The role of geographical juxtaposition in Kabalagala

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ABSTRACT

Geographical juxtaposition has been cited as a concept least studied by CPTED experts. Additionally, Urban planners and designers seem to have sparse knowledge on the applications of the geographical juxtaposition concept. This study evaluates the relationship between bars and pubs and the crime prevalent streets of Kabalagala township CBD. Kabalagala township as a crime hotspot within Kampala City presents appropriate conditions to support this study and generate more interest in CPTED. Kabalagala is an entertainment hotspot with numerous bars and pubs, gambling parlors, and other entertainment businesses. This paper focuses on analyzing the built environment of Kabalagala in terms of the principle of geographical juxtaposition. The outcome of polling property/business owners and police/private security firms suggested that bars and pubs created conditions necessary for crime generation, attraction, and facilitation in unison with the geographical juxtaposition concept and may be linked to property crime on adjacent streets.

1. Introduction

Crime is noted to have numerous adverse effects on society including loss of jobs, increased expenditure to the criminal justice system, and loss of taxpayer’s money on crime prevention (World Bank, 2009). The effects of crime are particularly most directly felt by businesses and property owners (Capobianco, 2005). In this backdrop, this study investigates the principle of geographical juxtaposition and its possible role in explaining property crime in the streets of Kabalagala township hence contributing to crime prevention.

The idea that the built environment can be manipulated to prevent crime is not entirely novel in the western metro-pole. CPTED principles have emerged to be important elements in crime prevention within public spaces in the western metro-pole as demonstrated by the government CPTED policy documents and guidelines mainly created by urban planning authorities (City of Virginia Beach, 2000; Western Australian Planning Commission, 2000; Owatonna Police Department, 2009; National Crime Prevention Council (NCPC), 2013). However, the existence of Crime Prevention through Environmental Design (CPTED) in Africa and developing countries seems to be lacking. CPTED offers important principles about how urban planners and designers can shape the built environment for crime prevention. This has spanned a whole field focused
on manipulation of the built environment by urban planners and designers and other built environment professionals.

However, in spite of the advancement and development of CPTED, the principle of geographical juxtaposition has largely gone unexplored (Cozens & Love, 2015). Geographical juxtaposition refers to the capacity of surrounding spaces to influence the security and safety of adjacent areas and vice versa (Newman, 1972).

This paper explores the principle of geographical juxtaposition within Kabalagala CBD since it has become challenging to elaborate and pinpoint the physical design implications of the principle of geographical juxtaposition which has been left out of most subsequent CPTED regulations and guidebooks (Cozens & Love, 2015; Cozens et al., 2019). The lack of adequate research on it might have curtailed its development. This study evaluates Kabalagala in terms of geographical juxtaposition and tries to determine the physical design and crime implications of geographical juxtaposition by evaluating the potential relationship between bars and pubs and street crime.

2. Literature review

This section highlights the major concepts of CPTED while specifically noting the concept of geographical juxtaposition and related developments that have occurred in shaping its role in crime prevention. The literature also illustrates the role of bars and pubs as currently understood with regards to crime.

2.1 CPTED

According to Oscar Newman, design and the physical environment can deter or facilitate crime (Radosevich, 2012; Reynald & Elffers, 2009). Consequently, Oscar Newman outlined several principles of defensible space i.e., territoriality, natural surveillance, geographical juxtaposition, and image and milieu. These principles are thought to combine to promote a sense of ownership, community and responsibility in residents enabling them to secure and maintain their neighborhood (Cozens & Love, 2015).

CPTED also known as designing out crime is an agglomeration of principles and concepts built upon the defensible space principles and with the basic postulation that the manipulation of the built environment can lead to crime prevention by effectively curtailing the opportunities available; (Cozens & Love, 2015; Crowe & Zahm, 1994; Nocheck, 2013; Teran, 2011). Johnson and Gibson (2013) defines CPTED as the proper design and effective use of the built environment that can lead to a reduction in the fear and incidence of crime and an improvement in the quality of life. The goal of CPTED is to reduce opportunities for crime that may be inherent in the design of structures or neighborhoods. However, it is not clear whether the aspect of quality of life is investigated as much the impact of CPTED on crime.

According to Nocheck (2013), modern CPTED is comprised of the concepts of surveillance, boundary definition, access control, maintenance, and activity support. Other proponents like Cozens and Love (2015) argue a strong case for the categorization of CPTED in two categories; the first-generation and second-generation eras of CPTED. First generation CPTED is based on seven strategies namely territoriality, access control
and management, image and space management, natural access control, legitimate activity support, target hardening, and geographical juxtaposition (Cozens & Love, 2015).

A key cornerstone of second generation CPTED is the inclusion and participation by community members and all affected parties (Cozens, 2011). The second generation CPTED is also referred to as community CPTED. Mallett (2004) calls it social CPTED.

### 2.2 Geographical juxtaposition

Geographical juxtaposition refers to the capacity of surrounding spaces to influence the security and safety of adjacent areas and vice versa (Newman, 1972). Cozens and Love (2015) and Cozens et al. (2019) argue that geographical juxtaposition (surrounding environment) as a strategy has been largely ignored and forgotten in planning theory and practice although evidence suggests that knowledge of use of the built environment and natural environment for crime prevention and safety has been available as far back as the year 1285 with Kingly decrees (Anderson et al., 2013). The literature available concerning factors that may be related to geographical juxtaposition is concerned with the proximal and meso environmental factors of crime and crime prevention which mainly include the effects of land uses on crime. Unfortunately, even this literature is scarcely known by planners, architects and urban designers but it is a component in environmental criminology.

Whereas crime prevention literature on social/cultural factors, individuals, and physical situations at the exact crime location (proximal/meso environmental factors) (Anderson et al., 2013) is available, crime prevention focused on the physical factors located outside the crime location is very sparse. An in-depth review of peer reviewed publications by Cozens and Love (2015) spanning from 1968 to 2019 discovered that only 3.31% (14 publications) focused on Geographical juxtaposition while only six publications slightly mention the geographical juxtaposition concept.

As far back as 1999, there have been suggestions that CPTED will be most effective if it is carried out within the framework of the entire urban planning and yet some aspects like geographical juxtaposition are still almost nonexistent in the planning world. Jeffery (1999) noted the importance of geographical juxtaposition being part of total urban planning.

