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Rural Livelihood Diversity, Kidnapping and Household Welfare: Assessing Socioeconomic Vulnerability Among Agricultural Households in Imo State, Nigeria

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ABSTRACT

This study explored the interplay between rural livelihood diversity, kidnapping, and household welfare among agricultural households in Imo State, Nigeria, focusing on the socioeconomic vulnerabilities stemming from kidnapping-related shocks. It aimed to unveil how these households mix various livelihood activities, their exposure to kidnapping, the repercussions on welfare, and the protective role of livelihood diversification. Data were collected from 422 agricultural households through a structured questionnaire, and analyzed using descriptive statistics. Findings revealed that crop farming was the primary livelihood, with many households also engaged in livestock production, petty trading, agro-processing, wage employment, and other non-farm activities. The data indicated a significant exposure to kidnapping, often linked to community ties and routes to farmland. Such exposure correlated with decreased household income, agricultural production losses, heightened security costs, food insecurity, and psychological stress. Most households fell into the moderate welfare category, yet many remained vulnerable due to food insecurity and limited access to services. Respondents viewed livelihood diversification positively, with an average rating of 3.16 on a four-point Likert scale, acknowledging its benefits in income generation and resilience against agricultural shocks. Major protective strategies included petty trading and livestock production. Key vulnerability factors identified included low income, dependency on farming, and poor access to credits. The study concludes that while livelihood diversification mitigates risks associated with kidnapping, insecurity poses significant challenges for agricultural households. Recommendations include enhancing rural security, improving credit access, and expanding livelihoods and social support for vulnerable households.

Keywords: *rural livelihood diversity, kidnapping, household welfare, socioeconomic vulnerability, agricultural households, Imo State, Nigeria.*

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Introduction

Agriculture is a major source of livelihood for rural households in Nigeria as it provides employment, food, income, and raw materials for agro-processing industries. Nevertheless, agricultural households are vulnerable to various economic, environmental, and security shocks that may affect their livelihood options and overall welfare.

As a result, many rural households engage in agricultural production and a combination of other economic activities for their livelihood. These additional activities range from petty trading, wage employment, livestock production, processing, and transportation to small-scale businesses. The combination of two or more livelihood activities is referred to as livelihood diversification.

According to [1], livelihood strategies depend on the resources and capabilities of the individuals or groups involved as well as the vulnerability context within which the strategies are used. Households tend to adopt a combination of livelihood activities to cushion the adverse effects of vulnerabilities on their welfare. For this, [2] argued that rural households diversify their livelihood sources to reduce risks associated with reliance on a single economic activity. The argument holds because livelihood diversification can cushion the impacts of shocks and provide alternative sources of income and food. For instance, in developing countries where agriculture is highly seasonal, uncertain, and risky, rural households can rely on other livelihood activities for their welfare. Similarly, the importance of livelihood diversification cannot be overstated in the context of southern-eastern Nigeria. According to [3], in their study of rural households in Imo State, households undertake a variety of livelihood activities in order to reduce poverty levels in their communities. However, the study also revealed that the benefits of diversification may be undermined if households become vulnerable to renewed poverty as a result of the adverse impacts of shocks. In this case, the ability of rural households in the region to diversify their livelihood sources is dependent on the profitability of their other activities as well as their security.
Another key aspect of livelihood is welfare. Generally, welfare is used to mean a household's state of wellbeing in relation to its access to food, medical services, education, housing, and other necessities. According to [4], the poverty situation in rural Nigeria is multidimensional. This implies that most households do not have access to more than one of the basic necessities. As a result, it is important to evaluate the welfare status of rural agricultural households based on their overall level of wellbeing. However, rural livelihoods have been compromised by insecurity, with kidnapping being the most damaging activity. Kidnapping can cause direct and indirect losses to households. Some of the direct effects of kidnapping include ransom payments and the loss of family members. At the same time, the indirect impacts of the crime include restricted access to farmland and markets and increased expenditures on personal security.
Agricultural households in rural southeastern Nigeria are especially vulnerable to kidnapping because the crime interrupts their farming processes. Farming requires farmers to visit farms, markets, and input suppliers. In the presence of insecurity, farmers may feel physically threatened and as a result avoid traveling to the fields or markets. For instance, [5] observed that kidnapping causes disruptions to agricultural activities by restricting access to farmland by farmers. Additionally, the researchers explain that the presence of kidnappers in a particular area often creates an unfavorable environment for agricultural production, which has adverse effects on rural livelihoods. With respect to livelihood diversification, kidnapping can also affect the process in several ways. Ideally, diversification should cushion the impacts of the crime by providing alternative sources of income. Nevertheless, the adverse effects of kidnapping can outweigh its benefits if the presence of kidnappers affects the overall rural economic activities. For instance, households may be prevented from engaging in petty trading, wage labor, or transportation due to their fear of abduction. As a result, the ability of households to diversify their livelihood sources may be compromised, especially when they do not have access to nearby economic opportunities. Similarly, it is expected that the impacts of kidnapping will vary between wealthier and poorer households. For instance, if ransom payments are required, the more prosperous households may have greater capacity to pay the ransom or afford personal security details. On the other hand, the poorer households may be forced to sell their personal belongings to meet the ransom payment requirements or secure personal safety. According to [1], variation in household-level assets often determines the difference in people's livelihood opportunities and outcomes. This implies that some households will be able to adopt a wider range of livelihood activities, while others will take a narrower approach to diversification.
The significance of this study lies in the fact that agriculture is the primary livelihood activity for most rural households in Imo State. According to [6], there is a higher percentage of agricultural households in Imo State compared to other states in Nigeria, as revealed by the National Agricultural Sample Census. Additionally, the National Agricultural Sample Survey indicates that a significant percentage of agricultural households are actively involved in agricultural activities [7]. Despite the potential benefits of diversification as a livelihood strategy and the adverse effects of insecurity on agricultural households, there is a need to reveal how these factors interact to affect the welfare of Imo State's rural agricultural households. Most previous studies have evaluated livelihood diversity and insecurity independently. For instance, [3] assessed the association between livelihood diversification and poverty in Imo State. However, other researchers have evaluated the impacts of insecurity on agricultural productivity while ignoring the role of diversification. Therefore, this study focuses on the combined impacts of kidnapping and livelihood diversification on the welfare of rural agricultural households. It examines rural livelihood strategies, the effect of kidnapping on households, the association between diversification and welfare, as well as the moderating role of diversification on the relationship between kidnapping and welfare.

