Examining the Impacts of Boko-Haram Conflict and Food Security Status among Households in Kano Metropolis

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Abstract

The extent to which conflict has impacted negatively to food security of households in Kano is of serious concern. The objective of this study is to examine the impacts of Boko-Haram conflict on food security status among households in Kano. Primary data were drawn from a sample size of one hundred (100) household heads from Gwale and Kano municipal areas. The research investigated household food security status by using Food Security Index (FSI) and Binary regression. Result from the FSI divulges that 69% of the households are food secure, with daily per capita energy consumption of 3,086 kcal while binary regression shows that all the variables under conflict have a negative impact on households' food status. Furthermore, food scarcity, market closure and high cost of foodstuff are significant at 10 percent, while unemployment and destruction of property are statistically significant at 1 percent. Households classified as food insecure adopt extremely severe coping strategies, severe coping strategies and less severe coping strategies in some cases. The study recommends that, extremely severe coping strategy to be replaced with the less severe, which can be reversible within a short period. While the study recommended that government should adopt short term and long-term measures in reducing conflict in the study areas, which directly affected the variables under conflict.

Keywords: Boko-haram, Unemployment, Per Capita Energy, Food Security Index

JEL Classification: Q18, Q34

1. Introduction

The number of people galloping into serious food security challenges in the world and Nigeria in particular is increasing by the day. Currently, according to Food and Agricultural Organisation (FAO); International Fund for Agricultural Development (IFAD); United Nations Children Emergency Fund (UNICEF); World Food Programme (WFP) and World Health Organisation (WHO), an estimated 822 million people are suffering from severe hunger in the world (FAO, IFAD, UNICEF, WFP& WHO, 2019). Whereas, in line with the Sustainable development Goals (SDG) indicators, an estimated 2 billion people are expected to be food insecure, including moderately food insecure individuals (FAO et al., 2019). By implication, this means that, for every nine people in the world, at least one is suffering from

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a severe food security problem. The figure represents an increased from the previous year projection of 804.6 million (FAO et al., 2018). African continents and Northern America are the worst affected regions in the world, mostly due to continuous conflicts, deteriorated economy and climate condition while Asian continents have witnessed improvement in the number of people suffering from chronic hunger within the period under review (FAO et al., 2019).

Conflict and hunger affected the lives of millions of individuals residing in conflict-affected areas. According to Holleman, Jackson, Sanchez and Vos (2017) majority of the conflict-affected countries identified by FAO are currently in a protracted crisis in term of food, mainly due to conflicts and violence. In the same vein, FAO et al. (2019) stated that over 60% of the estimated 822 million hungry people are found in conflict-affected zones in the world. Household's food security status is influence by conflict in both short term and long term, which subsequently affect wellbeing, individual cognitive improvement and productivity (Arcand, Rodella-Boitreaud & Reiger, 2015). According to Martin-Shields and Stojetz (2018) there is a direct negative relationship between agricultural productivity and conflict, which subsequently impacted on food security status of households. According to the United Nation High Commissioner for Refugees [UN-HCR], (2016), over 65.3 million people were affected due to conflicts in the world. As noted by Gleditsch, Wallensteen, Eriksson, Sollenberg and Strand (2002), conflict occurrence is exceptionally high in developing countries of the world. Townsend (1994); Maccini and Yang (2009) observed that in most of the conflict-affected zones, majority of the households and businesses are usually smallholder farmers, characterized by high degree of uncertainty in income, even without conflict, mostly due to climate change. Some of them are product suppliers locally, domestically or globally. These categories of households are always subjected to price oscillations in marketplaces (Adhvaryu, Fenske & Nyshadham, 2016; Adhvaryu, Kala & Nyshadham, 2015; Urdinola, 2010).

Under this scenario, conflict resulted in extra shock that influence the livelihood and wellbeing of the households. The outcome, therefore, presented two issues. First, the class of the shock may be moderately dissimilar across various kinds and intensities across local and national institutions, which could either be transformed or emerge in the course of the conflict (Justino, 2012). Secondly, food security is directly shapes and further interacts with other factors to further compound the food security situation through either price fluctuations or climate weather condition during conflict.

