AEFUNAI JOURNAL OF ECONOMICS, FINANCE AND DEVELOPMENT STUDIES (AEFUNAIJEFDS)
ISSN (Print): 2536-6793 | **ISSN (Electronic):** 2536-6742 *Volume 2 (2) September, 2025*

Security Threats and Agricultural Productivity: Farmers' and Community Leaders' Views on Kidnapping and Banditry in Zamfara State, Nigeria

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DOI: 10.48028/iiprds/aefunaijefds.v2.i2.06 ***Corresponding Author:*** Abdullahi Yusuf

Abstract

This study investigates the impacts of insecurity, particularly banditry and kidnapping, on agricultural productivity, household income, and forced migration among farmers in Zamfara State, Nigeria. Data were collected through interviews with 12 community leaders and structured surveys administered to 280 individual farmers across the affected communities in the state. The results from qualitative content and thematic analyses reveal disruption of farming activities, abandonment of farmlands, the collapse of social life, and deep-seated frustration over government neglect as a result of banditry and kidnapping. Results from descriptive statistics show that insecurity has severely undermined food production, eroded farmer incomes, and triggered large-scale displacement. Among the security threats, kidnapping emerged as the most detrimental, followed closely by banditry and protection levies. Inferential analysis using binary logistic regression confirmed that all three insecurity variables significantly increase the odds of declining agricultural output, income loss, and forced migration. Notably, banditry had the strongest predictive effect on reduced productivity, while kidnapping most significantly influenced income loss and forced migration. The study concludes that insecurity in its various forms constitutes a critical barrier to agricultural sustainability and rural livelihood resilience in Zamfara State. It calls for a multi-pronged intervention strategy involving improved security presence, targeted agricultural support, and trustworthy government action to rebuild farmer confidence and restore economic stability.

Keywords: *Insecurity, Kidnapping, Banditry, Agricultural Productivity, Income loss, Force Migration*

Background to the Study

Insecurity in Zamfara State, Nigeria, has escalated dramatically in recent years, predominantly manifesting as kidnapping and banditry. *These forms of violence have instilled fear among farmers and severely disrupted agricultural production, which is the primary livelihood (NBS,* 2024). According to Boudjema and Djerbal (2023), insecurity not only leads to loss of lives and physical assets but also dismantles the agricultural value chains crucial for food security. Historically, Zamfara was known for its robust agricultural output, but the rise of banditry and kidnapping has drastically reduced agricultural productivity, with estimates indicating declines of over 70% in some areas (FAO, 2023).

The persistence of these security threats has forced many farmers to abandon their lands, with reports indicating that those who attempt to farm often face extortion from armed groups, which further diminishes economic viability (Human Rights Watch, 2020). A significant number of farmers have resorted to paying "protection fees" to access their farmlands, leading to a cycle of economic exploitation and reduced food production (International Crisis Group, 2020). This ongoing crisis has resulted in mass displacements, with communities being uprooted and forced to seek safety in urban centers or internally displaced persons (IDP) camps (Maiharaji, 2023).

Although the name Zamfara is synonymous with kidnapping and banditry in Nigeria today, not the entire state is geographically affected. However, most of the affected areas are among the major farming communities, such as Shinkafi, Birnin, Magaji, Kauran, Namoda, Zurmi, Bungudu, Bakura, Bukuyum, Tsafe, Anka, and Maru (FAO, 2023). Despite the severity of insecurity including banditry and kidnapping in these communities, there are no available studies that examine the situation from the perspectives and experiences of community leaders and farmers, particularly regarding how banditry and kidnapping affect agricultural production and socioeconomic well-being. Additionally, no studies investigate government efforts to combat such insecurity, including the provision of aid, compensation, and relief materials to victims in the affected communities. Against this background, this study aims to address these gaps.

Literature Review

Several studies have examined the adverse effects of insecurity particularly kidnapping and banditry on agricultural productivity. The impacts of banditry, kidnapping, and other forms of insecurity on agricultural output and socioeconomic well-being show both shared patterns and country-specific variations across Niger, Chad, Cameroon, and Nigeria. In Niger, studies indicate that banditry-related insecurity disrupts farming activities, leading to decreased crop yields and livestock production. Forced migration due to violence has significantly reduced agricultural output, particularly in regions like Maradi. Hassan et al. (2022) found that fear of violence discourages agricultural investments, further harming productivity. Similarly, in Chad, agricultural productivity is heavily impacted by climate-related resource conflicts, which exacerbate banditry. Livestock losses, restricted grazing access, and forced migration contribute to soil degradation and overgrazing particularly in semi-arid regions where pasture is already scarce. Cameroon has experienced comparable disruptions in agricultural

productivity due to violence and restricted market access. Farmers frequently abandon their land temporarily, leading to lower crop yields and heightened food insecurity. Insecurity also disrupts local markets by restricting the flow of agricultural goods. Recurring insecurity has led to widespread poverty and food insecurity, with financial resources dwindling as rural credit systems collapse under violence, leaving communities with limited recovery options. Many farmers lack the means to rebuild their livelihoods, worsening socioeconomic challenges. For Chadian farmers, the consequences include deepening rural poverty, malnutrition, and economic instability due to agricultural losses. Displacement often forces affected populations to abandon farming for alternative income sources, further straining local economies.

