Analysing the Spatial Spread of Banditry Activities in Zamfara State Nigeria

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Abstract

The menace of banditry has become a serious threat to the people of the northwestern part of Nigeria, with Zamfara State experiencing the highest occurrence of incidence. Given this, the study sought to assess the spread of banditry in Zamfara State using the Geographic Information System (GIS) to provide spatial information for effectively monitoring the banditry incidence. Data utilised for the study include both primary and secondary. The primary data involved direct field observations. Secondary data were from the Armed Conflict Location and Events Data (ACLED) 2022 version. The result revealed a clustered pattern of the banditry in part of Zurmi, the eastern part of Maradun. Gusau, Maru, and Zurmi. These places had the highest banditry activities, with more than 24 incidents (2017-2021). The western part of Zurmi and the eastern part of Maradu are seen to be hot spots of banditry activities based on the density of the incidents at a 99% significant level. Hence, there is a need to adopt modern technology that will assist in dictating the location of bandit areas to deploy security personnel in curtailing this deadly menace.

Keywords: *banditry incidence, GIS, hotspots, spatial distribution, spatial analysis*

Introduction

The incidence of banditry activities is one of the major problems confronting the people of Nigeria and the northern part in particular. Over the years, the northern part of the country has witnessed many forms of banditry with North western part having the highest incidence occurrence (Hassan, Hassan, & Hussain, 2018). This banditry ranges from kidnapping, cattle rustling, rape, road attacks, farm attacks, and village raids.

In many of these incidences, lives and properties are lost, farm products destroyed, and people displaced. Bandits operate in gangs that might have been supplied with the necessary information by their collaborators in the community where they intend to carry out their atrocities. Such information could be given to the bandits for two reasons: information may be given for a price or to be in the good records of the bandits.

The menace of banditry has become a serious threat to the people of the north western part of Nigeria, with Zamfara State experiencing the incidence daily. Zamfara State has recorded so many incidences of banditry. Gangs of bandits taking cover in the forest around the north western part, most especially the forest in Zamfara State, have also been terrorising the people of Dansadau, Maru, Zurmi, and Gusau, to mention but a few. The bandits rob travellers, raid villages, and kidnap people. After kidnapping their relations, they also demand huge sums of money, particularly from Fulani herders. It has been described as an act that resulted from the failure of leaders to curb the menaces of social and economic upheavals (Mohammed & Ibrahim, 2015). It has also been conceived as a criminal act of taking cows for economic purposes (Okoli & Okpaleke, 2014).

Banditry is an act derived from the term "bandit", meaning an unlawful armed group terrorising people and confiscating their properties. It is synonymous with establishing gang groups that use small and light weapons to carry out attacks against people. In this regard, banditry could mean a set-up of criminal activity deliberately designed and carried out for personal gains.

Due to the complex nature of bandits' activities, Egwu (2016), in a restricted manner, described banditry as stealing cattle and animals from herders or raiding cattle from their ranches. Banditry has been termed robbery or violent crime, especially

in an area where the rule of law has broken down. It mostly involved using intimidation and threat to rob, rape, and kill (Okoli & Okpaleke, 2014). Banditry has been facilitated and made sophisticated by the proliferation of arms and daggers (Funteh, 2019). It has developed to become an organised crime that goes beyond national to transnational (Okoli & Okpaleke, 2014).

Banditry is on the increase mostly because of the economic and commercial benefits attached to it (Mohammed & Ibrahim, 2015). That is to say, those involved in the acts are essentially doing it to sustain their livelihood. Although other factors might be responsible for the menaces of cattle rustling and banditry, the continuous farmers' and herders' conflicts have made the youth readily available to carry out cattle rustling and banditry (Mustafa, 2019).

Olaniyan and Yahaya (2016), Suleiman (2017), and Mustapha (2019) have also pointed out that the fragility of the Nigerian state, weak state institutions, especially the security agencies, availability of grossly ungoverned spaces, the porosity of Nigeria's borders with its neighbouring countries and arms proliferation, weak leadership, corruption, unemployment, and mass poverty have also contributed to the rise in

banditry in Nigeria.

