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EVALUATING THE IMPACT OF INSECURITY ON HOUSEHOLD WELFARE IN NIGERIA (A CASE STUDY OF KATSINA STATE)

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ABSTRACT

This study was carried out on evaluating the impact of insecurity on household welfare in Nigeria. The study assessed the impact of banditry activities (farm destruction, cattle theft and human killing) which are proxies for insecurity in six local government areas in Katsina State. Relevant literature was reviewed in this study as sourced from reputable, acknowledged journal articles, environmental organization reports and several books. Data for this study were collected through the usage of questionnaires and personal observations, a total of 400 questionnaires were administered and all 400 were retrieved giving a 100% response rate. while the STATA 17 package and tools were used in the data processing and analysis. The study uniquely adopts the use of Binary Logit regression to test the hypothesis of this study The study found that cattle theft and human killings have a significant effect on food insecurity and the study concluded that human killings and cattle theft are major determinant for food insecurity as a result of the menace of banditry in Katsina State, and this issue requires urgent attention to reverse the situation as it poses potential detrimental economic and life-threatening consequences in Katsina State. The study further recommended that the government should enforces the law and bring justice to affected people in all the banditry killings and the perpetrators of the acts should be made to pay for their crimes.

Key Words: insecurity, Banditry, Household Welfare, Food Insecurity

JEL Classification: *E31, I32, H53*

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1.0 Background to the Study

Violent conflict is widespread globally, affecting regions in Europe, the Americas, Asia, and Africa. In Africa, regions such as North and Sub-Saharan Africa, Central America, and Eastern Europe have emerged as flashpoints for conflict (Osinubi & Osinubi, 2025). Banditry and communal violence are particularly prevalent, with widespread implications for food security. In many conflict zones, including El Salvador and South Africa, violence has significantly disrupted food production and access (Rashid 2025; Osinubi and Osinubi 2025). As banditry continues to escalate, the implications of food insecurity have become more evident, especially in rural communities, where agriculture is the primary occupation. The manipulation of food and livestock access by warring parties exacerbates food insecurity (Messer & Cohen 2025).

In Nigeria, violent conflicts, including banditry, have become increasingly problematic, especially in northwestern States such as Katsina, Kaduna, and Zamfara (Ladan, 2025). These conflicts, rooted in competition over land and resources between farmers and pastoralists, have evolved into full-scale banditry with severe economic and human costs (Habibu, 2025). Rural areas in Nigeria, particularly those in Katsina, have been particularly hard hit by this violence, resulting in the destruction of farmland, livestock theft, and widespread displacement of farmers (Ibrahim, 2025). Banditry has emerged as a significant threat to food security, reducing agricultural productivity and impeding food access in Nigeria.

The negative economic impacts of banditry, such as the destruction of farmland and theft of livestock, have led to a drastic reduction in food production, resulting in increased food insecurity. According to the Food and Agricultural Organization (FAO, 2025), conflicts such as banditry disproportionately affect the poorest populations, who are most reliant on agriculture for survival. Between 1980 and 1990, Africa lost over $120 billion in agricultural production due to communal violence, a figure that continues to grow as banditry spreads (FAO 2025). In particular, Katsina State, with its vast agricultural potential, has been grappling with food insecurity, exacerbated by ongoing banditry.

Despite the substantial government resources allocated to improve food security in Nigeria, the banditry crisis in Katsina State remains unresolved, leading to increased food shortages and the destruction of farmlands and livestock. Rural communities, primarily engaged in agriculture, have been severely impacted, and the resulting food insecurity continues to affect both local and national economies (Okoli & Addo, 2025). Banditry, which initially stemmed from disputes between farmers and herders, has escalated into widespread violence with significant consequences for food production and availability (Ingawa et al., 2025).

The situation in Katsina State is dire, with increasing reports of killings, kidnappings, and attacks on farming communities, leading to a massive food insecurity. Farmers in the State have been displaced from their lands, and agricultural productivity has declined sharply (Ladan and Mutawali, 2025). Historical tensions between pastoral Fulani and indigenous farmers have worsened as diminishing resources exacerbate the conflict (Okello et al., 2025). The increasing rate of banditry threatens not only the livelihoods of rural populations but also the food security of the nation.

