damaging coping strategies. The sale of productive assets, accumulation of debt, and diversion of funds away from education and healthcare are commonly reported responses to food shortages (Wudil et al., 2023). While these strategies address immediate consumption needs, they erode household resilience and asset bases, locking families into long-term poverty (Fasakin, Fonsah, & Oni, 2024). Thus, food insecurity functions not only as a symptom of poverty but also as a mechanism through which poverty is reproduced.

Measuring Food Insecurity Among Vulnerable Households: Evidence from HFIAS and Dietary Patterns

The Household Food Insecurity Access Scale (HFIAS) has become one of the most widely used tools for assessing household-level food insecurity in low- and middle-income countries. It captures experiential dimensions of food insecurity, including anxiety over food supply, compromised food quality, and reduced food intake (Ezeama et al., 2021). Empirical applications of HFIAS in Nigeria reveal that vulnerable households frequently experience moderate to severe food insecurity, characterised by meal skipping and reduced dietary diversity (Adesoye & Adepoju, 2020).

Dietary assessments further show that food-insecure households rely heavily on starchy staples, with limited consumption of protein-rich and micronutrient-dense foods (Ajetunmobi, 2024). These patterns disproportionately affect women and children, reinforcing gendered and generational inequalities in nutrition. Unlike income-based poverty measures, HFIAS and dietary indicators

capture hidden hunger and behavioural adaptations that directly link food access to household welfare outcomes.

Income, Food Insecurity, and Household Welfare Dynamics

Household income remains a strong predictor of food security status. Low-income households are particularly sensitive to food price inflation and income volatility, which restrict their ability to maintain stable and nutritious diets (Otekunrin et al., 2023). Empirical studies consistently demonstrate that declining income levels are associated with higher frequency and severity of food insecurity experiences (Popoola & Popoola, 2024).

In both rural and urban Nigeria, rising food prices disproportionately affect low-income households, forcing reductions in meal quantity and quality (Oderinde, Ilesanmi, & Afolabi, 2023). This income–food insecurity relationship highlights the inadequacy of poverty reduction strategies that focus solely on income growth without addressing food price stability, dietary quality, and social protection.

Food Insecurity and Poverty in Sub-Saharan Africa

Beyond Nigeria, food insecurity remains a widespread challenge across Sub-Saharan Africa, where structural poverty, climate variability, and weak agricultural systems continue to undermine household resilience. The Food and Agriculture Organization (FAO, IFAD, UNICEF, WFP, & WHO, 2023) reports that Sub-Saharan Africa has the highest prevalence of undernourishment globally, with food insecurity closely linked to income inequality and rural livelihood vulnerability. Studies from countries such as Ghana, Ethiopia, and Kenya reveal patterns similar to Nigeria, where food insecurity constrains labour productivity and reinforces poverty traps among smallholder farming households (Asfaw et al., 2018; Dzanku, 2019).

Empirical evidence from East and Southern Africa further shows that food-insecure households frequently deplete assets and reduce investments in education and healthcare, thereby transmitting poverty across generations (Barrett & Carter, 2013). These findings reinforce the argument that food insecurity acts as a structural driver of poverty perpetuation rather than a temporary welfare issue.

Global Evidence on the Food Insecurity–Poverty Nexus

Globally, the relationship between food insecurity and poverty has been widely documented in both developing and developed economies. In Latin America and South Asia, food insecurity has been shown to reduce cognitive development, educational outcomes, and labour market participation, with long-term implications for economic mobility (Hoddinott et al., 2013). Even in high-income countries, food insecurity is associated with poor health outcomes and reduced productivity, underscoring its universal relevance (Loopstra & Tarasuk, 2015).

International development literature increasingly emphasises integrated approaches that combine nutrition-sensitive agriculture, social protection, and income diversification to break the food

insecurity–poverty cycle (World Bank, 2020). These global perspectives provide an important comparative framework for understanding food insecurity in Imo State, situating local experiences within broader structural patterns observed across regions.

