VOL. 07 NO. 6,
FEBRUARY, 2025
E-ISSN 3027-1401
P-ISSN 3026-9148



African Scholar Publications & Research International
www.africanscholarpub.com

Journal of Arts and Sociological Research (JASR)

Applicability of GIS in Minimizing the Effects of Insecurity and Crimes in Kajuru Local Governement Area of Kaduna State

Maliki Adeku Joseph; Salahudeen Hajarat; & Jimoh Abdulrauf Kayode
Department of Geography, Federal University of Education, Zaria
Corresponding Author: joewealthy@yahoo.com
DOI: https://doi.org/10.70382/ajasr.v7i6.029

Abstract
This study assess the applicability of GIS in countering the effects of insecurity and crimes in Kajuru local government of Kaduna state, Nigeria. The research specifically examine the effects of insecurity and crime issues in the study area and also assess the applicability of geographic information system (GIS) in minimizing the effects of insecurity and crime issues in the study area. Both primary and secondary data were used for the study. A simple descriptive research method was used, by administering questionnaire which was used as the instrument to a sample population 399 people from the entire population of Kajuru local government. The findings revealed that: inadequate funding of insecurity personnel, lack of modern equipment both in weaponry and training, inadequate and disparities in provision of social amenities, unemployment especially among youths, poverty and bribery and corruption causes insecurity and crimes; finally the study also proved that, GIS facilitate tracking the movement of criminals, GIS can help security agencies to determine potential terrorists site, using GIS automated system, terrorists could be monitored, tract and smashed across borders and highways and GIS provide understanding of social phenomenon like criminality, violence and fear and thereby working out to solve those problems. Implications for safe and secure communities were and the research recommended that there should be more need of using GIS technology in addressing the problem of insecurity in the study area and all over the country at large.

Key words: GIS, Minimizing, Effects, Insecurity and Crime, Kajuru

Introduction

Insecurity is a state of being subjected to danger or injury on the other hand, crime is one of the continuous problems that bedevil the existence of mankind. Since early days, crime has been a disturbing threat to man's personality, property and lawful authority (Ayuba, Mugu, Tanko & Bulus, 2016).

Today, in the modern complex world, the situation is most highly disturbing. Crime started in the primitive days as a simple and less organized issue, and ended today as very complex and organized. Therefore, the existence of crime and its problems have spanned the history of mankind. Due to the complex nature of the subject of crime, its causes and consequences, various academic disciplines such as criminology, sociology, geography, psychology and demography study it from their own perspective (Hafiz, 2011). The distribution of crime across the landscape is geographically random since crimes are human phenomena. Several factors, including the lure of potential targets and simple geographic convenience for an offender, influence where people choose to break the law. Therefore, geography plays an important role in law enforcement and criminal justice (Francis, 2016). The International Crime Victim Survey (ICVS) has collected data on 55 countries, spread over six major regions including Africa, Asia, Central and Eastern Europe, Latin America, and Western Europe. The findings showed that for the 1989 to 1996 period, more than half of urban respondents reported being victimized at least once, regardless of what part of the world they inhabit (Zhuo, 2008).This shows that criminal activities continue to be a major concern in contemporary society (Francis, 2016). Francis (2016), asserts that there is no place or society that is completely devoid of crime. The existence of crime is as old as the creation of man itself and man has always looked for ways to combat it and reduce it as much as possible. Murray, (2011) elucidated that the occurrence of criminal activity such as theft, assault, armed robbery, homicide etc. is something that takes place every day in almost all reaches of our world. They stressed that there is a great deal of debate on the causes of crime and affirmed that in the 1980s the rate of crime occurrence grew sharply to nearly epidemic proportions.

