Urban Studies and Public Administration
Vol. 1, No. 1, 2018
www.scholink.org/ojs/index.php/uspa
ISSN 2576-1986 (Print) ISSN 2576-1994 (Online)

Original Paper

Mapping Crime Hotspots in Akure, Nigeria: A GIS Perspective

Oyinloye M. Ajide[1*] & Olamiju I. Oluwadare[1]

[1] Department of Urban and Regional Planning, Federal University of Technology, Akure, Nigeria

[*] Oyinloye M. Ajide, Department of Urban and Regional Planning, Federal University of Technology, Akure, Nigeria

Received: May 11, 2018 Accepted: May 21, 2018 Online Published: May 29, 2018

doi:10.22158/uspa.v1n1p135 URL: http://dx.doi.org/10.22158/uspa.v1n1p135

Abstract

African countries in recent times have witnessed an unprecedented level of insecurity. This has made national security threat to be a major issue for the government and has prompted huge allocation of the national budget to security. The objective of this paper is to mark out crime hotspot areas in the central area of Akure metropolis; and examine the rate at which crimes are committed, the surveillance method used and its effectiveness. The research made use of Google Earth imagery and Geographical Information System (GIS) technology to delineate crime hotspots in Akure. A 100m buffer was created around the identified crime hotspots to select houses that are susceptible to the impacts of crime activities in the study area. A structured questionnaire was also used to elicit information on crime, surveillance method, and effect of crime on the people and level of occurrence in the city among others. Findings identified six major crimes in eight hotspot areas; noise, loss of property and threat to life were some of the effects of hotspots on residents. The paper recommends construction/repair of roads in the core residential areas for effective surveillance of hotspots. The use of satellite images to combat crime in the city is also canvassed.

Keywords

crime hotspots, GIS mapping, GPS, security surveillance

1. Introduction

Crime and urban violence have been justified as the most social problem in the world and is increasing at an alarming rate surpassing urbanization (Walker et al., 2009). Crime presents a major challenge for the social, economic and physical development of cities and towns all over the world and there is a need to prevent it. Crime is seldom randomly or not evenly distributed across space (Cozen, 2005; Wilson & Sutton, 2003); for example, some areas have more incidents of crime than others, and some areas have different kinds of crimes than others. Identifying high crime areas or hot spots plays a key

role in how law enforcement agencies operate and address crime in problem areas. For strategic and problem-solving purposes, identifying high crime areas can be useful for the development and evaluation of police responses, and testing for spatial displacement or diffusion of benefits (Braga & David, 2010).

Nigeria in recent times has witnessed an unprecedented level of insecurity. This has made national security threat to be a major issue for the government and has prompted huge allocation of the national budget to security. In order to ameliorate the incidence of crime, the Federal Government has embarked on criminalization of terrorism by passing the Anti-Terrorism Act in 2011, installation of Computer-based Closed Circuit Television cameras (CCTV) in some parts of the country, enhancement of surveillance as well as investigation of criminal related offences, heightening of physical security measures around the country aimed at deterring or disrupting potential attacks, strengthening of security agencies through the provision of security facilities and the development and broadcast of security tips in mass media (Azazi, 2011). Despite these efforts, the level of insecurity in the country is still high. In addition, Nigeria has consistently ranked low in the Global Peace Index signifying a worsened state of insecurity in the country (GPI, 2012). Hence, Adagba et al. (2012), Uhunmwuangho and Aluforo (2011) are of the view that the efforts of government have not yielded enough positive result.

In Akure, crime hotspots are found on both sides of the Oyemekun/Oba-Adesida dual carriageway which traversed the city from east to west. The identified hotspot areas are characterized by bus parks, commercial motorcycle parks, petty trading and hawking, begging and miscreant activities among others. The major land uses in these areas include commercial and residential. This paper therefore identified 8 crime hotspots along the Oyemekun/Oba-Adesida road using remote sensing and GIS technologies. A buffer of 100m was created around each hotspot and a total number of 750 buildings was identified which constituted the population for the study.

However, Murphy and Topel (2004); Welsh and Farrigton (2004) opined that the use of Satellite image to obtain land cover information at more frequent intervals are more economical than those obtained by traditional methods. The advantages of satellite imagery compared to aerial photography include regular repeat coverage, recovering data from the same area at the same time of the day, consistence scale and look-angle, and lower cost (Kressler & Steinnocher, 1996). Satellite imageries are used all over the world by police departments, both large and small, to provide mapping solutions for crime analysis, criminal tracking, traffic safety, community policing, Intranet/Internet mapping, and numerous other tasks. Satellite images and GIS function effectively when combined with capabilities of location identification devices such as the GPS for tracking the movement of high-risk inmates or at-risk personnel throughout an area. Using these technological advancements to identify *hotspots* provides a consistent method to measure concentrations of criminal events over time (Azeez, 2014).