Conflicts in Africa are a normal phenomenon, especially in northern Nigeria where Boko-Haram insurgency is consistently causing serious havoc due to high youth unemployment, scarcity in terms of resources and high rate of poverty especially among the rural households (Ikezue & Ezeah, 2017). This condition has resulted in devastating negative impact on households' food security status especially, in the Northern part of Nigeria where the sect consistently strikes (Mukhtar, 2019c).

Boko-Haram can be traced way back to 2002 from Maiduguri, the state capital of the northeast of Borno under the leadership of the founding father named Mohammed Yusif. Boko-Haram is a new Islamic fundamentalist group found in Nigeria, with small branches in neighbouring countries. Its self-acclaimed name is "Jama'atAhl Us-Sunna li'd-Dawahwa'l

Jihad" which stands for (group for the protection of Sunnah and struggles). However, society and media refer to them as Boko-Haram (Murtala, 2013; Khan & Hamidu, 2015). The group stamped its footprint in 2003 when it openly engaged Nigerian police and various government formations in the country. The group perspective runs contrary to most Muslims in the country (Elden, 2014). According to Forest (2012), the origin of the group was as a result of fallout of country's bad governance, which produces high level of unemployment among the youth as well as extreme poverty and vast inequality. In the same vein, Food Security Information Network [FSIN], (2017) noted that Boko-Haram conflict has resulted in food shocks in the country. Accordingly, spike in the prices of food items was caused by Bok-Haram insurgency and other conflicts in Nigeria in 2018 (FSIN, 2017).

Empirical evidence revealed that there are few studies relating to food security and conflict. According to Taeb (2004), Messer and Cohen (2004) observed that there are no arduous empirical studies relating to conflict with household's food security status in Nigeria. In the same vein, Abbass (2014) and Nchi (2013) noted little empirical studies in conflicts in Nigeria without focusing adequately on the repercussion of food security. Therefore, this study intends to bridge the gap by analysing the impacts of Boko-Haram on households' food security in Kano, Nigeria.

2. Literature Review
Tari, Kibikiwa and Umar (2015) investigated the impacts of Boko-Haram insurgency on the food security status among some designated households in some selected local government areas in Adamawa, Nigeria, using binary regression and food security index. The result revealed that daily average per capita calorie intake among households in the selected local government areas were 1,060 kcal, 1150 kcal, 1,003 kcal and 963 kcal in Mubi North, Maiha, Gombi and Hong respectively. The result further indicated that these selected locations were food insecure. Variables that influence food security status of household include age of the household head, marital status of the household head, household size, household head income and monthly expenditure of the household. Clearly, this research only assessed the impact of socio-economic variables, while neglecting the conflict variables in the study.

Ogbozor (2016) investigated the causes and magnitude of Boko-Haram violent radicalism in Northeast, Nigeria. The research addressed some fundamental questions; what are the socioeconomic causes of the conflict? What are the core causes of conflict and its magnitudes? Result indicated a negative correlation between the conflict and socioeconomic condition; direct or indirect effects were also observed between the conflict and the rural livelihood. Aluko, Osikabor, Adejumo and Sumade (2016) examined the apparent impacts of Boko-Haram conflict from Northeast as a means of accessing cowpea to Bodija market located in Ibadan, Oyo Nigeria. The research expended descriptive analysis, chi-square and Pearson Product Moment Correlation. Result revealed that age, education and marketing proficiency of the household head as well as the source of cowpea from the conflict-affected areas were significantly correlated to the perceived impacts of Boko-Haram conflict. Mukhtar (2019d) investigated the impact of Boko-Haram among households in Kano Municipal, using regression analysis and FSI. Finding showed that all the variables under conflict have negative influence on the food security status of households. FSI further reveals that 31% of the households are food insecure.