In Northern Nigeria encompassing states such as Sokoto, Kebbi, Zamfara, Katsina, Kano, Yobe, Borno (including Maiduguri), Adamawa, Bauchi, and Plateau, insecurity has severely disrupted agriculture. Njoku and Onwumere (2023) investigated the impact of Boko Haram insurgency on agricultural productivity in Northeastern Nigeria, focusing on agricultural output, farmer displacement, and economic well-being. Their findings, based on panel data analysis, revealed that insurgency significantly reduced both agricultural production and economic stability. Similarly, Yakubu and Abdullahi (2020) examined the effects of communal clashes on agricultural productivity in Central Nigeria, analyzing crop production, food security, and farmer displacement. Their longitudinal study found that such conflicts led to sharp declines in crop yields and increased food insecurity, concluding that communal clashes are a major obstacle to agricultural development.

While existing studies have established the negative impacts of insecurity on agricultural productivity across the region, significant knowledge gaps remain particularly regarding Zamfara State. Current research relies heavily on secondary data that often fails to capture the actual realities on the ground, with poor coverage of the most affected communities. Also, there is limited documentation of first-hand experiences from community leaders and farmers who bear the brunt of these security challenges. Their perspectives on production constraints, coping mechanisms, and community resilience strategies remain largely unexplored in academic literature. This lack of community-level data from primary sources limits the development of context-specific interventions that could effectively support agricultural communities in Zamfara. The need to addressing these gaps through targeted fieldwork and participatory research would provide the clearer picture not only to policymakers in the state but also to academic literature and the general public.

Methodology

The study employed content analysis, thematic analysis, descriptive statistical tools and binary logistic models for data analysis. The use of content and thematic methods was employed to examine qualitative responses from both community leaders and farmers in the selected study areas largely affected by banditry and kidnapping. Descriptive statistical tools were used to give numerical content of both content and thematic analysis. In addition, the study used binary logistic regression for triangulation. That is to examine whether the outcomes will reflect the results of content analysis, thematic analysis and descriptive

statistics. Table 3.1 present the main variables for quantitative analysis. The table contains name of variables, their respective label as well as measurements and classifications.

Table 1: Variables, Label, & Measurement, Classification

Variable Name	Label	Measurement	Classification
Banditry	BDT	Insecurity	Independent
Kidnapping	KDN	Insecurity	Independent
Protection Levy	PRL	Insecurity	Independent
Total Agricultural Output	TAO	Agricultural Productivity	Dependent
Farmer Income Loss	FIL	Economic Well-being	Dependent
Migration Rate	MR	Social Well-being	Dependent

Source: Computed by the Author

Despite the fact that binary logistic regression model *was employed for triangulation purposes by comparing and validating the results* from content analysis, thematic analysis and descriptive statistics; there is the need to specify the equations for the model. Since the objectives include examining the impact of banditry, kidnapping and protection levy which is used as control variable on agricultural production and the socioeconomic wellbeing of farmers measured as farmer income loss and migration rate, there will be three equations. Firstly, the functional model (s) is specified as:

$$Y = f(X_1, +X_2, +X_3, \dots N) \quad \text{(Equation 1)}$$
$$TAO = f(BDT, KDN, PRL) \quad \text{(Equation 2)}$$
$$FIL = f(BDT, KDN, PRL) \quad \text{(Equation 3)}$$
$$MR = f(BDT, KDN, PRL) \quad \text{(Equation 4)}$$

Furthermore, the econometric model of the functional specification above can be further transforming into the following:

$$Y_{it} = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \mu_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{(Equation 5)}$$
$$TAO_{it} = \beta_0 + \beta_1 BDT_{it} + \beta_2 KDN_{it} + \beta_3 PRL_{it} + \mu_{it} \dots\dots\dots\dots\dots\dots \text{(Equation 6)}$$
$$FIL_{it} = \beta_0 + \beta_1 BDT_{it} + \beta_2 KDN_{it} + \beta_3 PRL_{it} + \mu_{it} \dots\dots\dots\dots\dots\dots \text{(Equation 7)}$$
$$MR_{it} = \beta_0 + \beta_1 BDT_{it} + \beta_2 KDN_{it} + \beta_3 PRL_{it} + \mu_{it} \dots\dots\dots\dots\dots\dots \text{(Equation 8)}$$

Where TAO = Total Agricultural Output, FIL= Farmer Income Loss, MR= Migration Rate, BDT = Banditry, KDN = Kidnapping, PRL = Protection Levy, μ = Error term or white noise, i = sampled communities, t = Time Period and β_0 = Constant term, $\beta_1 - \beta_5$ = Coefficients of the estimated parameters.

Traditionally, when primary data is used where the dependent variable is in the form of YES or NO, Logit regression model is the right statistical tool for hypotheses test (Tanko, 2019). Binary Logistic Regression models shows how binary response variable Y depends on a set of k explanatory variables, $X = (x_1, x_2 \dots x_k)$. Logit(π)= $\log(\pi_1 - \pi) = \beta_0 + \beta x_1 \dots \beta_{kk})$ which models the log odds of probability of "success" as a function of explanatory variables. Random component: The distribution of Y is assumed to be Binomial (n,π), where π is a probability of "success". Systematic component: X's are explanatory variables (can be continuous, discrete, or both) and are linear in the parameters, e.g., $\beta_0 + \beta x_1 \dots + \beta_0 + \cdots \beta_{kk}$.

