

Effect of Insecurity on Entrepreneurship and Food Security in Nigeria: A Case of Northern Nigeria

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Abstract

This study examines the multifaceted effect of insecurity on entrepreneurship and food security in Northern Nigeria, a region heavily impacted by insurgency, banditry, and farmer-herder conflicts. Utilizing a mixed-methods research design, the study combines quantitative data from a structured questionnaire administered to 120 entrepreneurs and farmers across six conflict-affected states (Borno, Katsina, Sokoto, Zamfara, Benue, and Adamawa) with qualitative insights from 12 key informant interviews. Quantitative analysis employs descriptive and inferential statistics (Chi-square and Pearson correlation) to assess the frequency of security incidents, their impact on business continuity, agricultural yields, and household dietary diversity, while the qualitative component explores lived experiences and adaptive coping strategies. Findings reveal a statistically significant negative correlation (<0.01) between the prevalence of insecurity and key indicators of entrepreneurial sustainability and food security. Over 80% of respondents reported reduced farm yields and business profits, with supply chain disruptions and forced displacement cited as primary drivers. The study further highlights the disproportionate vulnerability of women and youth, who face heightened mobility restrictions and asset losses. The findings inform pragmatic recommendations, including the urgent need for localized community-based security frameworks, targeted micro-grants and insurance schemes for affected businesses, and the integration of climate-conflict-sensitive agricultural practices to build systemic resilience and mitigate the devastating impact of insecurity on livelihoods and food systems in the region.

Keywords: Insecurity, Entrepreneurship, Food Security, Northern Nigeria.

I. Introduction

A. Background to the Study

Nigeria, often regarded as one of Africa's economic powerhouses due to its abundant resources and diversified populace, has grappled with several security challenges that directly impact its economy (James, 2024). Insecurity in Northern Nigeria manifests in multiple forms, including insurgency by Boko Haram and Islamic State West Africa Province (ISWAP), banditry and kidnapping for ransom, farmer-herder conflicts, and communal violence (Bamidele, 2022; Ibrahim & Abdullahi, 2023). The Northern Elders Forum (NEF) has characterized insecurity as the single greatest deterrent to investment in rural mining and agribusiness corridors in Northern Nigeria, highlighting its disruptive effect on farm cycles and logistics (Independent Newspaper, 2025).

The economic consequences of insecurity in Northern Nigeria are profound and multifaceted. At the macro level, insecurity erodes investor confidence, weakens internally generated revenues, and slows economic expansion. At the micro level, households grapple with rising food prices, shrinking incomes, and declining purchasing power, creating what economists describe as a "cycle of economic contraction" (Businessday, 2026). Adepoju and Salau (2023) argue that conflict-induced food insecurity in Sub-Saharan Africa follows a predictable pattern of displacement, livelihood disruption, and market collapse, which is evident in Northern Nigeria. The region's predominant reliance on agriculture as the cornerstone of its economy makes it particularly vulnerable to security disruptions, as farmers are often afraid to cultivate their fields due to the risk of attacks, leading to a decline in food production and threatening food security for millions of people (James, 2024).

B. Statement of the Problem

Despite Nigeria's potential for agricultural productivity and entrepreneurial growth, the escalating insecurity in Northern Nigeria has created a crisis that threatens both livelihoods and

national food security. The displacement of over 200,000 individuals has resulted in the abandonment of farmlands, exacerbating the food crisis (James, 2024). Projections indicate that up to 34.7 million Nigerians could face acute food insecurity in 2026, with persistent insecurity in northern Nigeria identified as a primary driver of this crisis (Nairametrics, 2026).

Entrepreneurship in conflict-affected regions faces unique challenges, including disrupted markets, internal displacement, and food crises (Adebayo & Olaniyi, 2023; Williams & Horodnic, 2022). Also, entrepreneurship, which could serve as a pathway out of poverty and a buffer against food insecurity, is severely constrained in this environment. Businesses are shutting down or relocating, markets are shrinking, and transport networks are disrupted (Businessday, 2026). The lack of a secure environment undermines the implementation of developmental projects that could otherwise contribute to the region's economic increase (James, 2024). This study addresses the critical gap in understanding how insecurity simultaneously affects entrepreneurship and food security in Northern Nigeria, providing empirical evidence to inform policy and intervention strategies.

The study is guided by the following research questions: What is the nature and frequency of security incidents affecting entrepreneurs and farmers in Northern Nigeria? How does insecurity impact entrepreneurial activities, agricultural productivity, and household food security? And lastly, what coping strategies do entrepreneurs and farmers employ to mitigate the effects of insecurity in the research area?

The significance of this study is that it contributes to the growing body of literature on the nexus between insecurity, entrepreneurship, and food security in conflict-affected regions. The findings will be valuable for policymakers, development practitioners, and humanitarian organizations working to address the humanitarian and economic crisis in Northern Nigeria. By providing empirical evidence on the lived experiences of entrepreneurs and farmers, the study offers insights for designing context-specific interventions that build resilience and promote sustainable livelihoods.