3. Methodology

The study used primary data, gathered through well-structured questionnaire which was administered to 100 household heads. A purposive stratified sampling method was used to categories Kano into rural and urban. Out of the eight (8) local government areas (LGAs), under metropolitan, two (2) LGAs were selected, and one hundred (100) regular households drawn for the research. The selection of these two (2) is due to the fact that most of the Boko Haram insurgency was carried out in either metropolitan or Gwale local government areas. While analysing the data descriptively, food security index, in-the context coping strategy index and binary regression were used. Food security index was selected because it is simple and easy to interpret the outcomes and the fact that most of the household heads are considered as low income earners, therefore calculating their food security status will be achieved easily by calculating the calorie intake in each household.

Food security index measures the calorie consumption of household as compared to recommended calorie intake set by FAO. To achieve this index, two stages need to be fulfilled, namely identification and aggregation. In the identification stage, household size will be demarcated into infant (1month-6years); children below the age of 18years and adults above 18years. This demarcation becomes necessary since each of the above individual group have different calorie intake as provided by Stefan and Pramila adult equivalent for adjusting household size in Appendix B (Stefan &Pramila, 1998). For simplicity of the calculation, an average of the adult equivalent for adjusting household was further adopted as used by Mukhtar, Kamaruddin and Applanaidu (2019a) as provided in Table 1.

Table 1: Recommended Daily Energy Intakes and Equivalent Scale

Age category (yrs)	Average energy per day	Factor equivalent
Children less than 6 yrs	813	0.3
Children (6 – 18) yrs	1,897	0.7
Adults (> 18) yrs	2,710	1.0

Source: Mukhtar et al., (2019a).

Therefore, an infant has an average energy requirement of 813 kcal per day with factor equivalent of 0.3, while children between the age of 6and18 years have an average energy requirement of 1,897 kcal. Furthermore, adult will have 2,710 kcal, which represents the recommended average daily energy requirement as provided by FAO in Nigeria (FAO, 2016). Still under identification stage, households consume different kinds of foods, measured in grams (kg) for instance, wheat (3,500 kcal/kg), millet (3,500 kcal/kg), rice (3,660 kcal/kg), cowpea (5,950 kcal/kg) and the rest, also provided by Oguntona and Akinyele (1995). Each of these foods has different calorie content, when the product of the energy content in each food is taken with food measured in kg, we obtain the total energy of each food item called kcal.

On the other hand, the aggregation stage involves the processing of cumulative household calorie consumption into daily per capita consumption in a household. For instance, according to Mukhtar (2019a), households with three (3) infants, three (3) children and two (2) adults, that consume a 1kg of rice, 0.5 kg of millet, 1kg of wheat and 1kg of cowpea,

will have a total calorie energy intake of (3,660+1,750+3,500+5,950 = 14,850 kcal). To also convert the household size and aggregate it into adult equivalent, we take the infants (3*813 = 2,439kcal/2,710kcal =1 adult equivalent); children 6–18 years (3*1,897 kcal = 5,691 kcal/2,710=2 adult equivalent); and adults (2*2710 kcal=5,420 kcal/2,710 = 2 adult equivalent. Thus, the summation of adult equivalent across the group will make a household adult equivalent of (1+2+2 = 5 adults). Therefore, Food Security Index (FSI) is given as follows:

$$\propto = \frac{\delta_\tau}{\pi} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.1$$

where α represents food security status of households, which could either be food secure if equal to 1 or above, otherwise food insecure less than 1. It is the household per capita calorie or energy consumption and is the per capita recommended energy requirement in a household, which is 2,710 kcal.

Surplus and shortfall ratio is the distance above from the threshold, which is one (1) expressed in term of percentage (surplus index) or below the threshold (shortfall index), also given as follows.

$$(\rho) = \frac{1}{\theta} = \prod_{i=1}^{m} \vartheta \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..2$$

$$\vartheta = \frac{\varepsilon - \mu}{\mu} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots...3$$

Further substituting into Equation (3.2) will provide Equation (4.4) below

$$(\rho) = \frac{1}{\theta} = \prod_{i=1}^{m} \frac{\varepsilon - \mu}{\mu} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots.4$$

where (ρ) indicates the number of households either classified as food secure or food insecure, represent per capita calorie surplus or deficiency.