Ractiffe and McCullagh (1999) pointed out that “there is no standard threshold for what constitutes a hotspot, nor is there clarity about what the best method is to identify them”. Both suggest that “areas

appearing to be hotspots will vary depending on the unit of analysis, scale of the map, and the amount of data mapped". Hotspot generally is an area of insecurity. The concept of insecurity would be best understood by first presenting the concept of security. Akin (2008) defined security as "the situation that exists as a result of the establishment of measures for the protection of persons, information and property against hostile persons, influences and actions". It is therefore a living condition whereby people in a society can go about their normal daily activities without any threats to their lives or properties. According to Igbuzor (2011) security is "safety from chronic threats and protection from harmful disruption". Therefore, security can be defined as the protection against all forms of harm whether physical, economic or psychological. "It is the ability to rise to the challenges posed by these threats with expediency and expertise" (Igbuzor, 2011).

A crime hotspot therefore is a location, or small area within an identifiable boundary, with a concentration of criminal incidents. These spots where crime is concentrated at high rates over extended periods of time may be analogous to the small percentage of criminals who are responsible for a large percentage of crime (Blumstein & Cohen, 1979; Brantingham & Brantingham, 1982). Crime studies that examine the spatial distribution of crime clearly demonstrate that certain landuses and population characteristics are associated with crime hotspots. Sherman, Gartin, and Buerger (1989) posited that crime in a city is highly concentrated in relatively few small areas. The study found that 3.3 percent of street addresses and intersections in Minneapolis generated 50.4 percent of all dispatched police calls for service. Similar patterns emerged in other cities (Pierce, Spaar, & Briggs, 1988; Sherman, 1992; Weisburd & Green, 1994). Skogan and Maxfield (1981) and Lawal (2013) reported that environmental conditions such as abandoned buildings, public incivilities such as fights and other minor assaults, disorderly youths, broken windows or other forms of vandalism, public drug use or drinking, prostitution, loitering, noise, litter, and obscene behaviour increase community fear of crime and create hotspots. From the on-going, it is evident that crime hotspots are associated with certain landuses and population characteristics.

UN HABITAT (2007) reported that "Crime, in the Lisbon Metropolitan Area, and in Amadora in particular, has risen to worrying levels in recent decades, bringing material and immaterial consequences". The report stressed the "need for strategies to combat crime, promote security in communities and contribute to their sustainable development". However, AIC (2010), noted that "the occurrence of deaths due to violence is much more common in Latin America than in any other region: it is roughly 200% higher than in North America and in the Western Pacific, 450% higher than in Western Europe, and 30% higher than in the former Communist bloc".

Crime and fear of crime are rated by business owners as major challenges business faces in South Africa (NCPS, 1996). This view that South Africa is unsafe adversely impacts on foreign investment in the country. Some foreign investors believe that South Africa is insecure environment to invest (Stone, 2006). On the flipside, crime costs the South African government a substantial amount annually which is spent on administration of the criminal justice system and crime prevention programmes.

In 1996, the government implemented the national crime prevention strategy (NCPS, 1996) which was followed by the White Paper on Safety and Security adopted only two years after the implementation of the NCPS. Given the current crime situation in the country, one may argue that the policies have failed to fight crime effectively. The government concentrated its efforts and resources on crime reduction without addressing factors that force individuals to pursue illegitimate activities (Manaliyo, 2012).

Criminal activities in South Africa are concentrated in big cities including Durban, Johannesburg, and Cape Town having highest crime rates. Within Cape Town, criminal activities are concentrated in poor communities and townships such as Khayelitsha, Gugulethu, Nyanga, and M. Khayelitsha however tops all crime hot-spot areas in Cape Town.

Agbola (1997), Omisakin (1998), Vanderschueren (2003), Adeboyejo and Abodunrin (2006), and Lawal (2013) posited that "hotspots areas are known to be areas vulnerable to insecurity and criminal activities which pose threats to human lives and properties". "Hotspots are hideouts for criminals, fightings, robberies and kidnappings" (Wikipedia, 2010). Increase in crime rate appears to be a feature of all modern societies all over the world. Crime in urban areas is no longer viewed exclusively as a social problem but as a real developmental problem due to rapid population growth and urbanization advances all over the world.

Crime and urban violence have been justified as the most social problem in the world and is increasing at an alarming rate surpassing urbanization (Harries, 1974; Vanderschueren, 1996). Crime presents a major challenge for the social, economic and physical development of cities and towns all over the world and there is a need to prevent it. Crime is not evenly distributed across space (Wilson & Sutton, 2005). Identifying high crime areas or hotspots play a key role in how law enforcement agencies operate and address crime in problem areas. This paper therefore identifies crime hotspots in Akure, Nigeria and examines the rate at which crimes are committed and the impact on residents in the study area.