Most of the defensible space principles have been studied to a large extent (Cozens & Love, 2015; Crowe & Zahm, 1994; Johnson & Gibson, 2013; National Crime Prevention Council (NCPC), 2013; Nocheck, 2013; Teran, 2011) but few studies have focused on the principle of geographical juxtaposition. Subsequent studies (Cozens & Love, 2015; Armitage, 2018; Ekblom, 1997; Reynald, 2011, 2014) have failed to mention and explore the principle of geographical juxtaposition which might have affected the efficacy and the development of the CPTED principles.

Understanding how the built environment within Kabalagala CBD which is comprised of bars and pubs and how it relates to property crime at the street level may prove useful in appreciating and role of the geographical juxtaposition concept and its potential input in crime prevention.

### 2.3 Geographical juxtaposition and land use

The concept of geographical juxtaposition has had varied application especially within land use development. However, this application is limited because it grossly misses to
address crime prevention focused on physical factors outside the crime location which was the original conceptualization of the concept by Newman (1972). Instead, the focus of most literature has been on socio-cultural and economic situations of the crime location, individual factors and a focus on the situation at the crime location.

Most of the literature that seems to be related to urban planning practice particularly discusses effects of land use on crime. However, Cozens et al. (2019) note that such knowledge is rarely available to urban planners but it is a mainly discussed within the field of environmental criminology. Urban planners are responsible for development control and zoning making such information essential for more informed decision making. According to Brantingham and Brantingham (1995) and Kinney et al. (2008) land use types can be evaluated based on the type of criminal opportunities they provide. The five classes that emerge are crime generators, crime attractors, crime facilitators, crime detractors, and crime precipitators.

Cozens et al. (2019) noted two contrasting theoretical perspectives explaining the relationship between mixed use developments and crime. The first view that is hinged on crime evidence is that a mixture of different land uses encourages more diversity and activity hence enabling and providing more ‘eyes on the street’, or natural surveillance which can act to reduce crime. This view is derived from Jacobs (1961) concept that encouraged more natural surveillance on the streets hence less crime. This perspective has been at the forefront of modern urban planning and inner-city policies being promoted worldwide although it remains unjustified and an erroneous assumption.

The second contrasting perspective argues that mixed land uses to reduce the ability of residences to claim public spaces as their own hence affecting the level of territoriality and affects social control and oversight over public spaces which hampers the capacity of residences to respond and challenge strangers.

Crime evidence however suggests that both perspectives are not as straightforward as often conceptualized. For instance, evidence indicates that contrary to the common idea that low levels of crime are synonymous with increased human activity, research is indicating that homogenous neighborhoods have lower crime rates compared to mixed use developments. However, most of the research on the effects of land uses on crime is focused on alcohol-related land uses.

Liquor stores are related to increased crime rates where for instance, streets containing bars and pubs experienced more crime than streets lacking them (McCord et al., 2007; Rengert et al., 2005; Roncek & Bell, 1981; Roncek & Maier, 1991). Retail stores have also been found to be related to elevated crime levels in varying scales (Bernasco and Block 2011; Boessen and Hipp, 2015; Hipp et al. (2017). Transit-related land uses have also been associated with increased risk of crime with subway stations attracting crime and influencing the distribution of criminal activity. Higher rates of violent and property crime have also been associated with the presence of schools in certain areas (Roncek and LoBosco 1983; Roncek and Faggiani; Wilcox et al. 2004).

Unfortunately, not utilizing land adequately will also not insulate places from crime. The non-use of land has been linked to increased crime rates where studies have shown that idle land and vacancies can attract crime (Roncek & LoBosco, 1983; Roncek and Faggiani 1983; Wilcox et al., 2004).

This study acknowledges some of the prominent models of CPTED that have been developed that indicate the position of the geographical juxtaposition concept in CPTED.
As illustrated in the models highlighted by Cozens et al. (2019), the geographical juxtaposition principle is perceived as an all-enveloping concept that is located at the outer rims of the other CPTED principles and which directly affects the efficacy of the other inward located principles (target hardening, access control, surveillance, territoriality, image and space management, and activity support). However, the exact location of where factors outside the crime location begin might be a stumbling block to the further development of the principle of geographical juxtaposition.

For Kampala, it is possible that the areas surrounding Kabalagala also affect the crime within it. As regions are linked, there can be some built environment features connecting these areas to Kabalagala that may influence crime within Kabalagala commercial district. Potential offenders might be escaping or emanating from these surrounding regions and property/business owners within the commercial district and where they live which might also influence crime opportunities. Additionally, new targets adjacent to the location of original crime targets might also emerge when the original targets no longer prove to be in spaces that are easy to perpetrate property crime.

### 2.4 Entertainment hotspots and crime

There is significant evidence linking crime to alcohol and by extension to bars and pubs. Alcohol is particularly linked to crimes of disorder and those involving violence. A lot has been written about bars and pubs and how they attract crime while in some instances, they also fall victim to criminal activities. It seems such entertainment hotspots are connected to crime irrespective of whether they facilitate crime or they fall victim to it (Frisbie et al., 1977; Rengert et al., 2005; Roncek & Bell, 1981; Roncek & Maier, 1991).

Frisbie et al. (1977) noted that a large percentage of assaults and robberies occur inside bars and pubs while other studies (McCord et al., 2007; Rengert et al., 2005; Roncek & Bell, 1981; Roncek & Maier, 1991) showed that street blocks containing bars experienced more crime than streets without bars and pubs. The density of bars and pubs in places are also associated with higher crime rates (Gruenewald, 2011; Livingston, 2011). In other studies, exposure to bars was discovered to be positively associated with violent crime, property crime and disorder (McCord & Ratcliffe, 2009; Muiir, 2012).

Muiir (2012) links the problems of bars and pubs to the alcohol consumption propagated by them. However, Muiir (2012) argues that bars and pubs serve the community by contributing in a positive way to social life. This occurs if they are run well.

The 2008/2009 British crime survey (BCS) on victims of crime found that the victims believed that the offenders were under some influence of alcohol or drugs in more than half of all violent incidents (Caulkins & Kleiman, 2014). Scott (2004) study on assaults in and around bars that was funded by the United States department of Justice highlighted several reasons why bars and pubs are linked to crime. Some of the noted factors that influence crime include alcohol, type of establishment, concentration of bars, unattractive décor and dim lighting etc.