Due to insecurity, the rate of crime in Nigeria is attributed to the rate of unemployment estimated at 13.9% by the National Bureau of Statistics (2017), high rate of poverty estimated at 62.6% by the United Nations Development programme (2016) and corrupt Police Force that is ill-equipped to fight crime (Adibe, 2009). The idea that unemployment, poverty and corruption are related to a whole series of other misfortunes such as illness, despair, and crime, is not new (Aminu, 2013). Nigeria is currently caught in the web of insecurity and crime dilemma, manifesting in the convulsive upsurge of both violent and non-violent crimes. But the most alarming and terrifying is the present escalation of violent crimes and the barbarity, lethality and trauma the perpetrators unleash on the hapless citizenry across the length and breadth of the country. Notable in this regard are the rising incidents of armed robbery, assassination and ransom-driven kidnapping, which are now ravaging the polity like a tsunami and spreading a climate of fears and anxieties about public safety (Uche, 2008). Ackerman and Murray (2004) stated that high crime rates are not unique features of a few nations, but statistically normal features

of life all over the world.

In urban areas like Kaduna due to population explosion, stark economic inequality and deprivation, unemployment, socio-political condition among others are factors that contribute to crime occurrence (Dodo, 2008). Certain environmental factors such as the physical layout of an area, proximity to various services and land use mixes are likely to influence criminal behaviour and are fundamental to the explanation of criminal activities in a spatial context. The issue of access, exposure, opportunity and the availability of targets are also important elements in helping to explain crime from an environmental perspective (Ayuba, Mugu, Tanko & Bulus, 2016).

Geographic Information System (GIS) as a tool can be used by relevant agencies such as police personnel to plan effectively for emergency response, determined mitigation priorities, analyse historical events, and predict future events. The ability to access and process information quickly while displaying it in a spatial and visual medium allows agencies to allocate resources quickly and more effectively. In the 'mission-critical' nature of law enforcement, information about the location of a crime incident, suspect, or victim is often crucial to determine the manner and size of the response. GIS software helps co-ordinate vast amounts of location-based data from multiple sources. It enables the user to create layers for the data and view the data most critical to the particular issue or mission (Johnson, 2000).

Irrespective of Government's huge investment in fighting insecurity and crime in the country, the issues of insecurity and crime has remained the bane of social and economic wellbeing of the people of Nigeria making the once peaceful nation now a heaven for criminals. Due to insecurity issues and crimes many deaths have been recorded in the past month across Kajuru LGA (Kaduna state). Authorities reported that on March 10, 2022 unknown armed men entered Barde village in Kajuru LGA and started shooting sporadically, resulting in the deaths of 16 persons. On March 11, 2022 gunmen reportedly attacked Iri, Dogon Noma, and Ikirimi villages, also in Kajuru LGA. The means of getting offenders is very much limited and the security personnel as it appears is yet not fully exposed to modern technologies that will help them combat crime properly. It is therefore with this in mind that this research works is carried out. This research attempts to explore the role of geographic information system (GIS) in curbing insecurity and crimes in Kajuru local government area of Kaduna State. It is hoped that by adopting this innovative approach in combating crime the spate of crime will be drastically reduced in the study area.

AIM AND OBJECTIVES OF THE STUDY

The aim of this research is to assess the applicability of GIS in minimizing the effects of insecurity and crimes in Kajuru local government area of Kaduna State.

The specific objectives are to:

i. Examine the effects of insecurity and crime issues in the study area.
ii. Assess the applicability of geographic information system (GIS) in minimizing the effects of insecurity and crime issues in the study area.

THE STUDY AREA

Kajuru is a local government area in southern part of Kaduna State, Nigeria. Its headquarters is in the town of Kajuru. The local government is located on latitude 7° 34'E and 8° 13'E and longitude 9° 59'N and 10° 55'N, with an area cover of 2,229 km2 (Suberu, 2013). Kajuru local government shares boundaries with Igabi Local Government Area to the north, Chikun Local Government Area to the west, Kauru Local Government Area to the east, Zangon Kataf Local Government Area and Kachia Local Government Area to the south-west and south respectively (Suberu, 2013). See figure 1.