Various studies have adopted FSI in determining household's food security status in Nigeria; this includes the work of Mukhtar *et al.* (2018b); Fawole and Ozkan (2017); Mukhtar (2019b).

Based on the outcome of food security index, classifying household into food secure and food insecure, a logistic model is estimated to measure the effect of conflict on household food security status. Thus, the explicit model of the estimation is given below:

$$\propto = \boldsymbol{\beta\lambda_i} + \boldsymbol{\sigma_i} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots..5$$

In order to assess the effects of Boko-Haram conflict on household food security status, the following variables were used for the analysis. Food Shortage ($\boldsymbol{Fds\sigma_1}$) – Normally during conflicts, both farming and non farming activities comes to a stand still, farmers that can go to farm to produce, were restricted, in some cases the farmers were forced to migrate out of the farming communities, which generally affected food production. Household perception was measured as binary, 1 represents yes and 0 represents no. The a priori expectation is a negative relationship between food security and food shortage. Market closure ($\boldsymbol{Mkcls\sigma_2}$) – In most cases during conflict markets are always closed. This is to avoid surprise attack and looting of people's properties and lives. Household perception was also measured in

binary outcome. The expectation here is also a negative relationship between food security status and market closure.

Security check points ($\boldsymbol{Schpt\sigma_3}$) – Checkpoints have a lot of implications to food security status of the households. Firstly, in most cases checkpoints have a direct link with high cost of food items, because the security personnel subjected most retailers to exploitation, which eventually was passed to the end user of the products. Motorists spent enormous amount of time on the line, thereby incurring extra cost in terms of extra petroleum, which subsequently is then passed to the end user of products. Sometimes household head prefer to stay in their communities than to face police and military harassment. This results in shortage in the market and scarcity of products. This variable also has a negative relationship with food security and is measured in binary term. Unemployment ($\boldsymbol{Uemplyt\sigma_4}$) – Businesses were always affected during conflicts, this resulted in unemployment situation in the conflict-affected areas. The a priori expectation is negative relationship with food security. High cost of foodstuff ($\boldsymbol{Hcfd\sigma_5}$) – Normally during conflict, cost of foodstuff skyrocketed to the ceiling, especially staple foodstuff. This is as a result of fear for attack by the insurgents. Most businesses that decided to supply foodstuff incurred extra cost in form of security and other logistics before the products arrived at the conflict affected zones. Therefore, these extra costs are always passed on to the final consumer. Destruction of property ($\boldsymbol{Destpty\sigma_6}$) – Once conflicts breakout, household properties running into millions of Naira/Dollars are either destroyed or snatched by the insurgence. Therefore, destruction during conflicts has a negative relationship with household food security status. The a priori expectation is also negative. Therefore, the empirical model used for the estimation is given as:

$$\propto = \beta\lambda_0 + Fds\sigma_1 + Mkcls\sigma_2 + Schpt\sigma_3 + Uemplyt\sigma_4 + Hcfd\sigma_5 + Destpty\sigma_6 + e_i.....6$$

In-the Context Coping Strategy Index
According to Food and Nutrition Technical Assistance [FANTA] (2003), coping strategies come into existence when a household is faced with food shortage or uncertainty. The index measures the number of time and severity of coping strategy behaviour in a given household. The index employed a simple question specifically formulated to measure household's repeated consumption pattern and then relates it with strategies respond in assessing food for a given period of time. Basically, there are three types of coping strategy based on severity namely, extremely severe coping strategy, severe coping strategy and less revere coping strategy.