Scott (2004) notes that the intense concentration of bars and pubs can increase barhopping and if all the bars close at the same time, this can increase conflict on the streets. However, the concentration of bars and pubs in an area does not always mean that there will be more crime (Muiir, 2012).
Unattractive décor is also a factor in disorder and violence in and around bars and pubs. Scott (2004 pg.6) states that ‘Unattractive, poorly maintained and dimly lit bars signal to patrons that the owners and managers have similarly low standards for behavior, and that they will likely tolerate aggression and violence’, which will also encourage and attract other property crime. This seems to conform to the Broken windows theory’s postulation concerning the significance of perception in attracting crime (Wilson and Kellings, 1982).

Additionally, unattractive and poorly maintained décor coupled with huge crowds often creates higher chances of accidental bumping and irritation which can spark of violence and also encourage pickpocketing. Muir (2012) also conversely notes that community bars and pubs do not experience a lot of problems related to drunkenness and violence. Bars and pubs have an important role in enabling social cohesion. Muir (2012) found that bars and pubs were the second most important place where people meet and socialize after homes. Whereas most of the men met at bars and pubs first followed by their homes, a larger proportion of the women met together at their homes followed by bars and pubs hence signaling the positive social value of such establishments.

2.5 Summary of literature review

CPTED is clearly a crime prevention approach firmly rooted within the Western metro-pole and mainly adopted in the West as illustrated by CPTED guidelines for several western cities (City of Virginia Beach, 2000; Western Australian Planning Commission, 2000; Owatonna Police Departmen, 2009; National Crime Prevention Council (NCPC), 2013). There is little evidence to indicate that the concept is actively being used in developing countries with the exception of South Africa (Cozens & Love, 2015).

However, it is evident that not all concepts of CPTED are given equal attention. The principle of geographical juxtaposition is not adequately understood especially by Urban planners even from the west in spite of it being a critical component of CPTED. The founder (Newman, 1972) of the defensible space principles similarly predicted that geographical juxtaposition would potentially face strong resistance from Urban planners. As it currently stands, the concept is synonymous with land use development which is part of the proximal and meso environmental factors of crime and crime prevention which mainly include the effects of land uses on crime. However, such literature is scarcely known by planners, architects, and urban designers but it is a component in environmental criminology (Cozens et al., 2019).

Whereas crime prevention literature on social/cultural factors, individuals and physical situations at the exact crime location (proximal/meso environmental factors) (Anderson et al., 2013) is available, crime prevention focused on the physical factors located outside the immediate crime location is very sparse (Cozens and Love, 2015).

This gap has presented the opportunity to examine geographical juxtaposition, especially by focusing on an area with numerous bars and pubs to clearly map out the possibility of the influence of bars and pubs and property crime on the streets of Kabalagala CBD.
This paper specifically identifies the link between bars and pubs and property crime as part of a broader conversation concerning the physical design implications of the principle of geographical juxtaposition on urban planning and design.

3. Methodology

Kothari (2004) defines research methodology as a way of systematically solving the research problem. It involves steps generally adopted by the researcher in studying his problem. Research methods on the other hand can be defined as all those methods/techniques that are used in the conduction of research.

Three methods were therefore applied: survey concerning existing literature, experience survey, and analysis of insight stimulating examples. These methods have been successfully applied by other studies of a similar nature like Teran (2011) and Nocheck (2013).

The researcher analyzed crime prevention within Uganda and built a justification for CPTED while specifically highlighting the potential place of geographical juxtaposition in fighting crime. As the study progressed across the major crime prevention approaches, the breadth narrowed and became more focused on geographical juxtaposition. Hence, a deductive approach to the research was also engaged. The study looked at dependent (property crimes), independent (CPTED concepts (mainly focusing on the geographical juxtaposition concept) and also considered extraneous factors that may affect crime in public places. This approach relies on the multifaceted approach of targeting major stakeholders within an area to build context-specific CPTED interventions. This also comes in the growing reality that CPTED interventions need to be context-specific and that respond to the needs of the people.

3.0.1 Measurement of crime

The release of official government statistics is done by the Uganda police which gives annual crime reports on the state of crime in the country. The Inspector general of police is the only one mandated to release crime data in Uganda. This includes data on terrorist-related activities. The high level of bureaucracy and secrecy in government institutions makes access to critical information challenging. It is therefore after the annual crime report is released by the Uganda police can a clear picture of the state of crime in each district can be appropriately mapped out (Kyogabirwe, 2017).

This study had to collect the opinions of the police having to contend with the limited amount of information that they were willing to provide. Other studies of a similar nature especially conducted in developing countries had access to detailed crime data that was not a preserve of the police to release as it deemed fit. This might have hampered the comparative analysis of real-time location-specific data and emerging information on crime trends that have been observed by the police.

To get a much more accurate picture of crime in Kabalagala CBD, the study collected perceptions and opinions of property crime from the police/private security firms within Kabalagala CBD to supplement findings from the property/business owners. This mix of data on crime trends from property/business owners and the police ensured that the data collected was more reliable.
3.1 Case study (Added cases study section)

This section explains the focus of the study area identifying the study area as a case study due to its unique attributes.

3.1.1 Study location

The study was conducted in Kabalagala CBD, located in Kampala City, Uganda that has been highlighted as a crime hotspot by previous crime reports (Uganda Police, 2014, 2018). The study area has been noted to experience snatch and grab thefts focused on the street.

Kabalagala is a multi-cultural heterogeneous neighborhood with proximity to the United States of America embassy in the neighboring Nsambya. The neighborhood is famous for its restaurants like the Ethiopian village, bars, and nightclubs. Kabalagala is a very vibrant night-time economy supported by heterogeneous multi-cultural urban community and it is a favorite hangout spot for foreigners. Bagala (2018) further notes that the Democratic Republic of Congo, Nigeria, Ethiopia and Eritrea are the countries from which most of these foreign population are drawn and who reside in Kabalagala.

Kabalagala was chosen because it is among the areas with a high prevalence of property crimes perpetrated in the streets involving snatch and grab thefts and other property crimes. Other crimes that have also occurred in Kabalagala in the recent past include: violent crimes, crimes of drug abuse, and terrorist-related crimes (Uganda Police, 2014). The presence of a foreign embassy and the multicultural demography make the area a potentially high target for crime.

3.1.2 Sampling frame

The study adopted a sampling formula highlighted in Kothari (2004) and stated below.

