MAPPING OF HUMAN DISPLACEMENT BY BOKO HARAM IN NIGERIA FROM 2009 TO 2021

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ABSTRACT

Insurgencies by Boko Haram, a terrorist group operating in the north-west African states, have negatively impacted the sense of national security in Nigeria. The activities of the sect have assumed political dimensions in that they have evaded all the possible technical and military solutions that have been implemented. The humanitarian crisis caused by incessant attacks by Boko Haram sects has led to a growth in the population of internally displaced persons and the associated camps accommodating them. This research examined the activities of the Boko Haram sect and how they relate to internally displaced persons, as well as to the challenges faced by the latter from 2009 to 2021. The data used comprise data from the Armed Conflict and Location Event Data Database (ACLED), from the National Emergency Management Agency (NEMA), and geospatial data from Diva-GIS. The method that was applied for this purpose incorporated the use of GIS techniques for mapping the activities of the sect from 2009 to 2021: Microsoft Excel was used for the purposes of data refinement and analysis; while ArcGIS was used for the mapping of the camps of internally displaced persons, as well as for the hotspot and directional analyses in this particular context.. The findings of this research study show that Borno state experiences a 77% frequency of insurgency attacks, followed by Yobe state with 11%. Over the years under study, 2015 is the year recording the highest number of fatalities in Nigeria, with Adamawa recording the highest number of fatalities in a state in spite of it being the least of all the states susceptible to terrorism. Borno, the most terrorized of the states, hosts the largest number of IDP camps but the challenges that these state experiences are relatively limited.

Keywords: Mapping, Human Displacement, Boko Haram, IDPs, Borno State

1. Introduction

Nigeria is gradually declining, and in its descent, is becoming a failed nation. This is due to the increasing number of internally displaced people and the soaring economic and political crisess that the country is experiencing, with beginnings traceable to the activities of terrorist

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groups such as the Boko Haram, ISWAP (The Islamic States in West African Provinces), and several other militant groups operating in the Western sub-Saharan region (Habibu, 2016; Pearson and Zenn, 2021). The continued worsening insecurity challenges have led to some West African countries falling under military coups and deteriorating into failed states (Akubor, 2011; Bamigbose, 2011; Chidume, 2013; Ibeanu, 2015; Johnson and Olatunji, 2018; Lenshie, 2014; Sheridan and Uhrmacher, 2016; VOA News, 2014). In managing the increasing humanitarian crisis developing across the country over the years, the Armed Conflict Location and Event Data Project (ACLED) has to date been documenting the major activities of the Boko Haram sect (Raleigh et al., 2010; Crisp, 2010). Data from ACLED are said to be reliable ad verifiable and have been subjected to rigorous peer reviews. In fact, both public media sources and secondary reports are the major sources of data for ACLED that have been validated through local partnerships and organizations (ACLED, 2019). Reports show that 90 percent of the IDP (internally displaced person) camps can be attributed to the incessant attacks from the Boko Haram sects, while less than 10 percent can be attributed to natural disasters, mostly in the northern part of Nigeria (Brock, 2012; IDMC, 2013; Lenshie and Henry, 2016; Mustafa and Helda, 2017; UNDP, 2017). This study aims to assess how Boko Haram activities have accelerated the process of forced migration and its linkage to the increased challenges faced by internally displaced persons. Reported data on the activities of Boko Haram and its insurgencies, both in the past and present, and GIS techniques have been the main sources used in this research study.