Results

This section presents the findings of the study. The presentation of results begins with demographic attributes of community leaders, geography and major farm produce as well as the analysis of community leaders' responses. It continues with content and thematic analysis of the themes derived from interviews. Thereafter, results from logistic regression are presented.

Demographic Attributes of Community Leaders and Locations

Based on the interview transcripts, this section presents the contextual information about the demographic profiles of the respondents, who are community leaders, as well as the geographic characteristics of the areas they represent.

Table 2: Demographic Profile of Respondents

Attribute	Description	Frequency
Gender	All male elders	12
Age Range	45–70	12
	Primary Farming	8
Occupation	Secondary Small trade	2
	Local governance roles	2
Education Level	Limited formal education	8
	Village heads	
Leadership Role	Clan leaders	12 (100%)
	Farming cooperatives	

Source: Computed by the Author using Excel

The demographic profile presented in Table 2 describes the background characteristics of 12 respondents, all of whom are community leaders from farming communities. In terms of gender, all the respondents are male. This reflects the gendered nature of traditional leadership in many rural farming communities, where leadership and decision-making roles are predominantly held by men. Furthermore, all respondents are within the age range of 45 to 70

years. In the area of occupation, 8 respondents cited primary farming which indicates their strong personal and economic ties to agricultural activities. 2 respondents engage in secondary small trading, possibly supplementing their farming income and the other 2 respondents hold local governance roles. The majority of respondents 8 out of 12 have limited formal education, which is common in many rural areas.

Content Analysis of Interview Transcripts

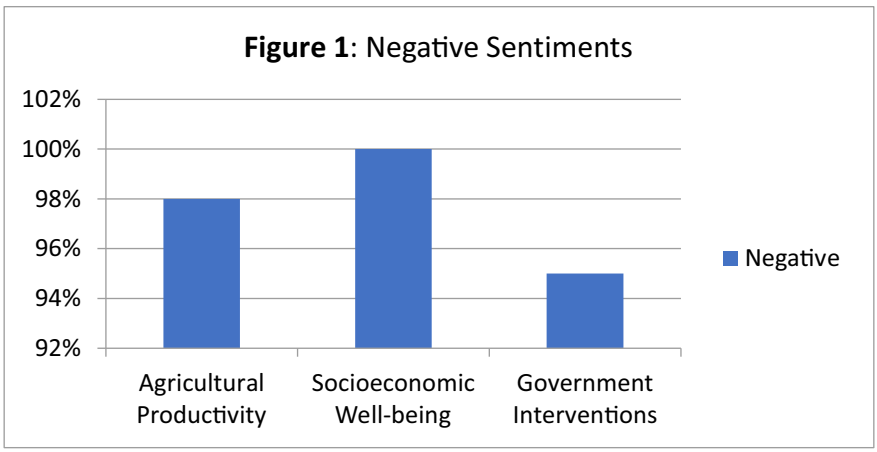
This section presents the analysis of themes quantifications from the interview transcripts with community leaders from the three geopolitical zones of Zamfara State. Each occurrence of a theme within the transcripts was counted to determine its frequency. In addition, an intensity analysis was conducted to assess the strength and tone of sentiments expressed in the responses, distinguishing between negative and positive perceptions regarding each theme.

Table 3: Frequency of Key Themes

Theme	Frequency	Example Quote
Restricted Farm Access	12	*"We can only farm near our homes" (Birnin Magaji).*
Extortion by Bandits	15	*"Bandits demand payment before planting/harvesting" (Zurmi).*
Abandoned Farmlands	10	*"Most farms are deserted" (Maru).*
Decline in Crop Yields	14	*"100 bags → 5 bags" (Kauran Namoda).*
Displacement/Migration	9	*"Families flee to IDP camps" (Gusau -Mada).*
Collapse of Social Life	11	*"No weddings, markets empty" (Bungudu).*
Government Neglect	16	*"We hear promises but see no help" (Anka).*
Retaliation After Military Ops	7	*"Bandits force us to rebuild camps" (Tsafe).*

Source: Computed by the Author using Nvivo-V12

Table 4 presents a sentiment analysis of interview responses, categorizing the tone of statements related to three core themes: agricultural productivity, socioeconomic well-being, and government interventions. For Agricultural Productivity, 98% of the responses conveyed negative sentiment, indicating distress among farmers regarding the impact of insecurity on farming activities. Only 2% of responses were neutral, with no positive sentiment recorded. This overwhelming negativity points to a drastic decline in food production and a sense of helplessness among farmers. In the case of Socioeconomic Well-being, the sentiment was entirely negative 100%, indicating a total collapse of livelihoods. Respondents consistently described the deterioration of community life, loss of income, forced displacement, and the breakdown of social structures. This suggests that insecurity has deeply eroded both economic stability and everyday life for rural populations. Regarding Government Interventions, 95% of sentiments were negative, while the remaining 5% were neutral. There were no positive responses, signaling a dominant perception of neglect or betrayal by government authorities. Many respondents expressed frustration with unfulfilled promises and the absence of meaningful support or protection. Figure 1 displayed the context of negative sentiments.



Thematic Analysis

This section presents a thematic analysis of qualitative data collected from community leaders. The analysis is based on understandings from interviews, grouped into themes supported by direct quotes from affected communities.