Theoretical Framework

The Sustainable Livelihoods Framework (SLF), propounded by Robert Chambers and Gordon Conway in 1992, is most suitable for this study on Food Insecurity Among Vulnerable Households: Implications on Poverty Perpetuation in Imo State. The theory assumes that people's livelihoods are shaped by five capital assets: human, social, natural, physical, and financial, and that vulnerability to shocks (such as food insecurity) can deplete these assets, thereby perpetuating poverty (Chambers & Conway, 1992). The framework emphasizes how vulnerable households adapt to challenges by drawing from and managing their limited assets, which aligns with the food insecurity dynamics experienced in Imo State (Ajao et al., 2023). The SLF's relevance lies in its holistic lens, explaining how food insecurity affects asset ownership, income, and expenditure. It is applicable to this study as it connects livelihood erosion directly to food-related stressors (Adesoye & Adepoju, 2020). However, critics argue it underemphasizes macroeconomic and political influences (Okpala, Manning, and Baines, 2023). Despite this, its practical, people-centered approach justifies its adoption for this study.

METHODOLOGY

This study adopted a descriptive cross-sectional survey design to examine the relationship between household food insecurity and poverty outcomes among vulnerable households in Imo State, Nigeria. The design was appropriate because it allowed for the systematic collection of quantitative data from a large population at a single point in time, facilitating comparison across geographic locations and socio-economic groups.

The study was conducted in Imo State, southeastern Nigeria, and covered 16 communities drawn from 8 Local Government Areas (LGAs): Owerri North, Ideato South, Orlu, Mbaitoli, Okigwe, Ohaji/Egbema, Isiala Mbano, and Ngor Okpala. These LGAs were purposively selected based on documented indicators of vulnerability, including high poverty incidence, prevalence of food insecurity, dependence on subsistence agriculture, and exposure to economic shocks. To ensure representativeness, two communities were selected from each LGA using stratified sampling, reflecting rural and peri-urban characteristics. The selected communities were Umualum and Orji (Owerri North), Umueshi and Dikenafai (Ideato South), Amaifeke and Umuna (Orlu), Umunoha and Ubomiri (Mbaitoli), Amuro and Ugwuoba (Okigwe), Assa and Obitti (Ohaji/Egbema), Umuelemai and Osuama (Isiala Mbano), and Obike and Umuekwunne (Ngor Okpala).

The study population comprised vulnerable households, operationally defined as households that met at least two of the following criteria: monthly household income below the national minimum wage threshold, female-headed household, widow-headed household, or household headed by an elderly person (60 years and above), engagement primarily in informal, unstable, or subsistence-based livelihoods, high dependency ratio (three or more dependents per working adult).

This operational definition aligns with vulnerability frameworks used in food security and poverty studies in Nigeria and Sub-Saharan Africa (Household Food Insecurity Access Scale (HFIAS) and ensures that vulnerability is treated as a measurable and replicable construct, rather than a subjective label.

A multi-stage sampling technique was employed. In the first stage, the selected LGAs were purposively chosen based on vulnerability indicators. In the second stage, communities were stratified by rural and peri-urban characteristics, and two communities were randomly selected from each LGA. In the third stage, systematic random sampling was used to select households from community-validated lists of vulnerable households provided by local leaders and community development associations.

A total of 484 respondents participated in the study, which was considered adequate for multivariate statistical analysis and ensured sufficient statistical power for MANCOVA. Primary data were collected using a structured questionnaire and interview. Responses were measured on a four-point Likert scale ranging from “strongly disagree” to “strongly agree.” The questionnaire was subjected to content and face validation by experts in sociology, nutrition, and development studies.

A pilot study conducted outside the sampled communities yielded a Cronbach’s Alpha coefficient of 0.82, indicating a high level of internal consistency and reliability of the instrument.

Completed questionnaires were screened for completeness before data entry. Missing data accounted for less than 5% of the total responses and were assessed to be missing at random. Cases with substantial missing values were excluded through listwise deletion, while isolated missing responses were handled using mean substitution to preserve sample size without compromising data integrity.

Data were analyzed using descriptive statistics, including means and standard deviations, to summarize household characteristics and food insecurity levels. Multivariate Analysis of Covariance (MANCOVA) was employed to examine the effect of food insecurity indicators (independent variables) on multiple poverty-related outcomes (dependent variables), while controlling for relevant covariates such as household size, education level of household head, and income category.

The use of MANCOVA was justified because: the study involved multiple dependent variables related to poverty (e.g., asset ownership, household expenditure, education and healthcare access); the independent variables (food insecurity indicators) were conceptually related; the technique allowed for control of confounding household characteristics, improving the precision of estimated effects; and reduces the risk of Type I error compared to conducting multiple univariate analyses. All analyses were conducted at a 5% level of significance.

