# Insurgency and Socio-Economic Status of Households in Rural Areas of North Central Nigeria

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#### Abstract

his study examined the impact of insurgency on socio-economic status of households in rural areas of north central Nigeria between 2000 and 2021. The study adopted survey method to examine the effect of insurgency on socio-economic status of households in rural areas of North-Central Nigeria. Data collected for this study were from primary sources, and they were collected from respondents across seven (7) states in the north-central Nigeria (including the Federal Capital Territory). The sample for this study covered 2100 individuals drawn from 3senatorial zones from each of the seven states. A multi-stage sampling method was used for this study. In the first stage, three senatorial zones were selected from each state through judgmental sampling. To this end, The Ordinary Least Square (OLS) regression method was used to determine the relationships between variables. Cramer's V method was also utilized to determine the statistical significance and provides information about the strength of the relationship between insurgency and socio-economic status of households in rural areas of north central Nigeria. The findings showed that all the indicators of insurgency (ethnic crises, socio-economic crises, and political crises) have negative impact on socio-economic status (health, education, economic activities/income generation, and other socioeconomic status) of residents in the rural areas of north central Nigeria. Therefore, it is concluded that insurgency generally has negative impact on socio-economic status of households in rural areas of north central Nigeria. The study recommends that Governments of states in the North-central Nigeria should develop strategies to fight insurgency. To this end, governments must be proactive in dealing with security issues and threats, through modern methods of intelligence gathering, and sharing among security personnel, training, logistics, motivation, and deployment of advanced technology in managing challenges of insecurity in the zone.

**Keywords:** Crises, Socio-Economic Crises, Health, Education, Income generation

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# **Background to the Study**

The protection of people and properties from internal and external aggression is critical for the functioning of markets and the incentives to invest and innovate for economic growth. This may explain why many countries around the world wish and work to maintain peace and security within and beyond their borders (Amana et al. 2020). Besides, rising levels of insurgency and other forms of anti-national activities pose a significant challenge to national rules and regulations, human rights and, in particular, have a significant negative impact on the economy, affecting price, output, employment, trade balance, poverty, inequality, defence expenditure, government budget patterns, socio-political environment and several others (Isola et al. 2019). Insurgency, which is rebellious acts, has subsequently been applied to any such armed uprising, typically guerrilla in character, against the recognized government of a state or country. It is a violent attempt to oppose a country's government carried out by citizens of that country (*Encyclopedia Britannica*, 2022).

It has been widely argued that insurgency can have a negative impact on economic growth in the short run through a variety of channels. It reduces the capital stock of a country by destroying human and physical capital. Increased government spending to combat insurgency may crowd out more growth-enhancing public and private investments in social sectors such as health and education, affecting a country's long-term growth (Micheal et al. 2019). The risk and uncertainty effect associated with rising level of insurgency causes foreign direct investments (FDI) to move away from countries with higher security risk toward countries with lower risk. Increased levels of insurgency reduce investment returns, reducing a developing country's capacity to attract foreign direct investments (Chuku et al. 2019). Furthermore, insurgencycreate economic risks and uncertainties that distort the equilibrium resource allocation within a country by influencing individuals' savings, investment and consumption behaviour. Insurgency also stifles growth by increasing the cost of doing business through higher wages, higher insurance premiums and increased security expenditures. These higher costs result in lower profits and, as a result, a lower return on investment. Insurgents' attacks can also devastate infrastructure, causing business disruptions (Brodeur 2018).

Nigeria has been ravaged by Insurgents' activities which have made the country unsafe for Nigerians and foreign investors. The country was named the third most affected by terrorism in the 2020 Global Terrorism Index, trailing only Iraq and Afghanistan (GTI, 2021). The disturbing level of insecurity has rendered the economy unappealing to local and foreign investors, who have become apprehensive of investing and putting their hard-earned resources in profitable investment in Nigeria (Chuku et al 2019). In addition to the country's deteriorating security situation, Nigeria is beset with significant developmental issues that constitute a severe threat to socioeconomic progress. These socio-economic issues include widespread poverty in the midst of plenty, sharp inequality in income distribution, extreme youth unemployment, poor industrial output, high inflation rate, poor infrastructure and fragile GDP growth (Edeme and Nkalu 2019). These and other depressing macroeconomic statistics, are result of insurgency as people in Nigeria struggle for survival over limited resources.

Nigeria's myriad of insurgency problems is becoming rather too complex and overwhelming for the country's armed forces to tackle, and overcoming them would require a comprehensive response. Insurgency (including banditry, organized kidnapping, farmers-herders' conflicts) and other forms of criminality have created a thriving trade in small arms, light weapons and other illicit trafficking. The proliferation of weaponry has increased insecurity in the country, resulting in over 80,000 deaths and 3 million Internally Displaced Persons (IDPs) despite the fact that the country is not at war (United Nations refugee agency and the Council on Foreign Relations 2021). According to The Institute for Security Studies (2021), the number of small arms and light weapons in the hands of non-state actors and civilians in Nigeria is estimated to be around 6,145,000, compared to 586,600 firearms in the hands of the armed forces and law enforcement agencies. Security forces have been overwhelmed, allowing terror groups to operate with little or no resistance, primarily in huge swaths of ungoverned spaces. Local disputes are used by violent extremist organizations, who take advantage of insufficient governmental security and protection to establish their own influence over local communities and safeguard their groups' survival. In the absence of government security, community members may be forced to assume control of their own security. This would result in increased violence, the loss of lives and livelihoods and the proliferation of weapons.

