

Spatial Analysis of Crime in Socially Distressed Cluster in Oke Ogun Region, Oyo State, Nigeria

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Abstract

The study is a methodological approach to measuring crime in distressed cluster in different geographic resolutions in Oke-Ogun Region of Oyo State with a view to examining spatial variation in crime concentration in the area. Crime reports of Oke-Ogun Region were collated from the Nigeria Police records on eighteen typologies of crime categorised in police blotter into crime against person and property from 2005 to 2015. Analytical techniques adapted to examine crime concentration were Z-score and Location Quotient of Crime (LQC). For the purpose of having the real picture of crime concentration as one moves across different spatial scales of settlements, settlements in the area were spatially disaggregated into three levels; urban, semi urban and rural settlements. Analysis with the use of Z-score showed that store breaking and arson for crime against property and murder for crime against person were more concentrated in rural settlements than every other crime type relatively. House breaking for crime against property, and breach of peace for crime against person were more concentrated in semi urban settlements, while burglary for crime against property, rape and indecent assault and unnatural offence for crime against person were conspicuously concentrated in urban settlements. Concentration of property crime therefore decreases as one move from rural areas to urban areas with Z scores of -1.15, 0.33 and 1.84 in urban, semi urban and rural areas respectively. However, the concentration of crime against person increases as one move from rural areas through semi urban to urban settlement, with Z scores of 4.06, 0.56 and -3.72 in urban, semi urban and rural areas respectively. Further analysis with LQC was done, and it was observed that rural settlements had (LQC =0.98) a disproportionately low share of 2% of crimes against person relative to urban settlement and that armed robbery, arson and false pretense / cheating are endemic nature of both semi urban and rural settlements. The study concluded that the cluster of aggregated crime types conformed to regular spatial pattern with declining crime cluster as one move from urban areas through semi urban to rural settlement.

Keywords: Crime, Settlement, distressed clusters, Spatial, Oke Ogun

Introduction

Crime is an environmental cankerworm and of the most notable threats to rural development, semi-urban integration and urban livability. In Nigeria, crime has become a hydra-headed social monster pervading every dimension of human survival and stable life style (Ige *et al* 2018). Every geographic unit being inhabited by men tend to experience a particular criminal activity (Badiora & Afon, 2013). The commonest type of crime that a particular settlement experience is important in crime analysis in any space economy. This is for early warning systems and for preparedness against geo-space distress (La Grange, 1999). Over times, evaluating crime frequencies in the countryside offers a different view. Besides, among the varied views in some literature include a widely held notion that small towns, farming communities, and the open country are more or less “crime free”. A long-standing global ideal is that rural places are crime-free to live, and that crime is by no means non-existent in the countryside. This perception is not accurate, but made up of exaggerations of reality that contain elements of the truth. Yet, relative to the problems of some large urban communities, there is every tendency to assume that villages and rural towns that make up a region in developing and less developed countries are havens of safety and paradise of tranquility. Noteworthy to say, countryside might be suggested to have less

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crime than its urban counterpart does, but it should be understood that countryside might have more crime than it did in the past, and its crime level might be equally serious. It is evident that rural environment is distinct from urban environment in ways that affect policing, crime and public policy but neglecting rural security is justifiable if there is nothing about crime, or the rural area in regional environment that precludes directly applying knowledge from urban area (Ige, 2015). Messner *et al.* (1999) opined that knowledge about the places where crime occurs can yield powerful insight into the underlying dynamics of crime. Hence crime occurrence is a spatial affair and the search for explanation for spatial variations in concentration of and specialisation in particular types of criminal behavior is an inevitable issue if crimes are to be effectively ameliorated (Obudho and Owuor, 1994).

Crime rates and simple incident counts for an analytical dissection of spatial variations in crime have their own limitation (Adejumobi *et al.* 2009). Crime rates are calculated from the ratio of the number of offences, usually incident of crime recorded by law enforcement agencies, to the total population within a location in a given period of time. However, these have often yielded inconsistent and divergent findings. The problem in assessing crime is that different people look at the same facts and reach varied conclusions. This is due to the use of unembellished units of analysis for problem solving. Situations have been usually observed where crime rates and simple crime incident counts depict a different image of the level of crime in an area, and that an area with small population a low number of incidents results in high crime rates (Brantingham and Brantingham, 1995). On the other hand, in area with large population relatively large number of incidents may result in low crime rates. Therefore, this inappropriate method of presentation of crime incidents can also lead to different conclusions when comparing geographic areas and impedes the search for analytical explanation.

