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Armed Banditry and Agricultural Extension Service Delivery in Katsina State

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Abstract

This study assessed the effect of armed banditry on agricultural extension service delivery in Katsina State, Nigeria. Using a multi-stage sampling procedure, data were collected via questionnaires from 196 respondents and analyzed using descriptive statistics and Binary Logistic Regression. Results showed that farmers had a mean age of 37 years, 14 years of farming experience, an average farm size of 2.45 hectares, and a household size of 8 persons. Findings showed that 56.1% of respondents lacked access to extension agents, 67.3% reported ineffective service delivery due to banditry, and 66.8% indicated remote extension services were unavailable. Logit regression analysis showed that banditry was a highly significant negative predictor of extension access ($p < 0.01$), reducing the odds of access by 90.6%. Conversely, cooperative membership significantly increased the likelihood of access. The study concluded that armed banditry severely disrupts extension delivery. It recommends that extension agents adopt digital platforms, radio, and mobile phones to disseminate information in insecure communities. Additionally, the government must strengthen rural security architecture and support extension personnel operating in conflict-prone areas.

Keywords: Armed banditry, Agricultural extension, Insecurity

Introduction

Agriculture remains the backbone of the Nigerian economy and the primary source of livelihood for most rural households. The sector contributes significantly to food production, employment generation and poverty reduction. However, agricultural activities in many parts of Northern Nigeria are increasingly threatened by insecurity, particularly armed banditry. In recent years, Katsina State has emerged as one of the states most affected by banditry activities, resulting in loss of lives, displacement of farming households, destruction of farmlands and disruption of rural livelihoods (Ibrahim et al., 2024).

Banditry refers to organized criminal activities involving armed attacks, kidnapping, cattle rustling, destruction of property and violent raids on rural communities. According to Saleh et al. (2025), armed banditry has become one of the major security challenges confronting Northwestern Nigeria. Bandit activities have created widespread fear among rural populations and significantly disrupted agricultural production systems. Farmers in affected communities are often unable to cultivate their farms effectively due to fear of attacks and abduction.

Agricultural extension services play an important role in disseminating agricultural innovations, technologies and advisory services to farmers. Extension agents provide farmers with training, technical guidance and information aimed at improving productivity and enhancing rural livelihoods. Oduehie et al. (2023) noted that effective extension delivery remains essential for improving agricultural productivity and promoting food security. However, the effectiveness of extension service delivery depends largely on regular interaction between extension personnel and farmers.

The growing insecurity caused by armed banditry has created serious challenges for extension service delivery in conflict-affected areas. Many extension agents are unable to visit farming communities regularly due to fear of kidnapping, attacks and other security threats. This situation has weakened the extension-farmer linkage and reduced farmers' access to improved agricultural technologies and advisory services. In many affected communities, extension activities have either drastically reduced or completely collapsed.

Previous studies (Bwala, M. A., & Abdulazeez, O. (2020), Oduehie et al. (2023) and Saminu et al. (2023)) have examined the effects of insecurity on agricultural productivity and rural livelihoods. However, empirical evidence on how armed banditry specifically affects agricultural extension service delivery in Katsina State using inferential analysis remains limited. More recently, Ayanwale et al. (2025) emphasized that insecurity in rural communities necessitates the adoption of innovative and digital extension approaches capable of reaching farmers under crisis conditions. This study therefore seeks to assess the effect of armed banditry on agricultural extension service delivery in Katsina State.

The broad objective of the study is to assess the effect of armed banditry on agricultural extension service delivery in Katsina State.

The specific objectives were to:

1. assess the effect of armed banditry on agricultural extension service delivery; and
2. determine factors influencing farmers' access to extension services in the study area

Methodology

The study was conducted in Katsina State, Nigeria. Katsina State lies between latitudes 11°08′N and 13°22′N and longitudes 6°52′E and 9°21′E, covers approximately 23,938 km², and shares boundaries with Kaduna, Kano, Jigawa, and Zamfara States, as well

as the Republic of Niger. Agriculture is the major occupation in the study area, with smallholder farmers dominating crop and livestock production.