Trained enumerators administered the questionnaires through face-to-face interviews, particularly assisting respondents with low literacy levels. Participation was voluntary, and informed consent was obtained from all respondents. Ethical principles of anonymity, confidentiality, and cultural

sensitivity were strictly observed throughout the research process. Ethical approval was obtained from the relevant institutional review board prior to data collection.

RESULTS

Table 1: Demographic Information of Respondents

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	189	39.05
	Female	295	60.95
Age Bracket	18–30	126	26.03
	31–45	171	35.33
	46–60	115	23.76
	61 and above	72	14.88
Marital Status	Single	97	20.04
	Married	265	54.75
	Widowed	74	15.29
	Divorced	48	9.92
Household Type	Low-income household	168	34.71
	Female-headed household	132	27.27
	Widow or elderly alone	92	19.01
	Rural/peri-urban insecure	92	19.01
Educational Qualification	No formal education	143	29.55
	Primary	112	23.14
	Secondary	138	28.51
	Tertiary	91	18.80
Employment Status	Employed	193	39.88
	Self-employed	168	34.71
	Unemployed	83	17.15
	Retired	40	8.26
Monthly Household Income	Below ₦30,000	237	48.97
	₦30,001–₦50,000	115	23.76
	₦50,001–₦100,000	89	18.38
	Above ₦100,000	43	8.89

The demographic profile reveals that female respondents (60.95%) predominated, consistent with the focus on vulnerable households, including female-headed homes. The majority of respondents were aged 31–45 (35.33%), representing the active adult population managing households. Over half were married (54.75%), but widows accounted for a significant 15.29%, highlighting vulnerability. Low-income households accounted for 34.71%, and a large proportion had no formal education or only primary education (52.69%), indicating low socio-economic status. Almost half (48.97%) earned below ₦30,000 monthly, underscoring widespread poverty. Employment was split mainly between the employed and self-employed categories, reflecting the informal economy's

dominance in these communities. This demographic spread provided a strong foundation for analysing the impacts of food insecurity.

Table 2: What is the extent of food insecurity experienced by vulnerable households in Imo State?

Statement	SA	A	D	SD	Mean Score	Std. Dev.
1. My household eats less than two meals a day.	160 (33.06%)	195 (40.29%)	75 (15.5%)	54 (11.15%)	2.90	0.98
2. We often worry about not having enough food to eat.	178 (36.78%)	181 (37.40%)	70 (14.46%)	55 (11.36%)	2.92	0.96
3. We depend on borrowing or begging for food.	140 (28.93%)	172 (35.54%)	94 (19.42%)	78 (16.11%)	2.68	1.05
4. We have skipped meals due to lack of food.	183 (37.81%)	167 (34.54%)	83 (17.15%)	51 (10.50%)	2.90	1.00
5. Our meals lack nutritional variety due to limited options.	156 (32.23%)	185 (38.22%)	79 (16.36%)	64 (13.22%)	2.83	1.02

The responses indicate a high level of food insecurity among vulnerable households in Imo State. The majority (73.35%) reported eating less than two meals or worrying about food shortages, while over 64% admitted to skipping meals due to lack of food. Dependence on borrowing or begging was slightly lower but still significant at 64.47%. The lack of dietary diversity was also prominent, with over 70% acknowledging limited meal variety. Mean scores close to 3 reflect an overall agreement with food insecurity experiences. These findings confirm that food insecurity is pervasive, severely impacting the daily lives of these households.

Table 3: How does food insecurity relate to the income levels of vulnerable households?

Statement	SA	A	D	SD	Mean Score	Std. Dev.
6. Most of my household's income is spent on food.	190 (39.30%)	178 (36.78%)	67 (13.85%)	49 (10.12%)	3.03	0.91
7. Food price increases affect our ability to buy enough food.	201 (41.53%)	160 (33.06%)	69 (14.26%)	54 (11.15%)	3.05	0.94
8. Limited income prevents us from accessing quality food.	182 (37.60%)	175 (36.16%)	71 (14.67%)	56 (11.57%)	3.00	0.94

9. When our income drops, we reduce food consumption.	169 (34.91%)	187 (38.64%)	74 (15.29%)	54 (11.15%)	2.96	0.95
10. Food insecurity increases when no member of the household is employed.	176 (36.36%)	179 (36.98%)	73 (15.08%)	56 (11.57%)	2.98	0.95

Income constraints play a critical role in the experience of food insecurity among vulnerable households. Most respondents (75.88%) agreed that the bulk of their income was spent on food, highlighting the financial burden food costs impose. Increases in food prices were reported to reduce food access by nearly 75%, while 73.76% agreed that limited income constrained access to quality food. The strong consensus that drops in income lead to reduced food intake (73.55%) and worsening food insecurity (73.34%) demonstrates the close link between income fluctuations and household food security status. These results underscore the financial vulnerability inherent in these households.