Concurrently, there must be reconciliation with the fact that crime does not occur in vacuum and all its concomitant adhesions with society that are likened to two inseparable opposite sides of a coin are a problem worth studying. It is important to investigate alternative measures of locational crime that is based on the assumption that there is a significant variation in the mix of crime experienced by an area even when the crime incidents at neighbouring locations are in some state of equilibrium. One possibility that was explored in this study is the use of Location Quotient of Crime (LQC). Location Quotient of Crime is the determination of the spatial variation in crimes among areal levels of different geographic resolutions where emphasis is placed not on crime rates but rather on a crime structure for problem solving (Mawby, 2006). By crime structure, it means the composition of the crimes that occur in an area. Just as geographic phenomenon tends to spread over geographic area, so does the crime. Identification of areas with disproportionate incidence of certain types of crime is useful for planning and management of security operations as it helps specialist law enforcement agents to concentrate their activities in these areas. In this study, the various levels of crime incidents to which urban, semi-urban and rural areas are attributed were investigated using Location Quotient of Crime (LQC). Here the crime structure of areas from a multivariate perspective was analysed such that account of the likely correlation among offences was taken for locational comparison. LQC is an alternative measure of area in criminal distress, and its idea is based on the assumption that even when overall area levels of crime remain stable or decline, there is a significant variation in the mix of crime experienced by an area (Brantingham and Brantingham, 1995). Crime rate and simple incident counts are not of much help in dealing with more complex issues involved in the analysis of crime over time and across spatial locations. Planning of Police operation and the allocation of resources for policing seem to be more sensitive to the actual composition of incidents than to crime rates. (Brantingham and Brantingham, 1995). Assessing the direction and strength of these effects is also of interest and was greatly explored in this study.

All the past research efforts on crime, however, have rarely made comparisons among the different spatial scales like rural and urban settlements let alone rural, semi-urban and urban settlements within a region. Hence, there is no or little crime research effort to investigate the position of intra-regional environment at spatially disaggregated levels. The scanty attempts sometimes can mask recognition that crimes exist in some locations and it must be understood that solutions to environmental challenges of crime lie in understanding the locational concentration of problem and there is no royal road to it. A crime concentration is a spatial area to which high levels of crime incidents are attributed while crime

specialisation of an area is the degree to a specific crime forms pattern in a spatial area. Concern with the relationship between crime and place is not new in recent times. The works of some researchers in the understanding community and pattern of crime include Obduho and Owuor (1994), Jones (2003), Ligget *et al.* (2004), Adeboyejo and Abodunrin (2007), Ahmed (2012), Adigun (2012) and Ghani (2017). However, the concentration of research effort on urban crime pattern with unjustified neglect of measuring regional crime cluster at spatially disaggregated level impedes the search for analytical explanations and effective strategies to eradicate crime; hence this study attempts to fill the gap.

The study therefore aims at measuring crime concentration and specialisation across socially distressed clusters of different geographic resolutions in Oke-Ogun Region of Oyo State with a view to examining spatial variation in crime incidence in the area.

The Study Area

The study area is Oke-Ogun area in Oyo State. Oke-Ogun area is the north-western region of Oyo State, and is made up of rural communities and large rural centres (small towns) located in the northern and north-western parts of Oyo State, Nigeria. Geographically, Oke-Ogun approximately stretches between latitudes 07° 28' and 08° 38' North and longitudes 03° 02' and 04° 44' East

Oke-Ogun area is a borderland consisting of ten local government areas. It shares boundary with Kwara State in the North, in the South by Ogun State, Ibarapa North and Ibarapa East local government areas; in the East by Atiba and Oyo West local government areas, and in the West by Republic of Benin (Okafor, 2004) (Figure 1.1).