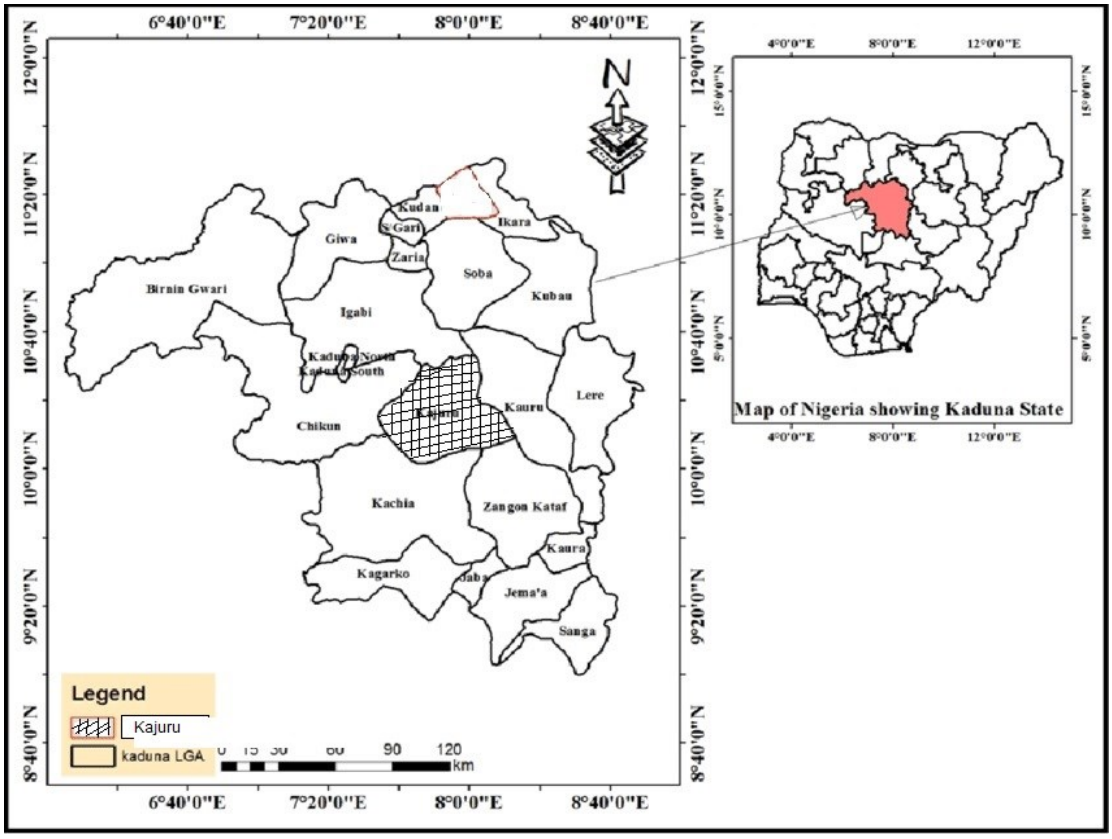


Figure III.1 Map of Kaduna State Showing the Study Area
Source: Modified from the administrative map of Kaduna state

MATERIALS AND METHODS

Reconnaissance Survey

Reconnaissance survey was done in order to be acquainted with the study area and also to identify the method of sampling this study.

Types and Sources of Data

The sources of data used in carrying out this research are primary and secondary sources of data

Primary Data

This will be collected through field survey which will be achieved through the administration of questionnaires.

- Data on the effects of insecurity and crime issues were obtained from the respondents in the study area through the administration of questionnaires and oral interview.
- Data on the applicability of geographic information system (GIS) were obtained from the respondents in the study area through the administration of questionnaires and oral interview.

Secondary Data

Secondary data were obtained from internet, newspapers, journals, theses and databases which will be useful and helpful in generating ideas, facts and issues relating to the study.