1.1. The Boko Haram Insurgency

From the earliest records, it is clear that the Boko Haram insurgency has become a complex political issue that has contributed to the election victory of General Muhammdu Buhari, the then presidential aspirant to the All Progressive Congress(Sani, 2011). While the Boko Haram insurgency has marked the gradual erosion of Nigerian unity, other forms of insurgencies have in their turn been emboldened with words and phrases such as "unknown gunmen", "banditry", "the Islamic State", and "kidnappers" having become the more popularized terms (Nwanegbo and Odigbo, 2013; The Nation, 2014). The Boko Haram insurgency has brought to light the weakness of the Nigerian military arm, while other self-determining militant groups have been emboldened, thus resulting in a geopolitically isolated crisis. The establishment of regional security infrastructures and a state police force has been posited by security experts (Habibu, 2016). However, this insurgency group has been able, nevertheless, to sew division in the country along religious, political, cultural, economic, ethnic, and even geographical lines (Nwozor, 2013). The political implications of the insurgency are more far-reaching than those of any other political group; the list of sponsors supporting the sect has been politicized, and even attempts to combat the insurgency have been politicized. Recently, the sect is known to have established links with sympathizers in the executive and legislative arms, including the military, the policing and security infrastructure, and other international groups (Onapajo,

2017). The entire situation surrounding Boko Haram has turned into a quagmire for the current Nigerian administration (Onapajo, 2017). The increasing number of internally displaced persons, as well as their camps, has been a thorn of contention in the flesh of not only the National Emergency Management Agency (NEMA), but also of the displaced people (Mashi et al., 2019).

1.2. Humanitarian Crisis

The Boko Haram insurgency alone has created one of the greatest humanitarian crises in Nigeria since the civil war. The incessant attacks by the group have led to the greatest internal displacement of people, including their mass migration from the northern to the southern portion of the country (USAID, 2012; UNDP, 2017). Internal migration comes with its induced implications, including the exacerbation of ethnocentric violence and the current tensions and economic woes, namely the high crime rate, unemployment, etc. The current national security challenges can be traced back to their roots in the humanitarian crisis that has been created in part or in its entirety by the Boko Haram insurgency. People fleeing from areas which are prone to insurgency attacks do so with few to no personal belongings, thus fostering in themselves a sense of economic insecurity (Mustapha et al., 2018; Nnadi et al., 2020; Okoli and Lortyer, 2014; USAID, 2012; UNDP, 2017).

1.3. Internally Displaced Persons and Camps

The Internal Displacement Monitoring Centre (IDMC) monitors and manages the data relating to internally displaced persons and the published reports on them (IDMC, 2013). Owing to the circumstances surrounding their situations, IDPs are known to be subject to several challenges, with some favouring a return to their violence-prone communities despite their concerns for their safety, whereas others tend to migrate to other parts of the country (Crisp, 2010; Mashi et al., 2019; Nnadi, 2020). IDP camps created in response to Boko Haram's incessant attacks have been reported to be experiencing increasing numbers of people and the challenges they must face (Mashi et al., 2019). The state of these camps has deteriorated through mismanagement and the security concerns (see Figure 2) associated with the various challenges. Thus, there is a need to investigate the activities of the Boko Haram insurgency in respect of the IDP camps and their associated challenges in order to understand the situation and to proffer recommendations for a way forward.

Figure 1: Scenes of unrest as a result of Boko Haram insurgencies (Ojoye, 2018)

Figure 2: A Scene in an IDP camp (Sheridan and Uhrmacher, 2016).

2. Material and Methods

2.1. Data Sources

Table 1 shows the nature of the datasets used and their sources. The data sources considered are nationally recognized. ACLED (The Armed Conflict Location and Event Data Project) boasts in having access to the highest quality and most widely used near-real-time data on the armed crisis in Nigeria. These data range from those pertaining to communal violence, rioting and violent protests, to violence against civilians. They include locational data on events and

the occurrence of insurgent attacks perpetrated by armed terrorists such as those associated with Boko Haram and the ISWAP (Islamic State in West Africa Province) (Raleigh et al., 2010). Figure 4 shows a sample of the data sources from ACLED. On the other hand, NEMA (Nigerian National Emergency Management Agency) is a government agency, which, unlike ACLED, is saddled with the responsibility of providing the public with government emergency plans, of planning and implementing national emergency plans, and finally of providing relief materials and resources to affected people in distress, including internally displaced people (Nnadi et al., 2020). Diva-GIS serves as one of the most frequently used platforms for sourcing geospatial data, especially national administrative shapefiles in the geographical coordinate reference frame (Hijmans et al., 2001).