Existing literature on conflict and agriculture in Nigeria frequently relies on macro-level estimations or qualitative summaries. Empirical micro-econometric investigations that

disaggregate specific conflict shocks separating asset theft from crop destruction and physical violence remain limited. To address this empirical gap, this study addresses three core research questions: (i) What is the quantitative impact of farm destruction on household food insecurity in Katsina State? (ii) How does cattle theft affect the probability of household food access failure? and (iii) To what extent do fatal attacks (human casualties) escalate household food insecurity?

To adequately answer the research questions raised, this study aimed to examine the impact of banditry on food insecurity in Katsina State, and specifically set to achieve objectives: to investigate the impact of farm destruction by bandits on food insecurity in Katsina State; examine the impact of cattle theft on food insecurity in Katsina State, and to evaluate the impact of human killings by bandits on food insecurity in Katsina State.

To effectively achieve the study set objectives, the following hypotheses were tested using an inferential statistical methods and techniques. H01: Farm destruction does not affect food insecurity in Katsina State, Nigeria; H02: Cattle theft does not affect food insecurity in Katsina, and H03: Human killings by bandits do not affect food insecurity in Katsina State.

As a scope, the study therefore, focused on examining the extent of banditry activities and their impact on food insecurity in Katsina State. The research was conducted in Six Local Government Areas- Safana, Batsari, Danmusa, Jibia, Faskari, and Dandume. It also references other pastoralist communities in Northern Nigeria and Africa to contextualise this issue. The limitations of the study include inaccessibility to some affected communities, time constraints, and difficulty retrieving information from victims of banditry.

In justifying the study, it has been found by other study that, banditry has severely destabilized livelihoods in Katsina State, limiting travel and blocking local trade routes that are essential for the movement of food. They have consistently targeted traders, kidnapping them and stealing food items, exacerbating food shortages (Ladan & Mutawali, 2025). Moreover, the destruction of farms, raids on grain silos, and displacement of farmers have significantly contributed to food insecurity. Therefore, understanding the impact of banditry on food security is crucial for developing solutions to restore peace in Katsina State and improve food security in Nigeria. The findings of this study can guide government interventions, inform policy decisions, and contribute to the broader literature on conflict and food insecurity in such zones.

2.0 Literature Review

The conceptual framework for the study focused on banditry as a proxy for insecurity and food insecurity as a proxy for household welfare, draws from the relationship between violent conflict, particularly banditry, and its socioeconomic effects on rural populations.

Insecurity (Banditry): Banditry, as a form of criminal violence, has been a significant source of insecurity in many parts of Nigeria, especially in the northwestern regions. This insecurity manifests in various forms such as cattle theft, kidnapping and human killing and destruction of farms. The direct consequences of banditry include displacement, loss of lives, destruction of livelihoods, and a decline in local governance and public safety. These factors disrupt normal economic activities and destabilise local economies, with a particularly harsh impact on agriculture, which is the primary livelihood for many households in rural Nigeria.

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Household Welfare (Food Insecurity): In the context of this study, household welfare is measured through food insecurity. Food insecurity reflects the limited access to sufficient, nutritious, and safe food due to economic constraints or disruptions in food production and distribution systems. Households experiencing food insecurity often face challenges such as malnutrition, limited access to quality food, and increased vulnerability to health and economic shocks. In areas affected by banditry, food insecurity is exacerbated due to reduced agricultural production, theft of crops and livestock, and the inability of affected populations to access markets or engage in farming activities.

2.1 Empirical Literature and Identified Gaps

Since 2018, armed banditry in northwestern Nigeria has intensified, particularly in States such as Katsina, Zamfara, and Sokoto. According to ACLED data, violent incidents rose sharply from 124 in 2018 to over 1,000 by 2022, with total fatalities surpassing 13,000 by mid-2023 (ACLED, cited in globalob.org, 2024). The January 2022 massacre in Zamfara, where over 200 people were killed, exemplifies the scale and brutality of the crisis (Wikipedia, 2025). What began as isolated cattle rustling and robbery has morphed into systematic rural violence, involving kidnapping, mass killings, and the destruction of livelihoods.

The persistence of the conflict is linked to several structural factors. These include the proliferation of illicit gold mining, arms smuggling through porous borders, and institutional weakness in rural forest zones (Wikipedia 2025). Bandits operate across international corridors that connect Nigeria with Niger and Benin, disrupting local economies and cross-border trade (Globalob. org, 2024). Community resistance groups, such as the Yan Sakai in Zamfara and Yan Banga in Katsina, have emerged in response, managing to reduce crop theft in some areas by up to 35% (iTelemedia 2025). However, these efforts remain fragmented and vulnerable to counterattacks, thereby limiting their long-term effectiveness.