Geographic Information System (GIS) is an information system that facilitates the capture, storage, manipulation, analysis, management, and presentation of geo-referenced data (Mustafa and Ezeamaka, 2019). GIS is used for many purposes, including insurgency mapping, banditry distribution, and trend of crimes within a geographical area (Mustafa, 2018).

The spatial spread and pattern of banditry in Zamfara have become so prevalent that only a few people who travel or live within the state can claim not to have suffered its impact. The marvel could take various forms in various places, including waylaying victims on the highways and transit points, storming and sacking whole villages, stealing hundreds of cattle, settling in villages and collecting taxes, and extortion on village routes. Losses could range from monetary, material, valuables, livestock, and human resources.

Various efforts have been put in place to understand the spatial spread of the incidence of banditry in Zamfara State (Mohammed and Ibrahim 2015: Mustapha, 2019; Mustapha, 2022) but have not been achieved; instead focusing on the causes, effects, and operating methods of the

banditry. There seems to be inadequate research on the spatial spread of banditry in Zamfara State because most of the research focuses on the causes, effects, and operating methods of the banditry (Egwu, 2016; Olaniyan & Yahaya, 2016; Mustafa & Ezeamaka, 2019). Given the above scenario of the banditry incidence in Zamfara state, this study seeks to assess the spread of banditry in Zamfara state using GIS to provide spatial information for effective monitoring of the banditry incidence.

Material and Methods

These aspects deal with methods used in carrying out the study to achieve the objectives of the study. The types and sources of data, sampling techniques, and methods of data analysis employed in the research.

Study Area

Zamfara State is one of the states in the north western part of Nigeria that is affected by banditry. The state comprises 14 Local Government Areas (LGA), as shown in Figure 1. The state lies between Latitudes 11°00'00"N and 13°00'00"N and Longitudes 5°00'00"E and 7°00'00"E. Zamfara State has a population of 4,324,182 estimated 2021 (Mustafa, 2022). The state falls within the climatic condition of tropically warm type,

with temperature rising from 22 C up to 38 °C (100.4 °F) and above between March and May.

The rainy season starts in late May to September, while the cold season, known as Harmattan, lasts from December to February (Dangusau, 1998). People of diverse languages inhabit the study area. The main ones are the Hausa and Fulani people, with some members of Gwari, Kamuku, Kambari, Dukawa, Bussawa, and Zabarma ethnic communities. Others include the Igbo, Yoruba, Kanuri, Nupe, and Tiv. Agriculture is the focal occupation of the state's people and the central source of income. Hence its slogan, "Farming is our pride".

Figure 1: Map of Nigeria showing the study area
(Source**:** NDA, 2022)

Methods

The methodology adopted in this study includes Data acquisition, data processing, and data analysis.

Data Acquisition

Data utilised for the study include both primary and secondary. The primary data involved direct field observations, which involved acquiring and verifying the coordinates of the bandit's incidence points using RINO 120 GPS. Secondary data were generated from the Armed Conflict Location and Events Data (ACLED, 2022 version). The ACLED database houses information on conflict and insurgency incidents around the world.

The ACLED is compiled from publicly available, unclassified materials, including media reporting, news archives, legal documents, and prior data sets. The data provide information on event characteristics, including locations (wards), dates, attack types, and responsible group(s). The Zamfara State base map showing all LGAs was extracted from Nigeria shape files.

Data Processing

The point data of the location of the incidents of bandits was imported into ArcGIS using the XY data import feature. The XY data imported from Excel was converted to a shape file in ArcGIS to facilitate the analysis. The administrative boundary of Zamfara state was used based on LGA to limit the geographical area of the study. All the data were converted to feature class format and saved to geodatabase for easy analysis in ArcGIS.

Data Analysis
Spatial Location of Banditry Incidents

The coordinates derived from the field observation through GPS and information from ACLED on the location of banditry incidence in XY format from 2017-2021 were mapped to show the spatial distribution.