2. Method

2.1 Research Locale

Akure is situated on latitude $7^0 17'$ N and longitude 5^0 4' E. It is about 370m above the mean sea level. Akure is situated within a 48 kilometer radius to major towns in Ondo State, viz Ondo to the South, Owo to the East and Iju/ItaOgbolu to the North. The easy access and geographical centrality of Akure to these towns have enhanced the growth prospects of the city. Akure is a traditional, *Youruba*-speaking Nigerian city which existed long before the advent of British colonial rule in the country. Akure is a medium-sized urban centre, which became the capital city of Ondo State and a Local Government headquarters in 1976. The Local Government Areas that made up the Akure metropolis are, Akure North and Akure South with corresponding land area coverages of 676.7 km^2 and 318.0 km^2 respectively. Each of these Local Government Areas constitutes a sub-region that forms the Akure region. This region is an integral part of a larger political region called Ondo State of Nigeria

(Olamiju & Olujimi, 2007). Apart from Akure which is the study area for this research, other important cities and towns in Ondo State include Idanre, Owo, Ore, Ondo, Oka-Akoko, Okitipupa, Ile-Oluji, and Ikare. As a result of its dual responsibilities as a local government headquarters and a state capital, it acts as an attraction centre to mass movement of people from neighbouring towns and villages. The research locale is traversed by the Oyemekun/Oba Adesida dual-carriage way, which is the main trunk road in the city. This area is one of the oldest part of the city, which is made up of traditional residential quarters such as: Oyemekun, Adesida, Eru-Oba, Odofin, Bye-pass, Femi-Alewi, Oke-Lisa, Igbede, Owode, and Araromi among others. Most buildings were originally residential later converted, partly or completely, to commercial purposes with consequential clumsy mixed uses. Figures 1, 2 and 3 show the study area in its national, regional and local settings.