Research has confirmed a sharp decline in agricultural productivity following bandit attacks. In a 2024 study, Ibrahim, Adejare, and Abdullahi surveyed 196 maize farmers in Katsina and found that average yields fell by more than 50% from 6,751 kg to 3,070 kg, while household income dropped from ₦529,180 to ₦372,757 post-attack (Ibrahim et al., 2024). These losses were attributed to mass displacement, theft of farm inputs, and widespread fear that kept farmers from returning to their fields.

Parallel data from Zamfara revealed similar patterns. Ekpa et al. (2025) observed that average crop income per hectare declined from ₦302,399 to ₦128,588 due to blocked extension services, theft, and constrained access to input markets. In fact, formal agricultural financing has shrunk by more than 40% in the region since 2022, worsening the capacity of smallholders to recover (iTelemedia 2025). Moreover, Ubilava, Hastings, and Atalay (2022) point out that violence tends to spike during harvest seasons, when commodity prices are highest, leading to greater farm raids and predatory violence. These dynamics further destabilize agricultural planning and food supply.

Banditry's impact is not limited to the farm level; it disrupts entire food supply chains. Ladan and Matawalli (2021), based on fieldwork in LGAs such as Jibia, Batsari, and Faskari, report widespread looting, destruction of grain stores, and roadblocks that prevent produce from

reaching markets. Such disruptions lead to localized food shortages and price volatility, as market participants withdraw due to insecurity.

Additional regional assessments confirm that in some conflict-heavy local government areas (LGAs), markets have entirely shut down, transporters have abandoned routes, and communities rely on inconsistent humanitarian aid for survival (inlightpublishers.com, 2024). These disruptions sever the link between rural producers and urban consumers, undermining food access in both zones and reducing farmers' income and market liquidity.

Nigeria's food insecurity has worsened dramatically since 2022. The FAO and WFP's 2025 projections estimate that 33.1 million Nigerians will be food-insecure during the June-August lean season, a sharp rise from 25.1 million in late 2024 (FAO, 2024). This surge is driven by a combination of violent conflict, inflation currently over 40% for food and recurrent displacement (FAO, 2024; Reuters 2024). Katsina and its neighboring States are among the most severely affected.

The WFP (2024) also projects that 1.8 million children under the age of five will suffer from severe acute malnutrition (SAM), particularly in Katsina, Zamfara, and Sokoto. Médecins Sans Frontières (MSF) clinics in Batsari and Jibia reported double the number of malnutrition cases in the past year, linking child hunger to both economic collapse and reduced healthcare access (The Guardian, 2024). The situation is exacerbated by climate shocks, such as floods, which destroyed over 1.6 million hectares of farmland nationwide in October 2024 (FAO/WFP, 2024).

Recent research has stressed the value of including conflict data in food security forecasting. Bertetti et al. (2024) demonstrated that when predictive models such as FEWSNET integrate geospatial conflict data from sources such as ACLED, forecast accuracy improves by up to 1.5%. This is especially useful for identifying hotspots where food insecurity is likely to spike due to rising violence.

In Katsina's context, this suggests that modeling efforts should include localized variables such as cattle rustling, displacement rates, and attack frequencies. This would help decision-makers better anticipate food-access disruptions and deploy interventions more effectively, especially during lean or harvest seasons when vulnerability is highest.

While the existing literature since 2020 has clearly shown the links between insecurity and declining food access in northwest Nigeria, several gaps persist. Most analyses are regional or State-level and do not use household data. Few studies have incorporated rigorous statistical models, such as logistic regression, to examine how specific forms of violence influence household food insecurity.

Additionally, there is limited integration of conflict variables with socio-economic factors, such as income, education, or access to services. Few studies have assessed child nutrition outcomes in conflict-affected areas using empirical data. This study addresses these gaps by applying a binary logistic regression model to 2025 survey data from six conflict-prone local government areas (LGAs) in Katsina State. It evaluates how cattle theft, farm attacks, and human killings increase the likelihood of food insecurity while situating the findings within recent trends in climate shocks, inflation, and food aid targeting.