# Literature Review Conceptual Review

Scholars and theorists have given different definitions of insurgency. While some of these definitions are closely related, others are not so related but contain common elements. Perhaps, insurgency is best understood by first considering what it is not. Liolio, (2013) posited that insurgency is not terrorism or conventional war, though they share some similarities such as the use of force, or guerrilla tactics to achieve an end which is often political. Basically, the difference between insurgency and terrorism lies in the scope and magnitude of violence. While for instance, terrorism rarely brings about political change on its own, insurgency attempts to bring about change through use of arms. Similarly, terrorists often apply a wide range of tactics when compared to insurgents. On the other hand, while conventional war involves adversaries more or less symmetric in equipment or training, insurgency involves adversaries that are asymmetric and weak. Traditionally, insurgencies seek to overthrow an existing order with one that is commensurate with their political, economic, ideological or religious goals (Gompert and Gordon, 2008). Also, Kilcullen (2006) stated that insurgency is a struggle to control a contested political space between a state (and a group of states or occupying powers) and one or more popularly based non-state challengers. The author also tries to draw a line between classical and contemporary insurgencies thus: while the latter seek to replace the existing order, the former sometimes strive for the expulsion of foreign invaders from their territory or seek to fill an existing power vacuum. In summary, insurgency connotes an internal uprising often outside the confines of state's laws and it is often characterized by social-economic and political goals as well as military or guerrilla tactics. Put differently, it is a protracted struggle carefully and methodically carried out to achieve certain goals with an eventual aim of replacing the existing power structure.

Julian (1967) and Hellesen (2008), defined insurgency as a radicalized movement that has the aim of bringing down a constituted government through dissident means and armed conflict. Thus, insurgent group's employ unlawful means towards achieving an end, which could be political, religious, social, or even ideological. Their goal is to confront and bring down an existing government for the control of power, an imposition of religion, resource control or for power-sharing (Geert et al., 2014). Investors always take into consideration the level of shield afforded and deterring factors in the host country. This is the position of the Halo Effect theory of FDI inflows. The increasing exposure of multinational corporations to insurgent activities in host countries has resulted to the loss of assets, skilled labor and returns on investment and this, therefore, has forced foreign investors to consider issues far beyond their traditional appraisal of economic and financial risk factors and are now concentrating on other risk factors (Kolstad and Tondel, 2002; Busse and Hefeker, 2007). Insurgency include terrorism, religious wars, and ethnic wars, military in politics, corruption and (civil) war. Collier (2008), stated that, African countries are stock in internal conflict as evidenced by communal, religious, political violence, tribal crises or sectional agitation. These have made the investment climate politically volatile (Collier and Hoeffler, 2002).

Socio-economic status (SES) is defined as a measure of one's combined economic and social status and tends to be positively associated with better health. This entry focuses on the three common measures of socioeconomic status; education, health and income. The study includes definitions, theoretical background, and empirical support for each of these SES indicators (including health status, education status, and income status) and their relationship with insurgency. Insurgency is generally thought to influence socioeconomic status through three avenues: (1) Inability to purchase health promoting resources and treatments; (2) socialization of early health habits and continuing socialization of health habits differs by SES; and (3) it has been posited that, rather than SES influencing health, health influences SES—less healthy individuals complete fewer years of school, miss more work, and earn lower incomes (Akram and Hamid, 2015).

Socioeconomic status has been one of the most strong and consistent variables in explicating variations among social groups (Bateman, 2014) and is defined as an indicator of households" combined economic and social welfare variables. Generally, socioeconomic status is viewed as a latent construct and is measured using a composite index of education, health, poverty, income and consumption (Baker, 2014). According Vyas and Kumaranayake (2006) standard economic measures of socio-economic status use monetary information such as income or consumption expenditure. Income is related to socio-economic status through structural factors. Income is normally defined as pre-tax wages from one's occupation. This can be measured at the individual level but it is more commonly measured at the household or family level, which consists of the combined income of all household or family members, respectively (Galobardes et al., 2006). It may also be measured in relation to the level of poverty (Lynch and Kaplan 2000).

Economists suggested two more variables, i.e., expenditure and debt as a measure of family's socio-economic status (Gaur, 2013). Study by Onwujekwe et.al (2006) used consumption

expenditure as the measure of socio-economic status. Other studies also associated consumption expenditure with socio-economic status of households (Fiorito, 2010) and the socioeconomic status was explained by consumption expenditure at household level. The household indebtedness is also affected by the socioeconomic status (Kyriopoulos, 2016) and should be additionally considered when assessing health effects of socio-economic status.