This formula was used to calculate sample size

\[ n = \frac{Z^2 \times p \times q \times N}{e^2(N - 1) + Z^2 \times p \times q} \]

Where:

- \( P \) = sample proportion
- \( Z \) = Value of standard variate at a selected confidence level
- \( n \) = Size of sample
- \( N \) = Population size
- \( q = 1 - p \) (Sample proportion)
- \( e \) = Acceptable error (The precision)

Police force in Makindye = 3,953
Police force in the entire Kampala City = 15,162
Number of businesses in Makindye = 21,811
Population was composed of business/property owners and police/security firms
- \( N \) = Population of business/property owners + population of police/private security firms
  - \( N = 21,811 + 3,952 \)
  - \( N = 25,673 \)
The research engaged a confidence interval of 90% which corresponded to a Z score of 1.645 (Kothari, 2004).

\[ N = \text{population size} \]

The sample proportion was assumed to be 0.5 because the study anticipated the most conservative sample size. The value of \( p = 0.5 \) and \( q = 1 - p = 0.5 \)

The margin of error was at 10% as informed by real constraints of time and resources. Hence, \( e = 0.1 \)

\[ n = \frac{4.3.2}{4.3.2} \]

3.1.2.1 Police/private security firms (n1). \( N1 = \left( \frac{S1}{N} \right) * n \)

\[ N1 = \left( \frac{3,953}{25,763} \right) * 67 = 10.27 \]

\( N1 = 10 \) Respondents

3.1.2.2 Property/business owners (n2). \( N2 = \left( \frac{S2}{N} \right) * n \)

\[ N2 = \left( \frac{21,811}{25,763} \right) * 67 = 56.72 \]

\( N2 = 57 \) Respondents

Percentage covered by each stratum.

\[ \text{Percentage} = \left( \frac{S}{n} \right) * 100 \]

For \( N1 \left( \frac{10}{67} \right) * 100 = 14.9 = 15\% \)

For \( N2 \left( \frac{57}{67} \right) * 100 = 85.07 = 85\% \)

10 questionnaires were administered to police/private security firms representing 15% of the sample size and 57 questionnaires were administered to property/business owners representing 85% of the sample size.

3.2 Data collection

The study relied on data primarily collected from questionnaires administered to property/business owners and police/private security firms. The questionnaires primarily documented perceptions of the property/business owners with regards to crime in the streets of Kabalagala CBD and CPTED related concepts since they are the primary
propriators of Kabalagala CBD establishments. The questionnaires targeted at the police/private security firms however mainly focused on establishing facts and data on crime and some opinions concerning CPTED related concepts.

The collected data went through rigorous data processing involving data cleaning and coding (Simpson, 2015; Flick, 2013). This prepared the data for analysis using SPSS 20 and Microsoft Excel.

### 3.2.1 Reliability and validity of methods

Anastasia (1982) in Kasomo (2015) defines validity as the quality that a procedure or instrument (tool) used in a research is accurate, correct, true, meaningful, and right. Kumar (2011) defines validity as the degree to which the researcher has been able to measure what he set out to measure. Kothari (2004) also looks at validity as a utility and defines it as the extent to which differences found with a measuring instrument reflect true differences among those being tested. It refers to whether an instrument is measuring what it is designed to measure.

The following steps were taken to ensure effectiveness and relevance of the data collection tools used based on the aspects of credibility, transferability, content validity, dependability, conformability.

### 3.2.2 Credibility

Trochim and Donnelly (2007) in Kumar (2011) define it as establishing that the results of qualitative research are credible or believable from the perspective of the participant in the research. This was determined using a pilot test of the survey instruments that was carried out.

### 3.2.3 Transferability

Trochim and Donnelly (2007) in Kumar (2011) define transferability as the degree to which the results of qualitative research can be generalized or transferred to other contexts or settings. The researcher painstakingly elaborated the process he used to ensure that the results can be generalized or transferred to other contexts.

### 3.2.4 Content validity

In determining the validity of instruments used, content validity which refers to the extent to which the instruments cover the topic under study was applied (Kothari, 2004). Content validity was determined through the researcher’s judgments and intuition and also based on expert opinions, in-depth literature review, and directions to judge whether the instruments meet the standards required. The researcher also ensured that the research questions are reflective of the objectives hence answering the intended questions.

### 3.2.5 Dependability

Trochim and Donnelly (2007) in Kumar (2011) define dependability as concerned with whether we would obtain the same results if we could observe the same thing twice. Dependability is almost similar to reliability in quantitative research. Kumar (2011) notes that the best way to ensure this is to keep a detailed record of the process for others to be able to replicate the results and determine the dependability of the results. Detailed processes of developing the instruments were kept by the researcher.
3.2.6 Conformability
Trochim and Donnelly (2007) in Kumar (2011) define conformability as the degree to which the results could be confirmed or corroborated by others. It is possible to establish conformability by comparing the instruments with the tools used previously in other studies. These methods were appropriate in data collection for this study because they have been previously applied in studies concerning crime prevention and CPTED (Nocheck, 2013).

The researcher also endeavored where possible to remove any external factors influencing the target populations from giving accurate information and ensured that he was in the right frame of mind to conduct the study. Additionally, research ethics were followed to ensure originality and quality output and protect the participants from any harm.

3.3 Data analysis
Pandey and Pandey (2015) refer to data analysis as studying the organized material in order to discover the inherent facts. Flick (2013) defines qualitative data analysis as the classification and interpretation of linguistic (or visual) material to make statements about implicit and explicit dimensions and structures of meaning making in the material and what is represented in it.

To unearth deeper insight, this study adopted the spearman’s rank order of correlation (Creswell, 2003; Nocheck, 2013; Teran, 2011) to analyze the relationship between entertainment hotspots and property crime perpetrated on the most crime prevalent streets in Kabalagala commercial district.

3.3.1 Spearman’s rank correlation coefficient
Since the Spearman coefficient is a nonparametric and distribution-free statistical method for measuring the rank correlation between two independent variables, which is appropriate for continuous, discrete, and ordinal variables, it was therefore found relevant for use in this study to analyze the association between the various pieces of statistical data that was generated from the field pertaining to crime, causes, and potential prevention.

According to Kasomo (2015), the Spearman’s Rank Order Correlation Coefficient is best used in ordinal data and when the data is of small amount. The Charles Spearman’s Correlation Coefficient is defined as a statistical measure of the strength of a monotonic relationship between paired data and is conducted with the following assumptions: The data is interval, ratio or ordinal and the data is monotonically related. This test is a nonparametric test because normality is not a requirement. The data therefore does not have to be normally distributed. Kothari (2004) and Kasomo (2015) advise that if the data is not interval or ratio, is not normally distributed and linearly related then the researcher should use the Spearman’s test of correlation.

