

EFFECT OF INSURGENCY ON THE LIVELIHOOD STATUS OF WOMEN POULTRY KEEPERS IN YOBE STATE, NIGERIA

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DOI: <https://doi.org/10.51193/IJAER.2024.10201>

Received: 03 Jan. 2024 / Accepted: 25 Jan. 2024 / Published: 26 Mar. 2024

ABSTRACT

The study investigated the effect of insurgency on the livelihood status of women poultry keepers in Yobe State through a comparative analysis. A multi-stage sampling procedure was used to select three hundred and twelve (312) respondents from the insurgency and non-insurgency areas. Data were collected on livelihood assets and livelihood status indices of women poultry keepers. Descriptive and t-test analysis was carried out to discover the effect of insurgency on livelihood assets and livelihood status indices of women poultry keepers. The results revealed that there was a significant difference between human capital (t – value= -9.622, p< 0.05), social capital (t – value= -10.927, p< 0.05), financial capital (t – value= -3.105, p< 0.05) and livelihood status indices (t – value= -6.756, p< 0.05) of poultry keepers in insurgency and non-insurgency areas. The findings imply that insurgency had negative effects on human capital, social capital, financial capital, and livelihood status indices of poultry keepers. Therefore, governments should work with the people to engender peaceful co-existence and direct specific interventions for women poultry keepers affected by insurgency in Yobe State to build their livelihood capitals and livelihood status.

Keywords: Effect, Insurgency, Women, Poultry Keepers, Yobe, Nigeria

1.0 INTRODUCTION

The livelihood of the people comprises their capabilities, assets/capitals around which they build their living (1). Livelihood is based on the premise that a rural household has access to (or has an endowment of) a minimum amount of resource base (capitals or assets), which can be utilized to fashion out a set of livelihood strategies (crop farming, livestock rearing, off-farm employment, etc.) to improve its welfare (2). The five major livelihood assets/capitals are human, physical, natural, social, and financial. Any stress or shock to these capitals; insurgency or conflict as witnessed in the study area, is bound to alter the livelihood activities of the people and their livelihood goals. Drawing on the DFID's Sustainable Livelihood Framework, the vulnerability context refers to the external environment, in which people live, over which they have limited or no control (1). The framework stresses the importance of policies, institutions, and processes, that operate from the household to the international arena to determine people's access to various types of capital and livelihood strategies (1). The study is interested in the impact of a change in the external environment on livelihoods and proposes policy recommendations at the level of governance to mitigate the impact.

Insurgency is a religious or political conflict that is started by a group of people who are well-organized, well-funded, and who feel they have been wronged. They therefore strive rebelliously to alter the existing political or religious order to impose or instill a particular principle or ideology(3).Insurgency is a type of insecurity, and the various labels that are frequently used refer to a state of openness to damage and the potential loss of lives, possessions, or means of subsistence.(4) stated that insecurity is broadly defined as a breach of peace and security that results in the wanton destruction of people and properties and is influenced by historical, religious, ethno-regional, civic, social, economic, and political factors. However, it is believed that the most crucial component necessary for agricultural production operations to take place sustainably is the preservation of the environment, human lives, and properties.

Insurgency in northeastern Nigeria started more than a decade ago and was linked to a religious ideology that forbids people from accessing Western education popularly referred to as *Boko Haram*. *Boko Haram* translates books as forbidden but in a broader sense, it forbids everything Western including education, culture, and science (5, 6).The hallmark of the *Boko Haram* group has been to propagate strict adherence to Islam by every citizen and forcefully impose on them the group's religious ideology (7, 8).

Before the crisis, there were fewer important jobs in the northeast, and there are now even fewer. Both the non-agriculture in a mostly unorganized sector and agriculture accounting for 39% and 43% respectively made up the bulk of those who were in the labour force (9). At the height of the insurgency (2012–2014), the percentage of labour employed in agriculture significantly

decreased to roughly 27% (9). This demonstrated how the insurgency has significantly decreased agricultural production and hampered access to land for farming and rearing of cattle. Food costs have risen as a result of the decline in agricultural production, making households more vulnerable to shocks and stressors. Due to this, there has been a notable rise in poverty, food insecurity, and unemployment in the region. The crisis caused the poverty rate to rise from 47.3% in 2011 to around 71% in 2019 (10, 11, 12).

Rural Borno, Yobe, and Adamawa States which are home to the majority of farmers are the insurgency's focal point in northeastern Nigeria, and thousands of farmers have been forced off their fields by the terrorists. Recent estimates reveal there have been roughly 17, 000 fatalities and 2.5 million displacements due to the insurgency (13). All types of livelihood activities, including agricultural output, have been negatively impacted by the insurgency. Crop farmers may be the worst hit as they cannot move their crops as livestock farmers move their animals to relatively peaceful areas. The rebellion has aggravated hunger in a region already plagued by crippling poverty, aridity, and a recurring cycle of drought and famine. According to 14, the Northeast's economy has been severely disrupted by crop failures and conflicts with a negative impact on agricultural assets and livelihoods in a region where more than 80% of the rural population relies on crop or livestock farming.