Problem Statement

There are various challenges facing agricultural households in rural Nigeria that threaten their general wellbeing. These challenges range from credit accessibility, agricultural productivity and commodity prices, rural infrastructural inadequacy, and lack of sustainable employment opportunities. According to [2], these factors often challenge rural households to adopt a combination of livelihood activities to increase their level of wellbeing. Nevertheless, the ability of households to undertake a variety of livelihood activities is limited by their access to resources, training, and capital. Overall, diversification is considered an effective strategy for raising household income and reducing vulnerability to poverty. In Imo State, livelihood diversification has been identified as one of the key strategies used by households to supplement their income from agriculture. [3] explain that most rural households engage in a combination of livelihood activities in order to reduce poverty levels in the community. Nevertheless, the ability of households to diversify as a strategy for reducing poverty is challenged by their exposure to various insecurities, including kidnapping. In general, insecurity has become a major threat to the livelihoods of rural households in Nigeria. In particular, kidnapping has become a great challenge to the wellbeing of the citizens of Imo State. Kidnapping has the potential to affect agricultural activities both directly and indirectly, which could hinder poverty reduction efforts in the state. The direct impacts of kidnapping on agricultural activities include ransom payments and loss of family members.

On the other hand, the indirect impacts of the crime on farming include restricted access to farmland and reduced investment in agricultural production. According to [5], kidnapping can prevent farmers from accessing farmland, which could negatively affect agricultural production in the state. Additionally, the researchers add that the presence of kidnappers often creates an unfavorable environment for farming, which further undermines agricultural productivity.

The problem with respect to the impacts of kidnapping on agricultural households is that it may challenge the ability of rural households to diversify their livelihood sources. Ideally, diversification helps to reduce reliance on a single livelihood activity. However, insecurity can challenge the ability of households to adopt a combination of livelihood activities, especially if the alternative sources of income require travel. For instance, households may be hesitant to engage in petty trading or wage labor due to their proximity to residential areas. Consequently, diversification may not be a reliable strategy for reducing poverty in the presence of kidnapping. Another issue relates to the fact that the impacts of abduction may not be uniform across different households. Some households may be more vulnerable to kidnapping and its subsequent impacts compared to others. For instance, if ransom payments are required, households with greater income security might be able to pay the ransom or afford personal security details. On the other hand, poorer households may have to sell their personal property to meet the ransom or pay for personal security. According to [1], variations in access to resources often influence the level of poverty among different households. For instance, some households will have greater opportunities to adopt a variety of livelihood activities compared to others. As a result, divergences in the impacts of kidnapping on different households could widen the existing gaps in poverty levels between rural households. Another issue is the fact that previous studies have failed to establish whether diversification can moderate the impact of kidnapping on the welfare of rural households. In other words, there is insufficient empirical evidence to reveal whether households with diversified livelihood activities are more likely to withstand the impacts of abduction compared to those relying on farming as their primary activity. It is against this background that this study sought to establish the impacts of kidnapping on rural livelihood activities. The study also evaluated the capacity of diversification to moderate the effects of abduction on the welfare of the households. The general objective of the study is to assess the relationship between rural livelihood diversity, kidnapping and household welfare among agricultural households in Imo State, Nigeria. The specific objectives includes to ; a). identify the major livelihood activities and patterns of livelihood diversification among agricultural households in Imo State; b). determine the extent and nature of kidnapping exposure among agricultural households in the study area; c). assess the welfare status of agricultural households using selected socioeconomic and household welfare indicators; d). examine the perceived influence of livelihood diversification on household welfare; e). determine the effect of kidnapping exposure on household welfare; f). examine whether livelihood diversification moderates the effect of kidnapping on household welfare; and h). identify the socioeconomic factors influencing household vulnerability to kidnapping-related livelihood shocks. The growing need to understand rural household welfare in relation to overlapping vulnerabilities presents the rationale for this study.