Table 1: Table showing data type, year, source from which the data were obtained(ACLED – Armed Conflict Location and Event Data Project; NEMA – National Emergency Management Agency)

Data type	Year	Source
Boko Haram terrorism data	2009-2021	ACLED
IDP data	2009-2021	NEMA
Administrative map of Nigeria	2021	Diva-Gis

2.2. Data Processing and Analysis

The numerical data showing the counts and records of insurgency attacks and internally displaced people were refined and analyzed using Microsoft Excel. This was made possible by eliminating unwanted columns and remarks; aggregating the number of fatalities and attacks per state; integrating the geospatial dataset with the statistical tables and displaying this detail with the aid of ArcGIS. Tables and graphs were prepared using the statistical data generated in Microsoft Excel, while maps were generated using ArcGIS software. For the analysis, a simple descriptive statistical analysis was performed to present the frequency of insurgency attacks among the worst-hit states, as well as to map the distribution of such incidents across the country. The hotspot analytical tool in ArcMap which calculates Getis-Ord Gi* statistics (equations 1, 2, and 3) shows the distribution of statistical z-scores with high values to indicate more intense clustering (the hotspots), and the distribution of low values to indicate less clustering (the cold spots) (Esri, 2015). Directional distribution analysis was also carried out to measure the trends of a set of point locations of insurgency attacks (Esri, 2015).

$$G_i^* = \frac{\sum_{j=1}^{n} w_{i,j} x_j - \bar{X} \sum_{j=1}^{n} w_{i,j}}{S \sqrt{\frac{n \sum_{j=1}^{n} w^2_{i,j} - (\sum_{j=1}^{n} w_{i,j})^2}{n-1}}} \tag{1}$$

Where x_j is the attribute value for feature j, $w_{i,j}$ is the spatial weight between feature $i\ and\ j$, n is equal to the total number of features, and

$$\overline{X} = \frac{\sum_{j=1} x_j}{n} \tag{2}$$

$$S = \sqrt{\frac{\sum_{j=1}^{n} x_j^2}{n} - (\overline{X})^2} \tag{3}$$

3. Results and Discussion

3.1. Frequency of Insurgency Attacks

Considering the distribution of insurgency attacks in Nigeria, it can be inferred that Borno is the state that leads with the highest frequency, followed by Yobe state, both states being in the north-eastern portion of Nigeria (Table 2 and Figure 3a). This is supported by the reports by the United Nations Development Programme UNDP(2018), Blair (2015), Smith (2014) and Goyei (2017).

Table 2: States in Nigeria subject to frequent insurgency attacks

State	Longitude (decimal degrees)	Latitude (decimal degrees)	Attack Frequency (%)
Borno	11.6566	13.4213	77.00%
Yobe	11.7119	11.0697	11.00%
Adamawa	9.2000	12.4833	8.00%
Bauchi	10.3153	9.8442	2.00%
Plateau	21.342	9.9167	1.00%
Jigawa	11.2764	9.8858	0.77%
Nassarawa	12.0020	8.5288	0.23%

3.2. Insurgency and Fatalities

From records and data pertaining to fatalities, it is evident that Adamawa state has experienced the highest (4380) and Gombe the lowest (291) number of attacks over the years, with 2015 and 2009 recording the highest and lowest fatalities respectively (Table 3 and Figure 4). Figure 5 shows that Borno state reported the highest number of kidnappings over the years, thus complementing its high frequency of insurgency. However, regardless of the geopolitical zone of the country into which a state should fall, the recent security and economic challenges in Nigeria have contributed to the increased number of kidnappings, cases of banditry, and insurgency attacks across the country(Erunke, 2022).