4. **Results**
Descriptive analysis indicated that 96% of the household heads were married, while 82% were male-headed household heads. Average household head age was 39 years, indicating that most household heads were within their productive age, while average family size among the household was seven (7) members in a household. About 52% of the household size comprised children under the age of 18 years. Majority of the household heads were engaged in public sector job, as against the farming activities. Average monthly expenditure among households was estimated at ₦206,446 (US$675) with about 48% of the monthly household expenditure within the range of ₦101,000–N200,000 (US$331–US$657). Descriptive analysis also revealed that average monthly income among household heads was

₦154,245 (US$504) with majority of the households within the range of ₦101,000–200,000 (US$331–US$657) while average household member's monthly income was N22,430 (US$73). This outcome of economic profiling is in line with finding of World Bank which stated that majority of the households in Nigeria survive under less than US$1.25 per day, which indicate high tendency of poor households in the study area due to high poverty rate. Table 2 summarise the household heads socio-economic profiling below.

Table 2: *Socio-economic Profiling of Household Heads*

	%	Average
Gender Status		
Male	82	
Female	18	
Marital Status		
Single	0	
Married	96	
Divorced	1	
Widowed	3	
Age (Yrs)		39
Family Size		7
Monthly Income (N/$)		
Naira		154,245
Dollar		657
Other Members' Income		
Naira		22,430
Dollar		73
Monthly Expenditure		
Naira		206,446
Dollar		675

Source: Research Survey, 2018
Note: Dollar exchange rate @ CBN rate of US$1 to N305

Table 3 indicates the status of food security among household in Kano metropolitan. The table reveals that 69% of the households were food secure. However, indication shows that there were more food secured households in Gwale (78%) as compared to Kano municipal with 69%. In the same vein, there are fewer food insecured households in Gwale than in Kano Municipal with 22% and 31% respectively. Total daily energy consumption (TDEC) in Gwale is 600,340.2 kcal, while total daily energy requirement (TDER) by households was 359,888 kcal. Also, there is total adult equivalent (AE) of 132 individuals in Gwale. Therefore, dividing the AE with TDEC and TDER will result in per capita energy consumption (PCEC) of the household and Per Capita Energy Requirement (PCER) of household. By adopting Equation (1), food security status (Z) of households is determined in Table 3. Indication from Table 3 reveals that food security status in Gwale among food-secured households is 1.67 with surplus index of 0.67 or 65%, while shortfall index among food-insecured household is 0.08 or 8% because food security index is 0.92. Surplus and

shortfall index reveal the extent to which households exceed food status threshold, while shortfall shows the extent of households deviation from the threshold.

Table 3 further reveals that TDEC and TDER in Kano Municipal among food-secured households is 367,098kcal and 30,7856kcal respectively, while PCEC and PCER is 3,277.66kcal and 2748.71kcal respectively, this resulted in food security index (Z) among food-secured households as 1.19 thereby resulting in surplus index of 0.19 or 19%. TDEC, TDER, PCEC and PCER for food-insecure households in Kano Municipal are 409,104kcal, 551,214kcal, 2,025.27kcal& 2,728kcal, respectively. After applying Equation (3.1), it will give an index of 0.74 and a shortfall of 0.26 or 26%.

The region overall can be considered food secured because overall food security index is 1.13 clearly above the threshold of 1. By implication, the surplus index among the food secured households upset the shortfall index incurred by the food insecured household, thereby overall making the region food secure.

Table 3: Summary of Food Security Index in Kano Metropolitan

Factors	Gwale (n = 50)			Kano Municipal (n = 50)			Pooled (n = 100)		
	Food Secure	Food Insecure	All	Food Secure	Food Insecure	All	Food Secure	Food Insecure	All
% of HH	78	22		60	40		69	31	100
TDEC	600340.2	201459	801799	367098	207645	574743	967438	409104	1376542
TDER	359888	220052	579940	307856	331162	639018	667744	551214	1218958
PCEC	4548	2487.15	3764.31	3277.66	1716.07	2466.71	3964.91	2025.27	3086.42
PCER	2726.42	2716.69	2722.72	2748.71	2736.88	2742.57	2736.66	2728.78	2733.09
Z	1.67	0.92	1.38	1.19	0.63	0.90	1.45	0.74	1.13
HeadCount	0.78	0.22	1	0.6	0.4	1	69.00	31	1.00
Shortfall (Pi)	0	0.08	0	0	0.37	0.1	0.00	0.26	0.00
Surplus (Ps)	0.67	0	0.38	0.19	0	0	0.45	0	0.13
AE	132	81	213	112	121	233	244.00	202	446.00

Source: Research Survey, 2018.