Women's involvement in poultry in Nigeria is not new as they are known to play triple roles consisting of productive, reproductive, and community development roles (15, 16, 17, 18,19). Women are engaged in crop and livestock production, processing, and marketing at varied extents across the thirty-six states in Nigeria. According to estimates, at least 85% of women in the north are involved in economic activities, with roughly 45% of them considered to be involved in agricultural business and 55% classified as off-farm activities (20). The contributions of women to the household economy are enormous despite the attempt by men folk to downplay these contributions (18). Poultry keeping is well suited to women because it occupies small space around or within the house premises. Women's poultry improves human nutrition, livelihood, and socio-cultural activities as incomes from the sale of poultry products are used to meet children's and household needs (21).

According to 22, the insurgency in northeastern Nigeria caused losses of cattle raised under free-range and semi-intensive systems to stray gunshots of the rebels. Only the effect of insurgency on cattle output was the subject of the study. The study did not take into consideration the impact of insurgency on the livelihood capitals/assets of the cattle farmers. To the best of the researchers' knowledge, the effect of insurgency on women poultry keepers was not studied previously. Hence, given the role of women in poultry keeping and their contributions to meeting household needs, there is a need to assess the effect of insurgency on their livelihoods through a

comparative study. The objectives of the study were to: 1) compare the livelihood assets/capitals of women poultry keepers comprising human, natural, social, physical, and financial in the insurgency and non-insurgency areas; and 2) compare the livelihood status indices of women poultry keepers in the insurgency and non-insurgency areas. This was to inform and motivate the government and non-governmental organizations on the need to direct empowerment interventions at women whose livelihoods may be impacted by insurgency.

The following null hypotheses were tested in the study:

- i. There is no significant difference between the assets/capitals of women poultry keepers in insurgency and non-insurgency areas.
- ii. There is no significant difference between the livelihood status indices of women poultry keepers in insurgency and non-insurgency areas.

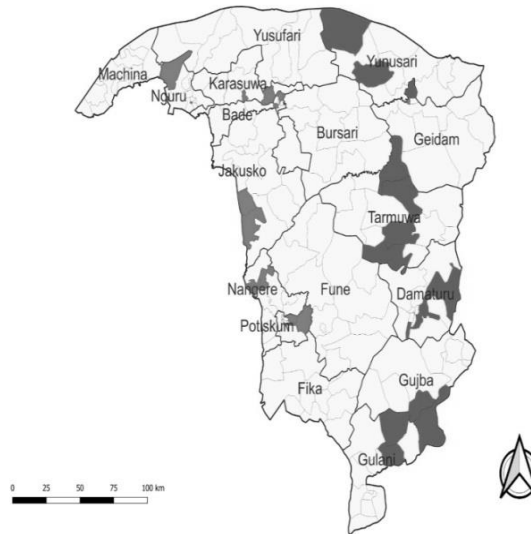
2.0 METHODOLOGY

2.1 Study Area

The study was carried out in Yobe State, Nigeria. The State is located within Latitudes 11° 45"N - 13° 30"N and Longitudes 9° 30"E - 12° 30" E. The state is bounded to the east by Borno State; to the west by both Jigawa and Bauchi States and to the north by the Niger Republic (23). Yobe State has a total area of 47,153 km² and an estimated population of 2, 321, 339 as of 2006. The projected population was 3, 924, 186 in 2021 using a population growth rate of 3.56% (24). The northern region of Yobe State experiences hot and dry weather for the majority of the year. The southern region experiences hot weather between the months of March and June and colder weather for the majority of the year, particularly in the rocky areas of Gujba and Fika LGAs. The three hottest months, with temperatures between 39°C and 42°C, are March, April, and May. In the State, the length of the rainy season varies depending on where you are, although it typically lasts for around 120 days in the north and more than 140 days in the south. The annual rainfall ranges from 500mm to 1000mm, and the rainy season typically lasts from May to October in the south and June to September in the north. The state's two vegetation zones, the Sahel in the north and the Sudan Savannah in the south are both seriously threatened by desert expansion, which has led to the development of dry and semi-arid conditions (25). Yobe State's climatic conditions are ideal for cereal crop cultivation and animal production. Most of the residents are farmers, and there is a sizable population of animals. The primary rain-fed crops are sorghum, millet, maize, groundnuts, and cowpeas as vegetables, rice, and wheat are cultivated in irrigated areas and the Fadamas (inland valleys) (26). Many rural residents now rely heavily on agriculture as their main source of income due to the state's favourable conditions for farming, particularly the development of cereals and livestock rearing.