3.0 Methodology

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3.1 Study Area and Sampling Design

The study was conducted in Katsina State, located in Northwest Nigeria. The State covers an area of approximately 24,192 km² and shares an international border with Niger Republic. Six Local Government Areas: Safana, Batsari, Danmusa, Jibia, Faskari, and Dandume- were purposively selected due to their high vulnerability to armed banditry and proximity to forested terrain serving as non-State actor enclaves. A multi-stage sampling technique was employed to select 400 rural agricultural households. Primary data were collected via structured questionnaire administrations and direct field observations.

3.2 Empirical Model Specification

This study employed a quantitative research design to investigate the relationship between banditry and food insecurity among rural households in Katsina State, Nigeria. Data were drawn from a 2025 household survey conducted in six highly affected Local Government Areas (LGAs): Safana, Batsari, Danmusa, Jibia, Faskari, and Dandume. These LGAs were selected based on the frequency of bandit-related violence reported by security agencies and media outlets between 2020 and 2021 (ACLED, 2023; Ibrahim et al., 2024). Their proximity to forest belts, which serve as operational bases for armed groups, further justifies their selection. During the study period, these areas experienced repeated incidents of farm invasions, cattle rustling, displacement, and infrastructure destruction, making them ideal for assessing food security in conflict zones.

A binary logistic regression model was used to quantify the relationship between banditry and food insecurity. The dependent variable was household food insecurity, coded as a binary outcome (1 = food insecure, 0 = food secure), based on standardized food access indicators. The key independent variables included exposure to cattle rustling, farm destruction, displacement, and ransom payments. Control variables, such as household income, education level, farm size, and credit access, were included to account for socioeconomic variations. This approach is consistent with the recent literature that uses logistic models to predict food insecurity in conflict-affected contexts (Akaike & Burnham, 2020; Bertetti et al., 2024). Model estimation was performed using STATA 17, with robustness checks including multicollinearity tests via the Variance Inflation Factor (VIF) and the Hosmer-Lemeshow test for model fit.

The empirical logistic model is expressed as:

$$\boldsymbol{ln\left(\frac{P_i}{1-p_i}\right) = \beta_0 + \beta_1 FDES_i + \beta_2 CATHEFT_i + \beta_3 HUKILL_i + \varepsilon_i}$$

Where $P_i = P(FIS_i = 1)$ represents the probability that household i experiences food insecurity; $FDES_i$ is a binary/ordinal measure of farm destruction; $CATHEFT_i$ denotes exposure to cattle rustling; $HUKILL_i$ captures fatal casualties within the household; and ε_i is the stochastic error term.

Ethical protocols were strictly followed throughout this study. Informed consent was obtained from all participants, confidentiality was maintained, and necessary approvals were obtained from local authorities prior to data collection. The methodological framework aligns with best practices in food security and conflict studies (Ekpa et al., 2025; Ubilava et al., 2022), ensuring that the findings are not only statistically robust but also grounded in the real-world dynamics.

Overall, the methodology supports a transparent, evidence-based exploration of how specific dimensions of rural insecurity influence household vulnerability to hunger.

4.0 Results & Discussion

4.1 Overview of Demographic Characteristics

The sample for this study consisted of 400 respondents from six conflict-affected Local Government Areas (LGAs) in Katsina State. The demographic profile revealed a significant gender imbalance, with 70% of the respondents being male and only 30% female. This can be attributed to sociocultural and religious norms that restrict female participation in public spaces. Most respondents (48%) were aged between 30 and 39 years, reflecting a youthful and economically active population. In terms of religious affiliation, an overwhelming 94% identified as Muslim, with 75% of respondents having received only Qur'anic education. Western education was limited, with only 7.25% having reached the secondary school level. Occupation-wise, more than half of the respondents (55%) were engaged in both farming and cattle rearing activities. A significant portion of the population, over 76%, owned more than 100 cattle, and 84.5% cultivated 1-4 ha of land. Moreover, 86% of the respondents reported sourcing their food directly from their farms. These demographic characteristics point to a rural, agrarian community, predominantly made up of Fulani ethnic groups, and highly vulnerable to the socio-economic impacts of insecurity and other related challenges.