Sample Size and Design

Kajuru Local Government Area has an estimated population of 109,810 people according to the 2006 national population census. Simple random sampling technique was used in arriving at the sample size. This figure is projected to 2022 which gave 190,409 populations. The projection was done using Kaduna State growth rate of 3.5%. In the geometric method of projection, the formula is $Pp = P1(1 + r/100)^n$. This formula is the basis of Malthus's population projection

Where

Pp	=	Projected population;
P1	=	Population as per the recent census;
R	=	Annual rate of increase or decrease of population; and
n	=	Number of years
Pp	=	$109,810(1+3.5/100)^{16}$
	=	$109810(1.035)^{16}$
	=	109810x 1.73398604
	=	190,409 approximately

To determine the sizes of the questionnaire to be administered Yamane (1967) formula for sample size determination was used. A total of 399 respondents were obtained and sampled.

Research Instrument

To actualize this research, the researchers will employed the used of self-designed questionnaire to collect data from the respondents. The questionnaire is divided into two sections, section A and B. Section 'A' solicits information on respondents bio-data while section 'B' comprised of questions on role of GIS in curbing insecurity and crime. Responses are rated on five likert scale of SA – Strongly Agreed (5), A – Agreed (4), Undecided – U (3), Disagree - D (2) and SD – Strongly Disagreed (1).

Validity of the Instrument

Validity refers to the degree to which an instrument accurately measures what it intends to measure. Three common types of validity for researchers and evaluators to consider are content, construct and criterion validities. The content validity will be determined by giving the instrument to research experts in field of Geography, the researchers' supervisor to make meaningful corrections, commentary and observations. Kerlinger (1986) hold the view that, the validation of the content of the research instruments by experts is an important and acceptable technique.

Techniques of Data Analysis

This section explains how the data collected were analyzed.

Objective 1: Examine the effects of insecurity and crime issues in the study area. This objective was achieved through the use of questionnaire to obtain relevant information about the effects of insecurity and crimes in the study area. The data generated through questionnaire and observation techniques were analyze using simple descriptive statistics techniques. The responses from the structure questions were computed into frequency count and percentage. It was summarized and tabulated for easy presentation, analysis and interpretation.

Objective 2: Assess the applicability of geographic information system (GIS) in minimizing the effects of insecurity and crime issues in the study area. This objective was achieved through the use of questionnaire to obtain relevant information about the role of geographic information system (GIS) in curbing the effects of insecurity and crime issues in the study area. The data generated through questionnaire and observation techniques were analyze using simple descriptive statistics techniques. It was summarized and tabulated for easy presentation, analysis and interpretation.

RESULT AND DISCUSSION

This chapter deals with the presentation, interpretation, analysis and result of data collected through the questionnaire distributed and retrieved. A total number of 399 copies of questionnaires were distributed and 362 copies were duly returned, hence the analysis and interpretation of the result will be based on the returned copies of the questionnaires.

Analysis of Respondents Bio-data

Table 1: Gender Distribution of the Respondents

Gender	No of Respondents	Percentage
Male	188	52%
Female	174	48%
Total	362	100%

Source: Field Survey, 2022.

Table 1 shows gender distribution of the response obtained. 188 of the respondents are male, which account for 52% of the total response which is slightly higher than the female respondents with a total number of 174 with a 48%.

Table 2: Age Distribution of the Respondents

Variables	Frequency	Percentage (%)

15-20 years	126	34.81
21-30 years	111	30.66
31-40 years	79	21.82
41 years and above	46	12.71
Total	362	100

Source: Field Survey, 2022.

Table 2 shows the ages of the respondents, the data indicates that 126 respondents representing 34.81% were between the ages of 15-20 years, 111 respondents representing 30.66% were between the ages of 11-30 years, 79 respondents representing 21.82% were between 31-40 years while 46 respondents representing 12.71% were 41 years and above. This revealed that majority of the respondents are between the ages of 15-20 years.