2.2 Sampling Procedure and Data Collection

A multi-stage sampling procedure was adopted to select the respondents for the study. First, six Local Government Areas (LGAs), where residents had experienced incursion and attacks by the insurgents, with significant destruction of lives and property on more than two occasions were purposefully selected for the study. Similarly, six LGAs where residents had never experienced the nefarious activities of the insurgents were also selected. A total of 12 LGAs were selected. The selected LGAs affected by insurgency were Gujba, Gaidam, Tarmuwa, Damaturu, Gulani, and Yunusari, while the selected LGAs not affected by insurgency were Jakusko, Nguru, Bade, Nangere, Karasuwa, and Potiskum as shown in Figure 1. Second, two (2) villages were selected by simple random sampling from each of the 12 LGAs to create a total of 24 villages for the study. Third, snowball technique was used to locate and select thirteen (13) respondents who were willing to participate in the study from each of the 24 villages making a total of three hundred and twelve (312) respondents. The consent of the respondents involved in this study was sought and obtained. Questionnaires and interview schedules were administered to collect data for the study. However, 297 questionnaires were retrieved for data analysis. Data were collected on indicators/sub-components of livelihood assets/capitals namely, human, physical, natural, financial, and social capitals. The design of the questionnaire was guided carefully by the existing literature. Experts in the Department of Agricultural Extension from Abubakar Tafawa Balewa University, Bauchi, and the Department of Agricultural Economics and Extension from Federal University Gashua, in Nigeria, subjected the instrument to face and content validity. The split-half approach produced a reliability coefficient of 0.75. Since a reliability coefficient of 0.70 or greater was considered a sufficient standard, this demonstrated that the instrument is reliable (27).



Legend: Non-insurgency area

Insurgency area

Figure 1: Map showing the insurgency and non-insurgency areas

2.3 Measurement of Variables

Adopting DFID’s Sustainable Livelihood Framework (SLF) (1), the condition of one's livelihood is determined by five different types of capital/assets, namely: human, natural, social, physical, and financial. Table 1 shows the description of livelihood indicators and scores.

Table 1: Description of livelihood indicators/sub-components

Livelihood capitals	Indicators/Sub-components	Literature justification	Scores
1. Human capital	Respondent’s access to healthcare	28, 29	Very good=4, Good=3, Average=2, Poor=1
	Respondent’s health status	29	Very good=4, Good=3, Average=2, Poor=1
	The health status of her family members	29	Very good=4, Good=3, Average=2, Poor=1
	The education level of her	30, 31	Very good=4, Good=3, Average=2,

	household members		Poor=1
	Number of people who work in the household	32	0-4=1, 5-9=2, above 9=3
	Training in poultry farming	29	Yes=1, No=0
2. Physical capital	Ownership of a home	33	Yes=1, No=0
	Access to product markets	34	Yes=1, No=0
	Access to input markets	34	Yes=1, No=0
	Ownership of agricultural assets (animal housing)	29	Yes=1, No=0
	State/quality of road	34	Very good=4, Good=3, Average=2, Poor=1
3. Natural Capital	Respondent's access to land	33	Always=2, Occasionally=1, Never=0
	Availability of a water source	33	Always=2, Occasionally=1, Never=0
	Availability of feed and feedstock	29	Always=2, Occasionally=1, Never=0
	Livestock/poultry flock size	34	0-10=1, 11-20=2, above 20=3
4. Social capital	Support from friends and family	35	Always=2, Occasionally=1, Never=0
	Membership of producers/poultry farmers' associations	33, 35, 29	Yes=1, No=0
	Membership in social associations	33,35,29	Yes=1, No=0
	Mutual trust within associations	35,34	Yes=1, No=0
5. Financial capital	Ownership of a bank account	35	Yes=1, No=0
	Access to loans /credit	33,29	Yes=1, No=0

Estimated annual income from poultry	33,35,31	₦0-₦20,000=1, ₦21,000-₦40,000=2, ₦41,000-₦60,000=3, Above ₦60,000=4
Estimated yearly income from other sources	33,35,31	₦0-₦20,000=1, ₦21,000-₦40,000=2, ₦41,000-₦60,000=3, Above ₦60,000=4

2.4 Data Analysis

The index of each livelihood capital was created by converting raw scores of the respective sub-components to standard scores, adding them all together, and finding the mean. Subsequently, the overall livelihood status index was derived from the combinations of the indices of the five capitals as follows:

The formulas were applied according to the methodology used by (36):

Standardized score:

$$Z_j = \frac{X_j - \text{Min}_j}{\text{Max}_j - \text{Min}_j}$$

Where;

Z_j = standardized subcomponent J

X_j = unstandardized subcomponents (X₁, X₂, X₃, X_n)

(a) Human index (HV) =

$$\frac{\text{WAAHC} + \text{WCHC} + \text{WFHCF} + \text{WEEHM} + \text{WMNEM} + \text{WTTPF}}{\text{WA} + \text{WC} + \text{WF} + \text{WE} + \text{WM} + \text{WT}}$$

Where;

WA, WC, WF, WE, WM, and WT represent the weight of access to health care (AHC), health condition (HC), health condition of family members (HCF), education of household members (EHM), number of earning members of the household (NEM) and training in poultry farming (TPF) respectively.