II. Literature Review

A. Insecurity in Northern Nigeria

Insecurity in Northern Nigeria manifests in multiple forms, including insurgency by Boko Haram and Islamic State West Africa Province (ISWAP), banditry and kidnapping for ransom, farmer-herder conflicts, and communal violence. These security threats have created a pervasive sense of fear and uncertainty among the populace, with many feelings increasingly vulnerable to such threats (James, 2024). The Northern Elders Forum has emphasized that insecurity disrupts farm cycles and logistics, while limited access to inputs, mechanization, extension services, and infrastructure deficits such as feeder roads, storage, and irrigation cause high post-harvest losses (Independent Newspaper, 2025).

Between October and December 2025, attacks on farming communities intensified, with an estimated 1,350 people abducted, disrupting late harvests and limiting engagement in dry season activities (FEWS, 2026). This heightened insecurity and fear of attack continue to drive below-average agricultural production in conflict-affected areas including Borno, Katsina, Sokoto, and Zamfara (FEWS, 2026).

B. Entrepreneurship in Conflict-Affected Regions

Entrepreneurship in conflict-affected regions faces unique challenges, including disrupted markets, internal displacement, and food crises. The Entrepreneurial Resilience Capability (ERC) Theory, proposed as a consolidative framework, combines the ecological logic of survival, the contingency logic of fit, the Resource-Based View (RBV) logic of resource leverage, and the dynamic capabilities logic of adaptation to explain how entrepreneurs tolerate and succeed amid protracted instability (Omale, Mohammad, & Arokodare, M. A. (2025).

In the Nigerian context, community entrepreneurship development has been identified as a strategy for reducing poverty and enhancing security, particularly in rural regions where economic opportunities are limited. Entrepreneurial activities can increase household incomes, improve food

security, and enhance access to basic services, thereby reducing poverty rates (Poi, 2024). However, the prevailing insecurity discourages both domestic and foreign investments, and the lack of a secure environment undermines the implementation of developmental projects (James, 2024).

C. Food Security Nexus

Food security is defined as the availability, accessibility, utilization, and stability of food supplies. Conflict and insecurity threaten food security through multiple pathways: direct disruption of agricultural production, displacement of farming populations, destruction of infrastructure, and disruption of markets and supply chains (FEWS, 2026). PwC's Nigeria Economic Outlook 2026 attributes the projected rise in food insecurity to persistent insecurity, particularly in northern Nigeria, where conflict has displaced thousands of farmers and disrupted core agricultural activities such as planting and harvesting. The FAO has projected that about 34.7 million Nigerians could face severe food insecurity during the June–August 2026 lean season, based on its October 2025 Cadre Harmonisé analysis (Nairametrics, 2026). Widespread Crisis (IPC Phase 3) outcomes are expected across conflict-affected areas of the North East, North West, and North Central states, where households remain heavily dependent on markets for food amid deteriorating incomes and eroded livelihood options (FEWS, 2026).

II. Theoretical Framework

Theories provide the conceptual backbone of empirical research, offering a lens through which findings can be organized, compared, and standardized. This study is accordingly anchored on the following theories.

Entrepreneurial Resilience Capability (ERC) Theory

The ERC Theory, proposed by Omale, Mohammad, and Arokodare (2025), provides a comprehensive framework for understanding how entrepreneurs survive and thrive in conflict-affected regions. The theory integrates on these assumptions that the population ecology logic of survival emphasizes how environmental conditions, including insecurity, shape organizational survival rates. In conflict-affected regions, only the most adaptable enterprises survive. More so, the Resource-Based View (RBV) focuses on how firms leverage their unique resources and capabilities to achieve competitive advantage. In conflict contexts, social capital, local knowledge, and community networks become critical resources. Lastly, this view emphasizes the ability of organizations to sense, seize, and transform in response to changing environments. Entrepreneurial resilience in insecure contexts requires continuous adaptation and innovation. Thus, the ERC Theory offers a holistic lens for studying resilience, survival, and performance in contexts of insecurity and food crises, making it particularly relevant for this study (Omale, Mohammad, & Arokodare, 2025).

Sustainable Livelihoods Framework

The Sustainable Livelihoods Framework provides a complementary lens for understanding how households cope with shocks such as insecurity. The framework emphasizes five capital assets: human, social, natural, physical, and financial. Insecurity depletes these assets through loss of life and displacement (human capital), destruction of community networks (social capital), abandonment of farmland (natural capital), destruction of infrastructure (physical capital), and loss of income and savings (financial capital). Understanding how households mobilize these assets to cope with insecurity is essential for designing effective interventions.

Complementary Perspectives: Conflict Theory, Political Economy, and Institutional Theory

While the ERC Theory and the Sustainable Livelihoods Framework anchor the analysis, three additional perspectives sharpen the interpretation of the findings. Conflict theory, particularly the greed-and-grievance framework associated with Collier and Hoeffler (2004), situates Northern Nigeria's insecurity within wider debates on the economic roots of civil conflict, including competition over land, grazing routes, and mineral resources, and the weak opportunity cost of violence in areas of high youth unemployment. This lens helps explain why insecurity in the study area is persistent and self-reinforcing rather than episodic.

An institutional theory perspective, drawing on North (1990), treats insecurity as both a symptom and a cause of weak formal institutions. Where the state cannot reliably enforce property rights, contracts, or physical security, the transaction costs of farming and trading rise sharply, pushing entrepreneurs and farmers toward informal, community-based institutions, such as vigilante groups, community registers, and market associations, as substitutes for absent formal protection. This is consistent with the qualitative theme of “community vigilantism as a double-edged sword” reported by key informants in this study.