Poverty status used as either a reference point for income categories or as a stand-alone measure, is also sometimes used in socioeconomic status calculations (Berzofsky et al. 2014). The most frequent measure of socio-economic status used in research is poverty status. Poverty is generally defined as having difficulties in meeting one's basic needs, and is represented as an indicator of socioeconomic status. It is closely tied to structural factors that influence health (Adler and Ostrove, 1999). According to Mirowsky and Ross (2003) educational attainment may be the most significant indicator of socio-economic status in its ability to shape the occupational status and income of the households. Education is often considered a critical indicator of socio-economic status because it conveys information regarding earning potential across the lifespan (Shavers, 2007). Some studies have examined socioeconomic status in the context of parents" educational levels (Magklara et al., 2012). Health is associated with almost any positive indicator of socio-economic status (Deaton, 2003) and the relationships between socio-economic status of individuals and their health are well documented in economics and sociological literature. There is consistent evidence that socio-economically better-off individuals do better-on most measures of health status including mortality (Fotso and Kuate, 2005). The relationship associating socio-economic status with health status has been detected between health outcomes and a matrix of socioeconomic status indicators based on data collected at the individual, household and community levels (Defo, 1997). Measuring SES is important in descriptive research that seeks to explain the causal mechanisms and pathways that connect SES to health (Galobardes et al., 2006).

#### Theoretical Review

There are many theories that can be used to explain the relationship between insurgency and socioeconomic status of households. One of the theories is called natural theory of law propounded by Pound (1912).

The Natural theory of law has helped this research to analyse the issue of insurgency in terms of what is right and wrong and what sought of behaviour is acceptable in the society. The Natural theory of law posits that every man-made law is a product of Natural law, which is a divine and eternal law, whose origin is attributable to God and the scriptures. The theory further stipulate that in every human society, human beings should be able to differentiate between what is right and wrong without being told; and live in harmony with their fellow humans respecting each other's freedom and the natural law that regulates human behaviour (Akani, 2019).

Ordinarily, without the existence of any man-made law, citizens should live in peace and harmony with one another. Insurgents who go about committing grave killings and violation

of human rights are in constant violation of the natural law; a divine and eternal law from which belief is based on the fact everyone has a conscience which guides or should his or her activities in the society. Natural law also posits that 'one must never intend what is evil, even as a means to achieving a good or avoiding a bad.' In the light of this, insurgents, even though, sometimes fight for a good cause; their mode of carrying out their objectives is always against humanity. For instance, the case of the Niger Delta militants in Nigeria, who genuinely are fighting for a good cause; mainly because they are being marginalized and side-lined by the government, however, their method of approach is wrong. They go about vandalizing government infrastructure, maining and killing of innocent citizens and end up becoming an enemy of the government (Akani, 2019).

Generally, uprisings are bound to occur wherever people are politically marginalized, economically strangulated and deprived of humane and just conditions of living. Insurgency in Nigeria did not just break out for the fun of it. Its occurrence is the product of pent-up grievances at the way the wealthy few that control the economic power of the country flaunt their wealth, subjugate, oppress and exploit the masses. In expressing their displeasure, the insurgents started series of armed attacks against not only the Federal Government of Nigeria but also against the masses (Liolio, 2013).

At this juncture, it will be necessary to also discuss the theories that have emerged in which scholars have attempted to explain the link between insurgents and socioeconomic status of households in the Nigerian State. These theories include: Family stress model (FSM) was propounded by Conger and Conger (2002). The Family Stress Model postulates that negative external economic influences result in poor socioeconomic status causing negative parenting practices such as inability to provide for education of children, inconsistence and harsh parenting practices. The underlying hypothesis of the framework is that child development including but not limited to feeding, health, competency (cognition, social and academic competences), internalizing (e.g., depression and anxiety) and externalizing (e.g. aggression and antisocial actions) are determined by the economic resources of the family (Conger, Conger and Martin, 2010). A number of existing studies have found support for the FSM and its predictive abilities (Solantaus, Leinonen, and Punamäki, 2004; Parke et al., 2004). Additionally, the assumptions of the theory have been replicated by studies which linked different insurgent groups to socioeconomic status of households (Conger et al., 2002). Studies have found support for the assumption of the theory that (a) insurgency results in economic hardship which cause lack of economic power and inability to provide for education of children, inconsistence and harsh parenting practices, (b) lack of economic power and inability to provide for education of children, inconsistence and harsh parenting practices leads to parent emotional distress, (c) parent emotional distress result in conflicts among parents, (d) conflicts among parents result in maladaptive parenting behaviors, and (e) disruption in parenting practices leads to child maladjustment (Conger et al 2010).

