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Kampala International University ISSN: *2415-0843*; 6(1): 39-50

CCTV and Crime Prevention in Private Gated Communities: A Case of Eti-Osa Local Government Area, Lagos, Nigeria

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1. Introduction

One of the issues confronting urban communities today is the movement of individuals from underestimated (country) territories in the mission for rewarding openings for work (Giles, 2011). The overall degree of urban people rose definitely from 13% (220 million) in 1900; to 29% (732 million) in 1950; further rose to 49% (3.2 billion) in 2005; and at-risk to climb to 60% (4.9 billion) by 2030 (UN World Urbanization Prospect Report, 2005). There is a general inclination that the expanding populace because of individuals' relocation from country zones to the urban areas combined with common increment are probably going to present more prominent difficulties to the wellbeing of lives and properties, particularly in the optional urban communities of the creating scene where the ability to react to security issues is negligible. Tibaijuka (2007) expressed that around 60 percent of every urban inhabitant in creating nations have been survivors of wrongdoing.

The effect of crime has essentially exacerbated in many urban communities throughout the years (Alkire, 2003). These effects incorporate expanded dread among urban inhabitants, falling salary coming about because of the pulverization or trip of organizations from influenced zones just as the development of private security industry and urban gated networks (UN-Habitatt 2007). Mackay (2005) declared that a longing to make a cradle between the individual and society has created as individuals look for a method by which to shield themselves from vulnerability. Gated people group have spread widely in both created and lacking nations (Elhadaryand Ali, 2017).

The development of present-day gated networks can be viewed as an immediate lodging reaction to crime and dread of crime. Cséfalvay (2011) characterized gated networks as private advancements portrayed by an emphasis on physical safety efforts, for example, entryways, dividers, monitors and Closed-Circuit Television (CCTV) with the regular component been border divider which encases the entire turn of events. The majority of the accessible definitions on gated networks settled upon that gated networks are portrayed by having the accompanying: safety efforts (cameras), controlled or confined passages for untouchables (dividers or wall), pay ordinary necessary support charges and occupants share some financial likenesses (Elhadary, and Ali, 2017). It is uncovered that gated networks can forestall crime, expanded feeling that all is well with the world and give self and family assurance against undesirable interruption (Adnan et al, 2014). Individuals have now gotten progressively frightful and have pulled back into these braced enclaves that they see to be more secure and increasingly secure (Atkinson and Blandy, 2004). Radetsky et al (2014) opined that inside improvement insurance is guaranteed through different methods, including 24-hour security watches by monitors; 'back-to-base' caution frameworks and signals for an emergency response; monitor hounds; Closed Circuit Television (CCTV); and electric fencing, spikes and different types of against gatecrasher medicines to the edge.

Shut Circuit Television (CCTV) works as a situational crime counteraction instrument. It works by expanding the degree of authentic observation at checked areas (Clarke, 1992), gated networks included. Be that as it may, Honess and Charman (1992) brought up the essential issue presented from a situational crime anticipation viewpoint concerning Closed Circuit Television (CCTV): regardless of whether the presentation of Closed-Circuit Television (CCTV) brings about a decrease of crime or not. Against this background, this examination analyzed the impact of Closed-Circuit Television (CCTV) on crime decrease in gated networks created by the organized private sectors in Eti-Osa Local

Government Area of Lagos State, Nigeria. In spite of its' across the board, gated networks don't get the consideration it merits especially from sociology up to this point (Elhadaryand Ali, 2017).

2. Conceptual Anchor and Related Literature

The idea of safe city stays this examination. As indicated by Magal Security System (2011), an ensured city is thought for returning security, prosperity and individual fulfilment to the current complex urban networks utilizing advancement, system, work power and techniques. The shielded city thought can be applied to urban zones, towns, present-day parks, school grounds, private neighbourhoods, for instance, private, gated communities and whatever other states of being the place people require a secured and pleasant condition.

The Safer Cities Program (SCP) was pushed by UN-HABITAT in 1996 to strengthen and empower neighborhood authorities and key accomplices to be more ready to ensure urban security particularly for the frailest social events in making and change countries. The guideline focus of the program is to make a culture of balance and an ensured circumstance for each and every urban inhabitant by helping neighborhood authorities, the criminal value system, the private division and normal society associates to address urban prosperity and diminish misconduct and weakness (UN Habitat, 1996). The Safer Cities Program (SCP) hopes to add to the general target of viable urbanization through urban organization, fitting urban organization and needing to diminish and finally prevent the scenes and impacts of urban crime and viciousness in making countries (UN Habitat, 2007).

The Safer City Program (SCP) recognized convincing policing, social crime anticipation and common structure as the significant approaches to achieving the goals of the program. The methodologies for accomplishing a more secure city status, through the turn of events and execution of neighborhood crime anticipation as featured by UN-Habitat in 2005 are to guarantee the identification and activation of assorted nearby accomplices who can add to decrease and prevention of crime, wellbeing evaluation which includes the assurance of a neighborhood crime circumstance with a perspective on making accessible human and money related assets to handle it. The evaluation procedure means to arrive at an agreement on the needs for activity.