(b) Physical index (PV) =

$$\frac{WHOH + WMAOM + WIMAIM + WAHPH + WRSR}{WH + WM + WIM + WAH + WR}$$

Where;

WH, WM, WIM, WAH, and WR represent weights of ownership of a house (OH), access to output market (AOM), access to input market (AIM), ownership of poultry house (PH), and state of road (SR) respectively.

(c) Natural index (NV) =

$$\frac{WALAL + WWSAWS + WAFAPF + WNLPLPF}{WAL + WWS + WAF + WNL}$$

Where;

WAL, WWS, WAF, and WNL represent the weight of access to land (AL), availability of water source (WWS), availability of feeds/feedstuffs (AF), and poultry flock size (PF), respectively.

The social index includes access to support from friends and relatives (AS), membership in a poultry farmers' Association (MFA), membership of a social association (MSA), and existence of mutual trust within an association (EMT).

(d) Social index (SV) =

$$\frac{WSAS + WFMFA + WAMSA + WTEMT}{WS + WF + WSA + WT}$$

Where;

WS, WF, WA, and WT represent the weight of access to support from friends and relatives (AS), membership of poultry farmers association (MFA), membership of social association (MSA), and existence of mutual trust within association (EMT) respectively.

(e) Financial index (FV) =

$$\frac{WAOA + WCAC + WFIF + WSIS}{WA + WC + WF + WS}$$

Where;

WA, WC, WF, and WS represent weights of ownership of bank account (OA), access to loans/credits (AC), income from poultry (IF), and income from other sources (IS) respectively.

(f) Livelihood Status Index (LSI) =

$$\frac{WHHV + WNNV + WSSV + WPPV + WFFV}{WH + WN + WS + WP + WF}$$

Where;

LSI is the livelihood status index; WH, WN, WS, WP, and WF are weight values of human, natural, social, physical, and financial capitals, respectively. HV, NV, SV, PV, and FV are the index values of human, natural, social, physical, and financial capital.

Data were analyzed with descriptive (mean, frequency counts, and percentages) and inferential (t-test) statistics using IBM SPSS version 26

Independent Sample *t* – test:

$$t = \frac{X_1 - X_2}{SE_{X_1 - X_2}}$$

Where;

$X_1 - X_2$ is the difference between the means of the two groups and SE denotes the standard error of the difference.

3.0 RESULTS AND DISCUSSION

3.1 Demographic Characteristics of Women Poultry Keepers

The results in Table 2 show that, in areas affected by insurgency, 38.4% of women poultry keepers were between the age brackets of 35 and 44 years, compared with 29.2% of their counterparts in non-insurgency areas in the same age brackets. However, the mean age (38.6) of women poultry keepers in insurgency areas was similar to the mean age (37.5) of their counterparts in non-insurgency areas. The results imply that both categories consist of youthful and active producers who can contribute to food security. The results in the table further reveal that 11.9% of women poultry keepers in insurgency areas had primary education while 47.4% of their counterparts in non-insurgency areas had primary education. Only (29.4%) of women poultry keepers in insurgency areas did not have formal education while 18.8% of their counterparts in non-insurgency areas did not have formal education. The finding implies that women poultry keepers in both the insurgency and non-insurgency areas are trainable if extension education is given to them to enhance their production. The finding contrasts with the finding of (37) who reported that 70% of women cattle farmers did not have formal education in

the Yobe State of Nigeria. Also, the table shows that 86.7% of women poultry keepers in insurgency areas were married while 66.2% of their counterparts in non-insurgency areas were married. Surprisingly, 27.3% of women poultry keepers were widowed in non-insurgency areas against only 2.8% in insurgency areas. However, women in both groups had to keep poultry to provide the needed support to their families. The finding is consistent with the previous finding of (37) that the majority of women cattle farmers in Yobe State were married. The mean year of experience of women poultry keepers in the insurgency areas was 11.14 with 4 missing values while it could not be properly determined in the non-insurgency areas because of 122 missing values. Women poultry keepers in insurgency areas had substantial experience in poultry keeping.