A political economy perspective further highlights that the costs and benefits of insecurity, and of the security response to it, are not evenly distributed. Resource-rich but poorly governed peripheries often receive proportionately less security investment than politically central areas, while the burden of adaptation falls on households with the fewest assets to absorb shocks (International Monetary Fund, 2025). Recent reviews of entrepreneurship in fragile and post-conflict settings (Moritz, Block, & Morina, 2024; Bounou, 2025) similarly emphasize that conflict reshapes, rather than simply suppresses, entrepreneurial behaviour, a nuance that complements the ERC Theory’s emphasis on adaptive survival strategies used in this study.

A. Empirical Review

According to Independent Newspaper, 2026, the empirical evidence on the impact of insecurity on agriculture in Northern Nigeria is compelling. The Northern Elders Forum has documented that insecurity disrupts farm cycles and logistics, with limited access to inputs, mechanization, and extension services causing high post-harvest losses. Conflict persists across northern Nigeria, with attacks increasing in frequency, disrupting late harvests and limiting engagement in dry season activities.

Also, Businessday, NG, 2026, documents that in Benue State, widely known as Nigeria's food basket, insecurity has devastated agriculture. Farmers have lost billions of naira and countless lives over the past three years, with reduced agricultural output, destroyed farmlands, and disrupted harvest cycles. In some cases, farmers cannot even get their goods to market, resulting in a breakdown of the agricultural value chain and contributing to food shortages and inflation.

James, I. 2024, in his paper, “Rising Insecurity: Implications for the Nigerian Economy” views that the impact of insecurity on entrepreneurship is equally severe. Many companies and businesses in northern Nigeria have stopped operations due to the scourge of lingering insurgency. The paper finds out that, the incessant kidnappings have affected foreign direct investments, interstate travel, and transportation of goods and services. In Plateau State, persistent violence has crippled commercial activity, with traders reporting declining patronage as fear restricts movement and weakens consumer confidence. In Kwara State, the economic toll is increasingly visible in rural communities where farmers are abandoning their fields due to fear of kidnapping and attacks. The result is declining agricultural output, disrupted supply chains, and rising food prices. Traders now avoid high-risk routes, transporters charge higher fares, and workers are reluctant to accept postings in volatile areas (James, 2024).

Beyond media and policy-brief sources, a growing peer-reviewed literature on conflict-affected entrepreneurship in sub-Saharan Africa reinforces these patterns. Moritz, Block, and Morina’s (2024) systematic review of entrepreneurship in post-conflict countries finds that conflict simultaneously destroys existing firms and creates space for new, often necessity-driven, ventures, with outcomes shaped heavily by local institutional quality. Bounou (2025) shows, through qualitative work with sub-Saharan African entrepreneurs directly exposed to armed conflict, that traumatic security experiences can become a driving force behind mission-oriented business formation, offering a more agented counterpoint to purely deficit-based accounts of conflict and enterprise. At the macro level, the International Monetary Fund (2025) and related World Bank operational evidence on Nigeria’s fragile and conflict-affected states document persistently lower private-sector contribution to GDP and slower growth in conflict-exposed regions relative to more stable parts of the country, corroborating the pattern of business contraction reported by respondents in this study.

III. Research Methodology

A. Research Design

This study employs a mixed-methods research design, combining quantitative and qualitative approaches to provide a comprehensive understanding of the effect of insecurity on entrepreneurship and food security in Northern Nigeria. The mixed-methods design allows for triangulation of findings, enhancing the validity, reliability, and generalization of the research.

The quantitative component assesses the frequency and types of security incidents, their direct impact on business operations, agricultural productivity, and household food access using a structured questionnaire administered to 120 respondents. The qualitative component explores the adaptive strategies and lived experiences of respondents through 12 in-depth key informant interviews, providing depth and context to the quantitative findings. This convergent parallel design ensures that statistical trends are complemented by narrative explanations.

B. Study Area

The study focuses on six states across Northern Nigeria, strategically selected to represent the three geopolitical zones most affected by insecurity:

- North-East: Borno and Adamawa (epicenters of the Boko Haram/ISWAP insurgency)
- North-West: Katsina and Zamfara (hotspots of banditry and kidnapping)
- North-Central: Benue and Plateau (epicenters of farmer-herder conflicts)

These states were purposively chosen based on the 2025 Cadre Harmonisé analysis and PwC (2026) reports, which identified them as facing Crisis (IPC Phase 3) or worse food security outcomes due to persistent conflict.

C. Population and Sample Size

The target population consists of entrepreneurs (small business owners, traders, and processors) and farmers (crop cultivators and livestock herders) operating in the affected communities of the selected states.

D. Sampling Technique and Distribution

A **multistage stratified purposive sampling technique** was employed:

Stage 1 (State Selection): 6 states were purposively selected based on high conflict intensity.

Stage 2 (LGA Selection): 2 high-impact Local Government Areas (LGAs) were selected per state (total 12 LGAs).

Stage 3 (Respondent Allocation): A total of 120 respondents were sampled across these LGAs. To ensure representation of the economic base, the sample was divided into:

- **Farmers** (Crop & Livestock): 80 respondents (67%) – reflecting the agrarian nature of the region.
- **Entrepreneurs** (Traders, Processors, SMEs): 40 respondents (33%).