Table 3: Level of Education of the Respondents

Level of Education	Frequency	Percentage (%)
Non formal Education	42	11.60
Primary Education	39	10.77
Secondary Education	158	43.65
Tertiary Education	123	33.98
Total	362	100

Source: Field Survey, 2022.

Table 3 Represent the level of education of the respondents, 42 respondent having 11.6% have no formal education, 39 have went for primary education, 158 reached secondary education and 123 respondents proceeded to tertiary education, the respondents represent 10.77%, 43.65% and 33.98% in a respective order. The majority of respondents stops at secondary school, Most of which have graduated from senior secondary school and have sat for the senior secondary certificate exams, few are those who have dropped out from the secondary school. Also the respondents that proceeded to tertiary education attended schools such as Federal/State Collages of Education, Federal/State/Private Universities and Federal /State Polytechnics. The questionnaire was ready and interpreted in Hausa for those that have no formal Education.

Effects of Insecurity and Crime Issues

Table 4: Insecurity results to higher incidence of unemployment

Response	Frequency	Percentage (%)
Strongly Agree	151	41.71
Agree	192	54.41
Undecided	9	2.49
Disagree	4	1.10
Strongly Disagree	1	0.28
Total	362	100

Source: Field Survey, 2022.

In Table 4, the data revealed that 151 respondents which is equivalent to 41.71% strongly agreed that insecurity results to higher incidence of unemployment, 192 respondents equivalent to 54.41% agreed too. This tally with the findings of Dike, (2010); Denny, (2013); and Ugwu, (2013), that insecurity results to high rate of unemployment.

Table5: Insecurity results to terrorism and kidnapping among populace in the study area

Response	Frequency	Percentage (%)
Strongly Agree	181	50.00
Agree	169	46.68
Undecided	10	2.76
Disagree	1	0.28
Strongly Disagree	1	0.28
Total	362	100

Source: Field Survey, 2022.

The Data in table 5 indicates that insecurity results to terrorism and kidnapping among the population in the study area as the index showed 181 respondents representing 50% and 169 respondent's representing 46.68%, strongly agreed and agreed respectively. This is in line with Eme and Onyishi (2011) research findings, that insecurity results to further crimes such as terrorism and kidnapping.

Table 6: Insecurity disrupted businesses and economic activities

Response	Frequency	Percentage (%)
Strongly Agree	143	39.50
Agree	181	50.00
Undecided	32	8.84
Disagree	3	0.83
Strongly Disagree	3	0.83
Total	362	100

Source: Field Survey, 2022.

Data from table 6 showed that 143 respondents representing 39.5% strongly agreed that Insecurity disrupted business and economic activities in the study area, also 181 respondents representing 50% agreed. This was found to be in line with the findings of Ugwu (2013) who observed that in conflict prone areas, unemployment rises, financial and banking systems become in-operative as investors have no confidence and move to more secure areas.

Table 7: Insecurity results in unwanted loss of lives and properties among populace

Response	Frequency	Percentage (%)
Strongly Agree	277	76.51
Agree	120	33.14
Undecided	11	3.04
Disagree	3	0.83
Strongly Disagree	1	0.28
Total	362	100

Source: Field Survey, 2022.

The Data from table 7 is found to be strongly agreeing to Ugwu, (2013) that insecurity results in unwanted loss of lives and properties among populace, as the table showed 277 respondents representing 76.51% strongly agreed and 120 respondents representing 33.14 agreed.

Table 8 Insecurity disrupt school calendar and led to closing down of schools

Response	Frequency	Percentage (%)
Strongly Agree	164	45.30
Agree	171	47.23
Undecided	23	6.35
Disagree	2	0.55
Strongly Disagree	2	0.55
Total	362	100

Source: Field Survey, 2022.