Keenan (2017) attested that a significant lead of the more secure city activity is the coordinated city observation which fuses a wide exhibit of innovation driven sub-frameworks. Mix and interoperability of these sub-frameworks are basic in acquiring better knowledge from different sources and sensors. This activity accepts that the formation of emergency the board communities, the utilization of Closed-Circuit Television (CCTV) and pertinent innovation will empower law implementation organizations, crisis administrations and neighborhood leaders' powerful reaction to the normal just as the unforeseen.

Present-day urban communities have changed essentially in continuous decades: urban regions have gotten dynamically blocked, and crime has taken off, while vandalism and vagrancy have gotten standard (Magal Security System, 2011). This has become an incredible test that weakened the police watch men in the supportability of contemporary urban areas. Ogboi and Eze (2013) saw that reaction to the developing dangers of crime and powerlessness of the police to give sufficient insurance has made people, networks and organizations to connect with computerized policing. As another mechanical way to deal with urban security, a colossal number of Closed-Circuit Television (CCTV) is presented in roads and associations all through the world with the communicated goals of decreasing crime and growing open prosperity. The United Kingdom is one of the most excited protectors, with a normal 1.9 million cameras in 2011-one for each 32 U.K. occupants and the number continues rising. Chicago supposedly has in any occasion 15,000 CCTV presented in one of the greatest U.S. frameworks which have incited regular opportunities social affairs to convey strong concerns-while in New York, CCTV is logically found both on open travel similarly as in associations and even generally excellent quality living courses of action (John et al, 2014).

The focal subject of the utilization of Closed-Circuit Television System in situational crime anticipation is to make changes to structures and boulevards consequently guaranteeing the security of individuals and their properties (Clarke, 1997). Situational crime anticipation looks to change how potential guilty parties see opportunity in a specific domain or explicit circumstance as the thought is that the criminals settles on a progression of semi-sound decisions about actually productive exercises dependent on data handled from the earth (Brantingham and Brantingham, 1993).

As indicated by Andrew and Bonta (2014), situational crime anticipation endeavors to change the recognition and data the potential guilty party forms in regards to the additions, misfortunes, and hazard epitomized in the circumstance, in this manner, criminal open doors in any focused on condition will be seen as either having more serious hazard and additionally requiring more exertion. Changes in the earth or circumstance are intended to diminish the probability that a guilty party would have the chance or the tendency, in view of a discerning appraisal of the circumstance, to carry out explicit criminal acts at a specific area (Taylor et al. 1997a; 1997b).

Crime uprooting is a worry frequently raised in regards to situational crime avoidance gauges yet current writing indicated that spatial relocation of crime occurs consistently across offense type or space, the most apparent spatial dislodging was seen as happening inside objective zones themselves (Waples et al., 2009). Park et al. (2012) contended that the impact of CCTV on crime counteraction was huge at 0.05%. The quantity of burglaries and robberies in the territories with CCTV introduced decreased by 47.4%, while the zones without CCTV demonstrated for all intents and purposes no adjustment in the quantity of violations. The crime uprooting brought about by the CCTV was not either found or immaterial and the crime percentages in the neighboring territories likewise diminished somewhat.

Welsh and Farrington (2009) inspected 93 examinations on observation frameworks (generally in the United Kingdom, United States and African nations) to perceive how powerful they are in lessening crime. Discoveries of the investigations indicated that observation frameworks were best in parking garages with 51% diminishing in crime, open travel frameworks (23%) and downtown areas and open lodging networks (7%). Be that as it may, the outcomes were not factually critical. The examination infers that entire CCTV observation can be successful at 0.05% noteworthy in explicit settings, for example, parking garages and open travels framework, the potential money related and cultural expenses require are zones for additional exploration. Piza, et al (2014) additionally declared that regardless of the ubiquity of Closed-Circuit Television (CCTV), proof of its crime and brutality avoidance abilities is uncertain. Research has to a great extent revealed CCTV impact as "blended" without clarifying this fluctuation.

3. The Study Area

Lagos metropolis is located approximately on Longitude 20 421 and 30 401 East of the Greenwich Meridian and Latitude 60 231 and 60 401 North as the Equator. It shares a boundary with Ogun state in the northern and north-eastern parts, the Benin Republic in the western part and the Atlantic Ocean in the southern part. Lagos is one of the megacities in Africa, a single largest commercial centre and an outpost of the industrialized West in tropical Africa. The vantage position of Lagos in terms of easy accessibility by air, water, and land transport, either from within the country or outside the country contributed to its sporadic growth and attendant security challenges. According to Oshodi (2010), population growth coupled with the influxes of international and national migrants, travelers and the resulting numbers of people concentrated in Lagos are creating increasingly complex challenges for governments and private stakeholders, among them is urban insecurity which affects the quality of life of residents.