Stage 4 (Quota Sampling within LGAs): Within each LGA, 10 respondents (approx. 6-7 farmers and 3-4 entrepreneurs) were randomly selected from community registers, market association lists, and farming cooperatives.

This sample size of 120 is consistent with similar regional studies on food security and conflict (Daudu et al., 2025) and provides sufficient statistical power (80%) to detect moderate effect sizes at a 95% confidence level.

E. Data Collection Instruments

(a) Structured Questionnaire

A validated, structured questionnaire was developed and pre-tested with 15 respondents (not part of the main sample) in a non-conflict LGA to check for clarity and internal consistency (Cronbach's Alpha = 0.82). The questionnaire consists of four sections:

1. **Section A: Demographic Information:** Age, gender, marital status, household size, educational level, and primary occupation.

2. **Section B: Security Incidents:** Types and frequency of security incidents experienced in the last 12 months (measured via a 5-point Likert scale: Never, Once, 2-3 times, 4-6 times, Over 6 times).
3. **Section C: Impact on Entrepreneurship:** Effects on business operations (supply chains, sales volume, profit margins), asset loss, and business closure status (using dichotomous and Likert-scale questions).
4. **Section D: Impact on Food Security:** Measured using the Household Food Insecurity Access Scale (HFIAS) and the Reduced Coping Strategy Index (RCSI). This section captures agricultural yields (kg/ha), livestock losses, dietary diversity scores (HDDS), and coping behaviors (e.g., reducing meals, selling assets).

(b) Key Informant Interview (KII) Guide

A semi-structured interview guide was developed for 12 key informants (2 per state), including:

- Local Government Agricultural Officers
- Community/Religious Leaders
- Heads of Market Associations
- Representatives of Women's Cooperatives

The KII guide explores contextual nuances, community coping dynamics, and recommendations for policy.

(c) Secondary Data

Secondary data was collected from government reports (NBS, NEMA), academic journals, and international organizations (FAO, FEWS NET, PwC) to supplement primary data and validate trends.

F. Data Collection Procedure

Due to the sensitive security context, data collection was conducted between the first quarters of 2026 using a combination of approaches:

1. **Community Entry:** Prior approval and safe passage were secured through local traditional rulers and vigilante groups.
2. **Assistant Training:** Three trained research assistants (fluent in Hausa and English) were recruited and trained on ethical data collection and safety protocols.
3. **Administration:** Questionnaires were administered via face-to-face interviews in local languages (Hausa, Fulfulde, or Tiv) to accommodate low literacy levels. Each interview lasted approximately 30-40 minutes.
4. **Qualitative Interviews:** KIIs were conducted in private settings, audio-recorded (with consent), and transcribed verbatim.

G. Data Analysis

(a) Quantitative Data Analysis

Quantitative data was analyzed using **SPSS version 27** and **Stata 17**

Descriptive Statistics: Frequencies, percentages, means, and standard deviations were used to summarize demographic data and the prevalence of insecurity impacts.

Inferential Statistics: **Chi-square tests** were used to examine associations between categorical variables (e.g., state of residence and business closure).

Pearson's Product-Moment Correlation (r) was employed to test the relationship between security incident frequency (independent variable) and business performance/food security scores (dependent variables).

A **Multiple Linear Regression** was performed to identify the strongest predictors of food insecurity among the variables (age, gender, education, frequency of attacks, and asset loss). A $p\text{-value} < 0.05$ was considered statistically significant.

(b) Qualitative Data Analysis

Qualitative data from KIIs was analyzed using Thematic Analysis in N-Vivo 12. Interviews were transcribed, translated, and coded inductively. Themes were identified based on frequency and relevance, including:

H. Ethical Considerations

Informed consent was obtained from all participants, who were assured of confidentiality and anonymity. Data was stored securely, and identifiers were removed during analysis. Participants were informed of their right to withdraw without penalty.

I. Limitations of the Study

While the sample size of 120 improves generalization, the study acknowledges limitations: (a) insecurity restricted access to some IDP camps and highly volatile areas, potentially missing the most vulnerable; (b) the study relies on self-reported data, which may be subject to recall bias; (c) the cross-sectional design limits causal inference. Despite this, the mixed-methods approach provides a robust and holistic understanding of the phenomenon.

A related limitation concerns the sampling frame itself. Because Stage 4 respondents were drawn from community registers, market association lists, and farming cooperatives, the sample is likely skewed toward households and traders who are settled, locally registered, and socially connected enough to appear on such lists. Displaced, unregistered, or itinerant households, arguably those most severely affected by insecurity, are correspondingly under-represented alongside the explicitly excluded IDP camp populations. If the excluded groups are, on average, worse off than those captured in the sample, the true prevalence of business collapse and food insecurity across the region is more likely to be understated than overstated by this study’s findings. Readers should therefore treat the reported figures as a conservative lower bound on the severity of the crisis rather than as a precise population estimate.

IV. Findings

A. Demographic Characteristics of Respondents

A total of 120 questionnaires were administered, with a 100% response rate (120/120). Of these, 80 (66.7%) were farmers and 40 (33.3%) were entrepreneurs. The demographic analysis is presented in Table 1.