Table 5: Impact of Insecurity on Agricultural Productivity

Theme	Supporting Quotes from Transcripts
Restricted Farm Access	*"We can no longer access our farmlands freely... We now rely on nearby farms closer to our homes" (Kauran Namoda).*
Extortion & Taxation by Bandits	*"Farmers are forced to pay bandits to access farms... pay another round of taxes before harvesting" (Zurmi).*
Abandoned Farmlands	*"Most of our farms are abandoned... If anyone dares to go far, they may not return" (Maru).*
Decline in Crop Yields	*"A man who used to harvest 100 bags of millet now struggles to get 5 bags" (Kauran Namoda).*
Disruption of Inputs & Markets	*"Inputs are hard to get... Markets are empty" (Anka, Bukuyum).*

Source: Computed by the Author using Nvivo-V12

Table 5 presents qualitative evidence from interview transcripts that illustrates the devastating effects of insecurity particularly banditry, kidnapping and protection levy on agricultural productivity in Zamfara State. The theme of Restricted Farm Access reflects how fear of attacks has confined farmers to smaller plots close to their homes. As noted in Kauran Namoda, the inability to safely reach larger, more fertile farmlands forces reliance on less productive areas, leading to diminished output.

Under Extortion and Taxation by Bandits, respondents describe a system where armed groups control access to farmland, charging farmers at multiple points before planting and

again before harvesting. As reported in Zurmi, this illegal taxation erodes profits and acts as a disincentive to farming altogether. The issue of Abandoned Farmlands, as highlighted by testimonies from Maru, indicates a significant withdrawal from agricultural activity. Entire farms are left untended due to life-threatening risks, resulting in widespread underutilization of arable land. A stark example of the impact on Crop Yields comes from Kauran Namoda, where a farmer who once produced 100 bags of millet now struggles to yield even 5 bags. This represents a catastrophic decline of over 90% in output, underscoring the severity of the crisis. Furthermore, Disruption of Inputs and Markets further compounds the problem. Insecurity has made it difficult to obtain farming inputs such as seeds and fertilizers, while market activities have come to a standstill, as observed in Anka and Bukuyum. This breakdown of the agricultural value chain not only hinders production but also cuts off income and food supply.

Table 6: Effects on Socioeconomic Well-being of Farmers

Theme	Supporting Quotes from Transcripts
Poverty & Hunger	*"Income has dropped to almost nothing... Hunger is everywhere" (Birnin Magaji).*
Displacement & Migration	*"Many have fled, leaving behind generations of heritage" (Tsafe).*
Collapse of Social Life	*"Weddings are quiet, markets are dry... People avoid public gatherings" (Maru).*
Trauma & Psychological Impact	*"Our children are growing up with trauma... They talk about guns, not school" (Bukuyum).*
Decline in Education & Healthcare	*"Schools are closing, clinics are deserted" (Bungudu).*

Source: Computed by the Author using Nvivo-V12

Table 6 presents the multidimensional toll that insecurity has taken on the socioeconomic well-being of farmers in Zamfara State from affected communities. The theme of poverty and hunger indicates the direct economic impact of insecurity. In Birnin Magaji, respondents note that income has nearly vanished and hunger is widespread. This reflects how the disruption of farming and market activity has decimated household earnings, leaving families unable to meet basic needs. Furthermore, displacement and migration emerge as another critical consequence. As described in Tsafe, people have been forced to flee ancestral homes, abandoning land, property, and community roots. This not only results in physical dislocation but also fractures long-standing social and cultural ties, weakening the social fabric. The collapse of social life, reported in Maru, shows how fear and instability have silenced once vibrant community events. Traditional social activities such as weddings and markets are now rare or subdued, as people avoid gatherings due to safety concerns. This erosion of public life damages communal identity and cohesion. Under trauma and psychological impact, the testimony from Bukuyum reveals the emotional and mental toll, especially on children. Growing up amid violence, many are developing a warped sense of normalcy where guns, not education, dominate their thinking. This indicates a looming generational crisis in mental health and societal values. Also, the decline in education and healthcare, as reported from

Bungudu, points to the breakdown of essential services. Schools and health clinics are either closing or abandoned, depriving communities of critical human capital development and life-saving care.

Table 7: Government Interventions

Theme	Supporting Quotes from Transcripts
Perceived Government Neglect	*"We have not received any assistance from the government... We feel forgotten" (Shinkafi).*
Ineffective Security Presence	*"The military presence is not consistent... After operations, bandits retaliate" (Gusau-Mada).*
Lack of Agricultural Support	*"We need agricultural support to rebuild... but hear only speeches" (Bakura).*
Forced Labor for Bandits	*"We are forced to rebuild bandit camps after military operations" (Kauran Namoda).*
Broken Promises	*"Promises from officials fade quickly... We need action, not words" (Gummi).*

Source: Computed by the Author using Nvivo-V12

Table 7 sheds light on community perceptions of government efforts or the lack thereof in addressing insecurity and its impact on rural farming communities in Zamfara State. The theme of Perceived Government Neglect is strongly reflected in the quote from Shinkafi, where residents express feeling "forgotten" due to the absence of any meaningful assistance. This sentiment underlines a general view that government presence is either invisible or ineffectual in these crisis-affected areas. Also, ineffective security presence, as described by respondents in Gusau-Mada, highlights a pattern where military interventions are inconsistent and often provoke retaliatory attacks by bandits. This suggests that the current security strategy lacks sustainability and fails to protect communities in the long term.