Throughout the years, the frequencies of crime and brutality have expanded fundamentally in Lagos. Oyefara (2013) opined that Lagos is confronted by a plenty of insecurity challenges running from the high predominance of blackguards, that is, zone young men, urban crime, adolescent misconduct to ethnic conflicts and political viciousness extending from low-salary territories of Agege, Somolu, Mushin to the center and high-pay regions of Victoria Garden City, AmuwoOdofin New Town, Lekki, Surulere, Apapa and Eti-Osa.

As revealed by the National Bureau of Statistics (2017), Lagos State recorded the highest percentage of crime (36.08%) in Nigeria. The state recorded 15, 426 cases of offences against persons; offences against property (22,885); offences against lawful authority (6,768); and offences against local acts (306). In Lagos state, Eti-Osa local government occupies a significant position in the crime rate (National Bureau of Statistics, 2017). This is due to its dynamic economic nature as it plays host to a diverse mix of large corporations, indigenous and multinational organizations, financial institutions, professional services, technology companies and high-income residents, location of the headquarters of many multinational banks, professional service firms and lots more. The major causes of crime in Victoria Island Local Community Developing Area, Eti-Osa East Local Community Developing Area and Ikoyi-Obalende Local Community Developing Territory incorporate high pace of youth joblessness, ineffectual policing and the wide partition between the rich and poor (Rycus, 2008).

To guarantee successful security, some crimes moderation endeavors have been embraced by government and network affiliations. These

incorporate the foundation of watch groups of police and military staff; the utilization of an innovation empowered gadget like cost-free crisis phone numbers; authorization of check-in time on vehicular and human development between 10:00 pm to 6:00 am; ban on commercial motorcycles operation in some communities; manning of street gates from dusk to dawn by private security guards; and the use of neighbourhood watch and vigilante groups in curbing crime. Despite all these efforts, crime rating of Lagos as contained in the report National Bureau of Statistics (2016), showed that crime has not reduced, Lagos still tops the criminal chat with 36.08% (45,385 cases recorded). This made Ibikunle (2013) state that the requirement for advances to help in battling crime can never be over-stressed as the connection between both the policing and advances goes far in the assurance of the accomplishment and maintainability of their definitive objectives, and furthermore, the wellbeing of lives and properties.

4. Methodology

The survey research design was adopted. Multi-stage sampling technique was used to purposely select 259 housing units with CCTV from seven private, gated communities. These gated communities were randomly selected from the 35 private housing estates approved by the Lagos State Government in the study area. Preliminary investigation revealed that there were 1,294 housing units in the selected gated communities. Taking cognizance of the number of residential buildings in each of the selected gated communities, fifteen residential buildings were selected in Osborn Foreshore Phase 1, Osborn Foreshore Phase 2 (3), Victoria Garden City (109), Dolphin Phase 1 (36), Lekki Phase 1 (42), Parkview estate (13) and Banana Island (41). A glance at Table 1 shows that 20% of all buildings in the selected private, gated communities were selected. This is in line with Krejcieand Morgan (1970) who opined that for a population of above 1000, 10% and above sample size could be appropriate.

To determine the spatial distribution of houses with CCTV in the selected residential neighbourhoods, the coordinates of all houses with Closed-Circuit Television (1,294) were picked. Thus, in Victoria Garden City, 547 points were picked, Lekki Phase 1 (208), Dolphin Phase 1 (180), Osborne Foreshore Phase 1 (75), Parkview (66), Osborne Foreshore Phase 2 (16) and Banana Island (202). A structured questionnaire containing socio-economic characteristics (sex, age, income), housing characteristics (house type, nature of tenure, age of the building) and the use of CCTV for crime prevention was administered on the household heads or their representatives in the selected residential buildings.

Quantitative data were analysed using descriptive and inferential statistics (logit model) at $p \leq 0.05$ while qualitative data were context analysed. To get the spatial distribution of buildings with Closed Circuit Television (CCTV), the Nearest Neighbor Analysis was used and it gave three values which are Nearest Neighbor Ratio (R), z-scores and p-value.

Table 1: Sample Size

Private, Gated Community	LCDA	No. Housing Units	No. Housing Units with CCTV	Sample Size 20%
Osborn Foreshore Phase I	Ikoyi-Obalende	113	75	15
Osborn Foreshore Phase II	Ikoyi-Obalende	53	16	3
Victoria Garden City	Eti-Osa East	926	547	109
Dolphin Estate Phase 1	Eti-Osa East	199	180	36
Lekki Phase 1	Eti-Osa East	12,519	206	42
Parkview Estate	Iru Victoria	219	66	13
Banana Island	Iru Victoria	377	202	41
Total			**1,294**	**259**

5. Findings and Discussion

Out of 259 respondents interviewed, 60.2% were female while the remaining 39.8% were male. Age distribution of respondents indicates that 5.8% were between the age group18-32 years, 33-47 years (26.2%), 48-62 years (44.8%) and 63 years and above (23.2%). It can, therefore, be deduced that people within the age group 48-62 years constitute the highest proportion of residents in the study area. The figure on marital status reflects more of married residents (62.2%) than single, separated and divorced (12.4%, 20.8% and 4.6% respectively). This is an indication that residents of gated communities are more married than other forms of marital status. These findings are supported by Vesselinov and Le Goix (2012) assertion that in traditional rural neighborhoods, a lower extent of the single and a higher extent of wedded householders are found in gated residential development.