#### **Empirical Review**

The empirical evaluation of the effect of insurgency on economic growth in developed and developing economies were carried out using different methodologies and data set by various

authors. Some of the studies are reviewed bellow. Abadie and Gardeazabal (2003) have examined the relationship between terrorism and GNP in Basque Countries. Their findings conclude that, after the outbreak of terrorism in the late 1960's, GDP per capita in the Basque Countries declined by about 10 percent in comparison with a synthetic control region without terrorism in the 1980's-1990s. Tavares (2004) conducts a systematic investigation of the incidence and economic costs of terrorist attacks at the country level. The study found that rich countries are the most prone to suffer from attacks while their democracies become, if anything, less vulnerable than other countries. Also, a study by World Bank estimates a 4 % GDP decline in the Israeli economy while the Palestinian territories suffered a 50 % decline in between 1994 and 2002.

Blomberg et al. (2004) perform an empirical investigation of the macroeconomic consequences of international terrorism and interactions with alternative forms of collective violence. Their analysis was based on a rich unbalanced panel data set with annual observations on 177 countries from 1968 to 2000. They found that, on average; the incidence of terrorism may have an economically significant negative effect on growth, albeit one that is considerably smaller and less persistent than that associated with either external wars or internal conflict.

Busse and Hefeker (2005) employed two different panel data econometric techniques to examine the impact of insurgency on economic growth it was established that political risk variables such as corruption, democratic accountability, and socio-economic conditions are statistically significant. In addition to those three mentioned indicators, they also find that the investment profile, internal and external conflict, ethnic and religious tensions are important determinants of economic growth.

Gaibulloev and Sandler (2009) examined the impact of insurgency on economic growth in Asia for 1970- 2004. Their panel data estimations show that national terrorist attacks had a significant effect on the growth. In other words, the study revealed that an additional insurgency incident per million persons reduces GDP per capita growth by about 1.5 %. However, this effect is different between developed and developing Asian countries. Especially for developing Asian countries, national terrorism curbs income per capita growth primarily by stimulating government security spending, which diverts resources from more productive private and public investments to fighting insurgency.

Meierrieks and Gries (2012) investigate the relationship between economic performance of country and terrorism for 18 Latin American countries from 1970 to 2007. They found that the link between terrorism and economic growth is different according to the development in countries. In other words, the terrorism reduces the growth for less developed countries, but this connection cannot be observed in developed Latin American economies.

Aguiar, Aguiar-Conraria, Gulamhussen, and Magalhaes (2012), investigated the impact of insurgency on economic growth in Brazil covering the period, 1990-2010. The study employed ordinary least squares regression techniques. The results showed an inverse

relationship between insurgency and economic growth, implying that lower insurgency is associated with higher level of economic growth in the country. Specifically, it was found that the effectiveness of national government is a key driver of the negative relationship between insurgency and economic growth.

Akıncı et al. (2014) using a total of 152 countries data from 2002 to 2011, consisting of 45 advanced, 77 emerging and 30 underdeveloped countries, made the two stages least squares analysis. According to the results, the terrorist attacks in these three groups of countries are disrupting the growth process by raising the level of inflation. In other words, acts of terrorism negatively affect the growth of inflation. However, this effect is stronger in developing and underdeveloped countries.

Younas (2015), investigates whether international openness limits the negative effect of terrorism on economic growth. The analysis focuses on 120 developing countries over the period of 1976-2008. The findings show that the positive interaction effect of terrorism and globalization suggests that the latter ameliorates the adverse impact of the former on growth. Then this result helps explain why the growth consequences of terrorism vary across nations and hold important policy implications.

Beatrice (2015), in a similar manner investigated Boko-Haram insurgency (terrorism) and its impact on the development of Nigeria and found that the Boko-Haram insurgency has posed serious limitations on development process of Nigeria due to destruction of lives and properties, destruction of schools which have led to the closure of so many schools in the North-East geo-political zone, disruption of businesses, reduction in government revenue, fear of foreign investors to live and do business in Nigeria, political instability, among others.

Bezić et al. (2016), examine the impact of terrorism on foreign direct investment of the selected European Union (EU) and European Economic Area (EEA) countries. They used dynamic panel data methods over 29 countries from 2000 to 2013. The results indicate that terrorist activities reduce security and confidence of investors in countries exposed to terrorist activities, reducing the inflow of foreign direct investment. These results show a negative indirect relationship between terrorist activities and economy.

Musayev (2016) investigates the potential sources of positive externalities for the relationship between military spending and economic growth using recent advances in panel data estimation methods and a large data-set on military expenditure. The results show that the impact of military expenditure on growth is generally negative as in the literature, but that it is not significantly detrimental for countries facing higher internal threats and for countries with large natural resource wealth once corruption levels are accounted for.

Ogunniyi, Kehinde, Salman and Ogundipe (2016) examined the various ways in which the activities of insurgents have threatened food security and worsens food poverty in Northern zones (North West, North Central and North East) of Nigeria where the sects are dominating and imposing demeaning menace using 2010 Nigerian Living Standard Survey (NLSS) data.