Materials and Methods

Secondary sources of data were used for the study. Secondary sources of data included Crime reports of Oke-Ogun Region collated from the Nigeria Police records of Oyo State Police Headquarters on eighteen typologies of regional crime categorised as crime against person and property from 2005 to 2015

Method of data analysis used for data collected included Location Quotient of crime (LQC) as proposed by Brantingham and Brantingham (1995) and adapted in this study as LQC (Location Quotient of Crime). LQC is also known as Crime Concentration Index (CCI) or Distress Concentration Index (DCI). LQC is a standardized count, and was used on the issue of establishing cluster of crime in certain locations. Analysis at area level can still be very useful by classifying areas into groups based on LQCs. This classification helps in giving special and suggestive description to a hierarchy of LQCs significantly greater or lesser than 1. The LQC analyzes the crime composition of areas from a multivariate perspective that takes into account the likely correlation among offences for spatial comparisons of crime occurrences among localities, It is the ratio of the percent contribution of the offence to the total crime in the area relative to its percent contribution to the total crime in the standard or reference area. LQC is based on the comparison between the mix of recorded offences in a specific area and the mix of offences in a broader area chosen as "standard" Let S_a represents the number of incidents of crime of stealing recorded within area "a", which is part of a broader region made up of "A" area. The total numbers of crimes recorded within area "j" is given by N_a . the total number of crimes of stealing recorded within a broader region is given by S_b and the total number of crimes of any types recorded in a broader region by N_b . The *Spatial Distress Concentration Index or standardized count of crime* in area as defined as:

$$LQC_a = (S_a/N_a) / (S_b/N_b) \quad (1)$$

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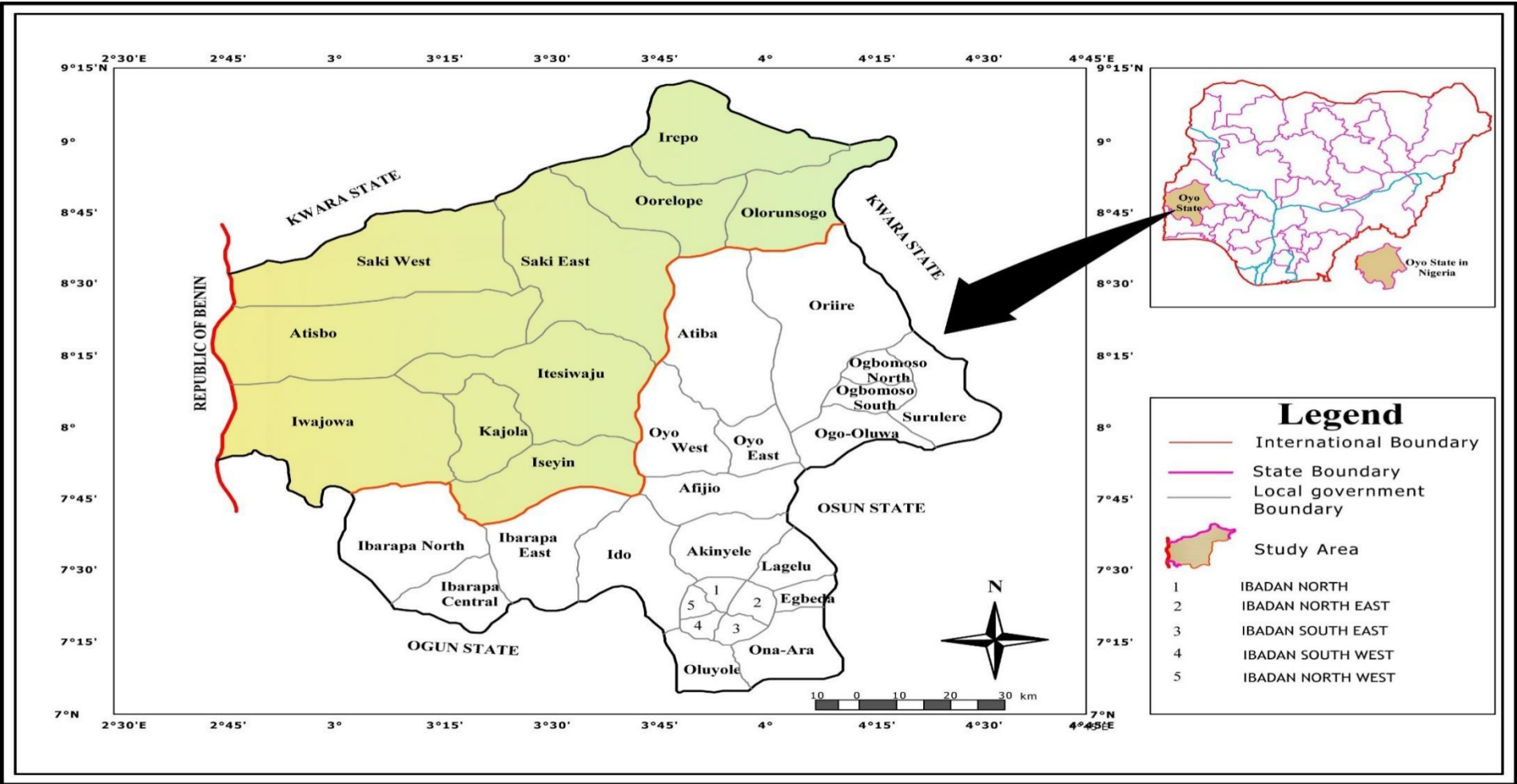