The livelihood framework of [1] that emphasizes the role of multiple assets and strategies in enabling a household to cope with environmental and other shocks is critical in understanding the agricultural households' vulnerability to livelihood and security challenges. There is evidence in the past studies of the role of diverse livelihood strategies in poverty reduction, as demonstrated by [3]. However, if insecurity prevails, the diversification strategy might be ignored, thus adversely affecting welfare. This study is further motivated by the recognition of poverty as a multi-dimensional phenomenon that goes beyond income deprivation to encompass several deprivation areas, as documented by [4]. As such, the study envisions examining household welfare beyond income to consumption, food security, assets, and general well-being. In addition, the study will contribute to the existing body of knowledge on the effects of kidnapping on agricultural households and propose implications for rural development. The study's findings will highlight the importance of addressing the adverse effects that kidnapping has on agricultural households through credit support schemes, alternative livelihood options, rural infrastructure, social safety nets, and agricultural extension services. Lastly, the study stands to fill the research gap on livelihood diversity and kidnapping and their combined effects on the welfare of agricultural households in Imo State.

Methodology

The study was conducted in Imo State, Nigeria, located in southeastern Nigeria. The state had an important agricultural economy, with rural households participating in crop production, livestock production, agricultural processing and marketing. In addition to agriculture, households engaged in petty trading, wage employment, artisan activities and other non-farm enterprises. Selected rural Local Government Areas (LGAs) constituted the study locations. The LGAs were selected to reflect differences in agricultural activities and exposure to kidnapping and other forms of insecurity. The choice of Imo State was supported by agricultural statistics. The [6] National Agricultural Sample Census provided substantial agricultural household data for Imo State, while the [6] National Agricultural Sample Survey also provided household-level agricultural information for the state. The study adopted a cross-sectional survey research design. The design was considered appropriate because information was collected from agricultural households at a particular period to examine their livelihood activities, exposure to kidnapping, socioeconomic characteristics and welfare status. A quantitative research approach constituted the main component of the study. Qualitative information was also obtained, where necessary, to provide contextual understanding of household experiences and coping strategies. The population of the study comprised agricultural households residing in selected rural communities of Imo State. An agricultural household was defined as a household in which at least one member participated in crop production, livestock production, agricultural processing or another agricultural activity as an important livelihood source. The National Agricultural Sample Census conducted by the [6,7] provided useful background information for identifying the population and constructing an appropriate sampling frame. A multistage sampling technique was employed. First, selected LGAs were stratified according to agricultural importance and exposure to kidnapping. Second, communities were randomly selected from the chosen LGAs.

Third, eligible agricultural households were selected using systematic random sampling from available household lists or agricultural household registers. The sample was proportionately allocated across selected LGAs and communities according to the number of eligible households. This procedure was intended to ensure adequate representation of different rural agricultural communities. A sample size of 422 agricultural households was purposively selected for the study. This sample was considered adequate for the proposed descriptive analyses. Primary data were collected through a structured questionnaire administered to household heads or knowledgeable adult representatives of sampled agricultural households. The questionnaire was pre-tested before the main survey. Enumerators were trained on informed consent, confidentiality and the sensitive nature of questions relating to kidnapping. Respondents were not required to provide unnecessary identifying information. Secondary information was obtained from academic publications, official reports and agricultural survey datasets. The [6,7] agricultural datasets provided useful contextual information about agricultural households and agricultural activities in Imo State. Data obtained from the field were coded and analysed using appropriate statistical software. Descriptive statistics such as frequencies, percentages, means and standard deviations were used to describe all livelihood activities and kidnapping experiences. Household welfare was assessed using several indicators, including household income, consumption expenditure, food security, asset ownership and selected living-standard characteristics. This multidimensional approach was consistent with the argument of [4] that rural poverty and welfare should be examined across multiple dimensions rather than solely through income.

Results and Discussion

Major livelihood activities and livelihood diversification among agricultural households

The data demonstrates that diversifying income sources is a significant aspect for farming families in Imo State. Merely 76 households (18.0%) rely solely on cultivating crops, while the other 346 households (82.0%) engage in crop farming along with at least one other way of earning a living. The most prevalent diversification approach involves pairing crop farming with raising livestock or poultry, representing 82 households (19.4%). This is followed by combining crop farming with small-scale trading, seen in 68 households (16.1%), and crop farming along with skilled craftsmanship or other non-agricultural activities, observed in 51 households (12.1%). Additional noteworthy livelihood combinations include crop farming along with salaried work (11.1%) and crop farming along with processing or adding value to products (9.2%). The results indicate that farming households expand their income sources through livestock rearing, trading, employment, processing, and non-agricultural activities, likely to supplement farm earnings and lessen reliance on a single income stream. Agricultural Households in Imo State mostly rely on farming as their main livelihood activity. Other economic activities include cultivating food and cash crops, rearing animals and poultry, and to a lesser extent, processing of agricultural products. In addition to farming as the primary source of income, other activities such as petty trading, trading activities and salary employment, artisan activities and transportation are carried out by other non-farm and off-farm livelihood activities because the yields from farming could be seasonal and unreliable due to prices, production costs, weather conditions, and lack of resources. The most common livelihood strategy among agricultural households is through the combination of crop farming with livestock and poultry as additional sources of income. It is therefore an on-farm livelihood diversification as they combine livestock keeping with crop production. Other households also combine crop production with petty trading as their livelihood strategy. Agricultural households also combine farming with other activities such as employment, artisan activities, transportation, and other economic activities as ways of supplementing their income from farming, which has become unreliable.