Table 2: Distribution of demographic characteristics of women poultry keepers (n= 297)

Variables	Women poultry keepers in insurgency area (n= 143)		Women poultry keepers in non-insurgency areas (n= 154)	
	Freq	%	Freq	%
Age (years)				
15 – 24	11	7.7	15	9.7
25 – 34	32	22.4	45	29.3
35 – 44	55	38.4	45	29.2
45 – 54	39	27.3	46	29.9
55 -64	06	4.2	03	1.9
Mean ± standard deviation	38.6	±10.3	37.5	±9.8
Highest level of education				
No formal education	42	29.4	29	18.8
Primary	17	11.9	73	47.4
Secondary	29	20.3	36	23.4
NCE/OND	30	21.0	10	6.5
HND/first degree	20	14.0	03	1.9

Postgraduate	05	3.5	03	1.9
Marital status				
Single	09	6.3	02	1.3
Married	124	86.7	102	66.2
Widowed	04	2.8	42	27.3
Divorced	06	4.2	08	5.2
Years of experience				
1 – 10	91	65.5	26	81.2
11 – 20	29	20.8	03	1.9
21 – 30	19	13.7	03	1.9
Mean ± standard deviation	11.14	±8.05	5.97	±7.26

Source: Field survey, 2023

3.2 Livelihood Assets and Livelihood Status Indices

The results in Table 3 reveal the comparison of livelihood assets/capitals and livelihood status indices between women poultry keepers in insurgency and non-insurgency areas. The human capital index of women poultry keepers in non-insurgency areas (0.72) was higher than that of their counter parts in insurgency areas (0.56) by 28.57%. Women poultry keepers in the non-insurgency areas had higher access to health care (0.84), better health conditions (0.82), better health conditions of family members (0.75), and better education of family members (0.92) than the corresponding components of human capital of their counter parts in insurgency area. The findings indicate that insurgency negatively affected the human capital in the affected area. The finding agrees with (38) who reported that the Boko Haram insurgency had adverse effects on Nigeria's education sector and the economy. The finding implication is that the livelihood strategy of the women in insurgency areas would be negatively impacted. In a study carried out in high mountain villages of Liangshan Yi Autonomous Prefecture of Sichuan, China, education level, skill training, and health condition had significant positive effects on off-farm livelihood strategy choices (39). The table also reveals that the natural capital index of women poultry keepers in the non-insurgency area (0.62) was similar to that of women poultry keepers in the insurgency area (0.65). Only the index of flock size (0.16) of women poultry keepers in the non-

insurgency area was lower than the corresponding index in the insurgency area (0.34) by 52.9%. The finding implies that insurgency had no impact on the natural capital perhaps because the insurgents engaged in guerilla warfare, and cattle were mostly what they targeted when they raided most areas(22).

The table on social capital shows that the social capital index of women poultry keepers in non-insurgency areas was higher (0.81) than that of their counterparts in insurgency areas (0.45) by 80%. Marked variations in the indices of women poultry keepers in non-insurgency areas were revealed in access to support from family and friends (0.87), membership of poultry farmers association (0.70), membership of social association (0.79) and existence of mutual trust within the association (0.86) from the corresponding indices of 0.40, 0.46, 0.32, and 0.62 of their counterparts in insurgency area. It indicates that insurgency affected people's ability to access mutual support and network of help inherent in social interactions. The finding aligns with (40) who reported that insurgency displaced people leading to loss of livelihoods, assets, and critical support systems. The implication of this is that households with higher social capital would be more innovative in their livelihood activities.

The table further reveals that the physical capital index of women poultry keepers in the non-insurgency area (0.74) was not markedly different from that of their counterparts in the insurgency area (0.79). However, women poultry keepers in the insurgency area had more access to the output market (1.00) and more access to the input market (0.93) than their counterparts in the non-insurgency area with the respective values of 0.65 and 0.66. Women affected by insurgency were likely displaced and pushed to seek markets for their products elsewhere thereby making them more aware of available markets. However, ownership of poultry houses (0.80) by women poultry keepers in non-insurgency areas and state of road (0.86) in their area were higher and better than those of women poultry keepers in insurgency areas 0.61 and 0.63 respectively. Insurgency probably hurt people's ability to own a house and the condition of their roads. The finding agrees with (40) who reported that insurgency has both damaged critical infrastructure and disrupted new development in North-East Nigeria.

The financial capital index of women poultry keepers in non-insurgency areas was higher (0.61) than that of their counterparts in insurgency areas (0.52) by 17.3% in Table 2. Women poultry keepers in non-insurgency areas owned more bank accounts (0.86), and more access to loans/credits (0.70) than their counterparts in insurgency areas with respective values of 0.69 and 0.20. Despite these, women poultry farmers in insurgency areas had more income from poultry (0.54) and other sources (0.66) than their counterparts from non-insurgency areas with respective values of 0.32 and 0.56. Women poultry keepers in insurgency areas with higher incomes may not be able to save money as their most important needs may be to buy food, prepare to escape

insurgency activities, or carry out a repair of damaged property. The finding is similar to (40) who affirmed that insurgency disrupts economic activity through the diversion of resources.

The overall livelihood status index of women poultry keepers in the non-insurgency area was higher (0.71) than the livelihood status index of their counterparts in the insurgency area (0.59) (Table 3). The implication is that generally, women poultry keepers in non-insurgency areas could enhance their livelihood activities and livelihood incomes. Hence their poverty level is expected to be lower than it is in the insurgency area. Furthermore, the level of living and well-being of women in non-insurgency areas would be better than they are among women in insurgency areas. Livelihood outcomes are likely to change in line with the (41) submission that in peaceful and politically stable environments, livelihood goals might include greater well-being or greater income, whereas, during times of crisis, people's goals might become focused on such short-term objectives as personal safety, food security, reduced vulnerability, and survival.