3.3. 3.3 Analysis of Hotspot Insurgency Attacks

Figure 3b presents the analysis of the hotspots, with the red cells showing high values for such incidents, and the white cells showing low values, thus substantiating the existing facts about the north-eastern part of the country as reported by several media houses and authors (Chukwuma, 2017; Simon, 2021).
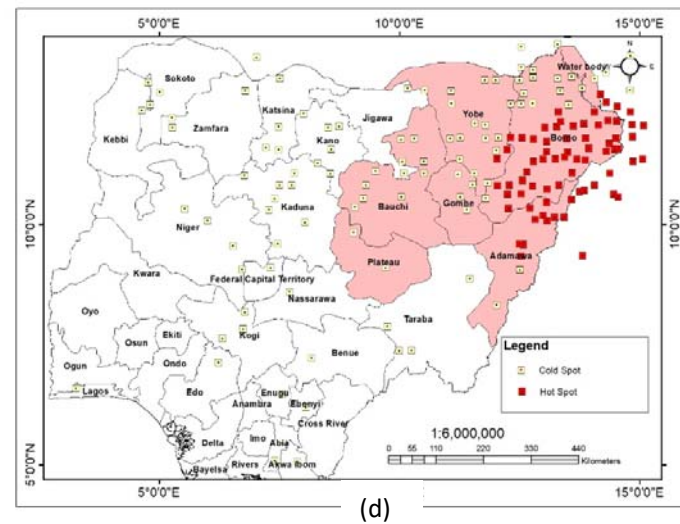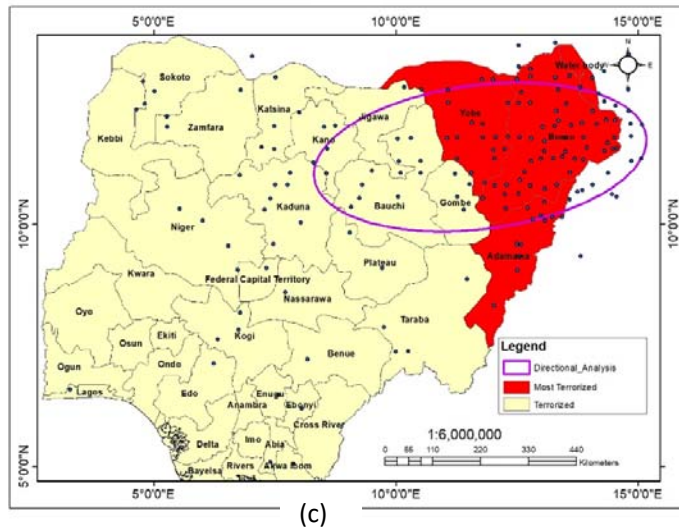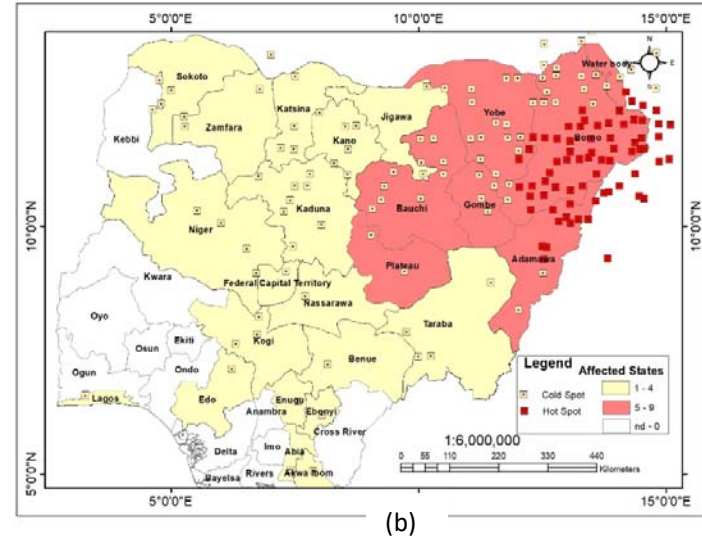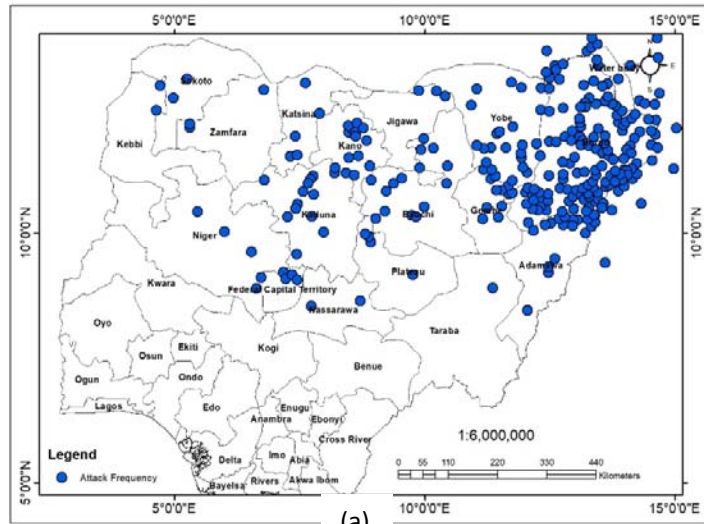
Figure 3: (a) Map of states in Nigeria experiencing frequent Boko Haram attacks; (b) A nalysis of hotspots showing Boko Haram attacks in the worst affected states; (c) Directional analysis of states in Nigeria experiencing frequent insurgency events; (d) Hotspot states with high numbers of internally displaced persons