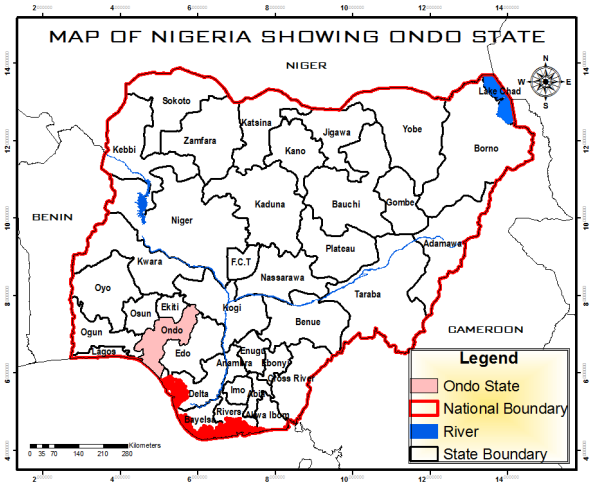

Figure 1. Map of Nigeria Showing Ondo State

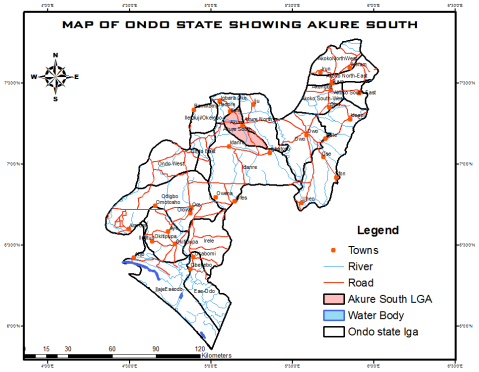

Figure 2. Map of Ondo State Showing the Akure South Local Government Area

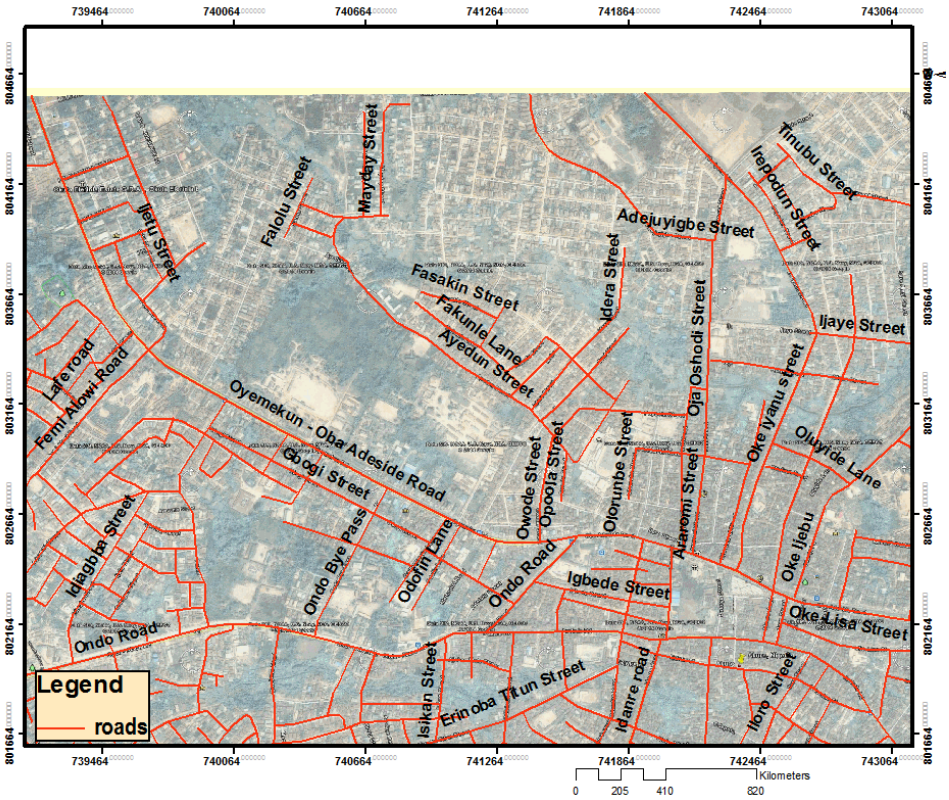

Figure 3. Satellite Imagery of the Study Area Digitized in ArcGIS by the Authors

2.2 Database

This study uses both primary and secondary sources of data. The paper examines the location and characteristics of hotspots in Akure, effects of hotspots on the residents and type of nuisance posed by hotspots among others. 20 hotspots were identified along the major trunk road in the study area. A buffer of 100m was created around each identified hotspot using ArcGIS computer software; and a total of 750 buildings fall within the buffers. Fifty percent (50%) of the total number of buildings in the study area constituted the sample size (190 buildings). The most senior household heads were interviewed through the instrumentality of a structured questionnaire in each sampled building. One hundred and ninety questionnaires were administered, which formed the basis of the analysis. Table 1 shows sampling of buildings at hotspots in the study area.

Table 1. Sampling Crime Hotspots in Akure

Hotspot	No. of Buildings	Sample (50%)
Ilesa Garrage	34	17
Lafe/Airways	76	38
Leo Junction	75	38
Champion Junction	22	11

Koseunti	53	27
Bye-Pass	37	19
Odofin/St Peters	45	23
Obanla	33	17
Total	**375**	**190**

Source: Authors' Fieldwork, 2016.

3. Result and Discussion

3.1 Location of Crime Hotspots in Akure

One of the objectives of this paper is to identify crime hotspots in the study area using GIS method. For this study, crime hotspots were determined by the number and type of crime occurrences in and around each hotspot. A total of six types of crimes were identified, these include armed robbery, rape, pick-pocketing, assault/battery, Ballyhooing and shoplifting. The identified hotspots are as shown in Figure 4. A GIS buffering operation was performed on the hotspots in the ArcGIS environment. The GIS analysis shows that an average of 20 buildings was found around each hotspot at 100m buffer distance. However, some of the buffers overlap due to hotspots closeness to each other. Every buffer that touches each other was therefore grouped as one. Table 2 shows the final groupings of the hotspots and the total number of buildings in them.

Table 2. Hotspots in Akure

S/N	Name of Hotspot	Number of Buildings	Percentage
1	Ilesa Garrage	34	9.1
2	Lafe/Airways	76	20.3
3	Leo Junction	75	20.0
4	Champion Junction	22	5.8
5	Koseunti	53	14.1
6	Bye-Pass	37	9.9
7	Odofin/St Peters	45	12.0
8	Obanla	33	8.8
	Total	**375**	**100.0**

Source: Authors' Fieldwork, 2016.

The total number of buildings as counted from the Google image of the study area was 375. Lafe/Airways and Leo junction has the highest number of buildings which accounted for 20.3% and 20.0% of the total number of buildings respectively.