Table 3: Livelihood capitals and livelihood status index of women poultry keepers in non-insurgency and insurgency

Sub-components	Values of sub-components		Types of livelihood capital	Indices of capitals	
	Non-insurgency area (n=154)	Insurgency area (n=143)		Non-insurgency area (n=154)	Insurgency area (n=143)
Access to healthcare	0.84	0.67	Human	0.75	0.55
Health conditions	0.82	0.69			
Health conditions of family members	0.75	0.18			
Education of family members	0.92	0.64			
Household size	0.41	0.57	Natural	0.62	0.61
Training on poultry farming	0.62	0.60			
Access to land	0.66	0.69			
Availability of water source	0.79	0.80			
Availability of feeds/feedstuffs	0.87	0.77	Social	0.82	0.46
Flock size	0.16	0.34			
Access to support from family and friends	0.87	0.40			
Membership in the Poultry Farmer Association	0.70	0.46			
Membership in social association	0.79	0.32			

The existence of mutual trust within the association	0.86	0.62			
Ownership of a house	0.72	0.76	Physical	0.72	0.80
Access to output market	0.65	1.00			
Access to input market	0.66	0.93			
Ownership of poultry house	0.80	0.63			
State of road	0.86	0.61			
Ownership of bank account	0.86	0.69	Financial	0.61	0.50
Access to loans/credits	0.70	0.20			
Annual income from poultry farming	0.32	0.54			
Annual income from other sources	0.56	0.66			
Overall livelihood status index					
Poultry keepers in non-insurgency area		0.71			
Poultry keepers in insurgency area		0.59			

Source: Field survey, 2023

3.3 Hypotheses Testing

Table 4 reveals the results of the test of differences between livelihood capitals and livelihood status indices of poultry keepers in insurgency and non-insurgency areas. There was a significant difference between human capital (t – value = -9.622, p< 0.05), social capital (t – value = -10.927, p< 0.05), and financial capital (t – value= -3.105, p< 0.05). There was also a significant difference between the livelihood status indices of poultry keepers in insurgency and non-insurgency areas (t – value= -6.756, p< 0.05). However, there was no significant difference between natural capital (t – value= 1.444, p> 0.05) and physical capital (t – value= 1.786, p> 0.05).The findings imply that insurgency had negative effects on human capital, social capital, financial capital, and livelihood status indices of poultry keepers.

Table 4: T-test of difference between livelihood capitals and livelihood status indices of poultry keepers in insurgency and non-insurgency areas

Livelihood capitals		Mean	Mean difference	T-value	Significance level 2-tailed	Decision
Human	Poultry keepers in insurgency area	0.5591	-0.1648	-9.622	0.000*	Reject
	Poultry keepers in non-insurgency area	0.7238				
Natural	Poultry keepers in insurgency area	0.6512	0.03191	1.444	0.150 ^{NS}	Accept
	Poultry keepers in non-insurgency area	0.6193				
Social	Poultry keepers in insurgency area	0.4502	-0.35583	-10.927	0.000*	Reject
	Poultry keepers in non-insurgency area	0.8060				
Physical	Poultry keepers in insurgency area	0.7869	0.04799	1.786	0.075 ^{NS}	Accept
	Poultry keepers in non-insurgency area	0.7390				
Financial	Poultry keepers in insurgency area	0.5227	-0.08983	-3.105	0.002*	Reject
	Poultry keepers in non-insurgency area	0.6126				
Livelihood status index (LSI)	Poultry keepers in insurgency area	0.5994	-0.1045	-6.757	0.000*	Reject
	Poultry keepers in non-insurgency area	0.7039				

Source: Field survey, 2023* = significant at 5% level of probability, NS= Not Significant

4.0 CONCLUSION

The study which explored the effect of insurgency on livelihood assets and livelihood status indices of women poultry keepers in Yobe State revealed that human, financial, and social capitals and livelihood status indices of women poultry keepers in non-insurgency areas and those of their counterparts in insurgency area were significantly different. Women poultry keepers in non-insurgency areas were better than their counterparts in insurgency areas with respect to the possession of livelihood assets that can enable them to enhance poultry keeping. Insurgency negatively impacted human development, social networks, financial capacity, and livelihoods of the people in Yobe State. However, this study has some limitations. The unwillingness of some women poultry keepers to participate in the study may bias the data. Clear causality of insurgency leading to low livelihood status was not adequately established because other factors that may influence livelihood status were not considered. Future research may consider the livelihood capitals and status before and after the insurgency and consider other factors that may affect them.