The data is analyzed using descriptive statistics and ordered probit. The study used mean food per capita expenditure to generate the poverty line and ordered the households into three categories; food poor, moderately food poor and food non poor. The estimate revealed that the mean food per capita expenditure (annually) was №25524.36 (\$128.23). The study further established that 84.85% of the households in northern Nigeria are food poor in which majority are rural households, male headed households and uneducated households. Furthermore, the study found that the activities of the insurgents have negatively impacted the wellbeing of the northern Nigerians and increases food poverty extremely. However, interventions such as donations from foreign organizations such as UNICEF, WHO, World Bank etc. were found to improve the food security and reduce food poverty of the northerners. Therefore, this study recommends increasing intervention effort by the Nigerian government and the international community in curbing the menace of "insurgents". Also, states governments and other stakeholders including nongovernmental organizations should boost awareness on productive opportunities for the unemployed women and youths; and establishment of training/development centers for the uneducated and internally displaced persons.

Mehmet (2017) examined the effects of insurgency on economic growth experienced worldwide. More precisely these insurgents' incidents and its effects on economic growth in most countries are classified according to income groups. In this respect, we conduct a panel study (FE and RE models) to analyze the number of insurgency incidents in these countries and the data range from 2000 to 2015 covering a total of 115 countries. The result of the study is in line with other findings in the literature. Those insurgents' attacks are causing a negative impact on the economic growth in most countries, particularly in low-income countries. Generally speaking, the findings show that low-income countries are affected about three times more than high-income countries as a result of these insurgents' attacks.

Meyer and Habanabakize (2018) examined the relationship between insurgency and economic growth in South Africa during the period 1995 to 2016 using ARDL (bounds test) approach to cointegration and error correction model. The study found that insurgency and FDI inflows affected economic growth in the short-and long- run. While insurgency deters inward FDI inflows, economic growth enhances the attractiveness of the economy to FDI. The study further applied Granger causality analysis to investigate the relationship between the variables. The causality test results indicated bidirectional causality between FDI and economic growth, and unidirectional causality between insurgency and FDI, with causation running from insurgency to FDI.

Iyaji (2021) examined the effect of insurgency, political violence, corruption, and religious tension on foreign direct investment inflows to the banking, construction, manufacturing, oil and gas, and telecommunication sectors in Nigeria. Empirical model was estimated using the fully modified ordinary least squares (FMOLS) technique. The study spans from 2008Q1 to 2017Q4. Findings showed that insurgency adversely affected foreign direct investment inflow to telecommunication sector, while corruption positively impacted on the oil and gas sector. Thus, this study recommended that efforts be intensified in the war against insurgency and strengthening of relevant anti-graft agencies to adequately fight corruption in Nigeria in order to enhance the country's attractiveness to foreign direct investment inflow.

Abdulkarim and Saidatulakmal (2022) examined the growth and fiscal effects of insurgency on the Nigerian Economy. The study used annual time-series data from 1980 to 2019 and the ARDL methodology to analyse the fiscal and socioeconomic consequences of insecurity on economic growth in Nigeria. The empirical findings demonstrated that high unemployment rate, domestic capital formation, foreign direct investment, government spending on education and security are negatively affected by the growing level of insurgency and consequently retarded growth in the long and short run. Conversely, improved health services, equitable income distribution and productive use of public borrowing were positively correlated with security and, therefore, stimulated growth in the long and short run. The findings suggest that good governance, provision of a safe and secured environment for human capital development and businesses, improved access to social and economic services will curb violent tendencies, create jobs, reduce poverty, increase government revenue and engender long-term inclusive growth.

## Methodology and Data

The study employed data from Nigeria Living Standard Survey (NLSS) conducted in the year 2021.A survey is a research method used for collecting data from a predefined group of respondents to gain information and insights into various topics of interest. The process involves asking people for information through a questionnaire, which can be either online or offline. To this end, the research used data from primary sources of information. Data were collected by administering questionnaires. To this end, the ordinary least square (OLS) regression method wasused to determine the relationships between variables. The responses to each question in the questionnaire was converted to logit before estimating the regression equation. Chi-square statistic was also employed to ascertain the association between indices of insurgency and households' health status, education expenditure, income. The NLSS contains information on 17959 households from the North-Central part of Nigeria.

The north-central Nigeria has seven (7) states, namely: Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and the Federal Capital Territory. It is covered mostly by mountains, which are rocky and undulating. Most parts of the zone are fertile for farming and grazing of livestock. It is traversed by river Benue and river Niger, making fishing possible. The zone has a population of about 21.13 million (National Population Commission, 2016) with average growth rate of 2.5%. The zone has two main climatic seasons: the dry and wet seasons. The natural vegetation comprises wooded and rain forest savannah, with annual rainfall ranging between 1000 to 1500 mm. The annual rainfall pattern across the zone extends between the months of April and October with minimum temperature ranging from 21.10C to 250C while maximum average temperature ranges from 300C to 350C. Agriculture is the mainstay of the economy of the zone.