Under Lack of Agricultural Support, the quote from Bakura illustrates that despite the massive losses suffered by farmers, there has been no provision of agricultural inputs, recovery funds, or support services. Communities hear promises and public speeches but receive no actual help, leaving them unable to restart their livelihoods. The mention of Forced Labor for Bandits in Kauran Namoda reveals an alarming situation where civilians are coerced into rebuilding hideouts for the same bandits targeted by military operations. This indicates both a breakdown of law enforcement and a dangerous reversal of power where residents are subjected to exploitation by criminal elements. Furthermore, the issue of broken promises, as voiced in Gummi, speaks to a deep erosion of trust in political leadership. Community members express frustration over repeated assurances that are never fulfilled, reinforcing a belief that the government is either incapable or unwilling to act decisively.

Analysis of Responses from Individual Farmers

This section shifts from qualitative community leader perspectives to a quantitative examination of how insecurity affects individual farmers across Zamfara State. Drawing on survey data from 280 farmers, the analysis employs statistical methods to systematically assess the varying impacts of different security threats on agricultural production and household welfare. The approach moves beyond narrative accounts to measure and compare the severity of specific challenges through descriptive statistics and regression modeling.

Demographic Attributes of the Respondents

Table 8: Demographic Attributes of Individual Farmer Respondents

Variable	Category	Frequency	Percentage
Sex	Male	235	83.9%
	Female	45	16.1%
Age Group	Under 30	42	15.0%
	30–49	133	47.5%
	50 and above	105	37.5%
Primary Occupation	Crop Farming	210	75.0%
	Mixed Farming	60	21.4%
	Others	10	3.6%
Educational Level	No Formal Education	198	70.7%
	Primary	55	19.6%
	Secondary & Above	27	9.6%
Household Size	≤ 5 members	78	27.9%
	6–10 members	165	58.9%
	> 10 members	37	13.2%

Source: Computed by the Author using *Nvivo-V12*

Table 8 presents the demographic profile of individual farmer respondents. The data shows that the farming population is predominantly male, with 83.9 percent of respondents being men. However, the presence of female respondents, though smaller at 16.1 percent, indicates that women are also affected by the ongoing insecurity, often in ways that may be less visible. In terms of age distribution, nearly half of the respondents are between 30 and 49 years old. This group represents the most economically active segment of the population, suggesting that the crisis is directly affecting those with the highest productive capacity. An additional 37.5 percent are aged 50 and above, pointing to the heightened vulnerability of older farmers who may face greater difficulty relocating or adapting to new livelihoods amid insecurity. Occupation-wise, most respondents depend heavily on land-based activities. About 75 percent are primarily crop farmers, while 21.4 percent practice mixed farming combining crop cultivation with livestock rearing. Only 3.6 percent reported alternative sources of income, indicating limited economic diversification and a high level of exposure to agricultural disruptions.

Educational attainment among the respondents is low. This is because majority, 70.7 percent, has no formal education, and only 9.6 percent attained a secondary level or higher. Such low literacy rates could restrict access to critical information, engagement with government and NGO support programs, and constrain adaptive strategies that require new knowledge or skills. Household size further compounds the socioeconomic burden. Most respondents belong to large households, with 58.9 percent reporting between six and ten members. These large family units increase the pressure on already strained food resources and income. Moreover, 13.2 percent belong to households with more than ten members, intensifying vulnerability in the face of dwindling agricultural output and insecurity-related displacement. Altogether, the demographic characteristics reflect a farming population that is largely male, middle-aged, poorly educated, economically dependent on agriculture, and responsible for supporting large households.

Descriptive Statistical Analysis

This subsection presents a data-driven ranking of security threats based on their measurable impacts. Using quantitative survey responses, it systematically evaluates how banditry, kidnapping and protection levy affect agricultural productivity, household income, and displacement rates. The analysis employs comparative metrics to identify which threats exert the most severe pressures on farming communities.

Overall Ranking of Independent Variables by Impact

Table 9: Impacts of Independent Variables on the Dependent Variables

Rank	Variable	Strongest Impact	Weakest Impact
1	KDN	FIL (92.2%), MR (88.6%)	TAO (85.0%)
2	BDT	TAO (90.4%), MR (88.6%)	FIL (86.8%)
3	PRL	TAO (85.8%), MR (73.5%)	FIL (63.3%)

Source: Computed by the Author using Nvivo-V12

The comparative analysis in Table 9 indicates kidnapping as the most damaging form of insecurity affecting farmers in Zamfara State. It shows the highest impact on both income loss (92.2%) and forced migration (88.6%), indicating that it poses the greatest threat to farmers' livelihoods and stability. Banditry follows closely, with strong effects on declining agricultural productivity (90.4%) and migration (88.6%), and slightly less on income loss (86.8%), suggesting it is a pervasive but somewhat less personal threat than kidnapping. Protection levies are the third most influential, significantly affecting agricultural output (85.8%) and migration (73.5%), though their impact on income loss (63.3%) is more modest. This pattern suggests that while protection levies burden farmers financially, their primary impact is in encouraging migration due to prolonged economic pressure and fear.

Ranking the Impact on Each Dependent Variable

This section presents the impact of each independent variable on a particular dependent variable. It begins with agricultural productivity, followed by the socioeconomic well-being of farmers, measured by farmer income loss and forced migration.

