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SPATIAL ANALYSIS OF RESIDENTS' RESPONSE TO FEAR OF CRIME IN OSOGBO, OSUN STATE, NIGERIA

The fear of crime has received an unprecedented amount of attention in researches, however, there is a great deal which remains unknown regarding residents' response to fear of crime. The study investigated spatial pattern of residents' response to the fear of crime in Osogbo Local Government Area, Osun State, Nigeria. Primary data was collected by stratifying the Osogbo into three residential neighborhoods, namely; core, transition, and suburban areas. Systematic sampling was used in selecting 112 respondents across residential neighborhoods. The result revealed that most residents in the core perceived high risk of victimization during weekends while most of the residents in the suburban perceived heightened risk of victimization in the suburban during weekdays. The level of Crime Occurrence Index (LCOI) in the core area was 5.03 while 5.90 and 5.31 were indices for transition and suburban areas. The study recorded that religion, police patrol, lightning, membership/ support of vigilante and use of joint community responses were the commonly used strategy in responding to fear of crime while insurance scheme, burglary alarm system, closed-circuit television (CCTV), and surveillance camera were the least strategies used in responding to fear of crime in the study area. The study concludes that there is a significant difference in the responses of residents to fear of crime in the various residential neighborhoods.

Key words: victimization, fear of crime, residents' response, residential densities, Osogbo.

Introduction

Crime is an anti-social act that is carried out or omitted in violation of law of the land that can be prosecuted (Onoge, 1993; UN Habitat, 2007). According to Adler, Mueller, and Lauifer (2001) and Schmallenger (2004), any human conduct that breaches criminal regulations of a State, the Federal, or a local government, for which there is no lawfully satisfactory excuse or justification but subject to punishment is referred to as criminal act. Issues of crime to man was dated back to the creation of man and has become an inevitable feature of civilization which occur every day in form of thefts, assaults, homicide among others, in almost all parts of the world (Fajemirokun et al, 2006; Wayne, 2008; Carpenter & Nevin, 2009). The causes of crime have been argued differently. For instance, Bello (2011) inserted that city with spontaneous urbanization that are associated with uncontrolled growth patterns have more crime prevalence. Anselin et al. (2000) posit that place may be a crime factor, whether by affecting or determining the level and type of criminal behaviour by the persons who regularly visit an area or by luring persons who previously have the same criminal inclination. Other causes were severe economic variation and deprivation, societal disorganization, insufficient government service and incompetence

of the law enforcement, joblessness, social and political conditions among others influence reasons why people break the law (Murray et al, 2001).

The concept of fear according to Sulemana (2015) is the feeling of panic or terror that are originated by consciousness or expectation of danger or criminal victimization different from sadness, anger, despair, induced by the perceived signal in the environment relating to some feature of crime. In another dimension, fear of crime as suggested by Covington and Taylor (1991) is an emotional reaction of terror to potential violent crime and physical harm. It was viewed in a broader view by the Department of Equality, Justice and Law Reform (2009) as a subjective observable fact which integrates not just a person's emotional unease about symbols of crime, as well as the cost of criminalities, yet it involves their of risk discernment and the responsibility of the location in bringing out fear.

Fear of crime has been observed in different studies as a social problem for more than 40 years (Clemente & Kleiman, 1977; Lewis & Salem, 1986; Donnelly, 1989). While early studies have concentrated on the conceptualization of crime, other researches have centered on the ways of operationalizing fear of crime (Rader, 2017; Jackson, 2006; Johnson, 2015; Cohen, 2008; Soares, 2006; Jackson et al., 2009; Quang & Hang, 2002; Tseloni & Zara-

foniton, 2008; Nasi et al., 2020; Ceccato & Nalla, 2020). The submission of these studies is that there is little or no relationship between crime rate and fears of crime. However, their relationship varies with time and space. Some researchers in the USA discovered that there is no correlation between crime rate and fear of crime (Johnson, 2015). Snyder and Mulako-Wangota (2015) supported this assertion that when crime rates decline, fear of crime often fails to drop. Rader (2017) also corroborated that perceptions of crime have increased while the crime rate decreases most times. Studies in developing countries have shown a relationship between the two (Quang & Hang, 2002; Tseloni & Zarafoniton, 2008; Badiora et al., 2014). An increase in crime waves often increases the fear of crime among people in the cities of developing countries especially Nigeria. The statistics of reported crime for instance in Nigeria show an increase from 120,911 cases to 144,505 between 1995 and 2000 (Agbola, 2004). It was later projected that, by 2030, the number of cases reported would have doubled.

Increase in the crime rate does not only have an adverse effect on society but also on the inhabitant, thereby contributing to fear (Badiora et al., 2012). Vanderveen (2006) noted that fear of crime is one of the powerful forces that is used in decreasing community bonds. To respond to fear of crime, different safety behaviours have been identified in literature. These include the use of private security or corporate guards (Agbola, 1997; Fabiyi, 2004); construction of high fencing walls around residences; strong locks and massive gates; illumination conveniences installation at every angle of the residence surroundings; mounting of dogs, insurance schemes, gun, installation of closed-circuit television (CCTV), unique security entrance, burglar rings, police tour of duty, windowpane and door grill, night watchmen employed to keep watch on neighborhoods (Agbola, 2002; Afon & Badiora, 2013; Abodunrin 2004). Other responses include avoidance, protective, insurance, communicative, and information-seeking behavioural responses (Garofalo, 1981).