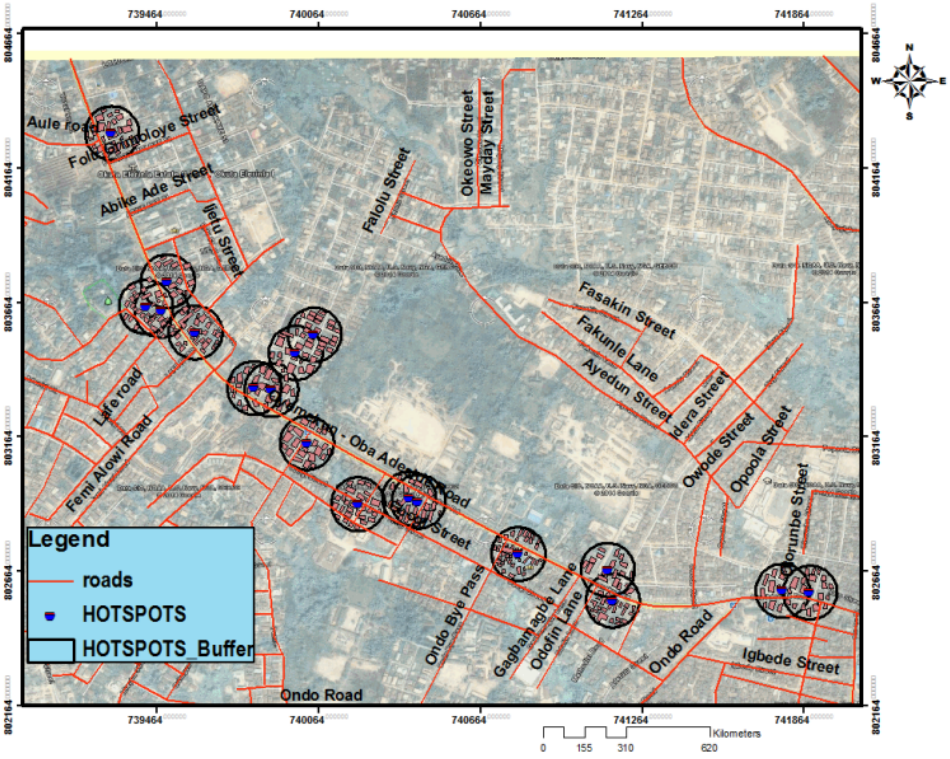

Figure 4. Google Image of the Study Area Showing Location of Hotspots

Source: Google Earth Image, Digitized in ArcGIS by the Authors, 2016.

Empirical analysis identifies three surveillance mechanisms of crime hotspots in the city. Respondents indicated the use of CCTV Camera and vigilante methods of surveillance in the city. The mechanisms were considered effective especially along the major roads due to good road condition. For instance, the Oyemekun/Oba-Adesida road is a dual carriage way. The vigilante method is community-sponsored while the CCTV cameras were owned by the State Government. Individuals also own dogs which help to alert residents whenever there is incursion of criminals at night. However, government police patrol teams often reinforce the vigilantes on night patrols. Table 3 shows respondents' rating of the effectiveness of the surveillance methods.

Table 3. Effectiveness of Surveillance Mechanism at the Hotspots

Surveillance Mechanism	Frequency	Percent
CCTV	27	14.2
Vigilante group	147	77.4
Use of Dogs	16	8.4
Total	190	100.0

Source: Authors' Fieldwork, 2016.

From Table 3, it is evident that the vigilante method of surveillance is most prominent in the city, as over 70% of respondents considered it as the most effective. The vigilante group is a Community-Based Organization (CBO); which comprises mainly of landlords, responsible for community projects such as environmental sanitation, construction of roads, bridges and drainages; provision of electrics, water and security among others (Olamiju, 2014).

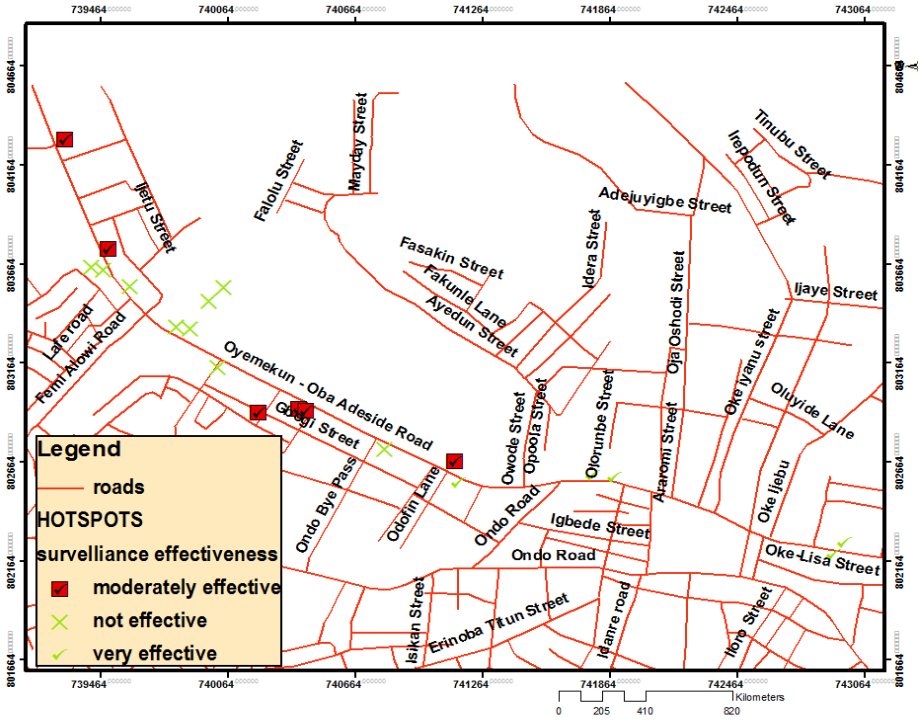

Figure 5. Map Showing the Surveillance Mechanism of Hotspots in Akure

Source: ArcGIS Analysis by the Authors, 2016.

It is worthy of note that areas where surveillance is not effective as shown in Figure 5 are characterized by poor road networks which hinders effective movement of the patrol vans. The non-effectiveness of the surveillance mechanisms especially around Lafe/Airways and Leo residential neighbourhoods could be attributed to poor road system in these areas. Remarkably, roads in these neighbourhoods are characterized by potholes, not tarred with poor drainage facilities.