This study is anchored on family stress model (FSM) propounded by Conger and Conger (2002). The Family Stress Model postulates that negative external economic influences result in poor socioeconomic status causing negative parenting practices such as inability to provide for education of children, inconsistence and harsh parenting practices. The underlying hypothesis of the framework is that child development including but not limited to feeding,

health, competency (cognition, social and academic competences), internalizing (e.g., depression and anxiety) and externalizing (e.g. aggression and antisocial actions) are determined by the economic resources of the family (Conger, Conger and Martin, 2010). Studies have found support for the assumption of the theory that (a) insurgency results in economic hardship which cause lack of economic power and inability to provide for education of children, inconsistence and harsh parenting practices, (b) lack of economic power and inability to provide for education of children, inconsistence and harsh parenting practices leads to parent emotional distress, (c) parent emotional distress result in conflicts among parents, (d) conflicts among parents result in maladaptive parenting behaviors, and (e) disruption in parenting practices leads to child maladjustment (Conger et al 2010). This theory relates socioeconomic status of households inversely to insurgent' activities from within and/or outside its local economic boundaries.

The information contained in the NLSS includes: poverty, income, expenditure on education, healthcare, housing clothing, utilities, house appliances, transportation, and communication, gender, years of education, and major occupation of household's heads, and households' sizes. In addition, insurgency variables captured include kidnapping, religious wars, ethnic wars, and farmers'-herders' conflicts.

The model used in this study was adapted from the work of Ogunniyi et al (2015) on Social Crisis, Terrorism and Food Poverty Dynamics: Evidence from Northern Nigeria. The central building block in their ordered probit model which follow consumer demand and production theory of household utility, is that socioeconomic status of household, measured by demand for food consumption of depends on food expenditure (foodexp), nutrient intake (NT) such as calorie, protein etc., dietary diversity score (DDS) or dietary diversity index (DDI)), production index, and among others. The Ogunniyi et al (2015) model is in general form as below. The model is specified as follows:

## Where:

SESh = Socioeconomic status of households (proxy by Food consumption, i.eincome);

FSt = Food and nutrition security;

EDUexp = Households Education expenditure;

NT = Nutrient intake;

DDS = Dietary diversity score; and

DDI = Dietary diversity index.

Model (1) above is modified by replacing nutrient intake (NT); dietary diversity score (DDS); or dietary diversity index (DDI) with kidnapping, banditry, ethnic wars, and farmers'-herders' conflicts. Thus, the model for this study is specified as:

The standard ordered probit model is widely used to analyze discrete data of this variety and is built around a latent regression of the following form:

$$Y^* = X'\beta + \varepsilon$$
 (3)

#### Where:

Where X and  $\beta$  are standard variables and parameter matrices, and  $\epsilon$  is a vector matrix of normally distributed error terms. Obviously predicted values (Y\*) are unobserved. However, the following will be observed:

Here,  $\mu 1$  and  $\mu 2$ , are the cut points i.e., the threshold variables in the probit model. The threshold variables are unknown and they indicate the discrete category that the latent variable falls into. They are determined in the maximum likelihood estimation procedure for the ordered probit. The likelihood for socioeconomic status of a household is:

$$Y = 0 - Xi\beta^{zi1}\mu_1 - Xi\beta 0^{zi2}1 - Xi\beta - \mu_1^{zi3} - \dots$$
 (7)

Where for the ith household, Yi is the observed outcome and Xi is a vector of explanatory variables and is the cumulative logistic distribution.

Y = Socioeconomic status, (2 = high status, 1 = moderate status, and 0 = poor status).

X1 = age (years)

X2 = Sex (Male = 1, female = 0)

X3= Marital status of household head (Married = 1, 0 otherwise).

X4 = Income (2 = high income, 1 = moderate income, 0 = poor income)

X5 = Primary occupation (farming = 1, 0 otherwise)

X6 = Area of residence (rural = 1, urban = 0)

X7 = Level of education (high = 1, 0 low)

X8= Accessibility to health facilities (accessible = 1,0 otherwise)

# Insurgency variables (Based on household experience in the last 5 years)

X9 = Kidnapping (1=yes, 0 = otherwise)

X10 = Banditry (1 = yes, 0 = otherwise)

X11 = Ethnic wars (1=yes, 0=otherwise)

X12 = Farmers'-herders' conflicts (1=yes, 0=otherwise)

# Intervention Variables (Any form of assistance from this organization)

X13 = WHO (1 = yes, 0 = otherwise)

X14 = European Union (1=yes, 0 = otherwise)

X15 = World Bank (1 = yes, 0 = otherwise)

This statistical tool was employed to compare the probability of a household falling into high socioeconomic status, moderate socioeconomic status and poor socioeconomic status categories in the study area. The model was chosen because of the polychotomous dependent

variables Also the technique has no restrictive distribution assumptions (Amalu, 2002 and Anyanwu, 2012). In this study, well-structured questionnaires are the main instrument that was used to collect the primary data. The questionnaire was administered for the households in the North-central Nigeria. The questionnaire was structured into two sections. The first section captured the demographic characteristics of the respondents such as the sex classification, age grouping and marital status. The respondents were also required to indicate their citizenship of the zone or otherwise before continuing with answering the questionnaire. The second section deals with open ended questions designed to harness the divergent views of the residents with respect to each index of insurgency as they affect socioeconomic status of households in the North-central Nigeria.