Table 8 showed that 164 respondents representing 45.3% strongly agreed that Insecurity disrupted business and economic activities in the study area, also 171 respondents representing 47.23% agreed. This was found to be in line with summarized findings of Dantala (2014) when he summarized the effect of insecurity on development in Nigeria.

Table 9: Insecurity results in dislocation and disruption of family and communal life

Response	Frequency	Percentage (%)
Strongly Agree	193	53.31
Agree	148	40.88
Undecided	15	4.14
Disagree	5	1.38
Strongly Disagree	1	0.28
Total	362	100

Source: Field Survey, 2022.

The data of table 9 also is in line with the summarized effect of insecurity on development in Nigeria by Dantala (2014); since 193 respondents representing 53.31%, and 148 respondents representing 40.88%, strongly agreed and agreed respectively that, insecurity results in dislocation and disruption of family and communal life.

Table 10: Insecurity lead to deepening of hunger and poverty

Response	Frequency	Percentage (%)
Strongly Agree	146	40.33
Agree	184	50.82
Undecided	25	6.91
Disagree	5	1.38
Strongly Disagree	2	0.55
Total	362	100

Source: Field Survey, 2022.

Table 10 showed that 146 respondents representing 40.33% strongly agreed that insecurity lead to deepening of hunger and poverty in the study area, also 184 respondents representing 47.23% agreed. This was found to be in line with summarized findings of Dantala (2014) when he summarized the effect of insecurity on development in Nigeria.

Table 11: Insecurity lead to governance deficit as a result of security agencies inefficiency and corruption

Response	Frequency	Percentage (%)
Strongly Agree	165	45.57
Agree	135	37.29
Undecided	52	14.36
Disagree	8	2.21
Strongly Disagree	2	0.55
Total	362	100

Source: Field Survey, 2022.

Table 11 revealed that 165 respondents representing 45.57% strongly agreed and 135 respondents representing 37.29% agreed that insecurity lead to governance deficit as a result of security agencies inefficiency and corruption. However a reasonable number of respondent are not certain as 53 respondents representing 14.36% rather couldn't decide. This could be due to the fact that, the respondent find it difficult to relate governances deficit as a result of insecurity inefficiency and corruption, since in the study area no governmental activity was affected.

Applicability of GIS in minimizing the effects of insecurity and crime issues

Table 12: GIS facilitate tracking the movement of criminals

Response	Frequency	Percentage (%)
Strongly Agree	120	33.14
Agree	169	46.68
Undecided	42	11.60
Disagree	19	5.25
Strongly Disagree	12	3.31
Total	362	100

Source: Field Survey, 2022.

Table 12 revealed that 120 respondents representing 33.14% strongly agreed and 169 respondents representing 46.68% agreed that GIS facilitate tracking the movement of criminals. However a number of respondent are not certain as 42 respondents representing 11.6% rather couldn't decide, 19 respondents representing 5.25% disagree and 12 respondents representing 3.31% strongly disagreed. Some of the respondent have no idea how the GIS works or certainly have not seen its impact. Ibrahim and Kuta, (2015) states that despite the advanced strategies in GIS such as crime analyses which have great potential for impacting a departments efficiency, crime reduction, and professionalism, today relevant officials in most crime departments in Nigeria may or may not have the necessary skills to engage in computerized crime mapping.

Table 13: GIS can help security agencies to determine potential terrorists sites

Response	Frequency	Percentage (%)

Strongly Agree	156	43.09
Agree	182	50.28
Undecided	22	6.08
Disagree	1	0.28
Strongly Disagree	1	0.28
Total	362	100

Source: Field Survey, 2022.

Table 13 indicated that 156 respondents representing 43.09% strongly agreed that GIS can help security agencies to determine potential terrorists sites, also 182 respondents representing 50.28% agreed. This was found to be in line with the findings of Usman (2015) who states that GIS can help security agencies to determine potential terrorist's sites by examining and displaying them in a geographical layered, special interface or map.