Adigun and Adedibu (2013) posited that the crime experienced and its attendant fear is comparatively simplified when urban centres are grouped into residential zones. This is because, according to Afon (2005), residential zones in urban centres have a tendency to show more lasting geographical attributes in terms of structures, locations, housing types among others. Also, these lasting geographical elements impartially embody the socio-economic and traditional characteristics of inhabitants which may determine variations in fear of crime. This study thus evaluates responses to fear of crime among residents

in the core, transition, and suburbs of Osogbo. The aim of this study is to examine whether the response of residents to fear of crime or feelings of insecurity in various residential neighborhoods has a spatial in Osogbo LGA, Osun State, Nigeria. The study specifically examines the types of crime and level of crime in different residential densities as well as residents' response to the fear of crime in the study area.

Literature Review

Issues on fear of crime have been amplified in literature. However, those that are related to this study were reviewed under this section. These issues include crime occurrence (Agbola, (1997; Afon, 2001; Charron, 2012; Adigun, 2012; Morrison & Rockmore, 2021; Chataway & Mellberg, 2021), likelihood of victimization (Wynne, 2008), measurements of frequency and intensity of fear (Farral, Gray, Jackson, 2008), predictors and consequences (Garofalo, 1981; Truman, 2005), gender and fear of crime (Hilinski, Neeson, and Andrews, 2011), socio-economic status and fear of crime (Bedenbaugh, 2003; Truman, 2005) and perceptions of safety (Shepherdson, 2014). While most of these studies of fear of crime were carried out in the residential environment, studies on respondents' coping mechanism to fear of crime are hard to come by.

Yazdanfar and Nazari (2015) examined the influence of physical environmental design factors on crime prevention in the Chizar neighborhood, Tehran. The study concluded that for the subjective part of security to get better, objective features of security must get better in terms of landscaping (preventing pollution), social factors (sense of ownership), and physical factors (size and form, appropriate building density). Similarly, Naghibi et al (2015) focused on the achievement to physical characteristics of security in residential neighborhoods of Deh-Vanak. The study observed that a significant correlation existed between attributes like public services, lighting, vegetation (landscape), safety, and presence of folks. The work of Adigun and Adedibu (2013) evaluated the correlations of the response of residents to crime in cities of Nigerian. The study posited that environmental building features were the strongest dependent variable that informs residents' response to crime among other socio-economic attributes and residential crime degree. Though on one hand, studies reviewed have discussed environmental attributes in relation to response to the fear of crime; empirical researches on small cities are very few compared to bigger cities which present diversified criminal activity pattern. This study assessed other responses such as avoidance response, physical and

social protective response, communicative, and participatory responses to fear of crime spatially in the core, transition as well as suburban areas of Osogbo.

Some researchers have considered residents' response to crime. For instance, Agbola, (1997) focused on target hardenings, such as fencing, good locks, or secured alarms as a form of method residents adopted to control crime. Fabiyi's (2004) research posited that community building in form of setting up security displays in the urban area by Neighbourhood Association (NA) is a response to insecurity which has brought a new dimension to livability and strengthening social cohesion in Ibadan. Obasola (2013) posited that religion is a veritable response tool in solving most crimes exhibited by the youth in Nigeria. Similarly, Badiora (2012) examined the spatio-temporal pattern of crime and delinquency in Ile-Ife and concluded that three important individual reactions to the fear of crime as well as delinquency in core centre, middle, high income, and post-crisis areas were the use of security light, use of burglary proofing and fencing while the use of vigilante group, human security guide, and security street light were three important neighborhood responses in the study area.

From the foregoing, it is evident that there is a dearth of literature on spatial analysis of residents' response to fear of crime, especially in Nigeria. Therefore the present research attempts to provide an answer to these questions: What are the perceived types of crime and level of occurrence in the study area? What crimes do people fear most and the reasons why? How do residents respond in several ways to fear of crime in different residential areas?

The Methods

Study Area

Osogbo, a pre-colonial Yoruba tribal town in the southwest part of Nigeria and the capital city of Osun State and, lies amid Longitude 40 34' 0 as well as Latitude 70 46' 0" North" East. It shares a boundary with Iragbiji, Ikirun, Ilesa, Egbedore, and Ede. It can be accessed without difficulty from any side of the state because of its central location. The city became a commercial hub ever since 1907 at what time the Nigerian railway was founded and the rail line transverse the township. It rose to become the administrative city of a newly created state due to the 1991 political-administrative reform in Nigeria. Osogbo thus transformed from the low lying position of the old province to a bustling city of regional and national importance.

Osogbo has since experienced remarkable growth both in population and areal extent. The key

singular reason for the expansion of the town is almost certainly the establishment of a rail line station. Apart from this, the extension of postal and telecoms branch offices, NEPA regional office, construction of road system, and a few small and large-scale commerce subsist. Hence, Osogbo is converted into a chief centre for trade plus retail for people in and out of its very close environment. This new class predictably introduced a number of new dynamics into the urbanization problems, patterns, and development of the emerging city. It has been growing since, demographically and spatially.