The data had some form of ranking hence ordinal in nature, and had monotonic correlations when plotted in scatterplot graphs. Two-tailed tests were used when running the Spearman’s Correlation Coefficient in SPSS to unearth relationships between crime in the streets and property crime in bars and pubs.
4. Findings

The significant findings from the study that were related to geographical juxtaposition concept are presented below.

4.1 Profile of sample

The researcher interviewed a total of 67 respondents from property and business owners and the police/private security firms. From the property/business owners, the researcher interviewed respondents from varying professions and across different categories of businesses and most importantly purposefully considered gender balance in administering the questionnaires (for further details check the appendix). The males represented 54.39% (31 respondents) while females represented 45.61% (26 respondents) of the property/business owners polled.

60% of the respondents came from the police and military. 40% of the respondents came from the private security firm’s half of which were females. 83.3% of the police/private security firms and military were males. Only 16.6% were females representing one respondent. Generally, 70% (7 respondents) of the respondents were males while 30% (3 respondents) were females.

4.2 Properties/Businesses targeted for crime

Most of the property/business owners stated that their properties/businesses have never been targeted for property crimes while 33.3% of the property/business owners felt that their properties/businesses have ever been targeted for crime as opposed to 66.7% who stated that their properties had been targeted for crime.

A further examination of the respondents who felt that their properties/businesses were targeted for crime revealed that morning (34.60%) experienced the highest number of property crimes followed by night (28.50%). Theft of cash/other property and robbery were the most prevalent crimes with 59.10 and 18.40%, respectively, as shown in the table one. This agrees with most of the crime data indicating that theft of cash/other property and robbery are persistent property crimes that exist in Kabalagala CBD. While most of the crimes that occur early in the mornings and at night thus suggesting where focus should be with regards to crime prevention. Mornings might also partly be facing crime possibly because people are also rushing to work and are not paying attention.

Table 1. Property crimes experienced in different times of the day.

| Time of Day | Theft of cash/other property | Robbery | Burglary | Vandalism | Arson | Total |
|-------------|------------------------------|---------|----------|-----------|-------|-------|
| Morning     | 16.30%                       | 8.20%   | 6.10%    | 2.00%     | 2.00% | 34.60%|
| Night       | 16.30%                       | 6.10%   | 6.10%    | 0%        | 0%    | 28.50%|
| Evening     | 18.30%                       | 4.10%   | 2.00%    | 2.00%     | 2%    | 28.40%|
| Afternoon   | 8.20%                        | 0.00%   | 0.00%    | 0%        | 0%    | 8.20% |
| Total       | 59.10%                       | 18.40%  | 14.20%   | 4.00%     | 4.00% | 100%  |
Figure 1. Reasons why properties/business are targeted for crime.

4.3 Reasons given for crime

The study found that 21.2% of respondents stated that business that have not been the target of crime noted being situated in a secure location as the second most important factor that determined their crime risk. While 15% of respondents stating that the property/businesses being situated in a congested area was a factor contributing to the properties/businesses being a target for crime. This is illustrated in figure 1 one.

4.4 Targeted properties/places

The study also inquired from the police/private security firms about data concerning places/properties targeted the most by property crime. The police/private security firms were asked to rank properties/businesses in Kabalagala CBD with regard to their level of vulnerability to property crime.

Figure 2 two illustrated that crowded public places and public property were most targeted as noted by 38% of respondents from the police/private security firms. Shops,
hotels and restaurants were the second most targeted identified by 36% of the respondents. Entertainment hotspots especially bars and pubs were the third most targeted stated by 21% of the respondents. The other properties/places mentioned included banks, learning institutions, residences, and police stations which were the least targeted cited by 5% of the respondents. These findings reflect that crowded public places in this case the streets of Kabalagala CBD were targeted the most for property crime.

### 4.5 Property crime versus targeted streets

A cross tabulation between property crimes that occurred versus targeted properties/places shown in table two revealed that theft of cash/other property was the highest occurring crime in all the properties/places and targeted most at crowded public places as stated by 18.15% of respondents from the police/private security firms. It is also the highest occurring crime in all the properties/places stated. Theft of cash/other property was second most targeted at shops, hotels and restaurants (15.6%) and entertainment hotspots are third most targeted as stated by 8.9% of the respondents. Cumulatively, 47% of the crimes that occurred were theft of cash/other property. Vandalism is the second most occurring crime as cited by 15.8% of the respondents followed closely by burglary stated by 15.60% of respondents. Robbery occurred the most in entertainment hotspots (Bars and pubs). Findings agree with crime targeting properties/businesses (table one) where theft of cash/other property was the most prevalent property crimes to occur in crowded places.

Shops/hotels and restaurants are expected to experience more cases of robbery probably because of the monetary value placed in businesses. Overall, theft of cash/other property was unanimously cited by the property/business owners (table one) and the police/private security firms (table two) as the most prevalent property crime in Kabalagala CBD. Bars and pubs on the other hand are surprisingly not the most targeted properties/places.

### 4.6 Crowded public places and entertainment hotspots

Further analysis using the spearman’s correlation coefficient uncovered a relationship between targeted crowded public places and entertainment hotspots for crime as shown in Table 3 revealing that targeted crowded public places were positively correlated to targeted bars and pubs where \( \rho = 0.993 \) (Very high) and

| Property crimes        | Crowded public places/public property | Shops/hotels and restaurants | Bars and pubs | Other (police stations/ universities/banks/residences) |
|------------------------|---------------------------------------|-----------------------------|---------------|-------------------------------------------------------|
| Theft of cash/other property | 18.15%                                 | 15.60%                      | 8.90%         | 3.80%                                                  | 46.45% |
| Vandalism              | 9.40%                                  | 3.90%                       | 1.90%         | 0.60%                                                   | 15.80% |
| Burglary               | 6.20%                                  | 5.60%                       | 1.90%         | 1.90%                                                   | 15.60% |
| Robbery                | 5.00%                                  | 5.60%                       | 1.90%         | 1.90%                                                   | 14.40% |
| Arson                  | 3.80%                                  | 1.90%                       | 1.90%         | 0%                                                      | 7.60%  |
|                        | 42.55%                                 | 32.60%                      | 16.50%        | 8.20%                                                   |        |
Table 3. Relationship between crowded public places and bars and pubs.