Figure 1.1: Oke-Ogun Area, Oyo State

Source: Authors' Fieldwork 2016

The Location Quotient of Crime for offences of stealing within area 'a' is an index that compares area a's share of crime of stealing with crime-stealing's share of the total crime in the broader area. A LQC larger than 1 means that area "a" has a disproportionately high share of stealing relative to the broader (reference) area 'A', whereas a LQC smaller than 1 is interpreted that area 'a' has a disproportionately low share of stealing relative to the broader region. A LQC of 1 means that area 'a' has an equal share of stealing relative to the total crime in the broader area. Identification LQC significantly greater than 1 could enable areas to be labelled as specialized for a particular type or category of offences Location Quotient of Crime (LQC) is an alternative measure of locational crime that is based on the assumption that there is a significant variation in the mix of crime experienced by an area. Crime Cluster is also investigated across the settlement types using Spatial Distress Concentration Index (SDCI) also called LQC. Identification of LQCs significantly greater than 1.0 respectively could enable areas to be labelled as specialized for a particular type of offence/offences (Brantingham and Brantingham, 1997).

Z-score was used to determine the standard crime specialisation which is the distance of crime count of a smaller unit area within a particular geographic area from the mean as measured by standard deviation units. The formula is given as; $Z\text{-score} = \frac{X-x}{Sd}$

When X = the raw count of each smaller unit area,
 x = the mean of the distribution across spatial levels,
 Sd = the standard deviation of the distribution.

If 'X' is the original count (sometimes called the raw count, then Z-score is the standard crime concentration where 'x' is the mean and 'Sd' is the standard deviation of raw scores. The mean of the standard scores will now be 0, and the standard deviation 1. Standard counts are completely comparable with each other. Here the relative specialization is investigated within the settlement among different types of crime using Z score (Zs). The value obtained for Z score in this study is referred to as standard crime score (Zcs) When raw count is converted to the derived count an area with highest raw crime count might not necessary be the standard area or region. Standard area is the area with highest concentration of sum total of Distant Crime Counts. Settlement type that had the highest positive value of standard count was picked as reference settlements in this study

For the purpose of having the real picture of crime concentration as one moves across different spatial scales (from urban areas (settlement with not less than 20,000 persons) to rural areas) (settlements with less than 20,000 person) in the study area, settlements were categorized into three spatial scales urban, semi urban and rural settlements. Semi urban comprises suburban settlements on the edge of a large town), and settlements with population greater than 10,000 but less than 20,000 with not less than half of its population engaging in secondary activities like trading, artisanship, banking, teaching to mention a few in conjunction with primary activities such as subsistence farming, fishing and hunting.