The population of Osogbo Local Government Area (LGA) was projected from 157, 207 in 2006 to 187, 693 in 2012 with a total land area of 2,875sq.km (Akanji, 1994) (see Figure 1.1). Recently, the setting of Osogbo as the capital of the state together amongst other reason have culminated in the incursion of folks from other villages plus towns, as a result becoming, a twin city - a traditional plus a contemporary city. (Adenaike, 1991; Egunjobi, 1995); a major reason, the location has attracted crimes. It includes the following: forcible rape, murder, aggravated assault, robbery, kidnapping, burglary, arson, and motor vehicle theft, which is a major problem facing Nigeria today. The threat from a bunch of criminals is rising and their dangerous exploit lately has made countless homes abode of crying and wailing (Ajibade, 2011). Consequently, though the city is developing fast, its safety condition yet hampers progress to a substantial degree. This trend undoubtedly adds up to danger signs to development nationally.

Data Collection and Analysis

Data were collected from primary and secondary sources for this study. Primary data was obtained by stratifying the study area into three residential areas, namely; core, transition, and suburban areas. A sum of 246 existing streets, comprising 44, 54, and 27 streets in the core, transition, and suburban respectively, were identified. In each residential area, one out of every 10 streets (10%) was intentionally selected. A total of 1102 residential buildings, comprising 522, 309, and 271 buildings were identified from the three residential neighborhoods. Tenth of every building (10%) where a household head was selected per building using the systematic technique. Using this method, a total of 112 were administered for data analysis. Descriptive and mean statistics were used to analyze the data gathered.

The questionnaire was used to collect information on residents' responses to crime with response to perceived types of crime and their level of occurrence, and ways in which resident responds to fear of crime in

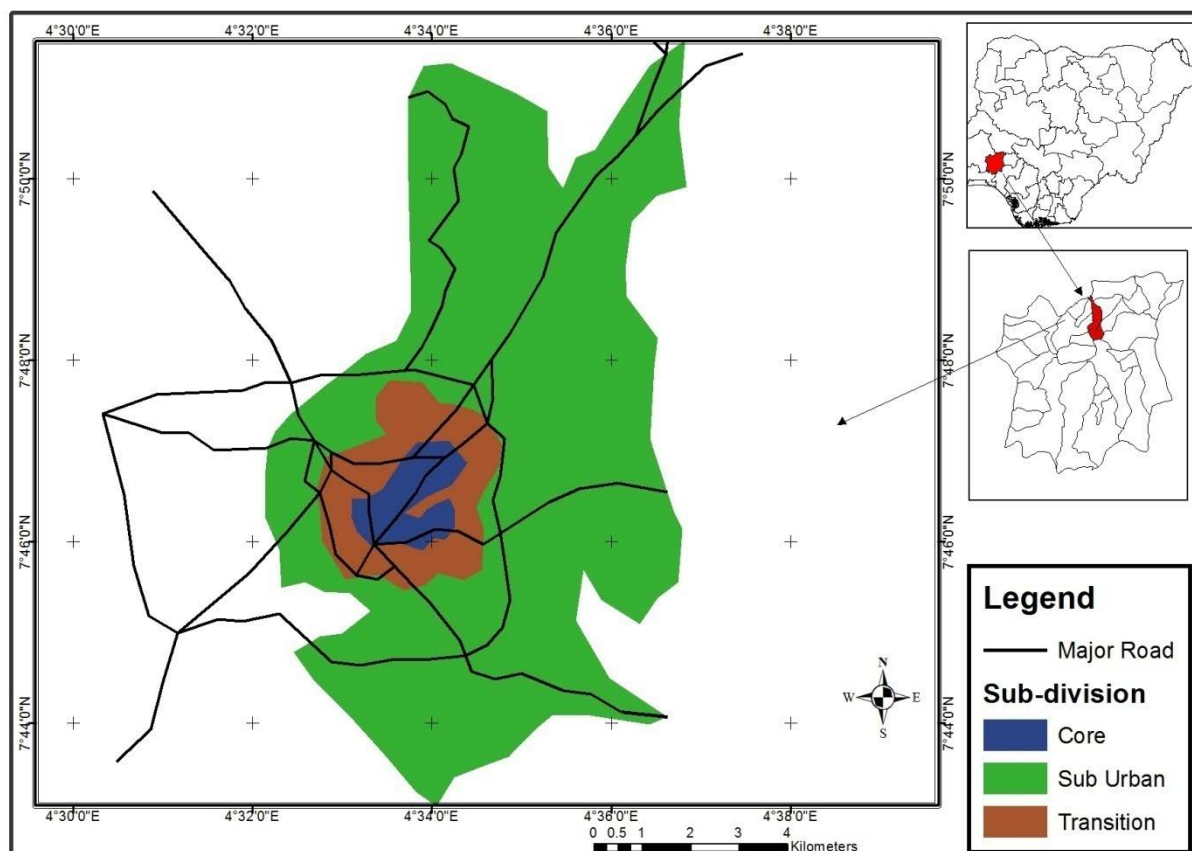


Figure 1 – Osogbo Local Government Area in the Context of Osun State
Source: Adopted from Fatusin et al. (2019)

different residential areas in the study area. The questionnaire was self-administered. Before its application, a psychologist was consulted to check the applicability of the developed scale. A pilot study was conducted and some items of the scale were revised. Questions were asked to know about the perceived types of crime as well as their level of occurrence across the residential densities. Respondents were asked to express their views on the following questions; What is the common time of occurrence of most crimes in the study area; What is the common types of crime; What is the level of occurrence of each of the identified crime types and what are your responses to fear of crime in the study area. The question set included questions about respondents' perceptions, which were rated on a seven-point Likert scale.