4.2 Data Reliability and Validity Test

To ascertain the reliability of the research instruments (question items), Cronbach's Alpha reliability and consistency test was employed. Cronbach's Alpha measures internal consistency between items in a scale. According to Ndiyo (2005), constructs/items are internally consistent with each other if their Cronbach's Alpha value is equal to or more than 0.70. Hence, such constructs/items as evaluation instruments become reliable. There are four question items (Q1-Q4) on the categorical scale *agree, strongly agree, disagree, strongly disagree and neutral*; where Q1= has your farm been destroyed by bandit, Q2= has there been considerable reduction on the supply of farm produce to the market Q3= has your cattle been rustled by bandits before Q4= have you lost a family member to bandits before/ The results of the Cronbach's Alpha statistics for the question items are presented in Table 2.1 below.

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Table 2.1: Reliability Statistics

Test scale = mean (unstandardized items)	
Statistic	Value
Average interitem covariance	0.0696
Number of items in the scale	4
Scale reliability coefficient (Cronbach's Alpha)	0.7851

Source: Author's Compilation using STATA 17(2025)

As seen in the Table 2.1 above, the Cronbach's Alpha values of the constructs exceed 0.70. Specifically, the value is 0.785 for all included instruments. This indicates the degree of internal consistency among the scales used as instruments to measure each variable represented by Q1-Q4 is very strong. Also notice from the table that removing any one of the question items will produce a low Cronbach's Alpha. Thus, all the items are indispensable.

4.3 Test of Correlation Coefficient

Table 2.2: Correlation Statistics

Variable	FDEST	CATHEFT	HUKILLIN	FIS
FIS	0.2545* (0.0000)	0.4009* (0.0000)	1.0000	—
FDEST	0.1726* (0.0005)	0.0646 (0.1931)	0.0313 (0.5287)	1.0000
CATHEFT	0.3278* (0.0000)	0.3620* (0.0000)	0.2458* (0.0000)	0.2002* (0.0000)
HUKILLIN	0.2344* (0.0000)	0.1310* (0.0081)	0.1740* (0.0004)	0.1492* (0.0026)

Source: Author's Compilation using STATA 17(2025) *. Correlation is significant at the 0.05 level (2-tailed)

As seen in Table 2.2 above, there is statistically strong evidence supporting the existence of correlation among virtually all the variables (dependent and independent) as the probability value (2-tailed 5% Sig. value) for the coefficient in each category are less than 0.05. However, in the case of FDEST×FIS and HUKILL×FIS, the association is statistically significant given their corresponding p-values of almost zero respectively. The insignificant correlations are FDEST×CATHEFT (0.0646, p=0.1931) and FDEST×HUKILLIN (0.0313, p=0.5287), with their probabilities greater than 0.05 level of significance.

Notice that FDEST, HUKILL, CATHEFT, and FIS are responses to question items covering the categories of dependent and independent variables discussed under the "*Description of Variables*". Specifically, FDEST represents question item "has there been a considerable reduction in the quantity of farm harvest you make in Katsina State"; CATHEFT "has your

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cattle been rustle by bandit in Katsina State? "; FIS "has your income level dropped since the beginning of banditry in Katsina State? "; "what is the quantity of grains (per bag) that your family required on monthly basis to have a three-square meal?"

4.4 Summary of Key Results from Logistic Regression Analysis

The study tested three major hypotheses using binary logistic regression.

H_{01}: Impact of Farm Destruction on Food Insecurity

Table 3.1: Binary Logistic Regression Output for specific objective 1(Odds Ratios), Dependent Variable = FIS

Variable	Coefficient	Std. Err.	z	P>|z|	95% Conf. Interval
FDEST	1.1587	0.0926	1.84	0.065	0.9907 – 1.3552
CATHEFT	3.7025	0.8374	5.79	0.000	2.3767 – 5.7677
HUKILLIN	1.3092	0.0886	3.98	0.000	1.1465 – 1.4950
Constant	0.1871	0.0586	-5.35	0.000	0.1013 – 0.3456

Model statistics: Number of OBS = 400; LR chi2(3) = 66.41; Prob > chi2 = 0.0000; Log likelihood = -248.87349; Pseudo R^2 = 0.1177

Source: Author's Compilation using STATA 17 (2025)

The analysis of the first hypothesis (H_{01}), which examined the impact of farm destruction on food insecurity, showed that the variable representing farm destruction (fdes) was not significant (p = 0.065). Although farm destruction was expected to worsen food insecurity, this result suggests that affected farmers may have employed various coping strategies, such as crop diversification, reliance on food aid, or temporary migration, to mitigate the impact. This finding contrasts with the findings of earlier studies by Purity et al. (2016) and Abdullahi et al. (2014), which established direct connections between land insecurity and food supply reduction. However, more recent reports from the FAO (2023) and WFP (2024) indicate that, in prolonged crisis settings, farm destruction may not be the primary driver of food insecurity. Instead, displacement, livelihood breakdown, and long-term instability tend to play more significant roles in shaping household vulnerability to hunger.