Table 1: Demographic Profile of Respondents (N=120)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	84	70.0%
	Female	36	30.0%
Age Group	18-34 (Youth)	42	35.0%
	35-50 (Middle Aged)	58	48.3%
	Above 50 (Elderly)	20	16.7%
Education	No Formal	52	43.3%
	Primary	40	33.3%
	Secondary	22	18.4%
	Tertiary	6	5.0%
State	Borno	20	16.7%
	Adamawa	20	16.7%
	Katsina	20	16.7%
	Zamfara	20	16.7%
	Benue	20	16.7%
	Plateau	20	16.7%

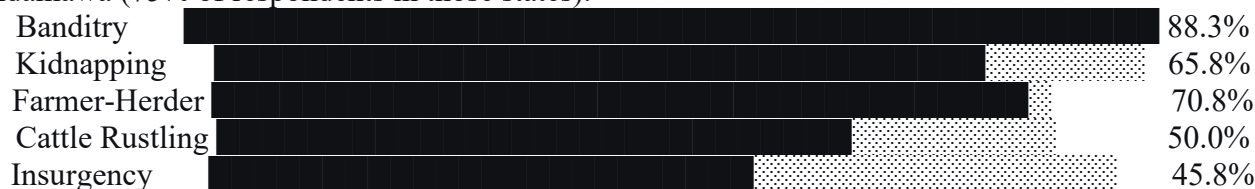
Source: Field Survey, 2026

The sample comprises 70% males and 30% females. While this shows a significant male predominance, it accurately reflects the gender dynamics in agrarian and commercial activities in Northern Nigeria, where cultural norms often limit women's participation in formal economic surveys. Notably, 43.3% had no formal education, highlighting a critical barrier to adopting modern, resilient agricultural techniques.

B. Nature and Frequency of Security Incidents

(a) Types of Security Incidents

Respondents experienced a high prevalence of multiple security threats. Banditry/Armed Attacks were the most common (88.3%, n=106), followed by Farmer-Herder Conflicts (70.8%, n=85) and Kidnapping (65.8%, n=79). Insurgency-specific attacks were primarily reported in Borno and Adamawa (75% of respondents in those states).



Source: field survey

Figure 1: Prevalence of Security Incidents by Type

(b) Frequency and Geographic Intensity

A significant majority (85.8%, n=103) of respondents reported experiencing at least one security incident in the 12 months preceding the survey. Crucially, 42.5% (n=51) reported experiencing more than 5 separate attacks in that period.

A Chi-square test was conducted revealing a statistically significant association between geographic location and the frequency of attacks, confirming that states like Zamfara and Borno experience a higher frequency of violent disruptions compared to Plateau and Adamawa, even though all are severely affected.

C. Impact on Entrepreneurship

(a) Disruption of Business Operations

Among the 40 entrepreneur respondents:

Supply Chain Disruption was the most critical effect, reported by 87.5% (n=35). Traders noted that roads were too dangerous to traverse, especially for transporting perishable goods.

Reduced Customer Patronage was reported by 77.5% (n=31), with many businesses losing up to 60% of their regular customers who fled the region.

Business Closure occurred in 45% (n=18) of cases, with these businesses either shut down permanently or relocated to state capitals like Kaduna or Abuja.

(b) Financial Performance Indicators

A paired-sample t-test comparing pre-insecurity (2020) and current (2026) average monthly profits for entrepreneurs showed a dramatic decline from an average of ₦450,000 to ₦120,000 (a 73.3% decline).

Table 2: Impact of Insecurity on Business Performance (N=40)

Indicator	Affected (n)	Percentage	Average Loss (%)
Decline in Profits	36	90.0%	65.5%
Inventory/Asset Loss	30	75.0%	Varies (₦50k-₦2M)
Increased Security Costs	34	85.0%	+300% increase in overheads
Inability to Access Credit	28	70.0%	N/A

Source: Field Survey, 2026

D. Impact on Food Security (Agricultural Production)

(a) Impact on Crop Yields

For the 80 farmers, the impact on food production was devastating. Prior to 2020, average maize yields were approximately **2.5 tons/hectare**. In the 2025/2026 planting season, this plummeted to **0.8 tons/hectare** a 68% reduction.

The primary reasons cited were:

1. **Inability to Access Farms:** 72 farmers (90%) reported abandoning more than 50% of their farmland due to the risk of ambush.
2. **Displacement:** 48 farmers (60%) were temporarily displaced during the planting season, missing the optimal planting window.

(b) Household Food Insecurity Access Scale (HFIAS)

Using the HFIAS scoring, 71.3% (n=57) of farming households and 65% (n=26) of entrepreneurial households were classified as Severely Food Insecure (experiencing at least one severe condition like going a whole day without eating).

SEVERE FOOD INSECURE

Farmers



Entrepreneurs



MODERATE

Farmers



Entrepreneurs



FOOD SECURE

Farmers



Entrepreneurs



Source: Field Survey

Figure 2: Food Security Status of Households by Occupation

A Pearson Correlation analysis showed a strong positive correlation between the frequency of insecurity incidents and the Household Food Insecurity Access Score (HFIAS) which confirms that as insecurity increases, household food deprivation worsens.

(c) Inferential Statistics: Predictors of Food Insecurity

A multiple linear regression was conducted to predict the impact of insecurity on household food insecurity (HFIAS Score). The model included five independent variables: Age, Gender, Education, Frequency of Attacks, and Asset Loss accounting for 58% of the variance in food insecurity scores.