Results and Discussion

Crime against Property and crime types across Settlement types using Z-score and Location Quotient of crime (LQC)

The total raw crime counts for rural, semi-urban and urban settlements are shown in Table 1. Using raw crime counts, rural settlement hosted a greatest number of crime compared with urban and semi-urban settlements, and that rural, semi-urban and urban came 1st, 2nd and 3rd respectively. This is not the correct order on conversion to standard count using Z score. As shown in Table 2, rural settlement with the total largest raw crime data against property came first, semi urban settlement with the third largest raw crime data came second and urban settlement with the second largest raw crime data came third. This implies that many different

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crimes against property are relatively more concentrated in rural areas, and that the concentration of crimes against property exhibited an increasing trend as one moves from urban areas through semi urban areas to rural areas. Table 2 shows that rural settlement highly specialised better in store breaking than every other crime type relatively with the standard crime score ($Z_s = 1.14$) followed by Arson ($Z_s = 1.03$)

Table 1. Raw Crime Statistics of Crimes against Property

S/N	Crime against Property (A)	Urban	Semi Urban	Rural	\bar{x} Mean	Standard Deviation
1	Armed robbery	40	92	86	72.67	28.50
2	Burglary	824	612	645	693.67	115.5
3	Theft and stealing	992	723	1180	965.00	230.30
4	House breaking	358	542	240	380.00	152.20
5	Store breaking	142	162	244	182.67	53.70
6	Arson	35	45	51	43.67	6.50
7	Forgery	84	67	44	65.00	20.10
8	False pretence and cheating	141	197	181	173.00	28.80
9	Unlawful possession	143	109	102	118.00	21.90
	Total	2759	2549	2773		
	Rank	2nd	3rd	1st		

Source: Authors' Fieldwork 2016

Semi urban settlements specialized better in store breaking relatively than every other crime with ($Z_{cs} = 1.06$). Urban settlements specialized better in burglary (1.13) than every other crime relatively. Next to burglary is unlawful possession with ($Z_{cs} = 1.14$).

Crime against Person and across Settlement types.

As shown in Table 3, crime against person, according to total frequency of raw data, semi urban came first, urban settlement came second while rural settlement came third. Technically, this is not the correct order when converted to standard crime count (see Table 4)

Table 2. Standard Crime Scores of Crimes against Property

S/N	Crime against Property (A)	Urban Z score	Semi Urban Z score	Rural Z score
1	Armed robbery	-1.15	0.68	0.47
2	Burglary	1.13	-0.71	-0.42
3	Theft and stealing	0.12	-1.05	0.93
4	House breaking	-0.14	1.06	-0.92
5	Store breaking	-0.76	-0.38	1.14
6	Arson Malicious damage	-1.33	0.20	1.13
7	Forgery	0.95	0.10	-1.04
8	False pretense and cheating	-1.11	0.83	0.28
9	Unlawful possession	1.14	-0.41	-0.73
	Total (A)	-1.15	0.33	1.84
	Rank	3rd	2nd	1st

Source: Authors' Fieldwork 2016

The results of findings as shown in Table 4 reveal that crime against person in urban settlements had the highest raw crime counts, followed by semi urban settlements and then by rural settlements. The standard crime counts across the settlement types assume the pattern of raw crime counts. Investigation with the use of standard crime count revealed that urban settlements specialized better in kidnapping/child stealing ($Z_s = 1.16$) than every other type of crime relatively, next to this is rape and indecent assault ($Z_s = 1.08$), then by child abuse ($Z_s = 0.89$).

Table 3. Raw Crime Statistics of Crimes against Person

S/N	Crime against Person (B)	Urban	Semi Urban	Rural	\bar{x} Mean	Standard Deviation
1	Murder	124	159	201	161.00	38.00
2	Suicide	19	17	12	16.00	4.00
3	GHW	486	318	477	427.00	96.90
4	Assault	1188	1495	798	1160.33	348.80
5	Rape and indecent assault	239	202	185	208.67	28.00
6	Kidnapping	34	27	25	28.67	4.60
7	Child abuse	27	23	16	22.00	5.60
8	Breach of peace	851	1007	901	919.67	79.70
9	Unnatural offence	34	21	18	24.33	21.00
	Total	3002	3269	2633		

Source: Authors' Fieldwork 2016

Table 4. Standard Crime Scores of Crimes against Person

S/N	Crime against Person (B)	Urban Z score	Semi Urban Z score	Rural Z score
1	Murder	-0.97	-0.05	1.05
2	Suicide	0.75	0.25	-1.00
3	GHW	0.61	-1.12	0.52
4	Assault	0.08	0.96	-1.04
5	Raped and indecent assault	1.08	-0.24	-0.85
6	Kidnapping/Child stealing	1.16	-0.36	-0.80
7	Child abuse	0.89	0.18	-1.07
8	Breach of peace	-0.86	1.10	-0.23
9	Unnatural offence	0.46	-0.16	-0.30
	Total (B)	4.06	0.56	-3.72
	Rank	1 st	2 nd	3 rd

Source: Authors' Fieldwork 2016

Semi urban settlements specialize better in Breach of peace ($Z_s = 1.10$) than every other crime type relatively. While rural settlements specialize better in Murder ($Z_s = 1.05$) than assault relatively despite the highest raw crime data of assault in rural settlements.