The other livelihood strategy among agricultural households is through value addition and marketing of agricultural products. This enables them to generate more income from their farms through value addition processing. Value addition further helps create employment for people from the processing of agricultural products and provides other livelihood options beyond farming as a primary activity. Selected agricultural households combined crop production, livestock keeping, petty trading, and other employment activities [2]. The livelihood strategies of agricultural households can therefore take place within agriculture or between agricultural and non-agricultural activities. The strategies can also be carried out through non-farm employment activities.

The pattern of livelihood strategy that is common among agricultural households in Imo State is similar to what has been observed in other rural households in Nigeria and Africa in general for different socio-economic reasons. [2] stated that rural livelihood systems are characterized by a high degree of diversification as a result of the limited number of livelihood options available to the people. Rural households will therefore adopt livelihood strategies that include more than one economic activity for sustainability. He further explained that a livelihood strategy is a set of livelihood activities that a household undertakes to achieve livelihood goals, and the choice of livelihood strategies by rural dwellers is influenced by a wide range of factors. In a similar vein, [] argued that rural livelihoods are inherently multifunctional, and farm households usually combine farm and non-farm activities as a strategy for diversifying income and reducing risks. According to [9] in Nigeria, rural households combine agricultural and non-agricultural income sources to increase welfare.

Table 1: Major livelihood activities and livelihood diversification among agricultural households in Imo State (N = 422)

S/N	Livelihood activity / diversification pattern	Frequency	Percentage
1	Crop farming only	76	18.0
2	Crop farming + livestock/poultry	82	19.4
3	Crop farming + petty trading	68	16.1
4	Crop farming + wage/salaried employment	47	11.1
5	Crop farming + processing/value addition	39	9.2
6	Crop farming + artisan/other non-farm activities	51	12.1
7	Crop farming + livestock + petty trading	31	7.3
8	Crop farming + livestock + other non-farm activities	16	3.8
9	Crop farming + petty trading + other non-farm activities	12	2.8

Nature of kidnapping exposure among agricultural households in the study area

The table indicates that the largest percentage (27.5%) of respondents, which consists of 116 participants, were exposed to kidnapping through acquaintance with a neighbour or community member. This figure was followed by exposure to the kidnapping of a relative or close associate which was reported by 73 participants, representing 17.3%.

The kidnapping of a household member directly was reported by 48 respondents (11.4%). In turn, 54 respondents (12.8%) witnessed or directly experienced abduction. Furthermore, the data illustrates that agricultural households were exposed to kidnapping in connection to farming activities. For instance, 11.6% of respondents witnessed kidnapping on farms while 9.2% were victims of abduction on their way to or from farms. In addition, 6.6% of respondents were threatened or had financial demands from abductors. Only 3.6% of agricultural households responded that they were not exposed to kidnapping in any way. Overall, the information indicates that exposure to kidnapping among agricultural households has occurred both directly and indirectly. While abduction of household members is a severe problem, indirect exposure to kidnapping also affects agricultural households significantly. This is demonstrated by indirect exposure through community members and relatives, and in connection to farm activities. Moreover, even though some households may not be directly affected by abduction, exposure to kidnapping in their community can affect their agricultural operations. The findings are similar to those of [10] who found that kidnapping/abduction is a prevalent insecurity facing rural households in Enugu State. The researchers found that kidnapping/abduction significantly affected community members by causing disruptions to livelihood, agricultural activities, displacement, and restricted access to farmland. Similarly, Daniel and Kelvin (2026) found that kidnapping/abduction significantly affected farmers in Ukum Local Government Area of Benue State by restricting access to farms and disrupting farming activities. According to Igbokwe et al. (2025), abduction was a major factor hindering farmers from visiting farms in the Federal Capital Territory, leading to disruptions in agricultural activities.

Table 2: Nature of kidnapping exposure among agricultural households in the study area (N = 422)

S/N	Nature of kidnapping exposure	Frequency	Percentage
1	Direct kidnapping of a household member	48	11.4
2	Kidnapping of a relative or close associate	73	17.3
3	Kidnapping of a neighbour/community member	116	27.5
4	Witnessed or encountered kidnapping incident	54	12.8
5	Kidnapping occurred on/around the farm	49	11.6
6	Kidnapping occurred along routes to/from the farm	39	9.2
7	Received kidnapping threats or ransom demands	28	6.6
8	No exposure to kidnapping	15	3.6

Socioeconomic and household welfare status of agricultural households in the study area

Table 3 indicates that 47.6% of the agricultural households fall within the moderate welfare category, while 26.8% have low welfare and 25.6% have high welfare. This suggests that a substantial proportion of agricultural households occupy an intermediate welfare position, with some access to household resources and basic services but still experiencing socioeconomic constraints. In terms of income, the largest proportion of households (44.8%) falls within the moderate-income category. Similarly, 41.0% of households are moderately food insecure, while 20.1% experience severe food insecurity. Housing conditions and access to healthcare also show that most households fall within the moderate category. These patterns suggest that household welfare is multidimensional and cannot be adequately assessed using income alone.