Table 4: In what ways does food insecurity influence asset ownership and household spending, thereby perpetuating poverty?

Statement	SA	A	D	SD	Mean Score	Std. Dev.
11. We have sold household assets to buy food.	156 (32.23%)	162 (33.47%)	93 (19.21%)	73 (15.09%)	2.80	1.04
12. Food insecurity has stopped us from investing in business or farming.	168 (34.71%)	160 (33.06%)	85 (17.56%)	71 (14.67%)	2.87	1.01
13. We delay or avoid paying school fees to afford food.	143 (29.55%)	175 (36.16%)	89 (18.38%)	77 (15.91%)	2.77	1.05
14. Poor access to food makes it difficult to save money.	174 (35.95%)	168 (34.71%)	83 (17.15%)	59 (12.19%)	2.93	0.99
15. The need to secure food has kept my household in poverty.	192 (39.67%)	163 (33.68%)	75 (15.50%)	54 (11.15%)	3.00	0.94

Food insecurity significantly disrupts asset ownership and household expenditures, perpetuating poverty. More than 65% of respondents reported selling assets to obtain food, indicating a decline in wealth. Similarly, over two-thirds agreed that food insecurity hindered investments in business or farming, curtailing future income-generating potential. Avoidance or delay in paying school fees due to food-related financial stress was noted by 65.71%, reflecting a sacrifice of long-term human capital. Around 70% indicated that food scarcity impedes savings, while 73.35% acknowledged

food insecurity as a major factor in ongoing poverty. These findings illustrate how food insecurity creates a vicious cycle that traps households in poverty.\

Table 5: MANCOVA Test for Hypothesis One - There is a significant level of food insecurity among vulnerable households in Imo State.

Effect	Wilks' Lambda	F-value	df (Hypothesis)	df (Error)	Sig. (p-value)
Food Insecurity	0.728	5.674	5	478	0.000
Covariates (Household Type, Education, Income)	0.912	1.293	12	478	0.221

The MANCOVA result for hypothesis one shows a Wilks' Lambda value of 0.728 and a significant p-value of 0.000, indicating a statistically significant level of food insecurity among vulnerable households in Imo State. The F-value (5.674) confirms this difference. Since the significance level is below 0.05, the null hypothesis (H_{01}) is rejected, and the alternative hypothesis (H_{11}) is accepted. This means that vulnerable households in the study area are significantly affected by food insecurity. The covariates (household type, education, income) were not statistically significant, indicating that food insecurity levels were high regardless of these background characteristics.

Table 6: MANCOVA Test for Hypothesis Two - There is a significant relationship between food insecurity and household income levels.

Effect	Wilks' Lambda	F-value	df (Hypothesis)	df (Error)	Sig. (p-value)
Food Insecurity × Income Level	0.784	6.211	4	479	0.000
Covariates (Education, Age)	0.933	1.084	10	479	0.362

The analysis for hypothesis two yielded a Wilks' Lambda value of 0.784 and a p-value of 0.000, indicating a statistically significant relationship between food insecurity and household income levels. The F-value of 6.211 supports the strength of this relationship. Since the p-value is less than 0.05, the null hypothesis (H_{02}) is rejected, and the alternative hypothesis (H_{12}) is accepted. This implies that income level plays a critical role in shaping household food security status. The result confirms that as household income decreases, food insecurity increases, reinforcing income as a significant predictor of food insecurity.

Table 7: MANCOVA Test for Hypothesis Three - Food insecurity significantly affect asset ownership and household expenditure patterns.