The population for this study is seven thousand (7000) individuals drawn from seven statesone thousand from each state. The seven states are: Benue, Kogi, Kwara, Nasarawa, Niger, Plateau, and the Federal Capital Territory.

**Table 1:** Distribution of Samples between the selected states

State	Sample Sizes
Benue	1000
Kogi	1000
Kwara	1000
Nasarawa	1000
Niger	1000
Plateau	1000
Total	7000

Source: Author's Computation, 2022

Equations (7) was estimated using maximum likelihood method. Before estimation, each response was coded according to the number of respondents. Cross-sectional data on the included variables were used. The International Business Machines Corp (IBM) Statistical Package for Social Sciences (SPSS), version 20 was employed for coding while the E-views version 10.0 was used to estimate the model.

Descriptive statistics such as percentages, frequencies, and cross tabulation were employed for the analysis of data collected through the administration of questionnaire. The study utilized tables for a summary of the results. Chi-square statistic was also employed to ascertain the association between economic development (level of income) and community development efforts. Chi-square method was used to determine whether or not a relationship is statistically significant (i.e., not probable as a result of chance).

Cramer's V method was utilized to determine the statistical significance and provides information about the strength of the relationship between the dependent and independent variables. The decision rule is that a Cramer's V value of O = No relationship, 0.2 or less = Weak relationship, from 0.21 to 0.3 = moderate, and above 0.3 = Strong relationship. In terms of analysis of reliability, the Cronbach's alpha was employed to check for data reliability. The

decision rules are that: 0-0.2 is weak/minimally acceptable; 0.21-0.25 is moderate/acceptable; 0.26-0.30 is moderately strong; 0.31-0.35 is strong; 0.36-0.40 is very strong; and 0.41-0.45 is worrisomely strong. As was observed by Nunnally (1978), the most minimum cited threshold for Cronbach alpha in terms of the range of acceptance is 0.25.

# **Empirical Results and Analysis**

**Table 2:** Socioeconomic status of the households

Socioeconomic status	Percentage	Per capita Income
Poor	70.42	N13,252.63
Moderate	15.15	₩42,790.11
High	14.43	₩83,957.22
Pooled	100	₩55,524.36

**Source:** Author's Computation 2022, Using E-views 10.0 version

The data on table 2 revealed that the majority (70.42%) of the rural households in the North-Central Nigeria have poor socioeconomic status. The mean per capita income is \$55,524.36

**Table 3:** Gender Distribution of the Respondents

Gender	Percentage	Per capita Income		
Male	45.48	₩35,506.98		
Female	54.52	₩20,357.89		
Total	100	₩55,864.87		

**Source:** Author's Computation 2022, Using E-views 10.0 version

An examination of table 3 showed that 45.48% of the respondents are male with №35,506.98 per capita income, while 54.52% are female with №20,357.89 per capita income. The total per capita income of the respondents is №55,864.87.

**Table 4:** Area of Residence of Respondents

Area	Percentage	Per capita Income	
Rural	100	₩55,864.87	
Urban	0	0	
Total	100	₩55,864.87	

**Source:** Author's Computation 2022, Using E-views 10.0 version

The data on table 4 indicated that all the respondents (100%) reside in rural areas of the zone.

**Table 5:** Educational Level of Respondents

Educational Level	Percentage	Per capita Income	
Learned Individuals	40	₩40,312.98	
No formal Education	60	₩15,552.89	
Total	100	№55,864.87	

**Source:** Author's Computation 2022, Using E-views 10.0 version

Table 5 revealed that majority of the respondents (60%) have no formal education, while 40% are learned (i.e, educated).

Indices of insurgency were tested to ascertain the differential in socioeconomic status of households in the rural areas of North-central Nigeria. Chi-Square and Cramer's V were used to test the relationship between variables.

Table 6: Pearson Chi-Square Result

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	24.544a	332	0.023
Likelihood Ratio	27.039	332	0.516
Linear-by-Linear	0.323	1	0.570
Association	0.323	1	0.570
N of Valid Cases	7000		

**Source:** Author's Computation 2022, Using E-views 10.0 version

Table 6 reveals the results of cross tabulation. Based on the Pearson chi-square results, insurgency is statistically associated with socioeconomic status of households in the rural areas of North-central Nigeria ( $^2$  = 24.54, df = 332, N = 7000, p > 0.023).

**Table 7:** Symmetric Measure

	Value	Approx. Probability
Phi	0.254	0.034
Cramer's V	0.227	0.034
No. of Valid Cases	7000	

**Source:** Author's Computation 2022, Using E-views 10.0 version

The results on table 7 revealed that there is correlation between insurgency and socioeconomic status of households in the rural areas of North-Central Nigeria. Cramer's V, which indicates the strength of the relationship between the variables is 0.227 and, thus, the impact of insurgency is moderate/acceptable.