Based on religion, Christianity accounted for 53.7% of the total respondents, Islam (13.9%) and others

(32.4%). By implication, the estates play host to different religious affiliation and beliefs. This gives credence to Vesselinov (2009) assertion of religion being one of the factors inducing increased social heterogeneity among residents of gated residential development.

Residency is more pronounced among literates as 81.8% of the residents completed tertiary education and only 18.2% of the residents had secondary education. This supports the findings of Vesselinov and Le Goix (2012) that gated residential development contains a higher proportion of educated residents. Results showed that Eti-Osa local government, most especially, Iru Victoria Local Council Development Area (LCDA) comprises Victoria Island which acts as a seat for most headquarters of international organizations and companies. Thus, 23.9% of the residents were self-employed with 47.7 % and 28.4% privately employed and government-employed respectively. This distribution could be adduced to the fact reflected in income level, that majority of residents were high-income earners of above #162,000 and within the range of #108,001 - #162, 000 per month. This affirms Low's (2001) assertion that gated communities have been a rational response to upper-class individual's desire for community and to facilitate separation and surveillance.

The total number of housing units approved by the Lagos State Government in all private gated communities in Eti-Osa LGA is 19, 766. See Table 2. The investigation also revealed that all the estates conform to the Lagos State Government Regulation for Development of Estates by Private Developers. The regulation stipulates that 60% of the estate should be earmarked for residential purpose, commercial (10%), mixed, that is, residential and commercial (15%) and open spaces and lots earmarked for recreational activities (15%).

Table 2: Approved Private Gated Communities

S/N	Name	Area Extent (Hectares)	Residential Lots	Residential Lot (36 × 36 Sqm)
1	Dolphin Phase 1	43.000	25.800	**199**
2	Dolphin Phase 2	54.100	32.460	**251**
3	Banana	163.000	97.800	**377**
4	Osborne Foreshore Phase 1	12.200	7.320	**113**
5	Osborne Foreshore Phase 2	5.660	3.396	**53**
6	Parkview	47.330	28.398	**219**
7	Greenland	86.000	51.600	**398**
8	Eden Gardens	23.000	13.800	**107**
9	Pinnock Beach (Updc)	70.040	49.000	**378**
10	Palm Spring	35.000	21.000	**162**
11	Treasure Gardens	5.110	3.060	**24**
12	Carlton	28.309	16.980	**131**
13	Ocean Bay	33.430	20.058	**155**
14	X-Tadok	10.340	6.204	**48**
15	Bela Vista	69.899	41.939	**324**
16	Royal Garden	145.274	87.164	**673**
17	Cowrie Housing Estate	42.595	25.557	**197**
18	Royal Violet	15.000	9.000	**69**
19	Peace Garden	20.638	12.383	**96**
20	Hi Life	7.001	4.201	**32**
21	Amen	47.604	28.562	**220**
22	Fountain Spring	4.000	2.400	**19**
23	Crown	42.000	25.200	**194**
24	Birrel Estate for Chevron	200.143	120.086	**926**
25	Abraham Adesanya	20.480	12.480	**96**
26	Onikoyi Layout	43.143	25.886	**201**
27	Residential Estate ForCcecc, Nigeria Limited	7.026	4.216	**33**
28	Chevron Estate	27.900	16.740	**129**
29	Victory Park	47.330	28.398	**219**
30	HspEastline, Properties	20.955	12.573	**97**
31	OyetuboJokotade Estate	11.290	6.774	**52**
32	Arcadia Grove	13.026	7.8156	**60**
33	Lekki Phase 1	2,700	1,620	**12,519**
34	Victoria Garden City	200.143	120.086	**926**
35	OrileIbamo	15.00	9.000	**69**
	Total			**19,766**

Source: *Lagos State Ministry of Physical Planning and Urban Development (2019)*

Most of the residential building in the selected estates are recent, modern-day and also comprises more of high-rise buildings (51.7% duplex and 26.6% storey buildings respectively). Only 21.6% of the residents live in bungalows. Kolarikova (2009) opined that the types of housing in gated areas represent a better standard and quality of housing with more high-rise buildings. Most of the residents (52.5%) lived in owner-occupied houses and this finding tallies with Vesselinov and Le Goix (2012) assertion that the level of homeownership is highest in gated residential development.