H_{02}: Impact of Cattle Theft on Food Insecurity

Table 3.2: Binary Logistic Regression Output for SO2 (Odds Ratios)- Dependent Variable: FIS

Variable	Odds Ratio	Std. Err.	z	P>|z|	95% Conf. Interval
FDEST	0.9676	0.0768	-0.41	0.678	0.8282 – 1.1305
CATHEFT	5.1494	1.2416	6.80	0.000	3.2101 – 8.2603
HUKILLIN	1.1472	0.0779	2.02	0.043	1.0043 – 1.3105
Constant	0.5815	0.1714	-1.84	0.066	0.3263 – 1.0361

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Model statistics: Number of obs = 400; LR chi2(3) = 60.23; Prob > chi2 = 0.0000; Log likelihood = -247.99219; Pseudo R^2 = 0.1083

Source: Author's Compilation using STATA 17 (2025)

Table 3.3 above revealed that cattle theft (catheft) had a strong positive and statistically significant impact on food insecurity, with an odds ratio of 5.15 and a p-value of less than 0.001. This finding indicates that households affected by cattle theft are more than five times more likely to experience food insecurity. The results highlight how the loss of livestock particularly among pastoralist groups, such as the Fulani directly undermines household capital, reduces access to food, and disrupts income-generating activities. This is consistent with the data from ACLED (2023) and OCHA (2024), which identify cattle raids as a major economic shock across Northwestern Nigeria. This also supports the findings of Ekpa et al. (2025), who noted that livestock losses contribute to long-term nutritional deficits and market instability. Furthermore, the results align with FAO (2022), which reports that pastoralist livelihoods deteriorate rapidly in conflict conditions, worsening food insecurity in affected communities.

H_{03}: Impact of Human Killings on Food Insecurity

Table 3.3: Binary Logistic Regression Output for SO3 (Odds Ratios)- Dependent Variable: FIS

Variable	Coefficient	Std. Err.	z	P>|z|	95% Conf. Interval
FDEST	0.9415	0.0727	-0.78	0.435	0.8093 – 1.0953
CATHEFT	2.8118	0.6229	4.67	0.000	1.8215 – 4.3405
HUKILLIN	1.2271	0.0802	3.13	0.002	1.0796 – 1.3947
Constant	0.5475	0.1565	-2.11	0.035	0.3127 – 0.9586

Model statistics: Number of OBS = 400; LR chi2(3) = 35.20; Prob > chi2 = 0.0000; Log likelihood = -263.61526; Pseudo R^2 = 0.0626

Source: Author's Compilation using STATA 17 (2025)

The analysis above shows that human killings (hukillin) had a statistically significant impact on food insecurity, with an odds ratio of 1.23 and p-value of 0.002. This indicates that households exposed to fatal violence are more likely to experience food insecurity. The loss of human life not only reduces the availability of labor but also triggers psychological trauma, both of which discourage continued farming and disrupts agricultural activities. This finding aligns with Ubilava et al. (2022), who demonstrated that community violence significantly lowers agricultural productivity and deters household investment in farms. Similarly, the World Food Programme (WFP, 2024) reported that violent conflict in the Sahel has led to the breakdown of communal farming systems, further worsening the food insecurity. In contrast, earlier studies, such as Idachaba (2006), gave less attention to the role of social capital loss in shaping food access, underscoring the relevance of revisiting such dynamics in current conflict-affected contexts.

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4.5 Post estimation Statistics

4.5.1 Heteroskedasticity Test

Table 4.1: Heteroskedasticity Test Result (Heteroskedastic Probit Model)

Variable	Coefficient	Std. Err.	z	P>|z|	95% Conf. Interval
FIS					
CADES	-0.0484	0.0373	-1.30	0.195	-0.1215 – 0.0248
CATHEFT	0.3472	0.2347	1.48	0.139	-0.1128 – 0.8073
HUKILL	0.1400	0.1376	1.02	0.309	-0.1297 – 0.4097
Constant	-0.2862	0.3038	-0.94	0.346	-0.8816 – 0.3093
lnsigma2					
CADES	-0.1670	0.1516	-1.10	0.271	-0.4642 – 0.1302
CATHEFT	-1.1911	0.6470	-1.84	0.066	-2.4592 – 0.0770
HUKILL	0.3105	0.1575	1.97	0.049	0.0018 – 0.6193