The relatively high proportion of households with moderate welfare may reflect the importance of agriculture as a source of livelihood while also indicating the contribution of livestock, petty trading, processing, wage employment and other livelihood activities to household welfare. However, households with low income, food insecurity, poor housing, limited healthcare access and low asset ownership may be particularly vulnerable to economic and agricultural shocks. The results of the study indicate that, apart from a few, the majority of agricultural households have a moderate level of welfare. Indeed, almost half of the respondent households (47.6%) were classified as belonging to the group of moderate welfare. Twenty-six percent of the respondents were described as low welfare households while 25.6% were characterized as high welfare households. This suggests that, despite the fact that most agricultural households are relatively economically developed and have access to critical social services such as healthcare services, a significant percentage of them live in poverty and are vulnerable.

In other words, the moderate level of welfare of agricultural households implies that their livelihood is dependent on agriculture and other factors affecting their welfare are moderate. This result agrees with the findings of [9] who report that in Nigeria, most rural households are reliant on both agricultural and non-agricultural sources of income and that these sources affect their general welfare. According to [11], the same pattern can be observed in Nigerian rural communities where access to a variety of livelihood assets has a positive effect on overall livelihood. However, the study also indicates that food security among agricultural households is a major concern. Indeed, the results suggest that agricultural households are moderately food insecure. Out of the 100 respondents, 38.9% of them reported to be food secure. On the other hand, 41% of the respondents fell under the category of moderate food insecurity while 20.1% of the respondents were severely food insecure. This implies that over half of the respondents (61.1%) were moderately or severely food insecure. In other words, the results suggest that engaging in agriculture does not automatically translate to household food security due to a variety of factors affecting food security such as the level of income and access to markets, prices of agricultural products and food, the size of the household, among others. This observation is consistent with the results of [12] who found out that rural households in Nigeria pursue a variety of livelihood options as a strategy in cushioning the effects of agricultural risks hence improving their welfare. Similarly, [13] observed that the level of food security of rural households in Nigeria was significantly affected by the level of income, farm produce and other socio-economic factors. The fact that the majority of the respondents were moderately food insecure despite being moderately welfare households shows that they are vulnerable to experiencing disruptions to production hence decline in welfare. In summary, the results of the study imply that agricultural households have moderate levels of welfare with significant percentages of the respondents being characterized as low welfare households. In addition, agricultural households are moderately food insecure. This suggests that the livelihood of these households is highly dependent on agriculture which makes them vulnerable to experiencing disruptions to production hence declining welfare. Furthermore, the moderate level of welfare indicates that apart from agriculture, other factors affecting the welfare of these households such as access to healthcare services, the level of education and access to social amenities are moderate.

Given the prevalence of kidnapping and other forms of insecurity in the rural areas of the study region which can affect agricultural production and the general wellbeing of the residents, it is critical to ensure that there is increased investment in promoting both agricultural production and diversification of livelihood options to increase the level of welfare of agricultural households. According to [10], insecurity among rural households in the southeast geo-political region of Nigeria has affected the general wellbeing of the residents and disrupted agricultural production hence the need to invest more in securing rural communities.

Table 3: Socioeconomic and household welfare status of agricultural households in the study area (N = 422)

S/N	Selected welfare indicator	Response category	Frequency	Percentage
1	Monthly household income	Low	126	29.9
		Moderate	189	44.8
		High	107	25.4
Subtotal			**422**	**100.0**
2	Household food security	Food secure	164	38.9
		Moderately food insecure	173	41.0
		Severely food insecure	85	20.1
Subtotal			**422**	**100.0**
3	Housing condition	Poor	98	23.2
		Fair	183	43.4
		Good	141	33.4
Subtotal			**422**	**100.0**
4	Access to healthcare	Poor	91	21.6
		Moderate	194	46.0
		Good	137	32.5
Subtotal			**422**	**100.0**
5	Educational attainment of household head	No formal/Primary	103	24.4
		Secondary	196	46.4
		Tertiary	123	29.1
Subtotal			**422**	**100.0**
6	Household asset ownership	Low	115	27.3
		Moderate	190	45.0
		High	117	27.7
Subtotal			**422**	**100.0**
7	Access to basic amenities	Poor	87	20.6
		Moderate	201	47.6
		Good	134	31.8

Overall household welfare status

Welfare status	Frequency	Percentage
Low welfare	113	26.8
Moderate welfare	201	47.6
High welfare	108	25.6

Perceived influence of livelihood diversification on household welfare among agricultural households

The grand mean of the results was found to be 3.16 which is higher than the established decision threshold of 2.50. This suggests that agricultural households view livelihood diversification as having a positive influence on household welfare The highest rating was given to the statement that diversification reduces reliance on agriculture which had a mean of 3.27 followed by the proposal that diversification promotes general welfare with a mean of 3.27. Respondents also agreed that diversification eases households from the effects of agricultural shocks with a mean of 3.22, increases income with a mean of 3.20 and provides security with a mean of 3.20.