Distribution Pattern Of Banditry Incidents

The distribution pattern explains the pattern of the incidents of banditry and shows the areas with the highest and lowest incidents of banditry. This was done by summing the total number of all incidents recorded by each LGA for the period from 2017-2021. This enables ArcGIS to group this incident using selection by location and joint and displayed by choropleth (symbolised) maps.

Density Of Banditry Incidents:

The density tool helps in calculating the density of point features in a neighbourhood. This helps calculate the density of point features around each output raster cell. The result of the density map is what is called a heat map or dot density map. The density map of banditry incidents was created to show areas where the incidents were more intense in the study area.

Directional Distribution of Banditry Incidents

The directional distribution measures the trend for points by calculating the standard distance in the X and Y directions. This was determined using a directional distribution tool in spatial analysis of ArcGIS and shows the directional pattern in which the banditry incidents are occurring in the study area.

Hotspot Analysis

This analysis examines each point within the context of neighbouring features. The analysis calculates the Getis-ord Gi statistics for each point on a dataset. The resultant Z-score and P-value tell you when features with high or low values cluster spatially. For statistically significant positive z-scores, the larger the z-score is, the more intense the clustering of high values (hot spot). For statistically negative z-scores, the smaller the z-score is, the more intense the clustering of low values (cold place).

Results and Discussion

This section presents and discusses the results obtained from the study.

Spatial Location

The assessment of the banditry location was done by the X and Y coordinates of the incident locations. The X and Y coordinates help identify the incidents' location in the study area (Figure 2).
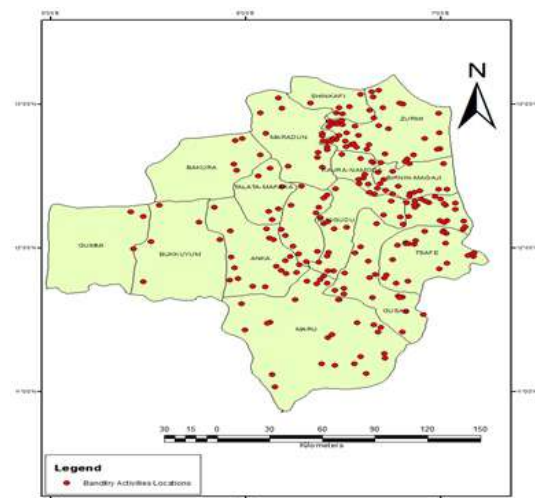

Figure 2: Spatial Location of Banditry Activities (2017-2021)
Source: Fieldwork (2022)

The analysis shows that there is a high concentration of banditry activities in the northern and north eastern parts of the study area. The northern part comprises Maradun, Zurmi, and Kaura-Namoda LGAs, while the

northeastern part comprises Birnin-Magaji, Tsafe, and part of Gusau. The high incidence can be attributed to the area's closeness to the international border, which provides an easy escape route to the bandits (Mustapha, 2019). The result also shows that the western part of the study area has scattered incidents of banditry. These areas include Gumi, Bukkuyum, and Bakura LGAs. The spatial distribution (Figure 3) was also analysed to show the density of the banditry activities. The result revealed a clustered pattern of the activities of bandits in part of Zurmi, the eastern part of Maradun, and scattered banditry activities around Zurmi and Bakura LGAs.
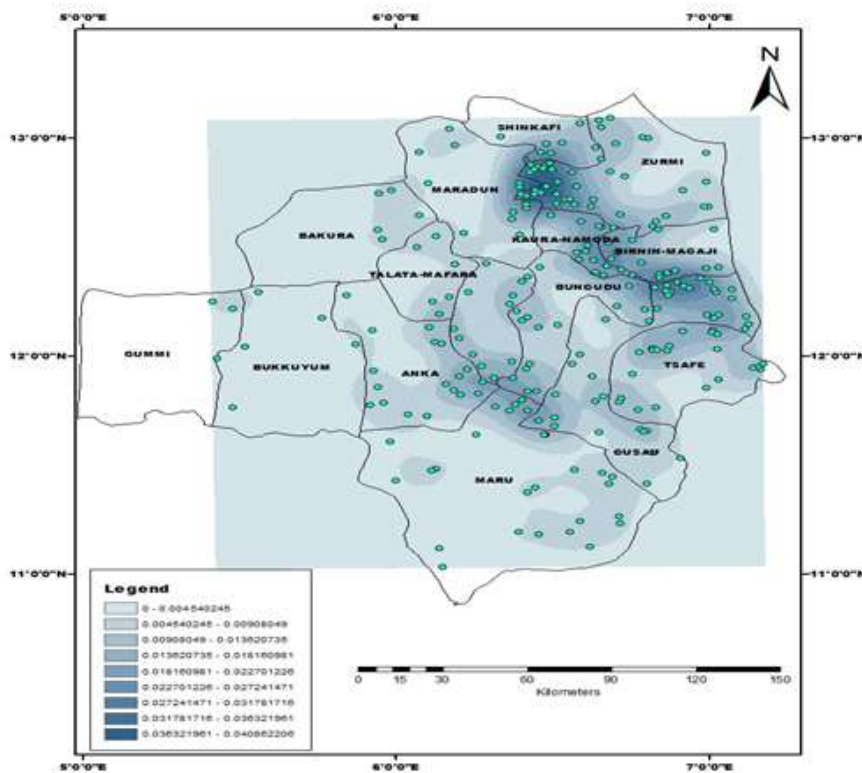