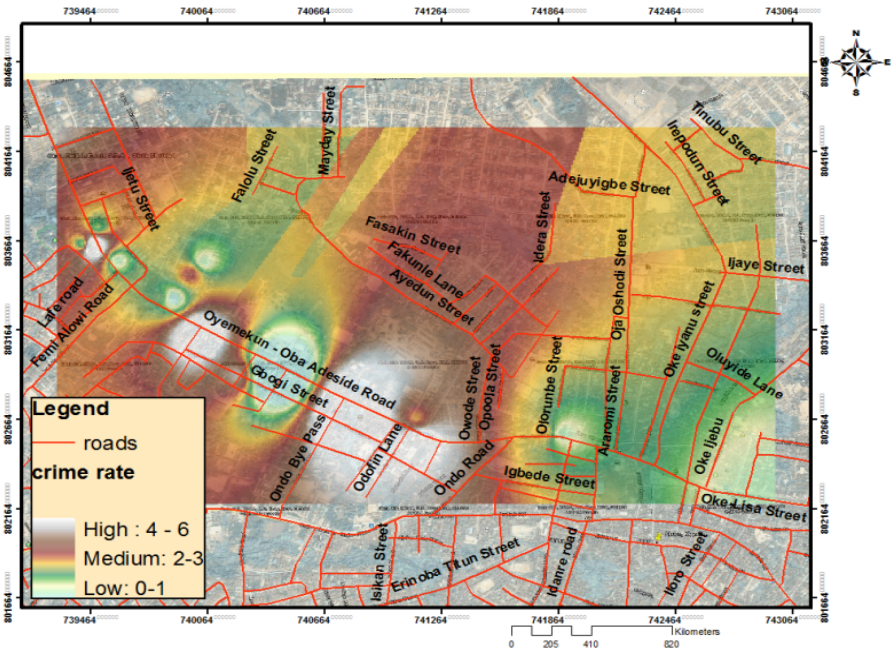

Figure 6. GIS Model of Crime Intensity at Hotspots in Akure

Figure 6 shows places around the hotspots where crime rates are at low, medium and high levels. For this paper, an area where 4 to 6 types of crime is experienced is regarded as a high hotspot; places where 2 to 3 types of crime is experienced is regarded as areas of moderate hotspots while an area with just one type of crime is regarded as a hotspot with low crime rate. From Figure 6, it is obvious that areas of low crime rate coincide with areas where surveillance is most effective and vice versa.

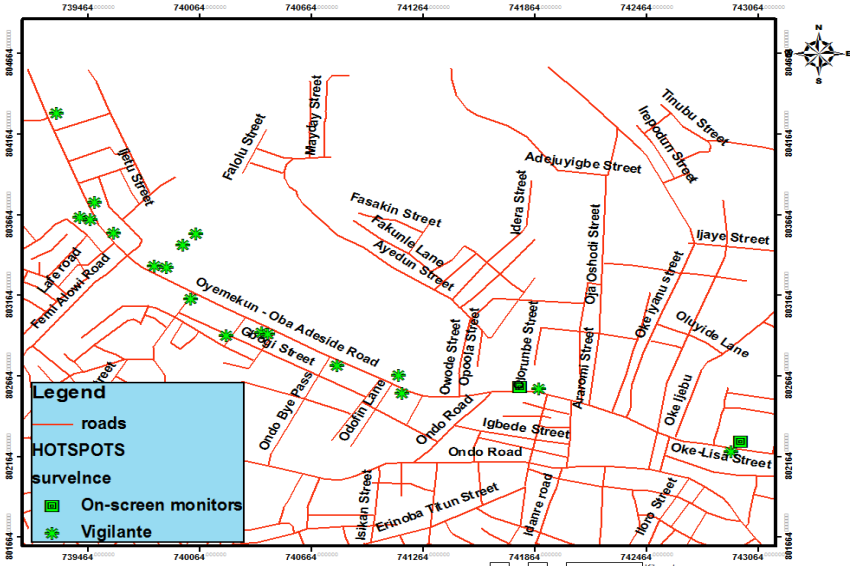

Figure 7. Surveillance Mechanism in Operation at the Hotspots

Figure 7 shows the two surveillance mechanism types available in the hotspots area of Akure, these include: CCTV Cameras and vigilante activities. The use of CCTV Cameras as means of surveillance in the study area is minimal compared with the use of vigilante activities. The CCTV cameras were available in only two locations, perhaps due to high cost of installation and were provided by the State government.

3.2 Effects of Hotspots on Residents

Table 4 shows the effect of hotspots on the people. From Table 4, over 30.0% of respondents claimed that hotspots serve as threats to residents' lives, over 20.0% identified loss of property; while 16.7% and 30.0% opined that hotspots produce lots of unnecessary noise and other effects respectively. The implication of this is that the locations and activities at these hotspots have adverse effects on residents. Observation revealed that activities at hotspots in Akure include clubbing, cinema, unguarded football viewing centres, bar and restaurant among others.