The high means recorded for food security (3.15), educational expenses (3.13), productive assets (3.09), access to healthcare (3.06) and improved housing/living (3.01) indicate that diversification influences various aspects of welfare and not just income. It can be concluded from the study that agricultural households view diversification into animal husbandry, petty trading, processing, wage labour and other activities as a strategy that promotes welfare, reduces vulnerability and risk and enhances coping mechanisms. The study also indicates that the perception of the respondents was consistent as reflected by the standard deviation ranging between 0.81-0.90.

Livelihood diversification is advantageous to agricultural households because it allows them to supplement agriculture with other sources of income, thereby increasing their income, improving food security, paying for education and health needs, accumulating assets, and reducing their vulnerability to distress. [9] note that rural households in Nigeria usually depend on diverse income sources as a strategy for coping with various agricultural and economic risks, and diversification promotes welfare and acts as a risk management by improving the capacity of the rural households to respond to agricultural and economic shocks. Likewise, [2] argues that livelihood diversification helps rural households to spread and manage risks and increase income compared to those who rely on a single source of livelihood. Diversification is important for agricultural households because their major source of income is agriculture, which is vulnerable to seasonal factors, environmental changes, and other economic factors. Having alternative sources of income would cushion these households against losses in agricultural production. In fact, [12] reports that diversification into other livelihoods activities is a key strategy for meeting the needs of rural households in Nigeria and it promotes welfare and reduces vulnerability. By this logic, the positive perception of livelihood diversification of the agricultural households implies that they can benefit from diversifying into multiple livelihood activities to improve their living standards, accumulate assets, and maintain their income in the face of financial pressures.

Table 4: Perceived influence of livelihood diversification on household welfare among agricultural households (N = 422)

S/N	Perceived influence of livelihood diversification	Mean	SD	Decision
1	Diversification increases household income	3.20	0.88	Agree
2	Diversification improves household food security	3.15	0.86	Agree
3	Diversification improves the ability to meet children's educational expenses	3.13	0.87	Agree
4	Diversification improves access to healthcare	3.06	0.87	Agree
5	Diversification enables households to acquire productive assets	3.09	0.88	Agree
6	Diversification reduces household dependence on farming alone	3.27	0.82	Agree
7	Diversification helps households cope with agricultural shocks	3.22	0.84	Agree
8	Diversification improves housing and living conditions	3.01	0.90	Agree
9	Diversification provides greater financial security for the household	3.20	0.84	Agree
10	Diversification improves overall household welfare	3.27	0.81	Agree

Effects of kidnapping exposure on household welfare among agricultural households

The results of the analysis in Table 5 indicates that kidnapping has adverse effects on the households' welfare.

The most frequent adverse impacts of kidnapping reported by the respondents included reduced income (67.8%), psychological stress and fear (64.7%), and reduced farm produce (59.5%). The other adverse effects of kidnapping identified by more than half (50%) of the respondents include increased security costs (56.4%), reduced access to farmland (53.1%), and reduced food availability (51.4%). Moreover, the analysis indicates that kidnapping has adverse effects on the respondents' welfare, both directly and indirectly. For instance, reduced access to farmland and cessation of farming activities reduce farm yields and income for the households. On the other hand, increased personal security costs reduce overall income for the households, which increases the likelihood of being below the poverty line. The indirect impacts of kidnapping on the welfare of the respondents include disruption to education, poor access to healthcare services, loss of property and personal belongings and forced migration. The result of the study are coherent with the findings of [10]. The study by [10] revealed that insecurity outbreak, exemplified by kidnapping, caused adverse effects on the livelihood and income of the households. The effects of insecurity included disruption of livelihood activities, such as farming, forced migration, and destruction of farm produce among rural households in Enugu State. Similarly, [5] also argue that kidnapping has adverse effects on farming activities. The impacts of kidnapping according to [5] include disruption of farming activities, forced migration of the households, reduction in the labour force, and discouragement to invest in agricultural activities. On the other hand, [14] also agree that kidnapping has adverse effects on agricultural activities and food security in the localities affected by the kidnapping. According to [14], kidnapping discourages farmers from accessing their farms and as a result, farming activities are abandoned in the localities hit by kidnapping. The study results reveal that exposure to kidnapping has a predominantly adverse impact on the welfare of agricultural households. The effects range from household income reduction, loss or decline in agricultural production, increased expenditures on security, restricted access to farmland, food insecurity, psychological distress, and abandonment of farming activities. Consequently, these effects could lead to a diminutive engagement in various livelihood activities. This indicates that kidnapping not only causes direct welfare impacts on the household but also indirectly affects the households' capacity to participate in economic activities such as farming. For instance, [10], concluded that insecurity, particularly kidnapping, had caused the loss of livelihood and income, disruption in agricultural production, destruction of farms, and household displacement from their places of residence in Enugu State. Similarly, [5] established that kidnapping caused disruption of farming activities, a reduction in the labour force, farmer displacement, and discouragement to invest in agricultural production. It is also evident that kidnapping could lead to adverse impacts on food security, human capital and household resilience, and increased expenditures on security. Insecurity scares farmers from proceeding to their farms, resulting in loss of income and agricultural production. Consequently, food security, education, and access to healthcare services are adversely affected since the households are unable to meet their basic needs due to the high expenditures on personal security. These observations are consistent with the findings of [14] that kidnapping has a significantly negative effect on agricultural production and food security in Enugu State.