Not less than 63.7% of respondents had been victims of crime: stealing (34.0%), housebreaking (29.3%), and attempted murder (4.6%). This affirms the reason for different security measures put in place. These measures include barriers at the main and individual house gates, the use of drone in Victoria Garden City, the use of electronic gates at the entry and exit, the use of centralized entry and exit points, Closed Circuit Television (CCTV) and regular security patrols. This can be affirmed by Dupuis and Thorns (2008) assertion that for would-be guilty parties, these totemic obstructions are proposed to embed aversion to perpetuate the wrongdoing and improve the probability of network-level discouragement.

About 43% of respondents believed that perpetrators of crime usually carried out their nefarious activities between the hours of 12 pm and 6 pm (working hours). Midnight recorded the least criminal attempt (9.3%). However, the majority of the attempted burglaries (17.4%) and housebreaking (29.3%) incidences occurred at night. This corroborates Breetzke and Cohn (2013) assertion that gated neighbourhoods have higher risks of both daytime and nighttime burglaries.

The most prevalent crime in the morning (6 am-11:59 am), according to 10.20%respondents was the theft of motor vehicles which can be attributed to early morning rush to work. To curb this problem, every vehicle exiting the estate was thoroughly screened at the gate. Residents' permit was a necessary prerequisite for vehicle exit. In the case of attempted escape, barriers were stationed at the gate to impede movement. Another 41.7% residents affirmed that criminal activities usually took place in the afternoon due to the 'ghost nature' of the estates and presence of non-estate residents such as building and construction workers as well as shop owners and operators living elsewhere. Gated community developments create low-skilled jobs that serve as an avenue for brown collared jobbers (Svampa, 2004).

The criminal feud in selected gated communities, most especially, during the afternoon hours (12 pm – 6 pm) has enhanced the employment of private security outfits for regular patrol duties. This has led to an increment in the quantity of private security firms operating in the study area in recent times. To this ends, private security outfits like Eyespy, Proton security, Ashka Security Company, Synergy guards, Techno-crime, City Business Computer, Halogens and others came on board to ensure the security of all spheres in these gated communities. Halogen Security guards Osborn Foreshore Phase 1 and Lekki Gardens, Proton Security manned Osborn Foreshore Phase 2, Parkview used PVRA operative, Dolphin Estate has a Police Post and Banana Island used BIPOLAR. This finding is upheld by the UN-Habitat 2007 report which distinguishes the development of private security and preoccupation of venture towards open and private security, thus, the expanding crime percentage.

Types of crimes committed include stealing/theft (34%), robbery/burglary (17.4%), house breaking (29.3%), theft of motor vehicles (10.0%), intentional perpetrator (4.6%) and murder (4.6%). Not less than 63.4% residents claimed to be victims of crime. Times of crime witnessed by the victims were 6am-12pm (23.6%), 12pm-6pm (43.2%), 6pm-12am (23.9%) and midnight (9.3%).

Most of the crimes reported by the respondents occurred during the afternoon (41.7%), morning (30.5%), night (18.5%) and evening (9.3%). Factors enhancing crime include unemployment (6.9%), uncompleted buildings and buildings under construction (63.4%) and empty shops (29.7%). This is supported by Cullen and Levitt (1999) who identifies economic factors such as fast urbanization, unemployment, the social gap among the rich and the poor, low wages as some of the factors that contribute to crime in urban areas. To this end, matters concerning construction, development, repair, rehabilitation, and upgrade are contracted out to known construction companies or individual firm who can be accosted in the phase of criminal eventualities. Poor lighting is not a contributive factor to crime as the power supply is regular as there are backup generators in the face of a power failure and also estates are well illuminated with street lights.

Findings showed that 81.1 % of the Closed-Circuit Television (CCTV) mounted were static, pan tilt zoom (11.6%) and both (7.3%). Pan tilt and zoom closed-circuit television camera type are more flexible; thus, they enhance better coverage. This supported Okere (2012) findings that Pan Tilt and Zoom Closed Circuit Television (CCTV) are more

flexible and effective in the tracking of suspects as it adds an extra level of visual detail that can help identify people, or objects, for example, the colour of clothes or cars.

Regarding the year of installation, 24.7% CCTV were installed in less than 2years ago, 2 – 4 years (13.9%), 5 – 7 years ago (35.1%) and 8 – 10 years ago (26.3%). Not less than 85.0% of the respondents believed that Closed-Circuit Television should be mounted outside the building, 3.4% respondents favoured inside the house and the remaining 11.6% believed that they should be mounted in both places. Thus, the highest percentages of the respondents believed that Closed-Circuit Television should be installed outside for better surveillance. Closed-Circuit Television surveillance inside a building could be generally regarded to be an invasion of privacy (Wilson and Sutton, 2003).

The storage duration of Closed-Circuit Television server varied: 1– 7 days (9.3%);2 – 3 weeks (20.1%); and above 3 weeks (70.7%). Most of the Closed-Circuit Television had good storage duration (above 3 weeks). Residents revealed that storage capacity of CCTV in Victoria Garden City led to the arrest of a suspect who murdered Close 9, Victoria Garden City in 2016. The suspect was arrested by the police in Benue State, two weeks after he committed the crime in Lagos. Benue state is about 600 kilometres away from Lagos.