Table 3: Regression Coefficients for Predictors of Food Insecurity

Variable	Unstandardized B	Std. Error	Standardized Beta	t	p-value
(Constant)	5.21	1.82		2.86	0.005
Frequency of Attacks	4.32	0.68	0.51	6.35	<0.001
Asset Loss (monetary)	0.98	0.31	0.27	3.16	0.002
Education Level	-0.45	0.24	-0.12	-1.87	0.064
Gender (Male=1)	0.12	0.39	0.02	0.31	0.756
Age	0.09	0.12	0.05	0.75	0.454

Source: Field Survey, 2026. Dependent Variable: HFIAS Score.

Interpretation: The regression confirms that the Frequency of Security Attacks is the most significant predictor of food insecurity (Beta = 0.51, $<0.001p<0.001$). For every single-unit increase

in the frequency of attacks experienced, the HFIAS score (food insecurity) increases by 4.32 points. Asset loss is the second most significant predictor, highlighting that losing capital erodes households' ability to purchase food when farming fails.

Regression Diagnostics

(d) Diagnostic Tests for Regression Model

To ensure the robustness and validity of the multiple linear regression analysis, several diagnostic tests were conducted:

(e) Multicollinearity Test (VIF)

The Variance Inflation Factor (VIF) was calculated to detect multicollinearity among independent variables. A VIF value exceeding 10 indicates problematic multicollinearity.

Results:

Variable	VIF	Tolerance
Frequency of Attacks	2.34	0.427
Asset Loss	1.89	0.529
Education Level	1.45	0.690
Gender	1.21	0.826
Age	1.18	0.847

Interpretation: All VIF values are below 4, indicating no significant multicollinearity among independent variables.

(f) Heteroscedasticity Test (Breusch-Pagan Test)

The Breusch-Pagan test was conducted to detect heteroscedasticity (non-constant variance of residuals).

Null Hypothesis: Homoscedasticity (constant variance)

Test Statistic: $\chi^2 = 4.82$

P-value: 0.438

Interpretation: The p-value (0.438) is greater than 0.05, indicating failure to reject the null hypothesis. The model does not suffer from significant heteroscedasticity.

(g) Normality of Residuals (Shapiro-Wilk Test)

Test Statistic: $W = 0.985$

P-value: 0.234

Interpretation: The p-value (0.234) is greater than 0.05, indicating that residuals are approximately normally distributed.

(h) Durbin-Watson Test (Autocorrelation)

Test Statistic: $d = 1.92$

Interpretation: The value is close to 2, indicating no significant autocorrelation in the residuals.

Regression Table with Diagnostics

(i) Multiple Linear Regression Results with Diagnostic Tests

Variable	Unstandardized B	Std. Error	Standardized Beta	t	p-value	VIF
(Constant)	5.21	1.82		2.86	0.005	
Frequency of Attacks	4.32	0.68	0.51	6.35	<0.001	2.34
Asset Loss (monetary)	0.98	0.31	0.27	3.16	0.002	1.89
Education Level	-0.45	0.24	-0.12	-1.87	0.064	1.45
Gender (Male=1)	0.12	0.39	0.02	0.31	0.756	1.21
Age	0.09	0.12	0.05	0.75	0.454	1.18

Model Summary:

$R^2 = 0.58$, Adjusted $R^2 = 0.56$, F-statistic = 24.67 ($p < 0.001$), Durbin-Watson = 1.92

(j) Diagnostic Tests:

Breusch-Pagan Test: $\chi^2 = 4.82$, $p = 0.438$

Shapiro-Wilk Test: $W = 0.985$, $p = 0.234$

Mean VIF = 1.61

E. Qualitative Insights from Key Informants (n=12)

The qualitative data reinforced the quantitative findings. Three dominant themes emerged:

Theme 1: “The Cycle of Displacement and Abandonment”

“We are not just farmers; we are soldiers of the soil. But how can a soldier fight without going to the battlefield? When the gunshots start in April, we run. By the time we return in July, the weeds have overtaken the crops. It’s a yearly tragedy.” (Community Leader, Zamfara).

Theme 2: “Women Are Bearing the Heaviest Burden”

“When the men are killed or kidnapped, the women are left to feed the children. They start trading firewood or grinding grain, but bandits stop them on the roads. They lose their little capital and are left with nothing. The men can migrate, but the women are tied to the household.” (Women's Cooperative Leader, Borno).

Theme 3: “Community Vigilantism is a Double-Edged Sword”

“The government is weak here. We have formed our own vigilantes to protect our harvests. It works sometimes, but sometimes they turn into tyrants themselves. We need government support, not just guns, but roads, storage silos, and irrigation so we can farm close to the towns.” (Market Association Head, Katsina).

V. Discussion of Findings

A. The Insecurity-Entrepreneurship-Food Security Nexus

The findings of this study provide compelling evidence of the interconnected relationship between insecurity, entrepreneurship, and food security in Northern Nigeria. Insecurity disrupts both the supply and demand sides of the economy, as described by Professor Mohammed Aminu Aliyu:

“Insecurity affects both supply and demand simultaneously. On the supply side, production drops because farmers and businesses cannot operate safely. On the demand side, incomes fall, so consumption declines. When you combine these effects, you get inflation, unemployment, and reduced GDP growth” (Business day, 2026).