| Correlations | Bars & pubs for crime | Crowded public places for crime | Hotels & restaurants for terrorism | Crowded public places for terrorism |
|--------------|------------------------|---------------------------------|-----------------------------------|-----------------------------------|
| Spearman’s rho | Correlation coefficient | Sig. (2-tailed) | 1.000 | .993** | -.304 | .440 |
| N | 8 | 8 | 5 | 6 |
| Correlated public places for crime | Correlation coefficient | Sig. (2-tailed) | .993** | 1.000 | 0.000 | .456 |
| N | 8 | 10 | 6 | 8 |
| Hotels & restaurants for terrorism | Correlation coefficient | Sig. (2-tailed) | -.304 | 0.000 | 1.000 | .913* |
| N | 5 | 6 | 6 | 5 |
| Crowded public places for terrorism | Correlation coefficient | Sig. (2-tailed) | .440 | .456 | .913* | 1.000 |
| N | 6 | 8 | 5 | 8 |

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Significance = 0.000. This positively very high correlation suggests that an increase in targeted bars and pubs also leads to an increase in targeted crowded public places and vice versa. This finding might strongly indicate that an increase in crime targeting bars and pubs also corresponds to an increase in crime targeting crowded public places and vice versa. This geographical juxtaposition concept is premised on the assumption that places adjacent to each other could affect crime in each other. The possibility of crime between these two places in Kabalagala might be an indication of the manifestation of crime transfer.

5. Discussion

The findings seemed to agree with previous evidence suggesting that bars and pubs are related to increased crime prevalence especially in areas where they are agglomerated together (Muiir, 2012; Scott, 2004) and that theft of cash/property and robbery were the most prevalent property crime in Kabalagala CBD (table one). Theft of cash/other property also referring to petty crime are both targeting properties/businesses and crowded places in this case referring to the major streets of Kabalagala (Muyenga, Gaba and Kikubamutwe). Targeted crowded public places (streets) were found to be positively correlated to targeted bars and pubs where rho = 0.993 (Very high) and Significance = 0.000. This positively very high correlation strongly suggests that when there is an increase in property crime targeting bars and pubs there is also likely to be an increase in crime targeting crowded public places and vice versa. These findings agree with previous research linking crime to alcohol-related establishments (Frisbie et al., 1977; Roncek; Roncek & Bell, 1981; Roncek & Maier, 1991; Rengert et al. Gruenewald, 2011; Livingston, 2011; Muiir, 2012).

Hopefully, this study will invigorate more discussion among urban planners and designers on the role of the geographical juxtaposition in crime prevention and within the entire framework of CPTED.
5.1 Geographical juxtaposition

Newman (1996) refers to geographical juxtaposition as the capacity of surrounding spaces to influence the security and safety of adjacent areas and vice versa. Most of the studies focus on other crime prevention concepts apart from Geographical juxtaposition (Cozens, 2011; Armitage, 2018; Ekbom, 2011a; Reynald, 2011, 2014). For instance, Cozens and Love (2015) and Cozens et al. (2019) argued that geographical juxtaposition as a strategy has been largely ignored. Additionally, Cozens et al. (2019) note that geographical juxtaposition is mainly applied to land-use development by environmental criminologists and that such knowledge is uncommon among urban planners globally. Whereas it is possible that the areas surrounding Kabalagala also affect the crime within it, this paper specifically focuses on the impact of bars and pubs on the property crimes prevalent on the streets.

5.2 Bars and pubs

There has long been a link between bars and pubs and crime (Frisbie et al., 1977; Roncek; Roncek & Bell, 1981; Roncek & Maier, 1991; Rengert et al. Grunewald, 2011; Livingston, 2011; Muir, 2012). Although bars and pubs might lead to increased crime in some cases, they are also targeted and fall victims to crime itself. The available research concerning the agglomeration of alcohol selling places and crime appears to be mixed. For instance, if bars and pubs within a certain area close at the same time they could cause conflict on the street and some bars and pubs seem to be the victims of crime itself (Greenfeld, 1998; Scott, 2004). This is not surprising because it is expected that areas with a high number of individuals who are potentially under the influence of drugs might also attract potential criminals because of the seeming abundance of easy targets and the perceived low consequence of apprehension.

In the case of Kabalagala, the presence of many bars and pubs defining the streets of Kabalagala commercial district especially Muyenga and Gaba road make it susceptible to property crime. It is possible that due to the criminogenic capacity where bars and pubs are crime generators and drugs are crime facilitators, they influence activity in crowded public places because people heading to entertainment hotspots commute through these streets. However, the agglomeration of such facilities seems to be on the premise that intense activity is always related to lower crime levels because of perceived increase in natural surveillance in accordance with Jacobs (1961)’s concept of ‘eyes upon the street’. This erroneous assumption by urban planners and designers has been the driving force guiding mixed used developments and the call for new urbanism (Cozens et al., 2019). Context-specific placement of urban features with regard to broader issues should be encouraged.

These findings agree with the researcher’s earlier held postulation that crime on the streets of Kabalagala is directly linked to the prevalence of entertainment hotspots in the study area. An increase in criminal activity in bars and pubs seems to have a spillover effect on streets as potential offenders look for more opportunities in adjacent places perceived as easier targets. These potential offenders might be under the influence of drugs. Potential offenders who perpetrate crime in crowded public places most likely escape to entertainment hotspots and also act on opportunities found within the bars and
pubs. This seems to echo the geographical juxtaposition concept where crime can be transferred between adjacent places and vice versa.

The relationship between crime and land-uses has been vastly studied. Most of the previous studies have however focused on liquor stores. These have been found to be related to increased crime rates where for instance, streets containing bars and pubs experienced more crime than streets lacking them (McCord et al., 2007; Rengert et al., 2005; Roncek & Bell, 1981; Roncek & Maier, 1991). Other land uses e.g., transit-related land-uses, retail stores, schools, lack of use of land e.t.c have also been related to crime (Roncek and Faggiani, 1985; Roncek & LoBosco, 1983; Roncek and Faggiani, 1985; Wilcox et al., 2004; Bernasco & Block, 2011; Boessen & Hipp, 2015; Hipp et al., 2017;). It was apparent that the relationship between land-uses and crime is far more complex as pointed out by Cozens et al. (2019). In certain instances, as has been demonstrated by Muiir (2012), bars and pubs can have positive social value to society if they are run well and can also be the victims of crime.