Analytical Method

In other to measure the level of crime occurrence index in the core, transition, and suburban area of Osogbo LGA. Types of crimes for the study were grouped according to the list of crimes identified in the literature. These were grouped as crime

against persons, and crime against properties. Crime against a person includes murder, manslaughter, attempted murder, suicide, and attempted suicide. Others include rape and indecent assault, slave dealing, kidnapping, child stealing, abuse, grievous harm, and wounding. Listed under crime against properties are robbery, burglary, stealing, housebreaking, store breaking, arson, property theft, vehicle hijacking, false pretense cheating, and receiving stolen properties. Based on these types of crime, the level of occurrence of each of the identified crime types from the perception of the residents was examined. Residents were to express their views on a seven-point Likert scale such as «Very Much Frequent» (VMF), «Very Frequent» (VF), «Frequent» (F), «just frequent» (JF), «Infrequent» (I), «Very Infrequent» (VI), and «Very Much Infrequent» (VMI).

The analyses of the rating that were gotten from the Likert scales adopted through respondents' indication were developed into an index called «Level of Crime Occurrence Index» (LCOI). To determine the weight value, 1,2,3,4,5,6 and 7 were attached to «Very Much Frequent» (VMF), «Very frequent» (VF), «Frequent» (F), «just frequent» (JF), «Infrequent» (I),

«Very Infrequent» (VI), and «Very Much Infrequent» (VMI) respectively. The Weight Value Summation for each type was obtained by adding the product of the number of responses to each type and the corresponding weight value attached to each rating.

This is mathematically expressed as

$$WVS = \sum_{i=1}^7 x_i y_i \quad (1)$$

Where:

WVS= Weight value Summation;

x_i = number of respondents to rating i ;

y_i =the weight assigned to a value ($i=1, 2, 3, 4, 5, 6, 7$).

The index for each of the crime type that was identified takes a value of between 7 and 1. The closer the value to 7, the greater the incidence that residents attached to that type of crime under consideration. Each level of crime occurrence index (LCOI) for each type of crime was arrived at by dividing the Weight value Summation (WVS) by the number of identified crime types ($n=28$) and deducting it from the division of Weight value Summation (WVS) by the number of rating ($x_i=7$), Thus;

Level of Crime Occurrence

$$\text{Index (LCOI)} = \frac{WVS}{\sum_{i=1}^7 i} = Xi \quad (2)$$

The mean index was computed for the study area «Osogbo» and each of the residential neighborhoods. This was obtained through the addition of the indices of LCOI of the Local Government and dividing them by the number of the identified types of crime ($n=28$). The mean index of core, transition, and suburban residential neighborhoods of Osogbo Local Government was denoted by average LCOI.

Result and Discussion

Under the different headings below, the results of this study were discoursed. The Tables through

which information is summarized are the results of the survey conducted by the author(s) (Farodoye, Oladehinde, Atoyebi, and Lukman) in 2018 unless otherwise specified.

Time of crime occurrence in the day and week across the residential areas

Time of crime occurrence in the day and week is related to types and levels of crime occurrence (Jayamala, 2008; Badiora et al., 2013). The view of residents on the time of crime occurrence of most of the identified common crime is presented in Table 1. As presented in Table 1, it was observed that more than half (52.9%) of the respondents in the core perceived that most of the criminal activities, next to this was 45.2% in transition and 29.7% in suburban while 50% of the respondents in suburban perceived criminal activities during the day time, next to this was 21.6% in core and 19.4% in transition areas. About 35.5% of the residents in transition observed that criminal activities occur both weekdays and weekends. It could be inferred that most residents in the core perceived high risk of victimization during weekends while most of the residents in the suburban perceived heightened risk of victimization in the suburban during weekdays. Further analysis showed that 59.1% of the respondents perceived criminal activities during the night time, 20.9% perceived it in both day and night time while 19.6% perceived it during the daytime. It could be established that criminal activities are more prevalent in the night time than day time across the residential densities. There was significant variation in the time of occurrence of criminal activities in various residential neighborhoods in the study area. The Chi-square value of $\chi^2 = 10.594$ and 93.454 is significant at $p = 0.032$ and $p = 0.031$ in the time of the week and day respectively. This showed that different types of crime occur during the week and day differently in the study area.