Summarily, rural settlement had high concentration of store breaking ($Z_s 1.14$), Arson ($Z_s 1.13$) and Murder ($Z_s 1.05$). Semi urban settlements had high concentration of House breaking and breach of peace while urban settlements had high concentration of Burglary, rape and indecent assault and unnatural offence.

From spatially disaggregated analysis of crime types, concentration of crime against property therefore increases as one more from urban to rural areas while the concentration of crime against person decreases as one move from urban through semi urban to rural areas. However, if crime concentration is to be considered regardless of crime types, crime concentration increases as one more from urban areas to rural areas. (see Table 5).

Table 5. Standard Crime Scores of Total Crimes against Person and Property

S/N	Total Crime	Urban Z score	Semi-Urban Z score	Rural Z score
1.	Crime against Property	-1.15	0.33	1.84
2.	Crime against person	4.06	0.56	-3.72
	Total Crime (A + B)	2.91	0.89	-1.88
	Rank	1 st	2 nd	3 rd

Source: Authors' Fieldwork 2016

Assessment of Relative Crime across Settlement Types using Distress Concentration Index (DCI)

Identification of areas with disproportionate incidence of certain types of crime is useful for planning and management of security operations as it helps specialist police squads to concentrate their activities in these areas. Therefore, there is need for re-orientation of crime prevention research and efforts not only in regards of crime location and causal factors but also in respect of measurement of crime distributions. It is therefore important to investigate alternative measures of locational crime.

Table 6. Percentage of the count for crime against property across settlement types

S/N	Crime Offence	Urban		Semi urban		Rural	
		Crime Count	% of Total Crime	Crime Count	% of Total Crime	Crime Count	% of Total Crime
1	Armed Robbery	40	1.45	92	3.61	86	3.10
2	Burglary	824	29.8	612	24.01	645	23.26
3	Theft & stealing	992	35.96	723	28.36	1,180	42.55
4	House breaking	358	12.98	542	21.26	240	8.65
5	Store breaking	142	5.15	162	6.36	244	8.80
6	Arson	35	1.27	45	1.77	51	1.84
7	Forgery	84	3.04	67	2.61	44	1.59
8	Pretence / cheating	141	5.11	197	7.73	181	6.53
9	Unlawful possession	143	5.18	109	4.28	102	3.68
	Total	2,759	100.00	2,549	100.00	2,773	100.00

Source: Authors' Fieldwork 2016

One possibility that is explored in this study is the determination of the spatial variation in crimes among areal levels of different geographic resolutions where emphasis is placed not on crime rates but rather on a crime structure for problem solving. By crime structure, it means the composition of the crimes that occur in an area. Crime rate and simple incident counts are not of much help in dealing with more complex issues involved in the analysis of crime structures over time and across spatial locations. Assessing the direction and strength of these effects is also of interest. Location Quotient of Crime is an alternative measure of locational crime that is based on the assumption that there is a significant variation in the mix of crime experienced by an area.

Table 7. Percentage of the count for crime against person across settlement types

S/N	Crime Offence	Urban		Semi urban		Rural	
	Crime against Person	Crime Count	% of Total Crime	Crime Count	% of Total Crime	Crime Count	% of Total Crime
1	Murder	124	4.13	159	4.86	201	7.63
2	Suicide	19	0.63	17	0.52	12	0.46
3	Grievous harm and wounding	486	16.19	318	9.73	477	18.12
4	Assault	1,188	39.57	1,495	45.73	798	30.31
5	Rape & indecent assault	239	7.96	202	6.18	185	7.03
6	Kidnapping	34	1.13	27	0.83	25	0.95
7	Child stealing	27	0.70	23	0.70	16	0.61
8	Breach of peace	851	28.35	1,007	30.80	901	34.22
9	Unnatural offense	34	1.13	21	0.63	18	0.68
	Total	3,002	100.00	3,269	100.00	2,633	100.00