Table 3: Fatalities caused by Boko Haram in the major terrorized states in Nigeria from 2009 – 2021

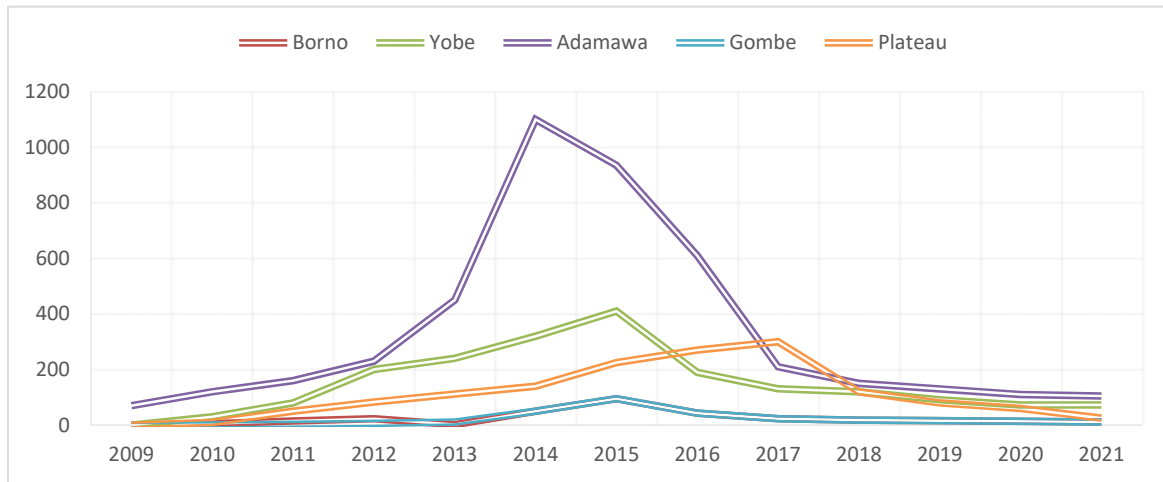| YEAR	Borno	Yobe	Adamawa	Gombe	Plateau	Total
2009 - 2012	43	310	580	10	143	1086
2013 - 2017	213	1291	3305	222	1047	6078
2018 - 2021	59	356	495	59	285	1254
Total	315	1957	4380	291	1475	