Table 4. Effect of Hotspots on Respondents

Effect	Frequency	Percent
Noise	32	16.7
Threat to life	63	33.3
Loss of property	38	20.0
Others	57	30.0
Total	**190**	**100.0**

Source: Authors' Field Survey, 2016.

3.3 Occurrence of Robbery at Hotspots in Akure

Table 5 shows the occurrence of robbery at hotspots in the study area. From the Table, it is evident that over 75.0% of the respondents said that robbery activities was frequent; while only about 10.0% claimed they never experience robbery in their area. The implication is that the hotspots shield criminals.

Table 5. Occurrence of Robbery at Hotspots in Akure

Occurrence of Robbery	Frequency	Percent
Very Frequent	115	60.5
Frequent	34	17.9
Seldom	21	11.1
Never	20	10.5
Total	**190**	**100.0**

Source: Authors' Field Survey, 2016.

3.4 Other Crimes Committed at Hotspots in Akure

Table 6 shows other types of crime and criminal activities carried out at hotspots in Akure. Over 30.0% of the respondents said ballyhooing was a very common phenomenon. Those involved are touts who enjoy causing uproar and commotion in the community. In addition, about 27.0% of respondents opined that rape was a frequent crime in the hotspots. From the on-going, it is evident that touts who are involved in ballyhooing are responsible for acts of rape at the hotspots. Other crimes committed at hotspots include: shoplifting, 23.2%; assault, 6.3%; and pick-pocketing, 11.6%.

Table 6. Other Crimes Committed at Hotspots in Akure

Type of crime	Frequency	Percent
Rape	53	27.9
Shoplifting	44	23.2
Assault	12	6.3
Pick pocketing	22	11.6
Ballyhooing	59	31.0
Total	**190**	**100**

Source: Authors' Fieldwork, 2016.

4. Town Planning Implication of Crime Hotspots

Town planners and environmentalists are always concerned about proper ordering of land uses. Hotspots evolve with the continued growth and development of the city. It is therefore expedient to take into cognizance the evolvement and danger posed by hotspots in the allocation of land uses. Uses that could lead to the evolvement of hotspots should not be over-concentrated within residential neighbourhoods. In addition, town planners should be adequately involved in monitoring developments so as to prevent improper mixed and misuse of land.

Since effective movement of personnel and vehicles is essential in surveillance of hotspots, Town Planners should ensure adequate and effective circulation system in the design and preparation of layouts in the community.

An up-to-date information is required about developments and other activities in the city for effective hotspot monitoring; it is only in a GIS environment that such information can be made available in real time, it is therefore expedient for Town Planners to adopt the use of Geographical Information System (GIS) and satellite imageries for crime mapping, analysis and forecasting for the use of criminologists, the Nigeria Police Force and other law enforcement agencies in the country.

5. Conclusions and Recommendations

The study revealed that hotspots are located where large number of people gathers and as such there is high level of crime in these areas. It was also revealed that the nuisance posed by the hotspots includes threat to life, noise and robbery attacks, theft, rape and assault. The available surveillance mechanism cannot curtail the crimes and nuisance posed by the hotspots. Based on the discussion, implications and conclusion, the following recommendations are made to curb the rate of criminality in the study area:

The issue of state police should be addressed and concluded without further delay by the National Assembly. Every State Government of the federation should be allowed to own her own police force, so as to ensure adequate provision of security at the grassroots. Adequate funds should be invested in the Nigerian Police Force including capacity building training programme and mind-set change as a means to curtailing crime activity in the city and other state capitals in the country. The CCTV should be put at strategic locations in Akure for adequate surveillance and detection of crime and other social vices in the city. A new geospatial method of Crime Analysis Information System (CAIS) and satellite images for crime data management in Nigeria should be adopted as opposed to the existing analogue method.

References

Adagba, O., Ugwu, S. C., & Eme, O. I. (2012). Activities of Boko Haram and Insecurity Question in Nigeria. *Arabian Journal of Business and Management Review*, *1*(9), 77-99.

Agbola, T. (1997). *Architecture of Fear: A Pilot Study of Planning*. Urban Design and African Book Builders. https://doi.org/10.4000/books.ifra.485

AIC. (2010). *Armed Robbery*. Retrieved October 21, 2010, from http://www.aic.gov.av/publications/armed robbery/ch1.html

Akin, I. O. (2008). *The Utility of Close-Circuit Television (CCTV) in Intelligence Gathering by Security*. Operatives in Nigeria, Proceedings of conference on intelligent security, Lagos.

Azazi, A. (2011). *Responding to the Emerging Trends of Terrorism in Nigeria*. 5th Policing Executive Forum Conference Proceedings organized by CLEEN Foundation.

Azeez. (2014). *Security Surveillance on Selected Hotspots areas in Akure—A Case Study of Akure South Local Government, Ondo State, Nigeria* (B Tech Thesis). Department of Urban and Regional Planning, Federal University of Technology, Akure.