**Table 8:** The estimation of effect of insurgency on socioeconomic status in North-Central Nigeria

Variables	Odd ratio (based on socioeconomic status)	Standard error	Z value	Marginal effects of poor socioeconomic status	Marginal effects of moderate socioeconomic status	Marginal effects of high socioeconomic status
Household						
variables						
Sex	2.48***	1.155	2.09	-0.44	-0.54	-0.03
Age	-0.01***	0.006	-2.05	0.00	0.00	0.00
Marital status	0.63**	0.272	2.32	0.17	-0.08	0.05
Occupation	-0.08	0.078	-1.02	0.02	0.11	0.01
Area of residence	-0.19	0.197	-0.95	0.07	0.07	0.04
Socioeconomic						
status						
Income	0.21**	0.114	1.91	0.02	-0.01	0.01
Education (Level)	-0.03	0.150	-0.26	0.04	-0.03	0.02
Health facilities	-0.48	0.261	-0.53	0.08	-0.02	0.03
Insurgency variables						
Kidnapping	0.20***	0.108	1.87	-1.18	1.58	-0.88
Banditry	5.51	142.507	0.04	0.00	0.05	0.03
Ethnic wars	0.42**	0.128	3.28	-0.42	0.40	0.22
Farmers/Herders' conflicts	0.20**	0.108	1.87	0.06	0.07	0.03
Intervention						
Variables						
WHO	0.22***	0.131	-1.71	-0.11	0.07	0.04
WORLD BANK	0.30***	0.162	-1.85	0.56	0.10	0.06
EU	0.95*	0.322	-2.93	0.39	0.34	0.26
/cut1	12.52946	437.7623				
/cut2 14.18	8821 437.762	23				
likelihood ratio chi	i-square	76.26				
R squared	•	0.1453				

Note: \*\*\* Significant at 5%; \*\* Significant at 10%; and \* Significant at 1%

**Source:** Author's Computation 2022, Using E-views 10.0 version

The results of the Ordered Probit model were used to investigate the effect of insurgency on socioeconomic status of households in North-Central Nigeria (table 8). The three levels of socioeconomic status—low status, moderate status and high status-formed the dependent variables as ordered 0, 1 and 2 respectively while 15 explanatory variables were considered in the model. However, only 9 were statistically significant at various levels. They are sex, age, marital status, income, kidnapping, ethnic wars, Farmers/Herders' conflicts, WHO, World Bank intervention and European Union intervention. The likelihood ratio chi-square of 76.26 with a p-value of 0.0000 reveals that the model as a whole is statistically significant. The Pseudo R squared of 0.7453 also underscored the good fit of the model. Sex (male headed) is positively related to socioeconomic status. This shows that being a male headed household

increases the ability of the households to better socioeconomic status. That is, it will lead to a 2.48 increase in the long odds of being high socioeconomic status given that all of the other variables in the model are held constant.

Age of the household head and marital status were found to significantly affect socioeconomic status at 5 percent and 10 percent respectively. However, these have negative and positive relationships with socioeconomic status respectively. By implication, a unit increase in the age of the household head and being a household with marital status leads to increase the log odds of being in high socioeconomic status. Occupation of respondents and their areas of residence both have negative and insignificant effects on socioeconomic status.

In relation to indices of insurgency-kidnapping, banditry, ethnic wars, and Farmers/ herders' conflicts in the North-Central Nigeria, especially the renowned "Boko Haram", subjected the rural households to being low socioeconomic status and reduces the log likelihood of the household in transiting to being high socioeconomic status. This thereby enhances the potentiality of rural households being in poor socioeconomic status. Interventions from various international organizations (WHO, World Bank, European Union) had statistical positive relationship with socioeconomic status of rural households in North-Central Nigeria. This implies that these intervention programmes and aid have increase the level of socioeconomic status of rural households in North-Central Nigeria.

#### **Conclusion and Recommendations**

The study examined the impact of insurgency on socioeconomic status of rural households in North-Central Nigeria. From the analysis of the results, it can be stated that all the indicators of insurgency (kidnapping, ethnic wars, Farmers/Herders' conflicts) have negative impact on socioeconomic status of rural households in North-Central Nigeria. Therefore, it can be concluded that insurgency generally has negative impact on socioeconomic status of rural households in North-Central Nigeria. Provision of more educational facilities will help to develop a resilient population thereby leading to better human capital development, better employment, and better socioeconomic status of rural households.

Provision of more health facilities will create in-built resistance among the rural residents to epidemics caused by air, water, and changes in weather. Therefore, all stakeholders and hands must therefore be on deck in the fight against insurgency in communities so that North-Central Nigeria can join other relatively peaceful regions in enjoying the dividend of development experienced through provision of health facilities.

To this end, effort by the government of Nigeria, and the international community, in curbing the adverse consequences of insurgency on employment generation, accessibility and better socioeconomic status of rural households in North-Central Nigeria need to be intensified. Also, state government and other stakeholders including nongovernmental organization should boost awareness on productive opportunities for the unemployed internally displaced persons; and establishment of training/development centers for the uneducated youths in order to prevent them from being an instrument of violence. In addition, governments should

embark on a short time remedial measures and direct intervention by distributing consumer items and necessary vaccinations from the national reserve in order to ameliorate the severe economic hardship being experienced by the victims of insurgent attacks.

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