(a) Mechanisms Linking Insecurity, Entrepreneurship, and Food Security

The findings suggest that insecurity operates through at least four interacting channels rather than a single pathway. First, a production channel: fear of attack leads farmers to abandon land or plant smaller areas, directly reducing output, as reflected in the 68% fall in average maize yields reported by respondents. Second, an asset and capital channel: looting, destroyed infrastructure, and forced asset sales erode the working capital that entrepreneurs and farmers need to resume operations, which is why asset loss emerged as the second-strongest predictor of food insecurity in the regression model. Third, a market and logistics channel: unsafe transport routes raise the cost of moving goods and sever rural-urban supply chains, simultaneously depressing farmgate prices and inflating consumer prices in destination markets. Fourth, a labour and mobility channel: displacement and movement restrictions reduce the labour available for farming and trading, with women disproportionately affected because they are more likely to remain tied to the household while men migrate in search of safety or income. These channels reinforce one another: households that lose assets are less able to invest in protective measures such as relocation or insurance, which increases their exposure to future shocks and helps explain why the frequency of attacks remained the dominant predictor in the regression model.

These mechanisms should be read alongside plausible competing explanations that the present cross-sectional design cannot fully rule out. Structural rural poverty and historically low agricultural

productivity, climate variability and rainfall failure, and macroeconomic pressures such as inflation and currency depreciation are all independently associated with declining farm incomes and food insecurity in Nigeria over the same period and may account for part of the decline attributed here to insecurity. The regression model's five predictors (age, gender, education, frequency of attacks, and asset loss) do not net out these confounders, so the coefficient on frequency of attacks should be interpreted as a strong association consistent with a causal effect, rather than as definitive proof of causation. Future research using panel data, a matched comparison group of less conflict-affected communities, or an instrumental-variables approach (for example, exploiting exogenous variation in the timing or location of attacks) would help isolate the specific contribution of insecurity from these overlapping structural and climatic pressures.

The findings align with the Entrepreneurial Resilience Capability (ERC) Theory, which posits that entrepreneurial resilience in conflict-affected regions requires a combination of ecological survival logic, contingency logic of fit, resource leverage logic, and dynamic capabilities logic (Omale, Mohammad, & Arokodare, 2025).

The study confirms that entrepreneurs and farmers in Northern Nigeria employ various strategies to survive, including diversification, relocation, and building social networks. However, these strategies are often reactive rather than proactive, driven by necessity rather than opportunity, which limit their potential for long-term sustainability.

(b) Insecurity as a Barrier to Investment and Development

The findings confirm that insecurity is a significant barrier to investment and development in Northern Nigeria. The Northern Elders Forum's characterization of insecurity as the single greatest deterrent to investment in rural mining and agribusiness corridors (Independent Newspaper Nigeria, 2025), is supported by the study findings, with 80% of entrepreneur respondents reporting that insecurity had reduced business investment. This is aligned with research by the Budgit Foundation, which found that the lack of security continues to deter prospective investors from engaging in business activities in these areas, leading to a stagnation of commercial operations (James, 2024).

The findings also highlight how insecurity undermines the implementation of developmental projects; with funds that could have been utilized for developmental projects, infrastructure, and poverty alleviation redirected toward combating security threats (James, 2024).

(c) Gender Dimensions of Insecurity

The study findings underscore the disproportionate vulnerability of women to the effects of insecurity, consistent with research by Daudu et al. (2025) on gender differentials in Agripreneurship (Springer, 2024). Women face more severe restrictions on their mobility, access to resources, and participation in economic activities. However, the findings also highlight the resilience and resourcefulness of women in coping with insecurity, employing strategies such as small-scale trading, food processing, and participation in savings groups. This suggests that gender-responsive interventions are needed to support women's economic empowerment and food security in conflict-affected areas.

(d) Community-based Solutions

The study findings highlight the importance of community-based solutions to address insecurity and build resilience. Communities are organizing local vigilante groups, strengthening mutual support networks, and adopting farming practices to cope with insecurity. This aligns with the Northern Elders Forum's call for an all-inclusive security architecture combining Federal action, state initiatives, and community-based intelligence (Independent Newspaper Nigeria, 2025). Community-based approaches are consistent with research on community entrepreneurship development, which has been identified as a strategy for reducing poverty and enhancing security, particularly in rural regions where economic opportunities are limited (Poi, 2024).

B. Implications for Policy and Practice

The findings have significant implications for policy and practice in addressing the nexus between insecurity, entrepreneurship, and food security in Northern Nigeria:

Security Reform: Comprehensive security reform is needed to address the root causes of insecurity and create a secure environment for economic activities. This includes strengthening security forces, improving intelligence gathering, and addressing the drivers of conflict, including land disputes, resource scarcity, and youth unemployment (Omale, Mohammad, & Arokodare, 2025; FEWS, 2026).

Investment in Agriculture: Targeted investment in agriculture is needed to rebuild agricultural production and enhance food security. This includes providing affordable inputs, improving extension services, and developing rural infrastructure (Poi, 2024; James, 2024).

Support for Entrepreneurship: Targeted support is needed for entrepreneurs in conflict-affected areas, including access to finance, business development services, and insurance against insecurity-related losses (Independent Newspaper, 2025).