Blumstein, A., & Cohen, J. (1979). Estimation of Individual Crime rates from arrest records. *Journal of Criminal Law and criminology*, *70*, 561-585. https://doi.org/10.2307/1142642

Braga, A. A., & David, L. W. (2010). *Policing Problem Places: Crime Hot Spots and Effective Prevention*. Oxford University Press. https://doi.org/10.1093/acprof:oso/9780195341966.001.0001

Brantingham, P. L., & Brantingham, P. J. (1982). Mobility, notoriety, and crime: A study of crime patterns in urban nodal points. *Journal of Environmental Systems*, *11*, 89-99. https://doi.org/10.2190/DTHJ-ERNN-HVCV-6K5T

Cozens, P. M., Saville, G., & Huller, D. (2005). C*rime prevention through environment design (CPTED): A review and modern bibliography, property management* (pp. 328-356).

Global Peace Index (GPI). (2012). *Global Peace Ranking, Institute for Economics and Peace*. Available from Wikipedia, the free encyclopedia.

Habitat, U. N. (2007). *Enhancing Urban Safety and Security: Global Report on Human Settlement, 2007*. Earthscan, London.

Harries, K. D. (1994). Juvenile Gun Crime and Social Stress: Baltimore, 1980-1990. *Urban Geographyn*, *15*, 45-63. https://doi.org/10.2747/0272-3638.15.1.45

Igbuzor, O. (2011). Peace and Security Education: A Critical Factor for Sustainable Peace and National Development. *International Journal of Peace and Development Studies*, *2*(1), 1-7.

Kressler, & Steinnocher. (1996). Remote sensing of urban areas. *International Journal of Remote Sensing*, 6-7.

Lawal, K. A. (2013). *Neighbourhood Incivilities and insecurity problems in Ibadan. Nigeria: Towards fixing the broken windows*. Paper presented at the maiden Conference of Cities in Transition: Building Resilience and Adaptation Organized by the Department of Urban and Regional Planning, The Polytechnic, Ibadan.

Manaliyo. (2012). *Township as a crime hotspots area in cape town*.

Murphy, & Topel. (2004). *The value of health and longevity*. NBER publications.

NCPS (National Crime Prevention Strategy). (1996). *Pretoria, South Africa department of safety and security*.

Olamiju, I. O., & Olujimi, J. A. B. (2011). Regional analysis of locations of public educational facilities in Nigeria: The Akure region experience. *Journal of Geography and Regional Planning*, *4*, 428-442.

Omisakin, I. S. (1998). *Crime Trend and Prevention Strategies in Nigeria. A case study of Old Oyo State, Ibadan, Nigeria*. Institute of Social and Economic Research (NISER), Monograph.

Pierce, G., Spaar, S. A., & Briggs, I. V. (1988). *The Character of Police Work: Strategies and tactical implications* (M.S. Thesis). Northeaster University, Centre for Applied Social Research.

Ractiffe, J. H., & McCullagh, M. J. (1999). Hotbeds of crime and the search for spatial accuracy. *Geographical Systems*, *1*, 385-398. https://doi.org/10.1007/s101090050020

Sherman, L. W. (1992). Attacking Crime: Police and Crime Control. *Crime and Justice*, *15*, 159-230. https://doi.org/10.1086/449195

Sherman, L. W., Gartin, P. R., & Buerger, M. E. (1989). Hotspots of predatory crime: Routine activities and the criminology of place. *Criminology*, *27*, 27-55. https://doi.org/10.1111/j.1745-9125.1989.tb00862.x

Skogan, W. G., & Maxfield, M. G. (1989). *Copping with Crime: Individual and neighbourhood reactions*. Beverly Hills: Sage Publications.

Stone. (2006). *Power, reform and urban regime analysis*.

Uhunmwuangho, S. O., & Aluforo, E. (2011). Challenges and Solutions to Ethno-Religious Conflicts in Nigeria: Case Study of the Jos Crises. *Journal of Sustainable Development in Africa*, *13*(5), 109-124.

Vanderschueren. (1996). *Urban Violence, Justice and Poverty*. Habitat Debate 2.

Vanderschueren. (2003). *Background Paper*. Durban.

Walker, Flatley, Kershaw, & Moon. (2009). Governmentality and the problem of crime: Foucault Criminology. *Sociology: Theoretical Criminology*, *1*(2), 173-214.

Weisburd, D. L., & Green, L. (1994). Defining the Street Level Drug Market. In D. L Mackenzie, & C. D. Uchida (Eds.), *Drugs and Crime: Evaluating public policy initiatives*. Beverly Hills: Sage Publication.

Welsh, B. C., & Farrington, D. P. (2002). Crime prevention effects of closed circuit television: A systematic review. In *Home Office Study* (p. 252). London: Home Office Research, Development and Statistics Directorate.

Wilson, D., & Sutton, A. (2003). *Trends & Issues in Crime and Criminal Justice No. 271: Open-street CCTV in Australia*. Australian Institute of Criminology.