Effect	Wilks' Lambda	F-value	df (Hypothesis)	df (Error)	Sig. (p-value)
Food Insecurity × Asset & Expenditure	0.756	5.898	6	477	0.000

Covariates (Household Size, Employment)	0.941	1.043	8	477	0.402
---	-------	-------	---	-----	-------

The MANCOVA results for hypothesis three show a Wilks' Lambda of 0.756 and a p-value of 0.000, both of which are statistically significant at the 5% level. With an F-value of 5.898, the test confirms that food insecurity significantly affects household asset ownership and expenditure patterns. Hence, the null hypothesis (H_{03}) is rejected, and the alternative hypothesis (H_{13}) is accepted. This means that food insecurity forces vulnerable households to sell off assets, divert resources from essential needs like education and healthcare, and reduce long-term economic stability. The covariates were not significant, suggesting the impact of food insecurity is widespread across groups.

DISCUSSION OF RESEARCH FINDINGS

The findings revealed that food insecurity was prevalent among vulnerable households in Imo State, with high mean scores indicating frequent experiences of inadequate access to sufficient, safe, and nutritious food. Households often skipped meals, reduced portion sizes, and prioritized food for children over adults due to financial constraints. This finding aligns with Adesoye and Adepoju (2020), who reported that working poor households in Southwest Nigeria regularly faced food shortages due to income instability and rising food prices. Similarly, Ajetunmobi (2024) found that vulnerable populations across Nigeria suffer significantly from chronic food insecurity, often linked to poor social safety nets. Esheya et al. (2024) also identified persistent food insecurity in Ebonyi State, attributing it to irregular agricultural yields and poor economic access to food. These studies confirm that food insecurity is not only widespread but also deeply rooted in socioeconomic vulnerabilities, consistent with the situation in Imo State as evidenced by this research.

The study found a significant relationship between income levels and food insecurity among vulnerable households. Respondents with lower income brackets were more likely to experience severe food insecurity, including skipping meals or relying on less preferred foods. This supports findings by Okpala et al. (2023), who demonstrated that income is a strong predictor of food insecurity in Nigeria, especially among households headed by women or the elderly. Similarly, Oderinde et al. (2023) observed in Ibadan slum communities that low household income was directly associated with limited food access and increased reliance on food coping mechanisms. Fasakin et al. (2024) also emphasized that in rural Ebonyi State, low-income levels reduced access to both market and subsistence food sources. These findings collectively reinforce the notion that household income is a major determinant of food access and availability, further substantiating the conclusion of this study in the context of Imo State's vulnerable groups.

The findings showed that food insecurity significantly affected asset ownership and household expenditure patterns. Many respondents reported selling productive assets, reducing spending on health and education, and incurring debt to buy food, factors that perpetuate a cycle of poverty. This result is consistent with Johnson (2020), who found that food-insecure households in Ondo State were often forced to liquidate assets to survive, resulting in long-term economic vulnerability. Similarly, Popoola and Popoola (2024) explained that frequent asset sales among agricultural households in Nigeria reflect a coping mechanism that undermines their future economic stability.

Ajao et al. (2023) also reported that in Ekiti State, food insecurity reduced household investment in productive resources, thereby reinforcing intergenerational poverty. This study thus confirms the growing evidence that food insecurity is not only a symptom but also a driver of poverty, limiting upward mobility among already vulnerable populations in Imo State.

Conclusions

This study concludes that food insecurity among vulnerable households in Imo State is a persistent and multidimensional problem rooted in economic vulnerability, unstable income sources, and rising food prices. A substantial proportion of households experienced inadequate access to sufficient and nutritious food, leading to frequent adoption of negative coping strategies such as meal skipping, reduced dietary diversity, and liquidation of productive assets. These practices not only undermine immediate nutritional well-being but also weaken long-term household resilience and economic stability.

The findings demonstrate a statistically significant relationship between household income level and food security status, confirming that economic access remains a primary determinant of adequate food consumption. Beyond consumption outcomes, food insecurity was shown to influence household economic behaviour, particularly through the reallocation of limited resources away from education, healthcare, and savings toward meeting basic food needs. Such adjustments heighten vulnerability and reinforce poverty traps, indicating that food insecurity operates both as a consequence and a driver of sustained poverty among vulnerable households.

Overall, the study reinforces the view that food insecurity in Imo State cannot be addressed solely through agricultural production or food distribution interventions. Rather, it is closely intertwined with broader socio-economic inequalities, labour market instability, and limited access to social protection. Effective responses, therefore, require integrated strategies that combine food security initiatives with income-generating opportunities, targeted support for female-headed and elderly-headed households, access to affordable agricultural inputs, and community-based safety nets. These measures are essential for breaking the cycle of food insecurity and poverty and for promoting sustainable livelihoods among vulnerable populations.