The geographical juxtaposition concept gives several parameters that will enable the classification of places/things in the environment of Kabalagala and their influence on crime (Newman, 1996; Nocheck, 2013; Radosevich, 2012; Teran, 2011). Bars and pubs can be seen as crime generators which are activity nodes that attract masses of people towards them who have the potential of committing crime when the opportunity arises even if some had no intention to. Drugs are crime facilitators because they assist the potential offenders in committing crime but this is to assume that most offenders are under some influence of drugs that motivates them to steal phones, cash, commit burglary, robbery, and other property crimes. This may not be true though likely in this setting. Crime precipitators are things in the immediate environment which encourages people to commit crime even if they would normally not consider offending. Crime precipitators include things like presence of hard cash (Cozens & Love, 2015; Cozens et al., 2019).

### 5.3 Crime transfer

In contrast to previous studies that have explained the effects of land-uses on crime, this study focuses on individual bars and pubs as entities and the specifics of how crime might be transferred on to the streets. Contrary to the previous postulation by Cozens et al. (2019) that suggest the use of the geographical juxtaposition concept as an enveloping principle to explain the confluence and relationship of the other CPTED principles, this study handles geographical juxtaposition as a concept with specific effects that regard to the nature of physical structures surrounding the streets of Kabalagala CBD. Furthermore, illustrating that crime can shift.

As properties/businesses take up measures to prevent crime, opportunities for crime in these specific properties/places reduce and the potential offenders select opportunities in easier targets on the streets of Kabalagala CBD within the same space and the crime is transferred onto the streets. It is possible that when target hardening measures are taken up by the property/business owners and the street features are not designed to foster crime prevention the result is that crime is transferred onto the streets. This explains why for instance, property crimes in Muyenga, Gaba, and Kikubamutwe road seem to be
similar to crimes targeted at specific properties/businesses. However, there is need for more evidence to clearly illustrate a relationship between the two.

Crime is largely perceived to be a consequence of a broken social structure and not the physical urban environment and geography (Wilson and Kellings, 1982). We should expect that the respondents should rank bars and pubs rank as places with most of the crime. In spite of this, entertainment hotspots were ranked the third most targeted properties/places (21%), shops, hotels and restaurants were second most targeted (36%) while crowded public places/public properties were most targeted (38%).

It is evident that the properties/places that are generally perceived to harbor potential offenders like bars and pubs are not necessarily the areas where crime will occur most. Maybe bars and pubs do not provide suitable targets. Perhaps there is more opportunity in crowded public places and shops, hotels, and restaurants because of criminogenic factors in these places that enable the potential offender to arrive at an appropriate target however they perceive their appropriate target to be.

5.4 Opportunity creates the thief

Other factors worth noting that influence and perhaps reinforce the relationship between property crime and bars and pubs include effects of alcohol on discouraging other sober-minded users, availability of concealment and isolated areas, and poor lighting and decor. Crime pattern theorists postulate that offenders select targets within their areas of routine activity and this is further supported by the absence of controllers that are either physical or human in nature, which influence the choice of targets by potential offenders.

Alcoholism impacts the mental capacity of drug takers and creates an air of intimidation to other people and impairs judgment. Sober minded people who can be perceived as controllers often avoid areas that are intimidating and seem disorderly. This also creates a feeling of invulnerability among potential offenders who take drugs which seems to boost their confidence levels to actually utilize any opportunities to commit crime. Such a situation concurs with the Broken Windows theory’s postulation that potential offenders assume that their chances of getting caught are lower if areas are intimidating and people are not attached to them (Van der Weele, 2017). Therefore, other sober-minded legitimate users will be discouraged from frequenting such places hence potentially offering effective natural surveillance over public places.

Such a scenario should remind us of the importance of undertaking crime risk assessments before adopting CPTED principles because crime prevention should be context-dependent and interventions should be tailored to specific situations. Factors outside the physical crime location have a significant effect on crime as is the case in Kabalagala CBD.

The proximity of numerous bars and pubs to each other may also be promoting criminal activity by affording many escape avenues for criminals into adjacent entertainment hotspots. Scott (2004) notes that agglomeration of bars and pubs leads to barhopping which might avail areas of concealment for potential offenders. However, it is not clear whether or not the targets are primarily the people who also partake of drug taking within the bars, pubs and other entertainment hotspots or unsuspecting individuals who
also share these streets although it is possible that most potential perpetrators are active drug takers.

Poor lighting in an area with numerous bars and pubs seems to be a key ingredient for the creation of isolated spots and concealment opportunities. The dim lighting within and outside these premises of Kabalagala CBD’s properties/businesses creates an environment that harbors criminality. Poor visibility might be an ingredient for property crime. Scott (2004)’s study funded by the US department of justice noted that dim lighting was one of the reasons why bars and pubs were associated with crime prevalence. In addition, poorly designed and maintained décor and façades of buildings housing the bars and pubs sends wrong signals to potential offenders. This suggests that the bars and pubs and the areas adjacent to them are not well cared for hence attracting deviant elements (Wilson and Kellings, 1982).

Any crime prevention intervention for Kabalagala CBD and areas that are entertainment hotspots will have to address the role of bars and pubs in perpetuation of crime and similarly acknowledge the positive social impacts and benefits of bars and pubs to the society. Such interventions should involve regulatory control of the bars and pubs, type of entertainment facilities to be permitted and their numbers, lighting, façade treatment and decor and the possibility of increasing varied and justified traffic along the streets and in their premises at all times of the day.

6. Conclusions and recommendations

The goal of this study was to assess the relationship between the agglomeration of entertainment hotspots and property crime prevalence on the streets of Kabalagala CBD. The study found that property crime targeting public spaces in the study area was closely related to the existence of numerous entertainment hotspots located within Kabalagala CBD.

Bars and pubs in particular were found to play a major role in crime prevalence within Kabalagala CBD. These hotspots could be associated with a transfer of crime along Muyenga, Gaba, and Kikubamutwe streets. According to the Geographical Juxtaposition concept, bars and pubs have a criminogenic capacity because they are crime generators. The study contended that the connection between entertainment hotspots and property crime on the streets of Kabalagala was as a result of the spillover effect of property crime from bars and pubs onto the streets. Public places might offer better targets for crime and the potential offenders may also be hiding in these bars and pubs and even escape to them after perpetrating the crimes.