Table 1 – Time of Crime Occurrence in Different Residential Areas of Osogbo LGA

Time of the week	Core	Transition	Suburban	Total for Osogbo
Weekdays	11 (21.6%)	6(19.4%)	15(50.0%)	31(28.6%)
Weekend	27(52.9%)	14(45.2%)	8(29.7%)	49(43.8%)
Both	13(25.5%)	11(35.5%)	7(23.3%)	30(27.7%)
Total	52(100.0)	31(100.0)	30(100.0)	112(100.0)
Time of the day	Core	Transition	Suburban	Total for Osogbo
Daytime	13(25.5%)	5(16.1%)	4(13.3%)	22(19.6%)
Night time	33(64.7%)	14(45.2%)	19(63.3%)	65(59.1%)
Both	5(9.8%)	12(38.7%)	7(23.3%)	23(20.9%)
Total	52(100.0%)	31(100.0)	30(100.0)	112 (100.0)

Level of Crime occurrences in the three residential areas in Osogbo from Residents' view

The level of crime occurrence in the core residential neighborhood is shown in Table 2. The crime could be grouped into three deviations from the mean, relative to residents' perceived level of crime occurrence. These groups include positive deviation, zero deviation, and negative deviation from the mean index (LCOI). It was clear from Table 2 that those crime types perceived to have a higher irregular level of occurrence in the core residential area of Osogbo Local Government included vehicle hijacking, attempted suicide, receiving stolen property, arson, vehicle theft, assassination, and sexual harassment. Others included burglary, murder, kidnapping, child stealing, suicide, vehicle theft, attempted rape, manslaughter, assault, attempted murder, and child abandonment. All these crime types had their infrequent level of occurrence index higher than average LCOI.

Thus, all these might not amount to major crime challenges in the core area of the city.

Moreover, the average frequent crime level of occurrence index (LCOI) for core residential area was 5.03. Thus, crimes below this level are the crimes that had responses index higher than LCOI. Thus, all these accounted for major crime challenges in the city core area. The crime types such as robbery, housebreaking, rape, armed robbery, store breaking, internet scam, cultism, and related harm, pick-pocketing, drug offenses, stealing of small items, as well as child abuse had their frequent level of occurrence index below the average LCOI (see Table 2). As a result, all these make up the most important crime challenge. Relative to residents' perceived level of occurrence, the five crime types that frequently occurred in the traditional core area of the local government included child abuse, stealing of small items, drug offenses, pick-pocketing, and cultism. The LCOI of each of these crimes was 3.06, 3.40, 3.56, 3.92, and 4.08 respectively.

Table 2 – Level of Crime Occurrence in Core Residential Area of Osogbo

Crime Perceived Related Activities	Crime Level and Weighted Values									
	VMI (7)	VI (6)	I (5)	JF (4)	F (3)	VF (2)	VMF (1)	WVS	LCOI	DM
Vehicle hijacking	203	78	65	4	0	0	0	350	6.86	1.83
Attempted suicide	203	42	80	0	0	0	0	325	6.25	1.22
Receiving stolen property	161	84	70	0	0	0	0	315	6.06	1.03
Arson	161	72	60	8	3	4	1	309	5.94	0.91
Assassination	168	72	60	4	0	0	0	304	5.85	0.82
Sexual harassment	154	78	65	0	3	0	0	300	5.77	0.74
Burglary	112	72	60	12	12	22	1	291	5.60	0.57
Murder	175	48	40	20	0	0	1	284	5.46	0.43
Kidnapping	161	60	50	4	6	2	1	284	5.46	0.43
Child stealing	175	36	30	20	9	10	0	280	5.38	0.35
Suicide	154	66	55	0	3	2	0	280	5.38	0.35
Vehicle theft	140	72	60	0	3	2	0	277	5.33	0.30
Attempted rape	182	48	40	0	0	2	0	272	5.23	0.20
Manslaughter	175	42	35	16	3	0	0	271	5.21	0.18
Assault	98	78	65	4	9	12	0	266	5.12	0.09
Attempted murder	217	24	20	0	0	2	0	263	5.06	0.03
Child abandonment	161	54	45	0	0	2	0	262	5.04	0.01
Robbery	91	60	50	8	21	16	8	254	4.88	-0.15
Housebreaking	49	72	60	24	24	14	7	250	4.81	-0.22
Rape	161	42	35	8	0	2	0	248	4.77	-0.26
Armed robbery	119	42	35	12	12	16	5	241	4.63	-0.40
Store breaking	63	48	40	32	27	12	9	231	4.44	-0.59
Internet scam	91	42	35	4	6	34	8	220	4.23	-0.80

Continuation of table 2

Cultism	63	42	35	12	21	30	9	212	4.08	-0.95
Pick-pocketing	84	30	25	8	21	28	8	204	3.92	-1.11
Drug offenses	35	42	35	4	21	38	10	185	3.56	-1.47
Stealing of small items	91	12	10	4	18	32	10	177	3.40	-1.63
Child abuse	56	24	20	8	15	22	14	159	3.06	-1.97
Average LCOI									5.03	

Further analysis of the level of crime occurrence in transition residential area is presented in Table 3. The average LCOI for the transition was 5.90. Criminal activities that were rated above the mean LCOI were manslaughter, assault, sexual harassment, receiving stolen property, child abandonment, arson, murder, attempted rape, attempted murder, suicide, assassination, kidnapping, child stealing, and vehicle theft with indices of 8.32, 8.09, 7.45, 7.35, 7.32, 7.23, 7.13, 6.84, 6.81, 6.48, 6.26, 6.26, 6.19, 6.16, and 5.87 respectively. This shows that all these crimes might not pose serious challenges in the transition residential area of Osogbo Local Government. However, crimes frequently experienced in this area that were rated below the mean LCOI included burglary, pick-pocketing, robbery, rape, vehicle hijacking, armed robbery, store breaking, internet scam, cultism, housebreaking, child abuse, stealing of small items, and drug offenses. There associated indices 5.65, 5.55, 5.39,