Despite its contributions, this study has some limitations that should be acknowledged. First, the use of a cross-sectional survey design limits the ability to establish causal relationships between food insecurity and poverty outcomes. While significant associations were identified, longitudinal data would be required to capture changes over time and to better understand causal pathways. Second, the study relied on self-reported data, which may be subject to recall bias or social desirability bias, particularly in reporting income levels, food access experiences, and coping strategies. Third, although the study covered multiple LGAs and communities, the findings may not be fully generalisable beyond Imo State or similar socio-economic contexts. Finally, while the Household Food Insecurity Access Scale (HFIAS) effectively captures access-related food insecurity, it does not directly measure nutritional adequacy or intra-household food distribution, which are important dimensions of food security.

Future research could address these limitations by employing longitudinal designs, incorporating qualitative methods to deepen contextual understanding, and expanding the scope to include nutritional and anthropometric indicators. Such approaches would further strengthen evidence on the mechanisms through which food insecurity perpetuates poverty in southeastern Nigeria and comparable settings.

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

1. **Income-Boosting Interventions:** The government should implement targeted economic empowerment programs such as conditional cash transfers, rural job creation schemes, and micro-credit facilities for low-income and female-headed households to improve purchasing power and reduce food insecurity.
2. **Asset Protection and Food Subsidy Schemes:** Authorities should design and enforce policies that prevent vulnerable households from selling off productive assets during food crises. Subsidized food programs and emergency food aid should be activated for high-risk communities.
3. **Community-Based Agricultural Support:** Strengthen local agriculture through input support, extension services, and smallholder market access programs to improve household-level food availability and reduce dependence on expensive, commercial food sources.

REFERENCES

- Adesoye, O. P., & Adepoju, A. (2020). Food insecurity status of the working poor households in south west Nigeria. *International Journal of Social Economics*, 47, 581–597. <https://doi.org/10.1108/ijse-09-2019-0589>
- Ajao, O. A., AyenZi, F. H., Bello, M. A., Ahmed, I. A., & Fanifosi, G. E. (2023). Analysis of food insecurity among rural farming households: Evidence from Ikere Local Government Area of Ekiti State, Nigeria. *Asian Journal of Agricultural Extension, Economics & Sociology*. <https://doi.org/10.9734/ajaees/2023/v41i11827>
- Ajetunmobi, O. (2024). Socio-economic impact of food insecurity on vulnerable population in Nigeria. *Journal of Agriculture, Food Systems, and Community Development*. <https://doi.org/10.5304/jafscd.2024.134.010>
- Asfaw, S., Pallante, G., & Palma, A. (2018). Diversification strategies and adaptation deficit: Evidence from rural Ethiopia. *World Development*, 109, 118–136.
- Barrett, C. B., & Carter, M. R. (2013). The economics of poverty traps and persistent poverty. *Journal of Development Studies*, 49(7), 976–990.
- Dzanku, F. M. (2019). Food security in rural Sub-Saharan Africa: Exploring the nexus between livelihoods and food access. *Food Security*, 11(3), 653–667.