Table 10: Declining Agricultural Output (TAO)

Rank	Variable	Yes
1	Banditry	90.4%
2	Protection Levy	85.8%
3	Kidnapping	85.0%

Source: Computed by the Author using Nvivo-V12

The analysis in Table 10 shows that all forms of insecurity have a strong negative impact on agricultural productivity in Zamfara State. Banditry emerges as the most significant threat, disrupting farming through direct violence, theft, and fear. Protection levies and kidnapping closely follow, reflecting how extortion and abduction undermine both the financial capacity and psychological readiness of farmers to engage in agriculture. In short, with all factors recording over 75% prevalence, the findings confirm that insecurity in its various forms is a central barrier to agricultural sustainability in the region.

Table 11: Farmer Income Loss (FIL)

Rank	Variable	Yes
1	Kidnapping	92.2%
2	Banditry	86.8%
3	Protection Levy	63.3%

Source: Computed by the Author using Nvivo-V12

The analysis in Table 11 reveals that kidnapping, with 92.2% prevalence, is identified as the most damaging, significantly draining farmer resources through ransom payments, labor loss, and widespread fear. Banditry follows closely at 86.8%, indicating how theft and violence continuously deprive farmers of assets and revenue. In contrast, protection levies, though still widespread at 63.3%, appear to have a less direct financial impact.

Table 12: Migration Rate (MR)

Rank	Variable	Yes
1	Kidnapping	88.6%
2	Banditry	88.6%
3	Protection Levy	73.5%

Source: Computed by the Author using Nvivo-V12

The analysis in Table 12 shows that kidnapping and banditry are the leading drivers of forced migration in agricultural communities, each with an exceptionally high prevalence of 88.6%. Their equal and extreme impact reflects the normalization of violent crime as a major push

factor, prompting extensive displacement. Protection levies follow as a significant cause of migration at 73.5%.

Inferential Analysis

Building upon the descriptive findings from previous sections, this subsection employs logistic regression models to statistically examine the predictive relationships between different forms of insecurity and key livelihood outcomes among Zamfara farmers. The analysis specifically tests how banditry, kidnapping, and protection levies influence affects: (1) agricultural productivity decline, (2) household income loss, and (3) forced migration patterns. Therefore, three separate regression results are presented each corresponding to one of the dependent variables to quantify the strength and significance of these security threats while controlling for other factors. The results complement and enhance the outcomes from descriptive statistics, content analysis and thematic analysis.

Summary Statistics

Table 13a: Summary Statistics for Agricultural Output Decline (TAO)

Variable	Yes	No	Mean	Std. Dev.	Min	Max
Banditry	254	27	0.904	0.294	0	1
Kidnapping	239	42	0.850	0.358	0	1
Protection Levy	241	40	0.858	0.349	0	1
Agricultural Output Decline	219	62	0.779	0.415		

Table 13b: Summary Statistics for Farmer Income Loss (FIL)

Variable	Yes	No	Mean	Std. Dev.	Min	Max
Banditry	244	37	0.869	0.338	0	1
Kidnapping	259	22	0.922	0.269	0	1
Protection Levy	178	103	0.633	0.482	0	1
Farmer Income Loss	193	88	0.687	0.464	0	1

Table 13c: Summary Statistics for Migration Rate (MR)

Variable	Yes	No	Mean	Std. Dev.	Min	Max
Banditry	210	27	0.886	0.318	0	1
Kidnapping	249	32	0.886	0.318	0	1
Protection Levy	111	40	0.735	0.442	0	1
Migration Rate	125	156	0.445	0.497	0	1

Source: Computed by the Author using Gretl-V10

Table 13 presents summary statistics showing how banditry, kidnapping, and protection levies affect agricultural output, farmer income, and migration. The mean, standard deviation, minimum, and maximum values provide insight into the prevalence and variability of these impacts across respondents. For agricultural output decline, banditry has the highest mean value of 0.904 with a low standard deviation of 0.294, indicating a widespread and consistent effect. Kidnapping and protection levies also show high means of 0.850 and 0.858, respectively, with moderate variation, confirming their significant roles in disrupting agricultural activities. The agricultural output decline variable itself has a mean of 0.779, reflecting that a large majority of respondents reported reduced production.

In terms of farmer income loss, kidnapping has the highest mean (0.922) and the lowest standard deviation (0.269), suggesting that its impact is both severe and uniformly experienced. Banditry follows with a mean of 0.869 (SD = 0.338), while protection levies have a lower mean of 0.633 and a higher standard deviation of 0.482, indicating more variation in how they affect farmers economically. The income loss variable has a mean of 0.687, meaning nearly 69% of farmers experienced income loss, with moderate variability. Regarding migration, banditry and kidnapping both have high and identical mean values of 0.886 (SD = 0.318), showing that these forms of violence are leading drivers of displacement and are relatively consistent across respondents. Protection levies have a lower mean of 0.735 and a higher SD of 0.442, suggesting more localized or uneven effects. The migration rate itself has a mean of 0.445 and a standard deviation of 0.497, indicating that fewer than half of the respondents migrated, with high variation in responses.

Pre-Estimation Test Results

Before performing regression analysis, data to be used must be tested or examined to satisfy the key assumptions. Consequently, the necessary tests for binary logistic regression were conducted and outcomes are presented in Tables 14A and 14-B.