Source: Authors' Fieldwork 2016

The LQC is the ratio of the percent contribution of the offence to the total crime in a given area relative to its present contribution to the total crime in the standard or reference settlement. Urban settlement is picked as reference settlements in this study because it has the highest positive value of standard count ($Z_c = 2.91$), see (Table 5). For example, the LQC also known as Crime Concentration Index (CCI) or Distress Concentration Index (DCI) for theft and stealing in rural and semi urban settlements relative to the reference area (urban settlement) are calculated as presented in Table 8 below

Table 8. Comparative analysis of LQC in levels of spatiality

Offence	Rural settlement relative to urban	Semi-urban relative to urban
Theft & stealing	$LQC = \frac{42.55}{35.96} = 1.18$	$LQC = \frac{28.36}{35.96} = 0.79$

Source: Authors' Fieldwork 2016

In this example, A LQC of 1.18 means that rural settlement had a disproportional high share of theft and stealing relative to urban settlement, and that incidence of theft and stealing was 18% higher relative to urban settlement (reference area) therefore, rural settlement specialises in stealing and theft. A LQC of 0.79 for semi urban settlement means that semi urban settlement had a disproportionately low share of theft and stealing relative to urban settlement (reference area) and that theft and stealing in semi urban settlement was 21 percent lower relative to urban settlement (LQC = 0.79)

As shown in Table 9, rural settlements in Oke-Ogun were observed to have disproportionately high share of armed robbery (114%), theft and stealing (18%), store breaking (71%), Arson (45%), and false pretense/cheating (28%) relative to urban settlements. Rural settlements in the region also had a disproportionately low share of burglary (22%), house breaking (33%), forgery (52%) and unlawful possession (29%) relative to urban settlement. In general, rural settlements had a disproportionately high share of crime against property because the sum of percentages higher relative to urban is greater than the sum of percentage lower relative to urban settlement (Table 9).

Table 9. The LQC for Crime against Property in Rural Settlements Relative to Urban Settlement

S/N	Offence	LQC	Interpretation
1	Armed robbery	2.14	114% higher relative to urban
2	Burglary	0.78	22% lower relative to urban
3	Theft and stealing	1.18	18% higher relative to urban
4	House breaking	0.67	33% lower relative to urban
5	Store breaking	1.71	71% higher relative to urban
6	Arson	1.45	45% higher relative to urban
7	Forgery	0.48	52% lower relative to urban
8	False Pretence and cheating	1.28	28% higher relative to urban
9	Unlawful possession	0.71	29% lower relative to urban

Source: Authors' Fieldwork 2016

As shown in Table 10, the analysis of LQCs for crimes against property in semi urban settlements relative to urban settlements showed that semi urban settlements had a disproportionately high share of armed robbery (149% higher relative to urban), house breaking (64% higher relative to urban), arson (39% higher relative to urban) and false pretence /cheating (51% higher relative to urban). The semi urban settlements also had a disproportionately low share of burglary, theft and stealing, store breaking, forgery and unlawful possession relative to urban settlement. In spite of the fact that semi urban settlements had greater number of offences with percentage lower relative to urban settlements in Oke-Ogun.

Table 10. LQC for Property Crime in Semi urban Settlement Relative to Urban Settlement

S/N	Offence	LQC	Interpretation
1	Armed robbery	2.49	149% higher relative to urban
2	Burglary	0.80	20% lower relative to urban
3	Theft and stealing	0.79	21% lower relative to urban
4	House breaking	1.64	64% higher relative to urban
5	Store breaking	1.23	23% lower relative to urban
6	Arson	1.39	39% higher relative to urban
7	Forgery	0.87	13% lower relative to urban
8	False Pretence and cheating	1.51	51% higher relative to urban
9	Unlawful possession	0.83	17% lower relative to urban

Source: Authors' Fieldwork 2016

Semi-urban settlement had a disproportionately high share of crime against property relative to urban settlements because the sum of percentage above relative to urban are greater than the sum of percentage lower relative to urban settlements. Further analysis also revealed that armed robbery Arson and false pretence / cheating are endemic nature of both semi urban and rural settlements. All the aforementioned crimes but false pretence/cheating are more disproportionately higher in rural settlements than semi urban settlement when compared with the urban settlements.