Table 14: Through the GIS automated system, terrorists can be monitored, tract and smashed across borders and highways

Response	Frequency	Percentage (%)
Strongly Agree	102	26.72
Agree	234	64.63
Undecided	23	6.35
Disagree	2	0.55
Strongly Disagree	1	0.28
Total	362	100

Source: Field Survey, 2022.

From the data in table 14, 234 respondent representing 64.63% agreed and 102 respondents representing 26.72% strongly agreed that through the GIS automated system, terrorists can be monitored, tract and smashed across borders and highways. This can be found in the roles of GIS in curbing insecurity and crimes by Usman (2015).

Table 15: GIS allows us to better understand social phenomenon like criminality, violence and fear, and to work on solving them

Response	Frequency	Percentage (%)
Strongly Agree	68	17.12
Agree	253	69.88
Undecided	33	9.11
Disagree	2	0.55
Strongly Disagree	1	0.28
Total	362	100

Source: Field Survey, 2022.

Also the data in table 15, revealed that 253 respondent representing 69.88% agreed and 102 respondents representing 17.12% strongly agreed that GIS allows us to better understand social phenomenon like criminality, violence and fear, and to work on solving them. This was also found to be in line with the roles of GIS in curbing insecurity and crimes stated by Usman (2015).

Summary of Major Findings

Based on the research objectives;

i. The causes of insecurity in the study area includes; Inadequate funding of security personnel, lack of modern equipment both in weaponry and training, inequality and disparities in provision of social amenities, unemployment especially among youths and violent crimes issues, poverty as a cankerworm are among the major causes insecurity and crimes in Kajuru local government area of Kaduna State.
ii. Based on the responses research found that insecurity results to higher incidence of unemployment, terrorism and kidnapping among populace in the study area, disrupted businesses and economic activities, unwanted loss of lives and properties among populace, disruption school calendar and led to closing down of schools, dislocation and disruption of family and communal life and it lead to deepening of hunger and poverty as some of major effects caused by insecurity around the study area.
iii. Despite some responses are uncertain about the use of GIS to facilitate tracking the movement of criminals and use of GIS to help security agencies to determine potential terrorists sites majority of the responses agreed that it can be used for such purposes. Also the result shows that through the GIS automated system, terrorists can be monitored, tract and smashed across borders and highways and GIS can be used for better understanding of social phenomenon like criminality, violence and fear, and to work on solving them.

CONCLUSION

The research uses people opinion on insecurity in Kajuru local government to determine the role of using GIS in curbing insecurity in the study area. The responses shows how informed are the people of the study area about the causes and menace of insecurity, and how fully they are aware on the use of GIS facilities in curbing insecurity in the study area. Though uncertainty was recorded, and this could be attributed to the fact that the GIS have not being used effectively and efficiently in the field of solving the problem of insecurity in the area. The responses started with majority strongly agreeing on the causes and effects of insecurity and crimes in the study area to majority only agreeing the use of GIS. This could be related to the general problem of the country.

RECOMMENDATIONS

Based on the findings of the study, the following recommendations are made:

i. Since most of the respondents were very much aware of the causes and effects of insecurity and crimes in the study area. It can be generalized that most of the residents are aware too, hence there is need for every responsible body put hand together and solve the problem.
ii. In view of the response by the respondent and other sources (journals, newspapers), there is more need of using GIS technology in addressing the problem of insecurity, since most people agree it worked, the responsible bodies should apply more knowledge and facilities in using the GIS to solve the general problem of insecurity.
iii. The information obtained didn't only show that GIS is effective in the study area, rather it could be suggested to be used in all areas that have problems with insecurity and crimes. Thereby bringing and restoring back peace in different places in the country.