Likelihood-ratio test of lnsigma2=0: chi2(3) = 6.30; Prob > chi2 = 0.0979

Source: Author's Compilation using STATA 17 (2025)

The 'hetprob' command was used to test for the presence of heteroskedasticity, the results showed a p-value of 0.0979, which is insignificant at 5% level of significance as seen in table 4.1, we therefore accept the null hypotheses and conclude that there is no heteroskedasticity in the model, although the test is not applicable in Binary Logistic regression as the model does not have error terms that comes from the data sets as the distributions of errors are mainly built in to the assumptions of the models itself. (Williams, 2009).

4.5.2 Goodness of Fit

Table 4.2: Hosmer-Lemeshow Goodness-of-Fit Test

Statistic		Value
Number of observations		400
Number of groups		10
Hosmer-Lemeshow chi2(8)		14.75
Prob > chi2		0.0642

Source: Author's Compilation using STATA 17 (2025)

The Hosmer-Lemeshow chi-squared ('estat' function) was used to carry out the goodness of fit test, the result shows a chi square value of 14.75 and the p-value is 0.0642 which is higher than the 0.05 significant value, the p value is therefore non-significant and this imply that there is goodness of fit of the data, the null hypothesis is therefore not rejected.

4.6 Interpretation and Policy Relevance

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The findings of this study have clear policy implications for the government. While farm destruction was disruptive, it did not emerge as the most immediate driver of food insecurity, likely due to household adaptation strategies or external assistance. In contrast, cattle theft was the most significant factor, highlighting the central role of livestock in sustaining rural livelihoods. Therefore, protecting livestock systems may deliver more immediate food security gains than crop-focused interventions alone. Human killings were also a critical factor, as they not only reduce the availability of farm labour but also fracture the social fabric of the affected communities, leading to long-term disruptions in agricultural productivity and communal resilience.

To effectively address food insecurity in Katsina State, a multi-pronged strategy is essential. This should include strengthening livestock protection mechanisms, expanding social safety nets for households affected by violence, and restoring communal security infrastructure in the most vulnerable local government areas (LGAs). If well-coordinated, these interventions can help stabilise food systems and rebuild community trust in the face of persistent insecurity.

5.0 Recommendations

Strengthening Rural Security: Support for the Nigerian Forest Security Service (NFSS) should be scaled up, especially in border and forested zones. Enhancing personnel training, surveillance tools, and coordination with local forces will help reduce the movement of bandits (Reuters, 2024).

Community-Based Surveillance: Vigilante units should be trained, equipped, and formally integrated into early warning systems. Groups such as Yan Sakai and Yan Banga have proven effective in certain LGAs. Community-led security improves rapid threat detection, boosts morale, and restores confidence in local farming (Itelmedia, 2025; The Guardian, 2024).

Livelihood and Input Support: Stabilising security, the government and NGOs should provide agricultural inputs such as seeds, fertilisers, and extension services to returning farmers. These support packages are crucial for restoring food production, preventing long-term displacement, and reducing reliance on food aid (FAO, 2024; Adan Journal, 2024).

Agricultural Insurance Schemes: Policymakers should promote affordable agricultural insurance to cushion losses from cattle raids, crop damage, and displacement. Coverage of conflict-induced losses will help smallholder farmers rebuild and continue farming in high-risk zones (lorojournals.com, 2024; WFP, 2024).

Nutrition and Social Protection: Malnutrition has worsened in conflict-affected LGAs. Expanding school feeding programs and mobile therapeutic nutrition centres can address child hunger, especially during the lean seasons. WFP and MSF data confirm the rising number of SAM admissions in Katsina, demanding targeted nutritional interventions (FAO, 2024; The Guardian, 2024; WFP, 2024).

5.1 Conclusion

Since 2020, banditry in Katsina State has significantly intensified the rural food insecurity. The crisis has led to widespread income loss, forced displacement, and the destruction of vital livelihood assets, amplifying the socioeconomic burden on affected communities. These conditions underscore the urgent need for tailored interventions that focus on restoring

livelihoods, protecting vulnerable farmers and mitigating the worsening hunger crisis. Without targeted support and security-focused reforms, the region's long-term development remains at serious risk.

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