The analysis showed that rural settlement in Oke-Ogun had a disproportionately high share of Murder (85%), Grievous harm/wounding (12%) and breach of peace (21%) relative to urban settlement. It then had a disproportionately low share of suicide, assault, rape and indecent assault, kidnapping/child stealing, child abuse and unnatural offense as shown in Table 11. In general, rural settlement had a disproportionately low share of crimes against person relative to urban settlement and therefore specialized in murder (LQC = 1.85, that is 85% higher relative) grievous harm/wounding (12% higher relative) and breach of peace (21% higher relative).

Table 11. LQCs for crimes against person in rural settlements relative to urban settlement

S/N	Offence	LQC	Interpretation
1	Murder	1.85	85% higher relative to urban
2	Suicide	0.73	27% lower relative to urban
3	Grievous harm/wounding	1.12	12% higher relative to urban
4	Assault	0.77	23% lower relative to urban
5	Rape/indecent Assault	0.88	12% lower relative to urban
6	Kidnapping/child stealing	0.84	16% lower relative to urban
7	Child abuse	0.87	13% lower relative to urban
8	Breach of peace	1.21	21% higher relative to urban
9	Unnatural offense	0.60	40% lower relative to urban

Source: Authors' Fieldwork 2016

The LQCs analysis for crime against person in semi urban settlements (Table12) shows that semi urban settlement in Oke-Ogun specialised in murder (18% higher relative to urban), assault and breach of peace with disproportionate high share of the aforementioned crimes relative to urban settlements

Table 12. The LQCs for Crime against Person in Semi urban Settlement relative to urban

S/N	Offence	LQC	Interpretation
1	Murder	1.18	18% higher relative to urban
2	Suicide	0.83	17% lower relative to urban
3	Grievous harm/wounding	0.60	40% lower relative to urban
4	Assault	1.16	16% higher relative to urban
5	Rape/indecent Assault	0.78	22% lower relative to urban
6	Kidnapping	0.73	27% lower relative to urban
7	Child abuse	1.00	0% below/higher relative to urban
8	Breach of peace	1.09	9% higher relative to urban
9	Unnatural offense	0.57	43% lower relative to urban

Source: Authors' Fieldwork 2016

Conclusion,

Summarily, rural settlement had high concentration of store breaking, Arson and Murder. Semi urban settlements had high concentration of House breaking and breach of peace while urban settlements had high concentration of Burglary, rape and indecent assault and unnatural offence. Concentration of crime against property therefore increases as one moves from urban areas to rural areas while the concentration of crime against person decreases as one moves from urban areas through semi urban to rural settlements. However, concentration of crime against person and property increases as one moves from rural areas to urban areas conformed to a regular spatial pattern. The implication of this is that there was a very high level of insecurity for lives and movable material objects in urban areas of Oke-Ogun Region. In many urban centres across the world, violence and high crime rates are undermining growth, threatening human welfare and impending social development (Ghani, 2017)

It is therefore concluded that crimes against person are more rampant than crime against property based on its increasing concentration pattern that conforms to concentration of summation of total crime against person and property that increases as one moves from rural areas to urban areas in Oke-Ogun. It is evident here that rural environment is distinct from urban environment in ways that affect community policing. According to the literature of crime based on the routine activity theory and basic systemic model of crime, the crime composition of an area would be a result of the area's ability to develop mechanism of formal and informal control. Therefore, high crime concentration in an area may be directly related to the inability of households to exercise suitable guardianship and the reality of the finiteness and limitations of government resources that could be put at the disposal of effective neighbourhood policing.

For a policy-oriented remark, it is therefore suggested at this point in time that a concerted effort and determination must be ensured by the law enforcement officers that crimes are thwarted. Efforts should be strategically intensified by the law enforcement officers to ensure that criminals are prevented from gaining forceful entry into residential houses during the day after the people have left home for their daily activities especially in the sub-urban areas that are far from town/village centres and security posts. The same effort should equally be made to check burglary at night coupled with the provision of street light by government to illuminate the ghost zones in the night.

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