5.32, 5.29, 5.23, 4.71, 4.45, 4.26, 4.26, 4.19, 3.68 and 3.42. These types of crimes were the most occurring crime in the area. As residents perceived it in their responses, the summary of the crime rate of occurrence index in the transition residential area of the town was presented in Table 3. With an index of 3.42, drug offense was perceived to be the major challenge in this part of the city. This may be attributed to the fact that this area is presumed to accommodate a large number of gangsters. Drug use and alcohol have been established to be a common practice among college (secondary school) dropouts (Mukoro, 1994; Okorodudu & Okorodudu, 2003; Portnov & Rattner, 2003; Alemika&Chukuma, 2005) and unemployed or jobless youth (Jayamala, 2008). Also, as observed from the table, only vehicle theft had a positive deviation which makes it a prominent crime influencing fear in the heart of Osogbo. Routine Activity of residents in this area may motivate this crime.

Table 3 – Level of Crime Occurrence in Transition Residential Area of Osogbo

Crime Perceived Related Activities	VMI (7)	VI (6)	I (5)	JF (4)	F (3)	VF (2)	VMF (1)	WVS	LCOI	DM
Manslaughter	98	84	70	0	6	0	0	258	8.32	2.42
Assault	70	96	80	4	0	0	0	250	8.06	2.16
Sexual harassment	105	66	55	4	0	0	1	231	7.45	1.55
Receiving stolen property	119	54	45	4	6	0	0	228	7.35	1.45
Child abandonment	112	60	50	4	0	0	1	227	7.32	1.42
Arson	133	48	40	0	3	0	0	224	7.23	1.33
Murder	147	36	30	4	3	0	1	221	7.13	1.23
Attempted rape	70	72	60	4	6	0	0	212	6.84	0.94
Attempted murder	147	30	25	8	0	0	1	211	6.81	0.91
Suicide	133	36	30	0	0	2	0	201	6.48	0.58
Attempted suicide	112	48	30	4	0	0	0	194	6.26	0.36
Assassination	91	48	40	4	6	4	1	194	6.26	0.36
Kidnapping	98	42	35	8	6	2	1	192	6.19	0.29
Child stealing	84	48	40	8	6	2	3	191	6.16	0.26
Vehicle theft	98	42	35	4	0	0	3	182	5.87	2.36

Continuation of table 3

Burglary	63	48	40	4	12	4	4	175	5.65	-0.03
Pick-pocketing	63	48	40	0	15	6	0	172	5.55	-0.25
Robbery	70	42	35	0	12	8	0	167	5.39	-0.51
Rape	84	30	25	4	15	6	1	165	5.32	-0.58
Vehicle hijacking	112	24	20	4	0	4	0	164	5.29	-0.61
Armed robbery	91	30	25	4	9	0	3	162	5.23	-0.67
Store breaking	28	48	40	0	21	4	5	146	4.71	-1.19
Internet scam	70	24	20	0	12	4	8	138	4.45	-1.45
Cultism	35	30	25	0	21	18	3	132	4.26	-1.64
Housebreaking	49	30	25	0	18	4	6	132	4.26	-1.64
Child abuse	28	30	25	8	24	10	5	130	4.19	-1.71
Stealing of small items	21	30	25	4	21	8	5	114	3.68	-2.22
Drug offences	14	30	25	0	9	18	10	106	3.42	-2.48
Average LCOI									5.90	

The result of the Level of crime occurrence in the suburban residential area was recorded in Table 4. The average level of crime occurrence (average LCOI) index in the suburban area of Osogbo local government is 5.31 (see Table 4). It was observed that some crimes were rated above the mean LCOI. The occurrences of these types of crime were not really frequent in the suburban area from the residents' point of view. These crimes included suicide, attempted rape, manslaughter, rape, attempted suicide, attempted murder, vehicle hijacking, and murder. Others were armed robbery, child stealing, vehicle theft, assassination, kidnapping, robbery, and arson. This is an indication that these types of crimes rarely happen, and there was not much concern in this area. On the other hand, crime types such as child abuse, receiving stolen items, pickpocketing, sexual harassment, child abandonment, assault, drug offenses, bur-

glary, cultism, store breaking, stealing of small items, housebreaking, and internet scam were frequently experienced, as their indices were rated below the mean LCOI.

Residents' responses revealed internet scam is the most frequent crime with an index of 3.93. It could therefore be inferred that crime relating to internet access is common due to its location in the urban area that has an advantage of more technology infrastructural presence like telecommunication facilities, cybercafés, among modern computer gadgets and residents who can afford them, when compared to other residential areas. This is in line with the view of Sesan, Soremi, and Bankole (2012) who noted that penetration of internet in Nigeria took a running jump at the turn of the 21st century, with less than 5% in 2002 and over 30% by the end of 2012, and the growth is only poised to accelerate.