Where TDEC stands for total daily energy consumption, TDER stands for total daily energy requirement, PCER stands for daily per capita energy consumption for households, PCER stands for daily per capita calorie requirement for the households, Z stands for the household food security status, P_s stands for surplus index, P_i stands for shortage and AE stands for the household adult equivalent.

The moment households are faced with the issues of food security problem, coping strategies set in. The research adopted in context coping strategy. The method identifies various strategies operational in the location. Households were later requested to identify and rank the strategy used during food shortage. Based on the ranking, strategies that were not in existence were then eliminated. The frequency, on the other hand, indicates the number of days that a household has to put up with identified coping strategy in a household.

Table 4 indicates the CSI among the households in Kano Metropolitan. It clearly, means that households under Kano Municipal have the highest CSI of 64 as compared to Gwale with only 42. The index takes the product of severity and frequency in each of the coping strategy adopted by the household to obtain the weighted score. The weighted scores, in turn, is summed up to obtain the CSI from each location. Indication from Table 4.4 revealed that selling assets/livestock and skipping meals represent extreme coping strategy in the location with a pooled percentage of 27% each. It also shows that more households resolved in using these two strategies over others. Severe coping strategies among the households include children eating first, before adult and reducing consumption in a household with 17% and 12% respectively. Other coping strategies considered less severe among households involve borrowing money or purchasing food on credit, depending on assistance from family and friends (5%), eating less preferred food (5%) and removing/relocating children to less expensive school (3%). This finding is in line with Mukhtar (2019c) and Mukhtar et al. (2018c) outcomes.

Table 4: Coping Strategies Adaptation in Kano Metropolitan

Coping Strategy	Gwale			Municipal			Pooled
	Severity	Frequency	Weighted	Severity	Frequency	Weighted	%
Borrowing money/purchase on credit	1	2	2	1	3	3	4
Selling assets/livestock	4	3	12	4	4	16	27
Children eat first before adult	3	3	9	3	3	9	17
Reduce consumption of food	2	3	6	2	3	7	12
Depend on assistances-family & friend	1	2	2	1	3	3	5
Skipping meals	4	2	8	4	5	20	27
Eating less preferred food	1	2	2	1	3	3	5
Remove/relocated to less expenses school	1	1	1	1	2	2	3
Total Scores			42			62	

Source: Research Survey, 2018.

Binary logit was used to analyse the effects of conflict (Boko Haram Insurgency) on household food security status in Kano Metropolitan, as shown in Table 4.. All the variables indicated that food security is negatively affected by conflict. This finding is in line with aprior expectation.

Indication from Table 4 reveals that food scarcity has an inverse and negative impact on the household's food security status. Nwabueze (2016) noted that in most cases during conflicts, especially in rural locations where farming activities were carried out, majority of the farmers, that generally bring in food products to the urban centers were restricted/affected

due to conflicts. In the same vein, Ekong (2003); Adelakun, Adurogbanga and Akinbile (2015) confirmed that food scarcity has a negative effect with food security status of the households. Table 4 further reveals that market closure has a negative consequencewith the household's food status. Marama (2015) noted that the market is a soft spot and easy target for most attacks by the insurgency, mostly due to the large number of people and low security. Activities in a market during conflict are affected, households that rely on the market for foodstuff suffer a severe setback, and consequently the situation reduces their food security status (Ofem and Inyang, 2014). Awodola and Oboshi (2015) noted those in most conflict-affected areas, shops and other businesses were crippled down, which also subsequently affected the household's food status. The same argument was observed by Okereocha (2012) that over 80% of business activities in Kano state were crippled due to Boko haram conflict.