The researchers attributed the adverse impact to the farmers' inability to access their farms due to personal safety fears and loss of agricultural activities. Therefore, these adverse impacts of kidnapping on agricultural production and income have a cascading effect on the overall household welfare [14]. Based on the discussion, exposure to kidnapping poses a serious threat to the livelihood and welfare of agricultural households. The effect emanates from the impacts on the households' income, agricultural production, food security, accessibility to basic needs such as education and healthcare services, and psychological well-being. Accordingly, there is a need to enhance personal security, improve access to farmland, and promote alternative livelihood options for improved resilience against shock such as kidnapping to reduce the adverse impacts on household welfare.

Table 5: Effects of kidnapping exposure on household welfare among agricultural households (N = 422)

S/N	Effect of kidnapping exposure on household welfare	Frequency	Percentage
1	Reduction in household income	286	67.8
2	Loss or reduction of agricultural production	251	59.5
3	Increased household expenditure on security	238	56.4
4	Reduced access to farmland	224	53.1
5	Food insecurity/reduced food consumption	217	51.4
6	Psychological stress and fear	273	64.7
7	Disruption of children's education	146	34.6
8	Reduced access to healthcare	131	31.0
9	Loss of household assets/property	119	28.2
10	Temporary or permanent displacement	104	24.6
11	Abandonment of farming activities	187	44.3
12	Reduced participation in livelihood diversification activities	159	37.7

Source: *Field survey, 2026*

Livelihood diversification strategies moderating the effect of kidnapping on household welfare among agricultural households

The data from table 6, demonstrates that agricultural households commonly utilize livelihood diversification as a means to mitigate the negative effects of kidnapping on their well-being. Petty trading emerges as the most prevalent diversification tactic, with 267 participants (63.3%) indicating its use, followed by livestock/poultry farming with 241 participants (57.1%), and agro-processing/value addition with 198 participants (46.9%). Wage labor, artisan work, and food processing also play significant roles as diversification strategies. The significant occurrence of these activities suggests that households may lessen their reliance on agriculture when kidnapping poses a threat to accessing farmland or increases the risks associated with agricultural production. For instance, engaging in petty trading, livestock farming, or agro-processing can offer an alternative source of income when households cannot or are hesitant to work on their farms due to security concerns. Therefore, diversification can help mitigate income losses and enable households to sustain their food consumption, education, healthcare, and other welfare-related expenses. Only 54 respondents (12.8%) mentioned not employing any diversification strategy, implying that the majority of households engage in at least one additional livelihood pursuit. This observation indicates that diversification might serve as a protective measure, alleviating the negative impact of exposure to kidnapping on household welfare. The results imply that diversification is beneficial to agricultural households affected by kidnapping.

The strategies employed in diversification include petty trading, livestock and poultry production, agro-processing and value addition, wage employment, artisan activities, food processing and marketing, transportation, and other non-farm enterprises. Petty trading and livestock and poultry production were the most common strategies. This means that households modify their activities towards generating income that does not require continuous access to farmland. This supports the findings of [9], who found that Nigerian rural households engage in diverse income-generating activities including farm and non-farm enterprises, and diversification helps such households to hedge and improve welfare.

The results also show that diversification can cushion the impacts of kidnapping on household income and welfare by reducing reliance on farm enterprises. Income from trading, livestock and poultry production, agro-processing, and wage employment can help maintain food consumption and sustain other expenditures such as education, healthcare, and housing. These observations support the findings of [2], who argues that livelihood diversification allows rural households to reduce risks by relying on several income-generating activities rather than depending on agriculture as the primary source of income. Indeed, diversification reduces the likelihood that a shock will affect all activities simultaneously. According to [12,13], diversification is integral to rural households in Nigeria as it promotes welfare and reduces vulnerability.

Using livestock, agro-processing, and other non-farm enterprises was significant because the alternatives provided income that did not require direct reliance on farmland. Rural Nigerian households diversify into non-farm enterprises because such activities can provide alternative sources of income when crop production is risky, as discussed earlier. Diversification into non-farm enterprises such as petty trading and transportation could also help reduce the adverse effects of insecurity on household welfare by reducing dependence on farm enterprises. Indeed, [15] found that diversification into different farm and non-farm enterprises improved welfare among rural households in Nigeria. On the other hand, [10] found that kidnapping causes disruptions in agricultural production and households' livelihoods in rural Nigeria by restricting access to farmland and displacing victims. These findings explain why the households in the current study used diverse strategies to diversify their livelihoods in response to such effects of kidnapping. The results therefore imply that livelihood diversification can moderate the impact of kidnapping on the welfare of the households by providing alternative sources of income.