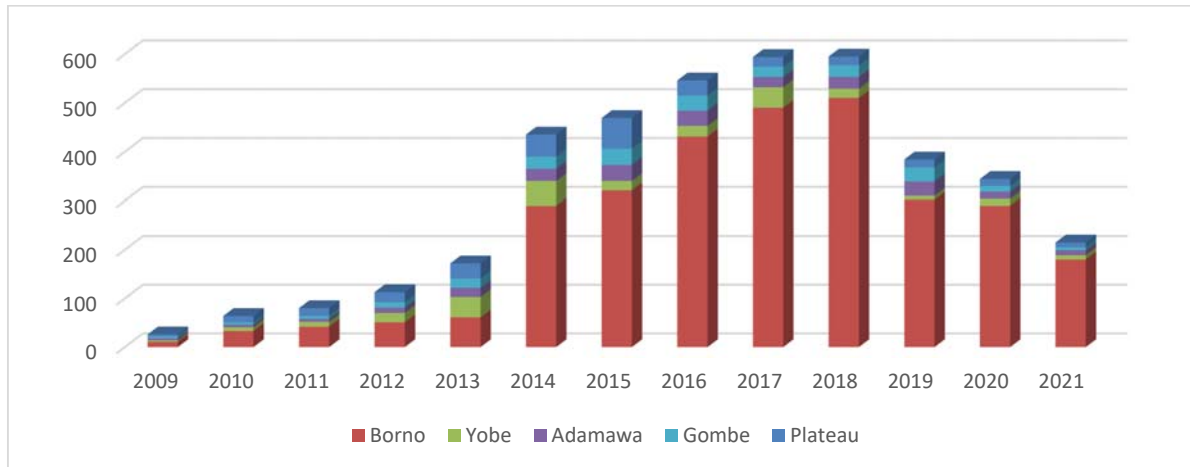Figure 4: Fatalities caused by Boko Haram incidents from 2009 - 2021

Figure 5: Kidnappings emanating from Boko Haram attacks in Nigeria from 2009-2021

3.4. Directional Distribution Analysis of Insurgency Attacks

The directional distribution analysis results present the focus area of insurgency attacks in terms of a clockwise circle. Figure 3c indicates that the focus area of attack within the Borno state correlates with the results of the hotspot analysis. With due consideration being given to the proper interpretation of the findings of the directional distribution analysis, the spread of security challenges across the country could be attributed to the lack of proper management in Borno state and other states experiencing high frequency levels of insecurity (Habibu, 2016).

3.5. Insurgency and Internally Displaced Persons

The increasing number of IDPs is highlighted in Table 4 and Figure 6, with the major causes of displacement shown in Figure 7. All support the argument by Lenshie and Henry (2016) and NEMA (2021) for effective control policies.