Table 4 also indicates that security checkpoint has a negative impact on household's food status, especially in a country like Nigeria that is considered as a developing country where corruption is exceptionally high. The negative implications developed as a result of excessive exploitations by the security personnel, especially on foodstuff and cost of transportation of food items to the conflict-affected area (Mohammed & Ahmed 2015). Also, Oti, Onyia and Umoinyang (2016) observed that the negative impact of security checkpoint and market closure in conflict areas seriously affect household's food security status. Furthermore, Table 4 indicates that unemployment has a negative impact on the food security status of the household. Employment is the source of livelihood of household, and food security is influenced where there is a shortage or no job for the household. Conflicts affect the employment status of the household in two ways. According to Amodio and Di-maio (2014), one, the firm or agricultural activities are affected and closed down, in the same way, the workers or farmers were rendered jobless. Secondly, households were forced to leave (migrate) their communities and sometimes stay in camp.

Table 5: Impacts of Conflict on Food Security Status of the Households

Factor	Coefficient	Strd.Err	z	P>|z|
Food scarcity	-0.762	0.458	-1.66	0.096*
Market Closure	-0.908	0.494	-1.84	0.066*
Security checkpoints	-0.594	0.482	-1.23	0.218
Unemployment	-1.392	0.536	-2.60	0.009***
High cost of foodstuff	-0.839	0.468	-1.79	0.070
Destruction of property	-1.204	0.300	-4.01	0.003***

*Source: Research survey, 2018 *significant @ 10%, ** significant @ 5% and *** significant @ 1%.*

Table 5 reveals that high cost of foodstuff has a negative influence on food status of households. O'Grada noted that one of the adverse effects of conflict is rooted in high cost of foodstuff and is considered as a vital factor. Awodola and Oboshi (2015) noted that conflict resulted in a hike in the price of food products 12% - 122%. Haynes (2007), Ojogbo and Egware (2016) linked food shortage during conflict with high cost of foodstuff, which eventually affected the food security status of households. Also, Table 4 reveals that

destruction of property has a negative effect on the food security status of the household. In most cases, households were either forced to pay for protection or their property were vandalized and used by the insurgents (Haruna, 2015).

5. Conclusions and Recommendations
The paper assesses the impact of Boko Haram insurgency on household food security status in Kano Metropolitan, Kano state. Food security index revealed that 69% of the households in Kano Metropolitan were food secure with average food security index of 1.13 and average daily per capita energy consumption of 3,086 kcal, while daily per capita energy requirement of 2,713 kcal. Surplus index also revealed that the region achieved 13%. Finding from binary regression analysis reveals that all the variables were in line with a priori expectation. Unemployment and destruction during conflict are negative and statistically significant at 1 percent, while food scarcity, market closure and high cost of foodstuff indicate a negative coefficient and statistically significant at 10 percent. Finding from coping strategy index revealed that households in Kano Municipal were more food insecure than households in Gwale with an index of 62. Coping strategies adopted by the food insecured households include extremely severe coping strategy, which comprises selling of asset and livestock and skipping meals. Severe coping strategies, on the other hand, consist of children eating first and reducing consumption in the household. And less severe coping strategies comprises borrowing and buying food on credit, depending on assistance to eat, eating less preferred foods and relocation of children and wards to less expensive school. All the variables used in conflict indicated a negative impact with food security status of the households; these variables include food scarcity, market closure, security checkpoints, unemployment, high cost of foodstuff and destruction of property during conflict.

The paper, therefore, recommends that to curtail Boko-Haram conflict, government needs to introduce measures that are short term and long term in nature. The short-term policy includes total crackdown of Boko Haram members through intelligence gathering, enforcing a mandatory curfew and state of emergency in a conflict-affected area, fishing out individuals that fund the organisation publicly. While the culprits judgment should be carried out with speed of light, in the long-term, the security personnel should be equipped with sophisticated and up to date weaponry to aid in facing the insurgency squarely. The government should invite the foreign countries in training the security personal, and lastly, the government should introduce the policy of carrot and stick among the member of the insurgency. All these measures are to curtail the effect of food scarcity, market closure, high cost of foodstuff, unemployment and destruction of lives and properties which directly affect the food security status of households.

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