Table 14-A: Multicollinearity Test Using Variance Inflation Factor (VIF)

Predictor Variable	VIF Value	Tolerance
Banditry	2.12	0.472
Kidnapping	2.44	0.409
Protection Levy	1.72	0.581

Source: Computed by the Author using Gretl-V10

Table 14-A displays the results of a multicollinearity test conducted using the Variance Inflation Factor (VIF) and tolerance values for three predictor variables: banditry, kidnapping, and protection levy. The VIF values for all three variables 2.12 for banditry, 2.44 for kidnapping, and 1.72 for protection levy are well below the commonly accepted threshold of 5. This indicates that multicollinearity is not a significant issue and that the predictors are not highly correlated with one another. Additionally, the tolerance values for each variable 0.472 (banditry), 0.409 (kidnapping), and 0.581 (protection levy) are all comfortably above

the critical limit of 0.1, further supporting the conclusion that each variable contributes unique and non-redundant information to the model. Overall, these results confirm the statistical independence of the predictors and the robustness of the regression estimates derived from them.

Table 14-B: Sample Size Adequacy Test

Criterion	Min- R	Observed (MR=125)
10 cases per predictor (5 vars)	50	125
20 cases per predictor (conservative)	100	125

Source: Computed by the Author using Gretl-V10

Table 14-B presents the sample size adequacy test results. The sample size adequacy test compares the observed sample size of 125 cases where migration rate = 125 against minimum requirements based on standard rules of thumb for regression analysis. The data comfortably exceed the minimum threshold of 10 cases per predictor variable which requires at least 50 cases and even surpass the more conservative criterion of 20 cases per predictor which requires at least 100 cases. This ensures the study has sufficient statistical power and reliability for the number of predictors included.

Results from Inferential Analysis

Table 15: Effect of Banditry and Kidnapping on Agricultural Output

Dependent Variable: Declining Agricultural Output (TAO)					
Variable	**Coefficient**	**Std. Er**	**Wald**	**p-value**	**Odds Ratio**
Constant	-2.108	0.642	10.77	0.001	0.121
Banditry (BDT)	1.247	0.398	9.80	0.002	3.481
Kidnapping (KDN)	1.089	0.373	8.53	0.004	2.971
Protection Levy (PRL)	0.801	0.354	5.11	0.024	2.228
Model Summary					
Statistic				**Value**	
-2 Log Likelihood				231.56	
Cox & Snell R^2				0.432	
Nagelkerke R^2				0.586	
Classification Accuracy				89.5%	
Observations (N)				281	

Source: Computed by the Author using *Gretl-V10*

Table 15 presents the results of a logistic regression analysis examining the impact of key insecurity variables banditry, kidnapping, and protection levy on the likelihood of declining agricultural output (TAO) among farmers. The regression model is based on 281

observations and demonstrates strong explanatory power and predictive accuracy. The constant term has a negative coefficient of -2.108 ($p = 0.001$), with an odds ratio of 0.121, indicating that in the absence of insecurity factors, the baseline likelihood of agricultural output decline is low. All three predictor variables have positive and statistically significant coefficients, meaning that their presence significantly increases the probability of declining agricultural output.

Banditry has the strongest effect with a coefficient of 1.247 ($p = 0.002$) and an odds ratio of 3.481, suggesting that the odds of output decline are over 3.4 times higher when banditry is reported. Kidnapping also shows a strong and significant influence, with a coefficient of 1.089 ($p = 0.004$) and an odds ratio of 2.971, indicating nearly a threefold increase in the likelihood of output decline. Protection levy, while having the smallest coefficient (0.801, $p = 0.024$), still significantly increases the odds of output decline by more than two times (odds ratio = 2.228).

The model's performance metrics confirm its robustness: the -2 Log Likelihood is 231.56, indicating a good fit to the data. The Cox & Snell R^2 value of 0.432 and the Nagelkerke R^2 of 0.586 show that a substantial portion of the variance in agricultural decline is explained by the model. Moreover, the classification accuracy of 89.5% reflects the model's high predictive strength. In summary, the regression results demonstrate that banditry, kidnapping, and protection levies are all significant and powerful predictors of declining agricultural output. Among them, banditry poses the greatest risk, followed closely by kidnapping, with protection levies also playing a substantial role. The model provides statistically reliable and practically meaningful evidence of how insecurity undermines agricultural productivity in the study area.

Table 16: Effect of Banditry and Kidnapping on Farmer Income Loss

Dependent Variable: Farmer Income Loss (FIL)					
Variable	**Coefficient**	**Std. Er**	**Wald**	**p-value**	**Odds Ratio**
Constant	-1.762	0.519	11.52	0.001	0.172
Banditry (BDT)	0.963	0.327	8.67	0.003	2.619
Kidnapping (KDN)	1.284	0.374	11.78	0.001	3.611
Protection Levy (PRL)	0.884	0.316	7.83	0.005	2.420
Model Summary					
Statistic				**Value**	
-2 Log Likelihood				243.18	
Cox & Snell R^2				0.389	
Nagelkerke R^2				0.519	
Classification Accuracy				87.9%	
Observations (N)				281	

Source: Computed by the Author using Gretl-V10

Table 16 presents the logistic regression results assessing the influence of insecurity-related factors banditry, kidnapping, and protection levy on the likelihood of farmer income loss (FIL). The analysis is based on 281 observations and shows a statistically robust model with strong predictive performance. The constant term has a negative and significant coefficient of -1.762 ($p = 0.001$), with an odds ratio of 0.172, suggesting that in the absence of the predictor variables, the baseline probability of income loss is relatively low. All three security variables in the model show positive and statistically significant effects, meaning their presence significantly increases the likelihood of income loss among farmers.