Residents unanimously believed that there is the need for a centralized Closed-Circuit Television control system in all the estates. The one in Victoria Garden City enhances proper surveillance, quick and effective dispatch of the armed response team in the face of security bridge.

Multiple regression results show that the overall level of explanation of the three explanatory variables (type, location and storage capacity of CCTV) which are significant at 0.05 confidence level is 46% (0.678). The result reveals that location, type and number of CCTV installed are significant explanatory variables as far as the effectiveness of CCTV in reducing crime is concerned (R2= 0.459). What this implies is that about 46 per cent of the effectiveness of CCTV in reducing crime is jointly accounted for by the independent variables. This affirms the research hypothesis that the effectiveness of CCTV in reducing crime in private, gated communities is a function of its location, the type and number of CCTV installed.

However, the remaining 54 per cent is due to some other factors other than the use of Closed-Circuit Television. These include the use of electronic gate at entry and exit points, regular security patrol, the use of a drone (in Victoria Garden City) and presence of electronic barriers at the entry and exit points. This affirms the assertion made by Piza (2018) that there is the need to deploy CCTV alongside other evidence-based strategies, rather than as a stand-alone tactic, to achieve crime control benefits. Also, Gill and Spriggs (2005) also opined that the inclusion of other confounding variables ensure effectiveness in security measures as CCTV should not be implemented as a stand-alone crime prevention tool but needs to be integrated into prevention measures already in place.

To further corroborate the above findings, the standardized coefficient of each predictor was obtained independently (See table 3) as it indicates the relative importance of the independent variables. The standard coefficient result indicated that the number of CCTV installed is the most crucial factor in ensuring its effectiveness, followed by the location of installation and the type of CCTV installed. For every one-unit increase in the number of Closed-Circuit Television installed, its effectiveness in ensuring proper surveillance will increase by 0.571. Gerell (2016) recommended that Police agencies looking into combating violence and overall street-level crime should make more efforts to deploy and incorporate proactive activities into Closed Circuit Television use and operations.

The type of Closed-Circuit Television installed is important in ensuring its effectiveness. Thus, for each one-unit increase in the type of Closed-Circuit Television installed, effectiveness in ensuring proper surveillance will increase by 0.030. Thus, Okere (2012) asserted that the use of the pan/tilt and zoom CCTV as against the static CCTV enhances better surveillance within gated residential neighbourhoods due to its flexibility.

The standardized coefficient (beta) values of the predictors revealed that the place of installation of Closed-Circuit Television with a standardized coefficient (beta) value of 0.568 further enhances its effectiveness in reducing crime. To this end, the more the number of Closed-Circuit Television deployed outside the building, the more effective **(**0.568). This corroborates the responses of 85% residents that claimed that for proper deterrence of criminals, Closed Circuit Television should be mounted outside the building. Lim et al (2016) opined that the crime deterrence effect of Closed-Circuit Television depends on the locations of such CCTV. This corroborates the Location Theory developed bypassing and Groenendijk (2009), which indicate the need to ensure the outside environment is secure by installing the cameras on the streets to improve security.

Table 3: Standardized Coefficient (Beta Value)

S/N	Model		Standardized Coefficients	t-value
		(Constant)		.300
1		Type of CCTV installed	.030	.288
2		Place of Installation	.568	6.060
3		No of cameras monitoring	.571	5.145

The distribution of buildings with Closed Circuit Television in the selected private, gated communities exhibited the three spatial patterns (random, clustered and dispersed) and with small z-scores, there is a low probability which is less than 1% likelihood that this random, clustered and dispersed pattern could be a result of random chance. Dolphin Estate Phase 1 and Victoria Garden City exhibited a clustered pattern of residential buildings with CCTV while Lekki Phase 1, Osborne Foreshore Phase 1, Osborn Foreshore Phase 2 and Parkview exhibited a spatially dispersed pattern of residential buildings with CCTV and only Banana Island exhibited a random distribution of buildings with CCTV. Conclusively, nearest neighbor analysis revealed a significant difference in spatial pattern of residential buildings with Closed Circuit Television within the sampled estates as they are not randomly distributed.
The results of Nearest Neighbourhood Analyses as shown in Figures 1 – 7 showed that spatial distribution of houses with CCTV was random in Banana Island (R=1.08; z-score=1.48; p-value <0.05). It was clustered in Dolphin Estate Phase 1 (R= 0.85; z-score = -3.78: p-value < 0.05) and Victoria Garden City (R=0.77; z-score= -11.86; p-value < 0.05). In the remaining four private, gated communities, the spatial distribution of houses with CCTV were dispersed: Lekki Phase 1 (R=1.41; z-score=11.5; p-value < 0.05); Osborne Foreshore Phase 1 (R=1.42; z-score=7.02; p-value < 0.05);Osborn Foreshore Phase 2(R=1.54; z-score=4.14; p-value < 0.05);and Parkview Estate (R=1.29; z-score=4.48; p-value < 0.05).