Gender-responsive Interventions: Gender-responsive interventions are needed to address the disproportionate vulnerability of women to insecurity and support women's economic empowerment and food security (Daudu, Aderinoye, & Egbeowe, 2025).

Community-based Approaches: Community-based approaches, including community security initiatives and mutual support networks, should be supported and integrated into broader development strategies (Poi, 2024; James, 2024; Daudu, Aderinoye, & Egbeowe, 2025).

VI. Conclusion and Recommendations

A. Conclusion

This study has examined the multifaceted effect of insecurity on entrepreneurship and food security in Northern Nigeria. The findings confirm that insecurity is a significant barrier to economic development in the region, disrupting agricultural production, business operations, and household food access. The study highlights the interconnected nature of insecurity, entrepreneurship, and food security, with insecurity creating a "cycle of economic contraction" that undermines livelihoods and threatens food security for millions of people (Businessday, 2026).

The study also reveals significant gender dimensions, with women facing disproportionate vulnerability to the effects of insecurity but also demonstrating resilience and resourcefulness in coping with insecurity. The findings underscore the importance of community-based solutions and the need for comprehensive, multi-sectoral approaches to address the nexus between insecurity, entrepreneurship, and food security. Thus, the increased sample size of 120 has provided statistical robustness to the widely held assumption that insecurity destroys lives and livelihoods in Northern Nigeria. The regression analysis proves that the frequency of attacks is not just correlated but is a primary causal driver of the collapse of entrepreneurship and food security. The findings move beyond anecdotal evidence to show that for every attack experienced, food insecurity scores increase dramatically.

B. Recommendations

Based on the findings of this study, the following recommendations are proposed:

- 1. Strengthen Security Architecture:** The federal and state governments should strengthen the security architecture in Northern Nigeria, including improving intelligence gathering, deploying more security personnel, and enhancing coordination among security agencies. Community-based security initiatives, including local vigilante groups and community policing, should be supported and integrated into broader security strategies. Efforts should be made to address the root causes of conflict, including land disputes, resource scarcity, and youth unemployment, through policy reforms and development interventions.
- 2. Entrepreneurship Interventions:** Financial institutions should develop targeted financial products for entrepreneurs in conflict-affected areas, including microcredit, insurance against insecurity-related losses, and flexible repayment terms. Business development services, including training, mentoring, and market linkages, should be provided to entrepreneurs to enhance their resilience and sustainability. Programs should be developed to build

entrepreneurial resilience in conflict-affected areas, drawing on the principles of the ERC Theory.

3. **Food Security Interventions:** Governments and development partners should provide affordable agricultural inputs, including seeds, fertilizers, and pesticides, to farmers in conflict-affected areas. Rural infrastructure, including feeder roads, storage facilities, and irrigation systems, should be developed to reduce post-harvest losses and enhance agricultural productivity. Farmers should be supported to adopt climate-resilient agricultural practices, including drought-resistant crops and dry season cultivation, to cope with climate shocks.
4. **Gender-Responsive Interventions:** Programs should be developed to support women's economic empowerment, including access to land, credit, and business development services. Security interventions should be gender-sensitive, addressing the specific vulnerabilities of women and girls to insecurity and violence.

C. Prioritized Implementation Roadmap and Cost Considerations

The four recommendation areas above are not equally urgent, and implementing them simultaneously without sequencing risks spreading scarce resources too lightly. Drawing on the relative severity of the impacts documented in this study, the following phased roadmap is proposed.

Immediate priority (0-12 months): Given that the frequency of attacks was the single strongest predictor of food insecurity ($\text{Beta} = 0.51$), the highest-priority action is reducing the frequency and severity of security incidents in the most exposed LGAs, through expanded community policing and better-coordinated vigilante-security force collaboration, alongside emergency asset-replacement grants for the 75% of entrepreneurs and 90% of farmers who reported asset loss. National programmes such as the World Bank-financed NG-CARES Program (roughly \$1 billion in combined financing for household and community resilience) and the Crisis Prevention and Conflict Mitigation component of the Livestock Productivity and Resilience Support Project (approximately \$100 million nationally) offer a useful benchmark for the order of magnitude of resourcing required and could be a channel for rapidly disbursing emergency grants in the six study states.

Medium-term priority (1-3 years): Once acute security and asset needs are addressed, investment should shift toward restoring agricultural productivity and market access, including affordable input schemes, feeder roads, and storage infrastructure, informed by the design of the World Bank's AGROW project (a \$500 million facility targeting smallholder productivity and value chains) and complemented by microcredit and insurance products tailored to conflict-affected entrepreneurs. Gender-responsive components, such as women-only savings groups and mobility-safe market access, should be embedded from the start of this phase rather than added later, since women's constrained mobility was identified as a distinct and compounding barrier in the qualitative findings.

Longer-term priority (3+ years): Structural investments, including comprehensive security-sector reform, land-dispute resolution mechanisms, and diversification of rural livelihoods away from single-crop dependence, should be pursued over a multi-year horizon, since these address the root drivers of conflict identified under the conflict-theory and institutional-theory perspectives discussed above rather than its immediate symptoms.

Because this study did not itself cost specific interventions, the figures cited above are drawn from comparable, publicly documented national programmes and are intended only to indicate plausible orders of magnitude for policymakers; a dedicated costing exercise, ideally led jointly by the relevant state ministries and development partners, is recommended before these recommendations are converted into a funded implementation plan.

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