Kidnapping has the most substantial impact, with a coefficient of 1.284 ($p = 0.001$) and an odds ratio of 3.611. This indicates that exposure to kidnapping increases the odds of income loss by more than 3.6 times, making it the strongest predictor in the model. Banditry follows with a coefficient of 0.963 ($p = 0.003$) and an odds ratio of 2.619, showing that its presence more than doubles the risk of income loss. Protection levy also significantly contributes to income decline, with a coefficient of 0.884 ($p = 0.005$) and an odds ratio of 2.420, suggesting that extortion practices likewise elevate the probability of financial hardship.

The model summary statistics support the strength of these findings. The -2 Log Likelihood is 243.18, indicating a good model fit. The Cox & Snell R^2 of 0.389 and Nagelkerke R^2 of 0.519 show that the model explains a moderate but meaningful proportion of the variance in income loss. Furthermore, the classification accuracy is 87.9%, confirming that the model performs well in correctly predicting income loss cases. In conclusion, the regression results clearly demonstrate that kidnapping, banditry, and protection levies significantly increase the likelihood of farmer income loss, with kidnapping exerting the strongest influence. These findings highlight how different forms of insecurity are eroding rural livelihoods by directly undermining farmers' earnings, while the model's performance affirms the reliability of these associations.

Table 17: Effect of Banditry and Kidnapping on Force Migration

Dependent Variable: Force Migration Rate					
Variable	**Coefficient**	**Std. Er**	**Wald**	**p-value**	**Odds Ratio**
Constant	-0.942	0.402	5.49	0.019	0.390
Banditry (BDT)	0.762	0.293	6.78	0.009	2.143
Kidnapping (KDN)	0.893	0.305	8.58	0.003	2.442
Protection Levy (PRL)	0.481	0.236	4.14	0.042	1.617
Model Summary					
Statistic				**Value**	
-2 Log Likelihood				297.64	
Cox & Snell R^2				0.201	
Nagelkerke R^2				0.271	
Classification Accuracy				78.6%	
Observations (N)				281	

Source: Computed by the Author using *Gretl-V10*

Table 17 presents the logistic regression results analyzing the effects of banditry, kidnapping, and protection levies on the likelihood of forced migration among farmers. Based on 281 observations, the model provides statistically significant findings and moderate predictive performance. The constant term has a negative and significant coefficient of -0.942 ($p = 0.019$), with an odds ratio of 0.390, suggesting that in the absence of these insecurity factors, the baseline likelihood of forced migration is relatively low. All three predictors show positive and statistically significant coefficients, indicating that their presence increases the probability of displacement.

Kidnapping has the strongest effect, with a coefficient of 0.893 ($p = 0.003$) and an odds ratio of 2.442, meaning farmers exposed to kidnapping are about 2.4 times more likely to be forced to migrate than those not affected. Banditry also has a significant impact, with a coefficient of 0.762 ($p = 0.009$) and an odds ratio of 2.143, suggesting it more than doubles the odds of forced migration. Protection levies show a smaller but still significant influence, with a coefficient of 0.481 ($p = 0.042$) and an odds ratio of 1.617, indicating a 61.7% increase in the likelihood of migration for those subjected to extortion or illegal payments.

Conclusion

The study examined the impacts of banditry and kidnapping on agricultural productivity, household income, and forced migration among farmers in Zamfara State, Nigeria. Through a combination of qualitative responses from community leaders and quantitative data from 280 individual farmers, the outcomes provide robust evidence on how various forms of insecurity have disrupted rural livelihoods and contributed to socioeconomic decline. Specifically, the major findings which serve as the conclusion of the study are itemized as follows:

1. Community leaders described rampant fear, abandonment of farmlands, reduced crop yields, and a collapse in social life due to ongoing insecurity.
2. Sentiment analysis revealed near-universal negative perceptions, especially concerning agricultural output, the role of government, and the broader socioeconomic condition of farming communities.
3. Thematic analysis confirmed that restricted access to farms, extortion by bandits, and disruption of input markets are major threats to agricultural productivity, while hunger, displacement, trauma, and a breakdown in education and healthcare represent the broader impacts on well-being.
4. Descriptive statistics showed that kidnapping had the most devastating effect on farmer income and migration, while banditry most significantly impacted agricultural productivity.
5. Logistic regression models confirmed that all three forms of insecurity significantly increase the likelihood of declining agricultural output, income loss, and forced migration. Banditry had the strongest influence on productivity decline, kidnapping on income loss and displacement, and protection levies contributed substantially across all three outcomes.

The findings stress that insecurity in Zamfara State is not merely a threat to physical safety but a powerful driver of economic collapse, food insecurity, and rural disintegration. Farmers are unable to access their lands freely, are extorted by criminal groups, and live in fear of abduction and violence. This has led to drastic reductions in farm output, rampant income loss, and the displacement of farming households. The government's response has been widely perceived as inadequate. Communities report neglect, broken promises, and ineffective military operations that sometimes worsen their vulnerability. Without urgent and sustained interventions, these conditions will continue to undermine food security, deepen poverty, and fuel further instability in the region.

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