Figure 3: Density of Banditry Activities (2017-2021)
Source: Fieldwork (2022)

The spatial pattern analysis revealed the LGAs with the total number of banditry activities within the study's time frame (Figure 4). The pattern exhibited that the banditry activities in the study area are not equally distributed within the LGAs. Gusau, Maru, and Zurmi had the highest activities of banditry, with more than 24 incidents between 2017-2021. The high incidents recorded in these areas may be attributed to

the abandoned forested areas, which serve as save heaven for the bandits. This finding is in tandem with Mustafa (2022), that most incidences of banditry are within the forested areas which provide hideouts for the bandits. The western part of the study

area experienced low incidents of banditry. This includes areas like Gumi, Bukkuyum, Bakura, and Talata-Mafara, with less than two banditry activities within the study period.
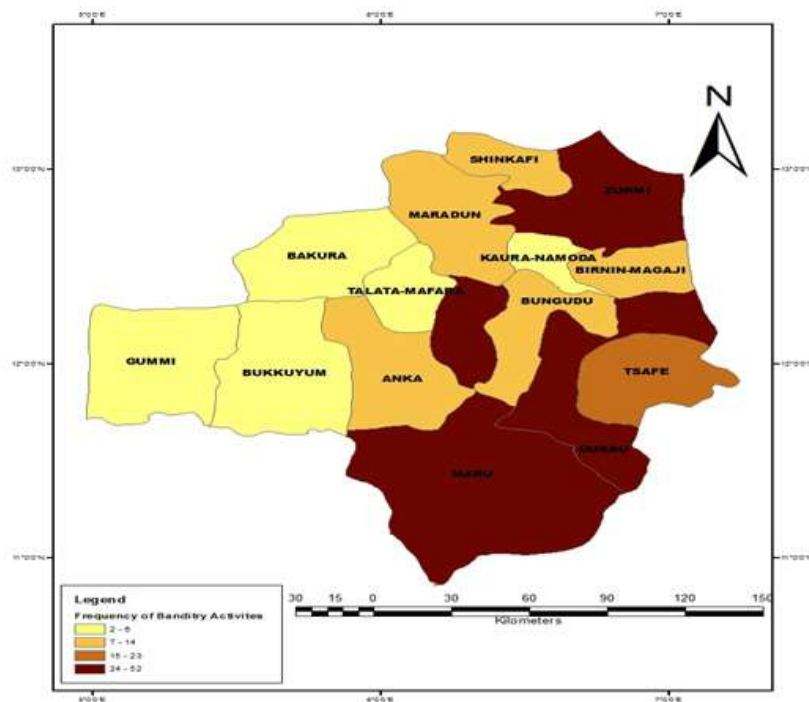

Figure 4: pattern of banditry activities in the study area
Source: Authors' Fieldwork (2022)

The directional distribution of the banditry activities indicates the direction towards which the incidents occurred. On the other hand, the hotspot analysis indicated areas with statistical significance, which may be called a hotspot or cold spot (Figure 5). Hence, the western part of Zurmi and the eastern part of Maradu is seen to be a hot spot for banditry activities based on the

density of the incidents with a 99% significant level. The northern part of Shinkafi, the eastern part of Bungudu, and the northern part of Tsafe have 95% significant hotspots.