Agricultural extension services in the state are primarily coordinated through the Katsina State Agricultural and Rural Development Authority (KTARDA), formerly the Agricultural Development Project (ADP), in collaboration with the State Ministry of Agriculture and various research and development agencies. Extension delivery is mainly implemented through village extension agents, block extension supervisors, farmer groups, and participatory extension approaches aimed at disseminating and promoting the adoption of improved agricultural technologies. These services play a crucial role in enhancing farmers' access to agricultural information, inputs, and innovations, thereby contributing to increased agricultural productivity and rural development.

The study employed a multi-stage sampling procedure. First, Kankara and Faskari Local Government Areas (LGAs) within KTARDA Zone II were purposively selected due to the high prevalence of armed banditry activities. Secondly, three conflict-affected farming communities were randomly selected from each of the two LGAs: Yankara, Daudawa, and Marua in Faskari LGA; and Gatakawa, Gundawa, and Marabar Gurbi in Kankara LGA. Finally, using the Cochran sampling formula, a total sample size of 196 respondents was determined, and a proportionate sampling technique was applied to distribute the structured interviews across the selected communities based on their estimated farming populations

Primary data were collected using a structured interview schedule administered to farmers. Information collected included socio-economic characteristics of respondents, access to extension services, effects of banditry on extension delivery and institutional characteristics.

Frequency counts, percentages and means were used to analyse farmers' socio-economic characteristics and the effect of armed banditry on agricultural extension service delivery. Binary Logistic Regression was employed to determine factors influencing access to extension services.

The binary logistic regression model is implicitly expressed as:

$$\ln\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_n X_n + e$$

Where:

- p = Probability of having access to extension services
- β_0 = Intercept
- X_1 = Age
- X_2 = Education
- X_3 = Membership in organizations

- X_4 = Direct impact of banditry
- $e = error$

Results and Discussion

Socio-economic Characteristics of Respondents

Table 1 presents the socio-economic characteristics of the respondents. The results show that respondents had a mean age of 37 years, indicating they were relatively young and economically active. This suggests that the farmers are within the productive age group capable of engaging in agricultural activities despite prevailing insecurity challenges. The finding is consistent with Muhammed et al. (2019), who reported the dominance of economically active individuals in agricultural production.

The respondents had a mean farming experience of 14 years, indicating considerable farming experience and indigenous knowledge acquired over time. Farming experience is important in enhancing farmers' decision-making ability and adoption of improved agricultural practices (Nwaobiala et al., 2022).

The mean farm size of 2.45 hectares shows that the respondents were predominantly smallholder farmers, which aligns with the FAO (2021a) report that smallholder farmers dominate agricultural production in Nigeria. The average household size was 8 persons, indicating relatively large household structures commonly found in rural northern Nigeria. Furthermore, 82.5% of the respondents identified farming as their primary occupation, suggesting a high dependence on agriculture as the main source of livelihood. Consequently, disruptions to farming activities arising from insecurity adversely affects household income, welfare, and food security an immediate economic threat empirically proven by Ibrahim et al. (2024), whose study in the state demonstrated that armed banditry inflicts deep psychological tolls and causes severe settlement displacements that ultimately collapse smallholder livelihoods, forcing average household maize yields to drop from 6,751.5 kg to 3,069 kg and driving farm incomes down significantly from a mean of ₦529,180.68 to ₦372,757.08.

Table 1: Socio-economic Characteristics of Respondents

Variable	Mean	Percentage
Age (Years)	37.0	
Farming Experience (Years)	14.0	
Farm Size (Hectares)	2.45	
Household Size (Persons)	8.0	
Primary Occupation (Farming)		82.5%

Source: Field Survey, 2023

Effect of Armed Banditry on Extension Service Delivery

Table 2 presents the effect of armed banditry on agricultural extension service delivery in the study area. The result revealed that 56.1% of the respondents did not have direct access to extension agents, indicating inadequate extension service coverage. This suggests that many farmers lack access to the technical information and advisory services needed to improve agricultural production. The finding agrees with Isah and Nabara (2021), who reported that insecurity limits farmers' access to extension services and agricultural information.