Table 4: Data for internally displaced persons from 2009 - 2021

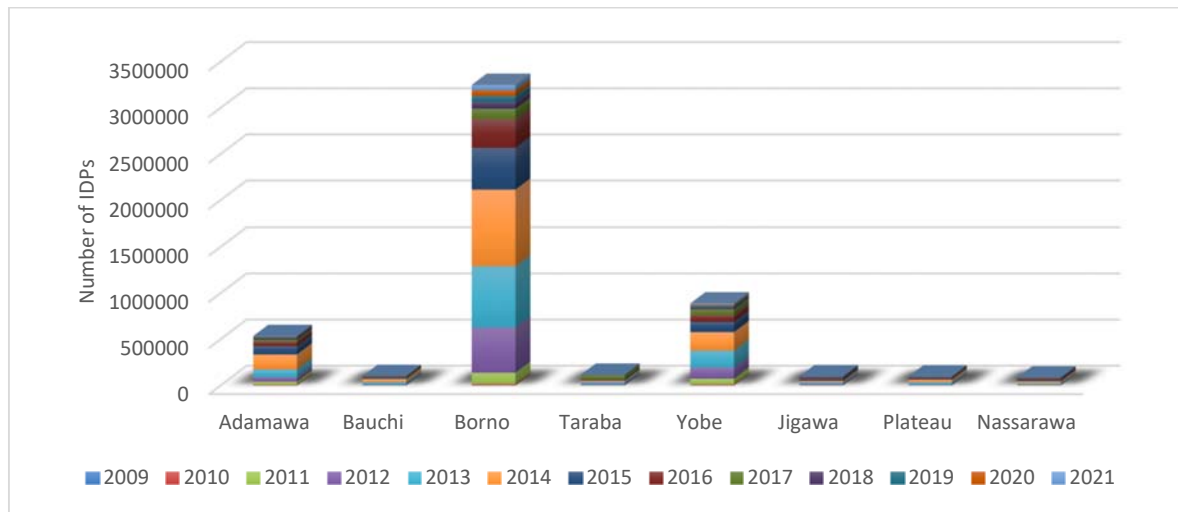| YEAR	Adamawa	Bauchi	Borno	Taraba	Yobe	Jigawa	Plateau	Nassarawa	Total
2009 - 2012	90300	15573	627950	21796	196160	19995	14028	10202	996004
2013 - 2017	404456	82922	2362330	88798	629667	63289	75506	69563	3776531
2018 - 2021	41591	4704	259720	6474	62576	16424	7810	5863	405162
Total	536347	103199	3250000	117068	888403	99708	97344	85628	5177697

Figure 6: Increase in the number of internally displaced persons in northern Nigeria from 2009 – 2021
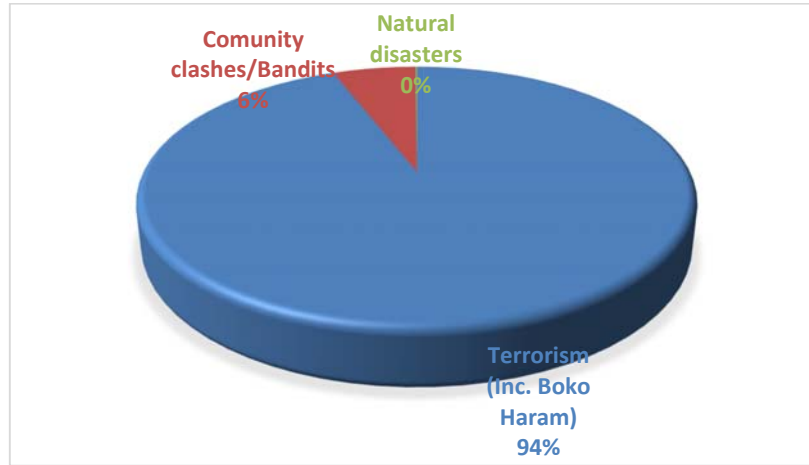
Figure 7: Causes of Displacement from 2009 – 2021