Furthermore, the analysis also revealed that the directional distribution of banditry activities is from the North to the Southern

part of the study area. The northern part comprises LGAs of (Zurmi, Tsafe, Birnin-Magaji, and Shinkafi) and the southern part comprises LGAs of (Maru, Anka, and Bukkuyum).
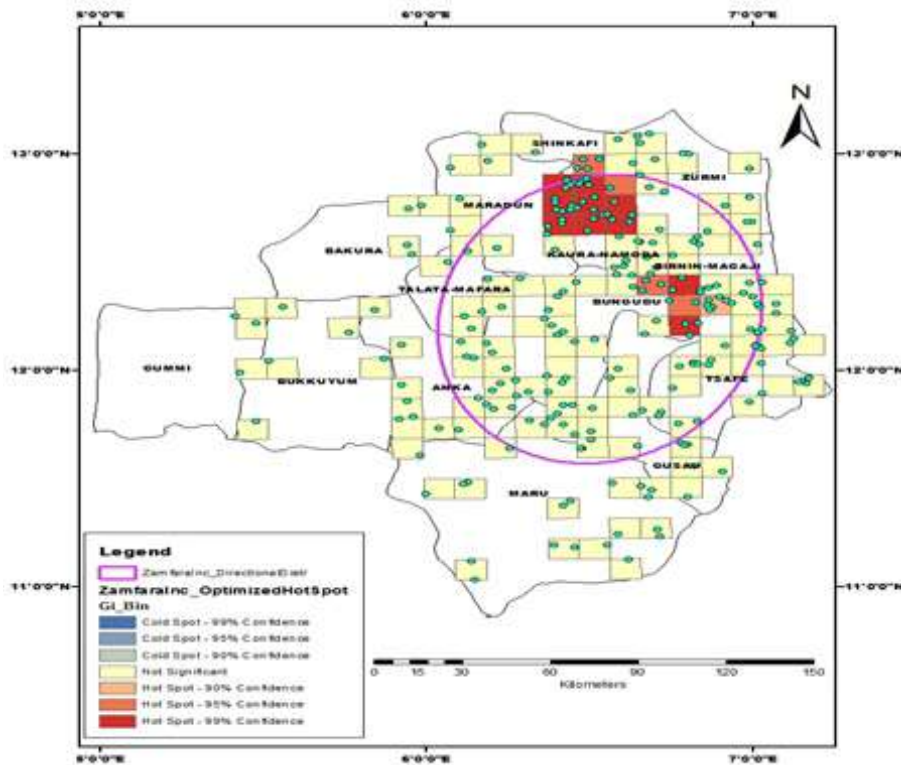

Figure 5: Directional distribution of banditry activities in the study area
(Source: Authors' Fieldwork, 2022)

Conclusion and Recommendation
Conclusion

The study examined the spatial spread of banditry activities in Zamfara state, Nigeria, from 2017-2021. Geographical information on the location of the banditry activities generated in the field indicated a high concentration of banditry in the northern part of the study area compared to the southern part. The banditry activities are not evenly distributed within the study's time frame. The distribution pattern exhibited that Zurmi, Maru, and Gusau had the highest banditry activities. The hotspot of the banditry is located around the western part of Zurmi, the eastern part of Maradu, Shinkafi, Tsafe, and the eastern part of Bungudu.

Recommendations

The study, therefore, recommends that the government of Zamfara state, in particular, and Nigeria in general, incorporate the

findings of this research in their strategic and tactical plan for ending banditry in the state. This can be achieved through introducing policies that would bring about the social inclusiveness of members of the various communities, providing those basic needs in the society, and lastly, adopting modern technology that will assist in dictating the location of bandits' areas to deploy security personnel in curtailing this deadly menace.

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