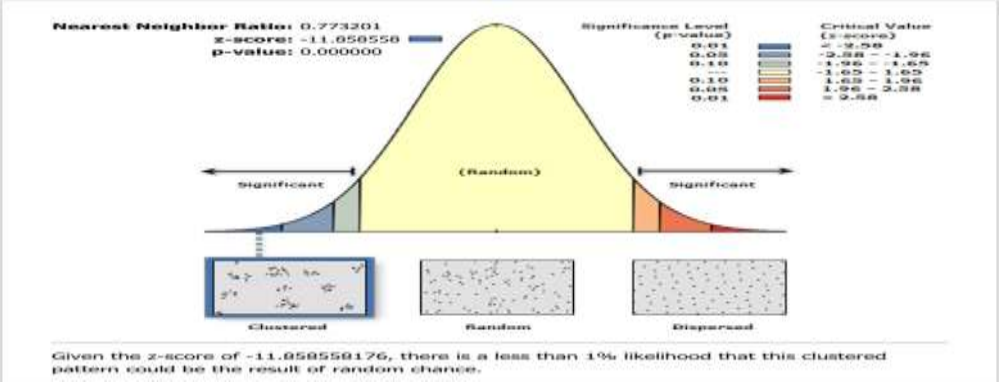

Figure 1: *Analysis of CCTV Points in Banana Island*

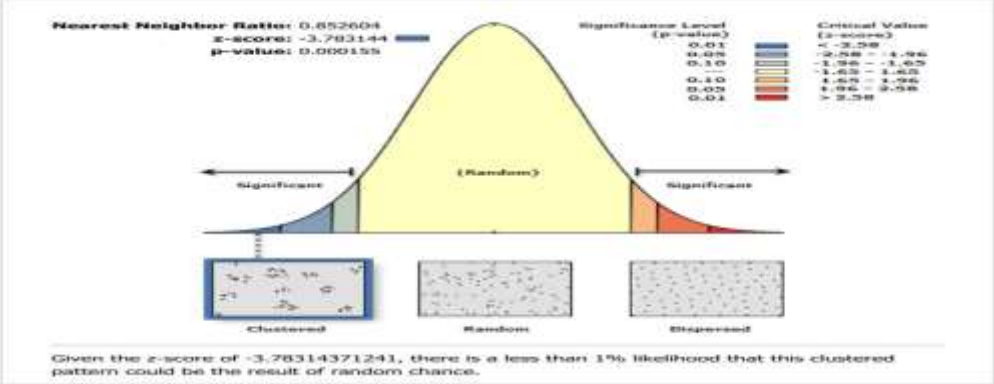

Figure 2: *Analysis of CCTV Points in Dolphin Estate*

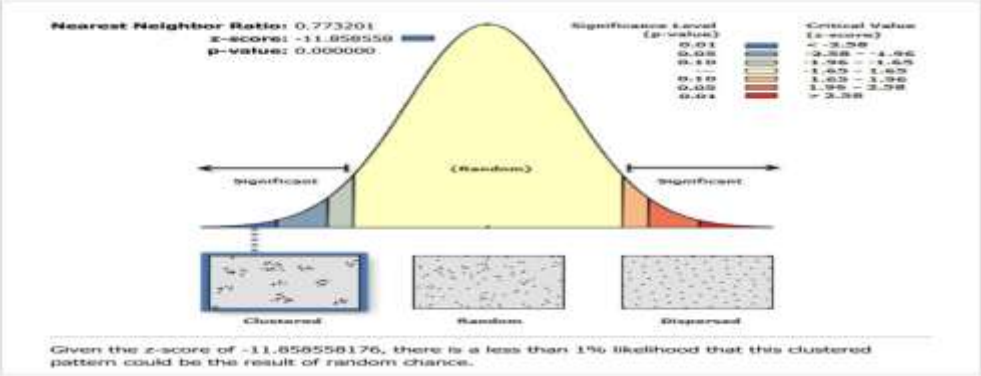

Figure 3: *Analysis of CCTV Points in Victoria Garden City*

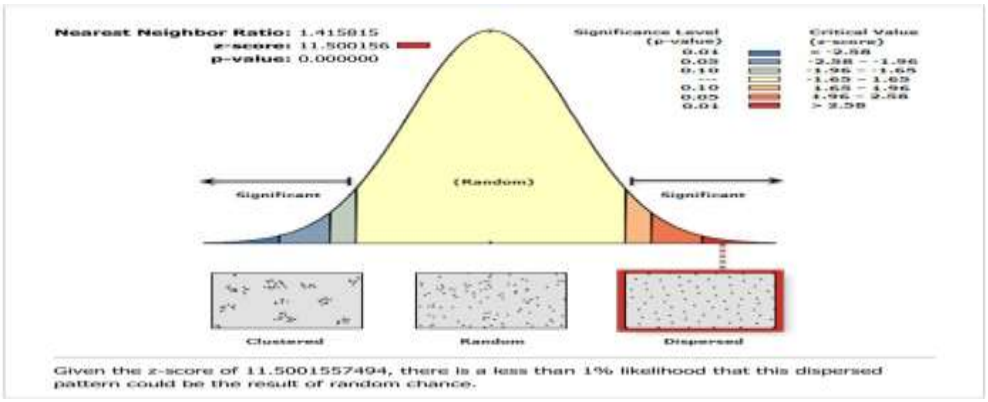

Figure 4: *Analysis of CCTV Points in Lekki Phase 1*

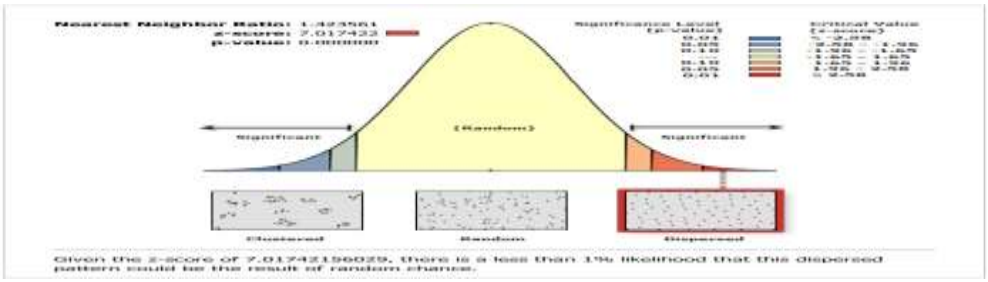

Figure 5: *Analysis of CCTV Points in Osborn Foreshore Phase 1*

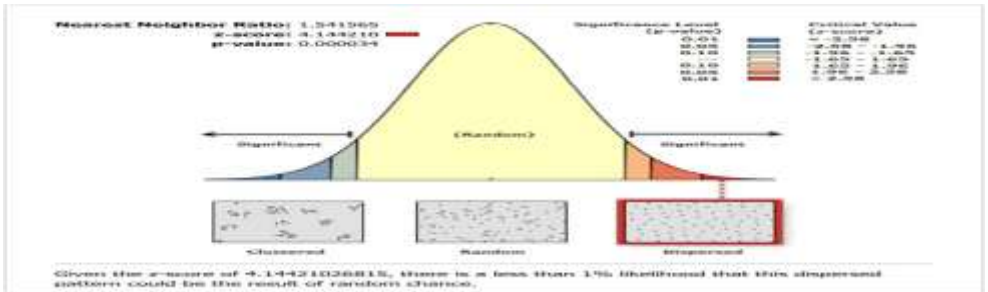

Figure 6: *Analysis of CCTV Points in Osborn Foreshore Phase 2*

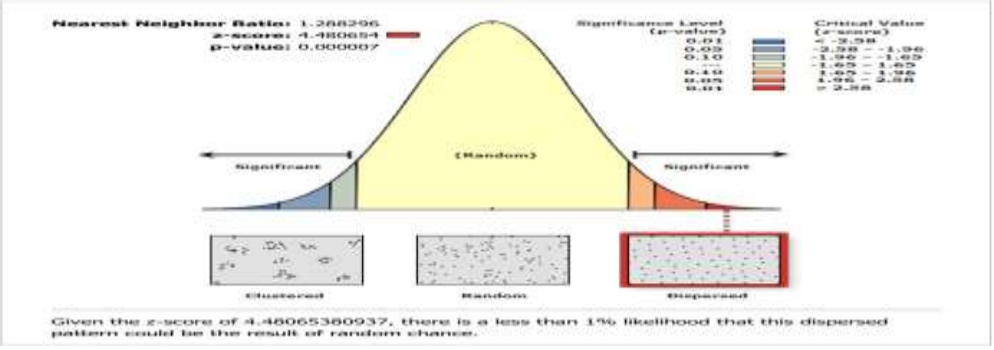

Figure 7: *Analysis of CCTV Points in Parkview Estate*

6. Conclusion and Recommendation

The type, location and number of CCTV installed prevented crime in private gated communities in Eti-Osa LGA. Thus, the use of Pan, Tilt and Zoom flexible cameras that are randomly distributed with the well-coded centralized control system is recommended for effective surveillance. The use of Closed-Circuit Television in policing gated communities will ensure that crime rate within them are effectively managed with increased detection and apprehension of criminals. The safety and security of lives and properties of residents can be further enhanced through regular patrol by security guards and the use of dogs. German shepherd, German Spitz, Miniature Schnauzer, Scottish terrier and West Highland white terrier are effective for security to the extent that at first sight of a threat within their jurisdictions, the first impulse is to attack. The use of sensors, for example, alarm doors that trigger alarms once a threat is sensed should also be encouraged.

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