3.6. Mapping Internally Displaced Persons

A map of IDP camps shows that several camps are unevenly distributed and proportional to the distribution of the insurgency attacks (Figure 3d). Identified challenges faced by IDPs include the lack of adequate safety and security measures in place, the lack of access of the people to formal education, health care, and basic amenities, such as food and clothing (IDMC, 2013; Ojoye, 2018). In fact, inaccessibility to basic amenities is the major challenge highlighted in the reports (Figure 8).
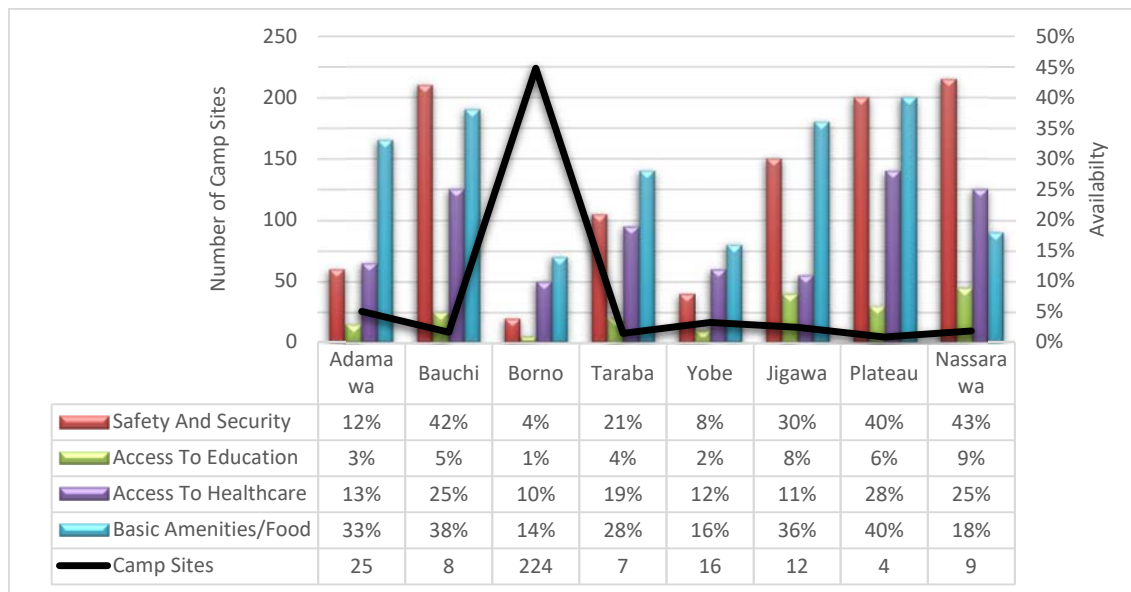

	Adamawa	Bauchi	Borno	Taraba	Yobe	Jigawa	Plateau	Nassarawa
Safety And Security	12%	42%	4%	21%	8%	30%	40%	43%
Access To Education	3%	5%	1%	4%	2%	8%	6%	9%
Access To Healthcare	13%	25%	10%	19%	12%	11%	28%	25%
Basic Amenities/Food	33%	38%	14%	28%	16%	36%	40%	18%
Camp Sites	25	8	224	7	16	12	4	9

Figure 8: Challenges faced by IDPs

4. Conclusion and Recommendations

The state of insecurity in Nigeria has called for this exploratory research paper. In fact, the Boko Haram insurgency, the focus of this paper, could be attributed to the first signs of deterioration in the national security infrastructure, as well as to the associated challenges and management of the IDP camps in certain states in Nigeria. This study investigated the activities of Boko Haram from 2009 to 2021 and using reported data and GIS techniques, focused on the creation and management of the IDP camps. The findings from this study show that among the 36 states of Nigeria, Borno state experienced a 77% frequency level in insurgency attacks, followed by Yobe state, with 11%. Thus, Borno leads as the greatest victim to terrorist attacks in the country; with the north-eastern states continuing to constitute the most terrorized geopolitical zone. Over the years under study, 2015 recorded the highest number of fatalities in a state. In fact, Adamawa, although not classified as the most terrorized state, was recorded as the leader in this respect. The most terrorized states were found to host the highest number of IDP camps but to experience only relatively limited challenges. Furthermore, the distribution of the IDP camp numbers was not in any way even across those states challenged with the issues of the Boko Haram insurgency. The challenges being faced by IDPs include those associated with safety and security, access to education, access to healthcare, and access to basic amenities and food. Among all these, access to basic amenities and food proved to be the most common and frequent challenge faced by IDPs. The ineffectiveness in the management of IDP camps and the challenges that they present can be seen in the deteriorating circumstances around national security.

From the foregoing, the Boko Haram insurgency has called for the effective and efficient management of IDP camps by NEMA and related agencies to mitigate uncontrolled migration and the challenges faced in these camps. The government and other stakeholders are advised to step up all necessary ameliorating actions if the country is to be preserved.

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