Table 4 – Level of Crime Occurrence in Suburban Residential Area of Osogbo

Crime Perceived Related Activities	VMI	VI	I	JF	F	VF	VMF	WVS	LCOI	DM
	(7)	(6)	(5)	(4)	(3)	(2)	(1)			
Suicide	15	42	35	0	0	0	0	182	6.74	1.43
Attempted Rape	70	54	45	4	3	0	0	176	6.52	1.21
Manslaughter	84	48	40	0	0	0	1	173	6.41	1.10
Rape	70	54	45	4	0	0	0	173	6.41	1.10
Attempted Suicide	98	36	35	0	0	0	0	169	6.26	0.95
Attempted Murder	12	30	25	0	0	0	1	168	6.22	0.91
Vehicle Hijacking	98	36	30	0	3	0	0	167	6.19	0.88

Continuation of table 4

Murder	112	24	20	0	0	2	1	159	5.89	0.58
Armed Robbery	49	42	35	16	6	4	0	152	5.63	0.32
Child Stealing	98	24	20	4	3	0	0	149	5.52	0.21
Vehicle Theft	70	36	30	8	3	0	0	147	5.44	0.13
Assassination	84	30	25	8	0	0	0	147	5.44	0.13
Kidnapping	77	30	25	12	3	0	0	147	5.44	0.13
Robbery	77	24	20	0	21	2	0	144	5.33	0.02
Arson	70	36	30	4	3	0	1	144	5.33	0.02
Child Abuse	70	24	20	4	18	4	0	140	5.19	-0.12
Receiving Stolen Property	84	30	25	0	0	0	0	139	5.15	-0.16
Pick Pocketing	63	24	20	12	6	12	0	137	5.07	-0.24
Sexual Harassment	70	24	20	12	6	2	2	136	5.04	-0.27
Child Abandonment	84	24	20	4	0	0	0	132	4.89	-0.42
Assault	63	24	20	4	6	10	1	128	4.74	-0.57
Drug Offences	56	24	20	4	3	12	4	123	4.56	-0.75
Burglary	49	18	15	8	21	8	2	121	4.48	-0.83
Cultism And Related Harm	56	24	20	0	6	12	2	120	4.44	-0.87
Store Breaking	63	6	5	12	12	16	1	115	4.26	-1.05
Stealing Of Small Items	49	18	15	4	9	16	3	114	4.22	-1.09
House Breaking	42	12	10	4	24	16	2	110	4.07	-1.24
Internet Scam/ Cybercrime	49	18	15	4	9	6	5	106	3.93	-1.38
Average LCOI									5.31	

General observation of the level of crime occurrence across the residential area of Osogbo is that criminal activities in the transition area are more *frequent* as the average LCOI was 5.90 which is closer to 6 while the level of crime occurrence in core and suburban was *not really frequent* as their average indices were 5.03 and 5.31. This shows that variation exists in the types of crime and level of crime occurrence in the three residential zones of the study area. The study supports the finding of Afon (2001) that criminal activities are more prevalent in certain densities with different degrees of incidence. This finding also corroborates the study of Abodunrin (2004), Adigun (2012), Badiora et al (2013), and Badiora et al (2014). The reason for this variation may be attributed to differences in socio-economic characteristics of the residents and the environmental characteristics of the residential area in the study area

Residents' Responses to Fear of Crime in Osogbo

Residents' responses to fear of crime through different means vary from individual to neighborhood responses. However, findings with respect to indi-

vidual houses' responses were examined (see Table 5). The Table shows that religion (faith) was the most widely used individual housing response strategy (12.8%). This was accounted for 14% in the core, 14.6% in transition, and 10.1% in the suburban. This could be the reason why many households attached more importance to religion. Religion plays a central role in shaping the attitudes and perceptions of residents in reducing fear of crime. Next to religion was police patrol which is accounted for 11.5%. The proportions across the densities were 11.7%, 13%, and 10.1% in the core, transition, and suburban areas respectively. This response was employed among the respondents mostly in transition, followed by core and suburban. Another major response strategy was lighting (11.1%). The use of lighting is commonly used in transition (12%), followed by the core (11.4%) and suburban (10.1%). Lighting is common among households to illuminate their surroundings and exposed intruders approaching their dwelling at the night. Some of the lighting systems observed in the course of the survey range from electric bulbs, fluorescent tubes, floodlights, and searchlights.

Next to lighting were membership/support of vigilante (10.7%) and use of Joint Community re-

sponses (10.6%). These strategies were closely related to respondents' ratings in all residential areas of the town. The suburban accounted for 9.7% and 8.2%, the transition accounted for 8.3% and 8.3%, while the core area of the town accounted for 12.8% and 12.2%. The use of vigilante and the use of joint community responses are common among respondents in the core area more than transition and suburban. The reasons for this may probably be due to differences in environmental characteristics of the residential densities.

Another way of response strategy after the use of joint community response was burglary proofing (10%) in the study area. Burglary proofing was a major feature in the transition (12%) and suburban (10.4%) residential zones. The other ways of responding to fear of crime were human guard/ security guide (6.6%), African traditional methods (6.1%), fencing (3.2%), avoiding certain areas in the day and

nights (3.2%), use of cutlass/axe/stick (3.1%), use of gun/firearms (2.4%), security dog (2.1%), special window/door grilles (2.0%), special security door/window locks (1.6%), security alarm (0.9%), insurance scheme (0.7%), burglary alarm system (0.6%), closed-circuit television (CCTV) (0.4%) and surveillance camera (0.4%). It could be inferred that religion, police patrol, lightning, membership/ support of vigilante and use of joint community responses were the commonly used strategy in responding to fear of crime while insurance scheme, burglary alarm system, closed-circuit television (CCTV), and surveillance camera were the least strategies used in responding to fear of crime in the study area. It is important to note that the adoption of these strategies in responding to fear of crime varies across the residential densities. The result of the Chi-square test was further used to validate the values of different safety strategies that were adopted by the respondents (see Table 5).