5.0 RECOMMENDATIONS

It was therefore recommended that the federal, state, local governments, and non-government organisations should work with the people in the study area to engender peace and foster socio-economic development. Women in insurgency areas should be assisted to rebuild their assets and livelihoods. Specifically, adult education institutions and extension service agencies should design and implement a series of education and training activities for women in insurgency areas to develop their human capital. The government should strengthen the financial institutions to grant loans to women in the insurgency area. Women in the insurgency area should be encouraged to form or strengthen existing producer associations in a bid to enhance their social capital.

REFERENCES

- [1] DFID (2000). Sustainable Livelihoods Guidance Sheets. Department for International Development. http://www.livelihoods.org/info/info_guidancesheets.html (accessed:18/10/2023)
- [2] Chambers, R., Conway, G. (1992). Sustainable rural livelihoods: practical concepts for the 21st century, IDS Discussion Paper 296, Brighton: IDS.
- [3] Abdullahi, I. M., Jatbong, J. N., and Idris, Y. (2022). Analysis of the Influence of Boko Haram Insurgency on Households' Food Security in Maiduguri Metropolis of Borno State, Nigeria. *Journal of Agricultural Economics, Extension & Social Sciences*. 1(2): 70 – 76.

- [4] Ewetan, O. O. and Urhie, E. (2014). Insecurity and socio-economic development in Nigeria. *Journal of Sustainable Development Studies*. 5(1): 40-63.
- [5] Danjibo, N. D. (2009). Islamic Fundamentalism and Secretarian Violence: The Maitatsine and Boko Haram crises in Northern Nigeria. Peace and Conflict Studies Paper Series, Institute of African Studies, University of Ibadan: 1-21.
- [6] Adesoji, A. (2010). The Boko Haram uprising and Islamic revivalism in Nigeria. *African Spectrum*, 45(2): 95-108.
- [7] Abimbola, J.O. and Adesote, S.A. (2012). Historicising Domestic Terrorism and Boko Haram Insurgency in the North East, Nigeria: Issues and Trends. *KIU Journal of Social Sciences*, 8 (3): 17-29.
- [8] Buah, J. and Abimbola, A. (2009). The Boko Haram tragedy and other issues. *The Punch*, 6 August.
- [9] World Bank (2015). Annual Reports on Developments in the Northeast.
- [10] Eme O. I., Ibietan J. (2012). The cost of 'Boko-Haram' activities in Nigeria, *Arabian Journal of Business and Management Review*. 2(2):10.
- [11] National Bureau of Statistics (NBS), (2019). Poverty and inequality in Nigeria: Executive Summary, Federal Republic of Nigeria
- [12] Avis, W. R. (2020). War economy in North East Nigeria, K4D knowledge, evidence & learning for development, Helpdesk Report 734, Institute of Development Studies, Brighton, UK.
- [13] Babagana, M., Ismail M., Mohammed B. G., Dilala M. A., Hussaini I., Zangoma I. M. (2018). Impacts of Boko Haram Insurgency on Agricultural Activities in Gujba Local Government Area, Yobe State, Nigeria. *International Journal of Contemporary Research and Review*. 9(12). DOI: <https://doi.org/10.15520/ijcrr.v9i12.631>.
- [14] UN Women (2017). "Progress of the world's women 2015-2016: Transforming economies, Realising Rights". New York: UN Women. United Nations. 11(02). ESA Working Paper.
- [15] Okitoi, L.O., H.O. Ondwasy, M.P. Obali and F. Murekefu (2007). Gender issues in poultry production in rural households of Western Kenya. *Livestock Research and Rural Development*. 19: Art 17.
- [16] Ogunlade. I., and Adebayo. S. A. (2009). Socio-Economic Status of Women in Rural Poultry Production in Selected Areas of Kwara State, Nigeria. Department of Agricultural Extension and Rural Development, University of Ilorin, Ilorin, Kwara State, Nigeria. *International Journal of Poultry Science*. 8 (1): 55-59.
- [17] Manandhar, P. K. (2008). Managing the triple roles: A study on rural mountain women's changing routine in Nepal. <https://lib.icimod.org/record/13550>