The result further showed that 67.3% of the respondents indicated that extension agents were unable to deliver services effectively due to armed banditry. This implies that insecurity has negatively affected extension-farmer contact and the dissemination of agricultural innovations. The finding is consistent with Oduehie et al. (2023) and Giro et al. (2024), who reported that rural insecurity and movement restrictions hinder extension activities and reduce farmers' access to support services.

Furthermore, 51.0% of the respondents reported a decline in the quality of extension services received. This may be attributed to reduced extension visits and limited interaction between farmers and extension agents resulting from insecurity. The finding supports Arokoyo (2012), who identified insecurity as a major constraint to effective extension service delivery in Nigeria.

The result also revealed that 66.8% of the respondents reported the absence of ICT-based extension services. This indicates inadequate alternative channels for delivering agricultural information during periods of insecurity. The finding agrees with Ayanwale et al. (2025) and Emeana et al. (2020), who emphasised the importance of digital extension approaches in improving farmers' access to information where physical contact is constrained.

Table 2: Effect of Armed Banditry on Extension Service Delivery

Impact Variable	Percentage (%)
Lacked access to extension agents	56.1
Agents unable to deliver services effectively	67.3
Decline in service quality	51.0
Limited/No remote services	66.8

Source: Field Survey, 2023

Factors Influencing Access to Extension Services

Table 3 presents the binary logistic regression results showing the factors influencing farmers' access to extension services. The results showed that armed banditry had a negative and significant influence on access to extension services ($\beta = -2.364$; $p < 0.01$). This implies that farmers affected by banditry were less likely to access extension services than those who were not affected. The odds ratio of 0.094 further indicates that increased exposure to banditry significantly reduced the likelihood of accessing

extension services. The finding corroborates Giro et al. (2024) and Oduehie et al. (2023), who reported that insecurity disrupts extension activities and limits farmers' access to agricultural information and support services.

The result further showed that cooperative membership had a positive and significant influence on access to extension services at the 5% level of significance. The odds ratio of 13.067 implies that farmers who belonged to cooperative societies were more likely to have access to extension services than non-members. This may be attributed to cooperatives facilitating information dissemination and strengthening farmers' linkages with extension agents. The finding agrees with Ibe et al. (2026), who reported that membership in farmer organisations enhances access to extension services and other agricultural support services.

Although age and educational level had positive coefficients, their effects were not statistically significant. This suggests that these variables did not significantly influence farmers' access to extension services in the study area. The Hosmer-Lemeshow goodness-of-fit test was not significant (p = 0.174), indicating that the model adequately fitted the data and provided a reliable explanation of the factors influencing farmers' access to extension services in the study area (Field, 2018).

Table 3: Logistic Regression Estimates of Factors Influencing Extension Access

Variable	B (Coefficient)	S.E.	Wald	Exp(B) Odds Ratio
Age	0.050	0.041	1.542	1.052
Educational Level	-	-	10.638	-
Cooperative Membership	-	-	10.597	13.067*
Banditry Effect	-2.364	0.430	30.179	0.094
Constant	1.157	1.558	0.552	3.181

Note: *Nagelkerke* $R^2 = .564$*; Hosmer & Lemeshow Sig = .174; *P≤ 0.05*

Conclusion and Recommendations

The study concluded that armed banditry has severe negative effects on the delivery of agricultural extension services in Katsina State. The findings revealed that insecurity significantly reduced farmers' access to extension agents and weakened the effectiveness and quality of extension services. The study further established that the direct impact of banditry significantly reduced the likelihood of accessing extension services among farmers. Extension agents should adopt alternative extension delivery methods such as radio, mobile phones, digital platforms and social media to effectively disseminate agricultural information in insecure communities. The government should strengthen the rural security architecture and provide adequate protection for extension personnel operating in conflict-prone areas. Agricultural development agencies should collaborate with cooperatives and private organizations to improve farmers' access to

extension services during periods of insecurity. Government and relevant stakeholders should invest in ICT-based agricultural extension systems that can reach farmers in remote and vulnerable communities.

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