- Esheya, E. S., Ibeabuchi, O. S., & Peter, I. N. (2024). Empirical analysis of the factors promoting food insecurity among farming households in Ebonyi State, Nigeria. *Greener Journal of Agricultural Sciences*. <https://doi.org/10.15580/gjas.2024.1.012624015>
- Ezeama, N., Ibeh, C., Adinma, E., Epundu, U., & Chiejine, G. I. (2021). Burden of food insecurity, sociodemographic characteristics and coping practices of households in Anambra State, South-eastern Nigeria. *Journal of Hunger & Environmental Nutrition*, 16, 847–861. <https://doi.org/10.1080/19320248.2021.1892561>
- FAO, IFAD, UNICEF, WFP, & WHO. (2023). The state of food security and nutrition in the world. Rome: FAO.
- Fasakin, I. J., Fonsah, G., & Oni, O. A. (2024). Socioeconomic drivers of food insecurity among rural households: evidence from participating farmers in the integrated rice-fish system in Ebonyi State, Nigeria. *Qeios*. <https://doi.org/10.32388/035tlx.2>
- Hoddinott, J., Alderman, H., Behrman, J. R., Haddad, L., & Horton, S. (2013). The economic rationale for investing in stunting reduction. *Maternal & Child Nutrition*, 9(S2), 69–82.
- Johnson, S. B. (2020). Vulnerability analysis of rural households to food insecurity in Ondo State, Nigeria. <https://consensus.app/papers/vulnerability-analysis-of-rural-households-to-food-johnson/e9fa3732aa7e5e4d8bb9576bf8634fa5/>
- kassy, w., ndu, a., okeke, c., & aniwada, e. c. (2021). Food security status and factors affecting household food security in Enugu State, Nigeria. *Journal of Health Care for the Poor and Underserved*, 32, 565–581. <https://doi.org/10.1353/hpu.2021.0041>
- Loopstra, R., & Tarasuk, V. (2015). Food insecurity and chronic disease among low-income adults. *Canadian Medical Association Journal*, 187(4), E94–E102.
- Nwaka, I., Akadiri, S., & Uma, K. (2020). Gender of the family head and food insecurity in urban and rural Nigeria. *African Journal of Economic and Management Studies*, 11, 381–402. <https://doi.org/10.1108/ajems-03-2019-0117>
- Obayelu, O., & Akpan, E. I. (2020). Food insecurity transitions among rural households in Nigeria. *Studies of Applied Economics*. <https://doi.org/10.25115/EEA.V39I1.3505>
- Oderinde, T., Ilesanmi, O., & Afolabi, A. (2023). Food insecurity and associated factors among households with under-5 children in slum communities in Ibadan, Nigeria. *BMC Public Health*, 23. <https://doi.org/10.1186/s12889-023-17051-2>
- Okpala, E., Manning, L., & Baines, R. (2023). Socio-economic drivers of poverty and food insecurity: Nigeria a case study. *Food Reviews International*, 39, 3444–3454. <https://doi.org/10.1080/87559129.2021.2012793>

- Osabohien, R., Jaaffar, A. H. bin, Ibrahim, J., Usman, O., Igharo, A., & Oyekanmi, A. (2024). Socioeconomic shocks, social protection and household food security amidst COVID-19 pandemic in Africa's largest economy. *PLOS ONE*, 19. <https://doi.org/10.1371/journal.pone.0293563>
- Otekunrin, O. (2022). Investigating food insecurity, health and environment-related factors, and agricultural commercialization in Southwestern Nigeria: evidence from smallholder farming households. *Environmental Science and Pollution Research International*, 29, 51469–51488. <https://doi.org/10.1007/s11356-022-19544-w>
- Otekunrin, O., Mukaila, R., & Otekunrin, O. (2023). Investigating and quantifying food insecurity in Nigeria: A Systematic Review. *Agriculture*. <https://doi.org/10.3390/agriculture13101873>
- Otekunrin, O., Otekunrin, O., Sawicka, B., & Pszczółkowski, P. (2021). Assessing Food insecurity and its drivers among smallholder farming households in rural Oyo State, Nigeria: The HFIAS Approach. *Agriculture*. <https://doi.org/10.3390/agriculture11121189>
- Popoola, G., & Popoola, O. (2024). Food insecurity transition among agricultural households in Nigeria. *The Journal of Developing Areas*, 58, 55–76. <https://doi.org/10.1353/jda.2024.a924515>
- Popoola, G., Adeniyi, O., & Omolehin, R. (2023). Are agricultural households resilient to food insecurity in Nigeria? *Agris On-Line Papers in Economics and Informatics*. <https://doi.org/10.7160/aol.2023.150206>
- Samuel, K., Gomina, Gomina, K. S., Gomina, O. E., Egbubine, L., Anyanaso, C., Ilesanmi, A. S., Maureen, G., & Obunukwu. (2024). Analyzing the intersection between food security and poverty status among households. *World Journal of Advanced Engineering Technology and Sciences*. <https://doi.org/10.30574/wjaets.2024.12.2.0296>
- World Bank. (2020). Reversals of fortune: Poverty and shared prosperity 2020. Washington, DC.
- Wudil, A., Ali, A., Aderinoye-Abdulwahab, S., Raza, H., Mehmood, H. Z., & Sannoh, A. (2023). Determinants of food security in Nigeria: Empirical evidence from beneficiaries and non-beneficiaries rice farmers of the Kano River Irrigation Project. 7. <https://doi.org/10.3389/fsufs.2023.999932>