Table 5 – Residents' Housing Security Responses to Fear of Crime

Safety Strategy Individual Housing	Residential Densities			Total
	Core	Transition	Sub-Urban	
Insurance Scheme	1(0.3%)	1 (0.5%)	4(1.5%)	6(0.7%)
Burglary Proof	34(9.9%)	23(12.0%)	28(10.4%)	85(10.0%)
Fencing	5(1.5%)	3(1.6%)	18(6.7%)	26(3.2%)
Security Alarm	0(0.0%)	1(0.5%)	6(2.2%)	7(0.9%)
Human Guard/Security Guide	20(5.8%)	13(6.8%)	20(7.5%)	53(6.6%)
Gun/Fire Arms	8(2.3%)	5(2.6%)	6(2.2%)	19(2.4%)
Security Dog	1(0.3%)	5(2.6%)	11(4.1%)	17(2.1%)
Cutlass/Axe/Stick	17(5.0%)	2(1.0%)	6(2.2%)	25(3.1%)
Member of community vigilante association	44(12.8%)	16(8.3%)	26(9.7%)	86(10.7%)
Joint community response e.g. whistle blowing etc.	42(12.2%)	16(8.3%)	22(8.2%)	80(10.6%)
Police/Military Personnel	40(11.7%)	25(13.0%)	27(10.1%)	92(11.5%)
Closed Circuit Television (CCTV)	0(0.0%)	1(0.5%)	2(0.7%)	3(0.4%)
Special security door/window locks	3(0.9%)	5(2.6%)	5(1.9%)	13(1.6%)
Surveillance Camera	0(0.0%)	3(1.6%)	0(0.0%)	3(0.4%)
Lighting	39(11.4%)	23(12.0%)	27(10.1%)	89(11.1%)
Religion (Faith)	48(14.0%)	28(14.6%)	27(10.1%)	103(12.8%)
African Traditional Methods (Charms)	28(8.2%)	10(5.2%)	11(4.1%)	49(6.1%)
Burglar Alarm System	1(0.3%)	0(0.0%)	4(1.5%)	5(0.6%)
Special window/door grilles	4(1.2%)	5(2.6%)	7(2.6%)	16(2.0%)
Avoiding to take certain paths in the day and nights	8(2.3%)	7(3.6%)	11(4.1%)	26(3.2%)
Total	*343(42.7%)	*192(23.9%)	*268(33.4%)	*803(100.0)

**Higher than the total survey because of multiple responses*

The result in Table 6 shows that there was significant variation in the response of respondents to fear of crime in the study area. This was confirmed by the chi-square

value ($\chi^2 = 167.703$) at significant level of $p = 0.000$. This implies that respondents' strategies in responding to fear of crime vary across the residential zones.

Table 6 – Chi-square test of significant variation in residents' responses to fear of crime

Safety strategy of individual housing	Pearson chi-square	Degree of freedom (df)	Assumption significant
Residents' Responses to Fear of Crime	167.703	40	0.000

Conclusion and Recommendation

Different types and levels of occurrence of crime are commonly attributed to human communities that affect the security of towns and cities in developing countries. This study of spatial analysis of residents' response to the fear of crime across different residential zones which specifically examines the types and level of crime, as well as residents' response to the fear of crime in Osogbo, revealed varying degree in the types of crime and level of crime occurrence in the different residential area of the study area. The study reported that the level of crime occurrence across the residential area in the transition area is more *frequent* as the average LCOI was 5.90 which is closer to 6 while the level of crime occurrence in core and suburban was *not really frequent* as their average indices were 5.03 and 5.31. It was also reported that religion, police patrol, lightning, membership/ support of vigilante and use of joint community responses were the commonly used strategy in responding to fear of crime while insurance scheme, burglary alarm system, closed-circuit television (CCTV), and surveillance camera were the least strategies used in responding to fear of crime in the study area. The findings of this study have implications for policy formulation in ensuring a safer city or adequate urban security. Based on the above findings, it is suggested that different strategies should be

put in place to address crime and effective ways of responding to fear of crime.

Residents should be more conscious of security by installing strong and unique security entry locks in each dwelling. Ferraro (1995) established that folks who have resided on their land for a more lengthened period are least probable to be fearful and more probable to set up supplementary security gadgets. Also, security experts say about 34% of all store breaking or housebreaking come in right through the door (NPF 2010). Thus, any investment residents make securing their doors will probably pay off. Additionally, residents have to conceal valuables. They must make sure that valuables are secreted from those passing by. This is achievable using curtains that ensure privacy (they allow light nevertheless obstruct the view) so passers-by with a criminal mindset would not see in while occupants are not home. Another major modern approach this study suggests to reducing crime is to create a central system of response to crime that every household can log into or call when in distress.

The investigative method should be used in demarcating areas of intense criminal activity. Policymakers and police divisions should be involved in build tactics and organize their forces in a way that must offer formidable securities. Nevertheless, the lasting answer to the problem of crime should stress a safe city through policies aimed at continuous attempts at reducing poverty.

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