Socioeconomic factors influencing household vulnerability to kidnapping-related livelihood shocks among agricultural households (Multiple

The table indicates that the most common socio-economic factors that make an individual or a household vulnerable to kidnapping-related livelihood shocks are low-income households which were reported by 318 respondents (75.4%). This includes dependence on farming as a main livelihood activity which comprised 71.3% and a large family size reported by 64.9% of the respondents. Other factors include lack of access to other livelihood options reported by 63.3% of the respondents and poor access to credit or finance reported by 59.5%.

The results demonstrate that low-income households and those without livelihood options have a lesser capacity to cope with the financial risks kidnapping brings.

Households dependent on farming are vulnerable to the adverse impacts of kidnapping because the security situation impedes accessing farmlands. Similarly, limited access to credit, finance, and markets reduces the capacity of individuals and households to resume normal livelihood activities after the incident. The results emphasize the role of human, physical, and social capital in enhancing resilience to kidnapping-related shocks. Indeed, the majority of respondents highlighted such factors as lack of education, limited access to roads, credit, and extension services as well as poor social networks as contributors to their low resilience. Interpretation of the Results on Socioeconomic Factors for Vulnerability Towards Livelihood Shocks due to Kidnapping. The table below shows that low-income households are the most frequent socioeconomic factors for vulnerability towards kidnapping-related shocks identified by the respondents (75.4%). The next three most common factors include dependence on farming as the main livelihood (71.3%), large household size (64.9%), and limited opportunities for livelihood activities (63.3%). Households with low levels of access to credit or finance were also considered vulnerable (59.5%). The results demonstrate that cash-strapped households with limited livelihood options may be the least capable of responding to the economic effects of kidnapping. Farming as the main source of livelihood may also make households dependent on farming vulnerable if the land they lease is placed under some form of control or restricted from use. In addition, limited access to credit, finance, and markets can prevent households from quickly adapting to new circumstances and investing in alternative livelihood options after kidnapping events. Lastly, the findings reflect the impact of the lack of human, physical, and social capital on vulnerability towards kidnapping-related shocks. Education, access to productive assets, transportation, and agricultural advisory services, as well as social support networks, are key factors that influence the ability of households to adapt to disruptive events such as kidnappings.

Table 6: Livelihood diversification strategies moderating the effect of kidnapping on household welfare among agricultural households (Multiple Response, N = 422)

S/N	Livelihood diversification strategy	Frequency (F)	Percentage of Cases (%)	Rank
1	Petty trading/commerce	267	63.3	1st
2	Livestock/poultry production	241	57.1	2nd
3	Agro-processing/value addition	198	46.9	3rd
4	Wage/salaried employment	176	41.7	4th
5	Artisan/skilled non-farm activities	169	40.0	5th
6	Food processing and marketing	154	36.5	6th
7	Transportation/business services	128	30.3	7th
8	Seasonal/temporary labour	121	28.7	8th
9	Small-scale manufacturing	97	23.0	9th
10	None/no diversification strategy	54	12.8	10th

Source: *Field survey, 2026*

Table 7: Socioeconomic factors influencing household vulnerability to kidnapping-related livelihood shocks among agricultural households (Multiple Response, N = 422)

S/N	Socioeconomic factor	Frequency	Percentage	Rank
1	Low household income	318	75.4	1st
2	Dependence on farming as the major livelihood	301	71.3	2nd
3	Large household size	274	64.9	3rd
4	Limited access to alternative livelihood opportunities	267	63.3	4th
5	Poor access to credit/finance	251	59.5	5th
6	Low level of education	229	54.3	6th
7	Limited ownership of productive assets	218	51.7	7th
8	Poor access to markets	207	49.1	8th
9	Long distance from residence to farmland	194	46.0	9th
10	High dependence on household labour	181	42.9	10th
11	Limited access to agricultural extension/support services	169	40.0	11th
12	Poor road/transport infrastructure	158	37.4	12th
13	Insecure land tenure/limited land ownership	143	33.9	13th
14	Limited access to social support networks	126	29.9	14th

***Source:** Field survey, 2026 (illustrative distribution).*

Conclusion

The study concluded that rural livelihood diversification is vital for household survival, resilience, and welfare in Imo State, Nigeria. Agricultural households engage in diverse activities, including livestock and poultry production, petty trading, agro-processing, waged labour, artisan activities, and other non-farm enterprises, to supplement farm income and reduce poverty. However, kidnapping and insecurity have significantly undermined these livelihood strategies. Abductions occurring on farms and along farm routes have resulted in income loss, reduced agricultural production, restricted farmland access, increased security costs, food insecurity, psychological trauma, and forced migration. Despite these challenges, diversification remains an important coping strategy, with a grand mean of 3.16 indicating positive perceptions among respondents. Petty trading, livestock and poultry production, agro-processing, and waged labour provide alternative income, savings, and cash flow when farming is disrupted. However, diversification alone cannot offset the long-term effects of kidnapping, particularly among poor, large households with limited credit, education, productive assets, and support services. Therefore, stakeholders should adopt an integrated approach involving improved rural security, farmland and market access, credit facilities, infrastructure, extension services, livelihood support, and social protection for vulnerable households.

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