REFERENCES

Ackerman, W.V & Murray, A.T. (2004) Assessing Spatial Patterns of Crime in Lima, Ohio: USA Cities, Vol. 21, No.5 P.423-437 published by Elseview Ltd.
Adibe, J. (2009). Pervasive Kidnapping in Nigeria: Symptom of a Failing State? An Article pasted on www.hollerafrica.com.Retrieved on 7th of January 2011.
Aminu, U. (2013). Relationship between Crime Level, Unemployment, Poverty, Corruption and Inflation in Nigeria (An Empirical Analysis): *Global Advanced Research Journal of Management and Business Studies*, Vol. 2(8) pp.411-422.
Ayuba B., Mugu, B.A., Tanko, H. &Bulus, S.J (2016). Geo-spatial analysis of crime in Kaduna Metropolis, Nigeria. *Science World Journal*, 11(4): 7-15.
Dantala, D.P. (2014). Insecurity and the challenges of development in Nigeria. *Journal of Developing Country Studies,* 4(22), 50-52.
Dodo, N.A (2008). Levels and Differentials of youth unemployment in Kaduna South LGA of Kaduna State.
Eme, O. I., & Onyishi, A. (2011). The Challenges of Insecurity in Nigeria: A Thematic Exposition. *Interdisciplinary Journal of Contemporary Research in Business*, 3(8), 172-184.
Francis, F. (2016). A GIS Approach to Crime Mapping and Management in Nigeria: A Case Study of Victoria Island Lagos Available on https://www.fig.net.
Hafiz, H.J. (2011).Urbanization and Crime: A Case Study of Pakistan, University Islamabad.
Ibrahim, S., & Kuta, A. A. (2015). Challenges in using Geographic Information Systems (GIS) to Understand and Control Crime in Nigeria. *IOSR Journal Of Humanities And Social Science*, 43-48.
Johnson, C.P. (2000). Crime Mapping and Analysis Using GIS. Geomatics 2000: Conference on Geomatics in Electronic Governance, January 2000, Pune.
Kerlinger, F.N. (1986). Foundations of Behavioural Science. Holt Rinehart and Winston, Inc.
Murray, T.A. (2011). Exploratory Spatial Data Analysis Techniques for Examining Urban Crime *Brit. J. Criminology,* Vol. 41, Pg.309 - 329.
National Bureau of statistics (2017) Unemployment/Underemployment watch. Official Web Site of the bureau. Retieved from www.nigerianstat.gov.ng date:2 4/02/2017.
Subern, R.T. (2013). "Ethnic Minorities and Political Turbulence in Kaduna State", Ethnic Minority Conflicts and Governance in Nigeria, African Dynamics, IFRA-Nigeria, pp. 48–65, ISBN 979-10-92312-15-7.
Uche, O. (2008) Nigeria Prison Robbed by Criminals. http://www.whichwayNigeria net/Nigeria Prison- robbed-criminals retrieved December 6, 2011.
Ugwu, A.N. (2013). Conflict management for sustainable community development in Nigeria in the 21st Century. in B. A, Eheazu, C. N. Barikor, and I.S., Nzeneri, (Eds). Readings in adult and non-formal education. Port Harcourt. University of Port Harcourt Press. (1) 199-211.
United Nations Development Program (2016) National Human Development Report in Nigeria. Available at:www.ng.undp.org/content/Nigeria/en/home/library/poverty/ national-human-development-report-2016-hmtlRetievedon: 24/02/2017.
Usman, U.S. (2015). The role of geographic information system (GIS) in effective control of terrorism in Nigeria. *International Journal of Economics, Commerce and Management United Kingdom* Vol. III, Issue 4, 1-9.
Yamane, T. (1967). Statistics, An Introductory Analysis, 2nd Ed., New York: Harper and Row.
Zhuo, Y. (2008). Criminal Victimization in Contemporary China: A Review of the Evidence and Challenges for future Research; *Crime Law social Change*, Vol 50,pp. 197-209.