- [18] Alliyu, N. (2016). Patriarchy, Women's Triple Roles and Development in Southwest Nigeria. *International Journal of Arts and Humanities*, 5(4), S/No 19: 94-110. <http://dx.doi.org/10.4314/ijah.v5i4.7>
- [19] Usman, A. (2018). Gender and Religion in Nigeria: The Role of Northern Nigerian Muslim Women in National Development. *Journal of Science, Humanities and Arts*, 5(9):503.
- [20] National Bureau of Statistics (2012). "Annual Abstract of Statistics"
- [21] FAO. (2014). Family poultry development – Issues, opportunities, and constraints. Animal Production and Health. Working Paper. No. 12. Rome.
- [22] Iliyasu, D., Lawan, A., Ibrahim, Y., Omonike, O. S. and Muktar, A. (2015). Repercussion of Insurgence Activities of Boko Haram on Management of Livestock and Production in Northeastern Part of Nigeria. *Journal of Animal Production Advances*.5(3): 624-628.
- [23] Chinedu, E. and Olaolu, O. (2010). Public Financial Management Performance Assessment Report for Yobe State. Company.
- [24] National Population Commission (2006). "Population and Development Review". 33(1): 206-210.
- [25] Ali, I. N., Brian B., Richard, G.H. and Peter, C. (2014). Changing Vegetation Patterns in Yobe State Nigeria: An Analysis of the Rates of Change, Potential Causes, and the Implications for Sustainable Resource Management. *International Journal of Geosciences*, (5):50-62.
- [26] Women Farmers Advancement Network (WOFAN) (2007). "Report of Focus Groups Discussions (FGD)" Conducted with Farmers in Eight Villages from Four Northern States of Nigeria on Adaptation to Climate Change and Radio Listening Habits.
- [27] Nunnally, J.C. (1978). Psychometric theory. McGraw-Hill Book Company, pp 86-113, 190-255.
- [28] Alam, G.M.M.(2016). An Assessment of the Livelihood Vulnerability of the Riverbank Erosion Hazard and its Impact on Food Security for Rural Households in Bangladesh (Ph.D. Thesis). University of Southern Queensland.
- [29] Sarker, M.N.I., Wu, M., Alam, G.M., Shouse, R.C., (2020). Livelihood diversification in rural Bangladesh: patterns and determinants in disaster-prone riverine islands. *Land Use Policy* 96, 104720. <https://doi.org/10.1016/j.landusepol.2020.104720>.
- [30] Arya, S., Cockfield, G., Maraseni, T.N. (2014). Vulnerability of Himalayan transhumant communities to climate change. *Clim. Change* 125, 193–208. <https://doi.org/10.1007/s10584-014-1157-5>.
- [31] Alam, G.M.M., Alam, K., Mushtaq, S., Filho, W.L. (2018). How do climate change and associated hazards impact on the resilience of riparian rural communities in Bangladesh?

- Policy implications for livelihood development. *Environ. Sci. Policy* 84, 7–18. <https://doi.org/10.1016/j.envsci.2018.02.012>.
- [32] Ayana, G.F., Megento, T.L., Kussa, F.G.(2021). The extent of livelihood diversification On the determinants of livelihood diversification in Assosa Wereda, Western Ethiopia. *GeoJournal*. <https://doi.org/10.1007/s10708-021-10379-5>.
- [33] Monwar, M.M., Mustafa, M.G., Khan, N.A., Hossain, M.S., Hossain, M.M., Majumder, M. K., Chowdhury, R.M., Islam, M.A., Chowdhury, M., Alam, M.S.(2014). Indigenous adaptation practices for the development of climate resilient ecosystems in the hail haor, Bangladesh. *Glob. Soc. Welf.* 5, 125–136. <https://doi.org/10.1007/s40609-014-0014-9>.
- [34] Dutta, S. and Guchhait – Barddhaman, S. K. (2018). Measurement of Livelihood Assets in Sustainable Forest Governance: A Study in Burdwan Forest Division, West Bengal. *Transactions*. 40 (2), 215.
- [35] Yashodhara, B. and Narasimha, N. (2015). Development of A Scale to Measure the Livelihood Status of Farmers. *Mysore J. Agric. Sci.*, 49 (2): 408-412
- [36] Rahman, Md. S., Majumder, M. K. Sujan, Md. H. K. Manjira, S,(2021). Livelihood status of coastal shrimp farmers in Bangladesh: Comparison before and during COVID-19. *Aquaculture Report* 21. <https://doi.org/10.1016/j.aqrep.2021.100895>
- [37] Umar, Y. A., Abu,I. A., Sani, M. H., Idi, S. and Owoade, E. O. (2023). Gender Analysis of Cattle Farmers' Participation in Cattle Production in Bauchi and Yobe States, Nigeria. *Asian Journal of Agricultural Extension, Economics & Sociology*. 41 (9): 637-646.
- [38] Idowu, B. M., Nwangele, C. N. and Nwosu, C.P. (2021). Implications of the Boko Haram Insurgency for Educational and Economic Development in Nigeria. *African Journal of Terrorism and Insurgency Research*, 2(2):113
- [39] He, R., Fang, F., and Liu, Y. (2019). Influence of human capital on the livelihood strategy of farming households in poor mountainous areas: A case study of Liangshan Yi Autonomous Prefecture of Sichuan China. *Progress in Geography*. 38 (9): 1282-1893. DOI:10.18306/dlkxjz.2019.09.002
- [40] Taylor, H. K., Bohl. D. K. Rafa, M. and Moyer, J. D. (2021). Assessing the impact of conflict on development in North-East Nigeria. UNDP.
- [41] United Nations Development Program (UNDP), (2013). Sustainable livelihoods; Concept, Principles and Approaches to Indicator Development-Draft. www.Undp.org/sl/docs. (Accessed: 19/2/2020).