Entertainment hotspots are advocates of creating pockets of spaces where drug abuse is highly legitimate therefore encouraging a climate of illegal drug and substance abuse which has largely been found to facilitate and perpetuate more crime. However, previous studies (e.g., Muiir, 2012) have shown that bars and pubs also have a positive impact on the social fabric within the public realm and should not entirely be faced out in lieu of their positive social impact which is often overlooked. Additionally, they offer jobs security to the employees. Planners will therefore have to balance between the social and economic benefits of bars and pubs to the residence of Kampala City.
Bars and pubs afforded more anonymity and less consequence of apprehension hence encouraging crime. In addition, poor lighting within and outside bars and pubs was also found to be supportive of criminal activity and offered more room for anonymity to potential offenders and hence catalytic of lesser consequence of apprehension. The poor lighting and unattractive décor within and outside these places attract potential offenders because the areas are perceived as being uncared for (Wilson and Kellings, 1982). Bars and pubs also offer avenues where potential offenders can hide and even escape to after the crime has been committed on the streets.

Due to the impact of entertainment hotspots on crime within the CBD of Kabalagala, this study suggests that KCCA should encourage other entertainment entities that can generate revenue but discourage crime. Diversity will discourage appropriating of public spaces only by activities concerned with drug taking. The licensing and approval regime for entertainment hotspots and related developments might have to be reevaluated so as to curb down on the number of bars and pubs within the area and to ensure that bar owners demonstrate how they plan to ensure safety and discourage criminality within its premises and potential spillover of crime to the streets.

The authorities should strongly consider CPTED interventions that lead to the improvement of lighting specifications, décor, and facade treatment within and outside bars and pubs to respond to the functionality of bars and pubs and enhance aesthetic appeal of these places and to also discourage creation of dark spots where gangsters might hide in wait of unsuspecting pedestrians. This will encourage natural surveillance and perceptions of image and space management leading to crime prevention in places that surround bars and pubs.

It will be appropriate to also setup policies and regulations to control the operating time of bars and pubs with hindsight of the relationship between areas outside the crime location which in this case are the streets of Kabalagala, across the day to avoid the intensive and potentially harmful activity of most of these hotspots during the night. Such policies may lead to a reduction in conflicts between users of bars and pubs and groups of people who are normally locked out because they are not comfortable with alcoholism. These other groups may also increase natural surveillance over public spaces during the night. Lastly, it may be essential if proper signage is adopted to clearly indicate the location of entertainment hotspots and warning signs at the street level to notify pedestrians of the impending danger associated with the entertainment hotspots and property crimes within Kabalagala CBD.

The study also found that property crime targeting public spaces (streets) in the study area was closely related to the existence of numerous entertainment hotspots existing within Kabalagala CBD. Bars and pubs are activities that support drug-taking and have an influence on the behavior of individuals. According to the Geographical Juxtaposition concept, bars and pubs have a criminogenic capacity because they are crime generators. The study contended that the connection between entertainment hotspots and property crime on the streets was as a result of the spillover effect of property crime from entertainment hotspots onto the streets. Public places might offer better targets for crime and the potential offenders may also be hiding in these bars and pubs and even escape to them after perpetrating the crimes.
This study has found that geographical juxtaposition concepts has deeper repercussions on the crime levels and perceptions of safety along the streets. The entertainment hotspots have been found to be advocates of the following:

- Creating pockets of spaces where drug abuse is highly legitimate, which facilitates and encourages potential offenders to commit crime due to poor lighting within and outside these places;
- Affording more anonymity and less consequence of apprehension hence encouraging crime;
- Offering avenues where potential offenders can hide and even escape to after the crime has been committed;
- Encouraging a climate of illegal drug and substance abuse which has largely been found to facilitate and perpetuate more crime.

Having illustrated the impact of entertainment hotspots on property crime levels within Kabalagala, the study suggests the following:

1. In regards to commercialization of entertainment hotspots specializing in selling alcoholic drinks within Kabalagala CBD. KCCA should find other entertainment entities that can generate revenue but discourage crime;
2. The licensing and approval regime for entertainment hotspots and related developments should be reevaluated so as to curb down on the number of bars and pubs within the area;
3. Consideration for improvement of lighting specifications within and outside bars and pubs to respond to functionality of these places and to also discourage creation of dark spots where gangsters might hide in wait of unsuspecting pedestrians should be among the priorities;
4. Policies and regulations to control the operating time of bars and pubs across the day to avoid the intensive activity of most of these hotspots during the night should be put in place. This may lead to the following:
   a. A reduction in conflicts between users of entertainment hotspots and streets;
   b. The use of streets by other groups of people who are normally locked out because they are not comfortable with alcoholism should be encouraged. These other groups may also increase surveillance over public space during the night.
5. Proper signage to clearly indicate the location of entertainment hotspots and warning signs for pedestrians highlighting the impending danger associated with the entertainment hotspots should be setup.

This study cannot fail to mention that the essence of geographical juxtaposition as initially conceptualized by Newman (1972) to CPTED and calls for more research on the topic. Urban planners, urban designers, architects, and CPTED experts should invest more resources on the concept because it might potentially lead to key advancements in CPTED.
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Appendix

Questionnaire 1

NAME:
CONTACTS: EMAIL:
TEL:

A STUDY OF CRIME PREVENTION THROUGH URBAN DESIGN IN KABALAGALA COMMERCIAL DISTRICT

Questionnaire administered to property and business owners

Dear Sir/Madam
I am an urban planner and humbly requesting for your time in answering the questions below. I am conducting research on urban design as an approach of crime prevention.

Objectives
Part of my research entails collecting data about perceptions of crime from property/business owners in Kabalagala commercial district.

Information confidentiality
The information you provide is strictly confidential and will only be used for academic purposes. Do not provide any personal information that will be prejudicial to you.

It is also within your right to decline answering this questionnaire or some questions by notifying the interviewer that you do not wish to do so. You are allowed to withdraw your participation at any time. Your responses will be useful in improving safety and preventing crime in public spaces within Kabalagala commercial district. However, you are encouraged to respond to all questions.

Thank you for your time

Respondent’s details
Nationality: ____________________________________________
Gender: _______________________________________________
Profession: ___________________________________________
Type of business _______________________________________
Age of business _______________________________________
Are you the owner or employee? __________________________
How long have you been employed in this business __________

(Please circle the relevant number or state as directed)
(1)

(a) Has your property/business ever been a target of crime?
   (1) Yes
   (2) No

(b)
   (i) If yes which type of property crime did your property/business experience?
      1. Vandalism
      2. Arson
      3. Burglary
      4. Robbery
      5. Theft of cash/other property
      6. Other (State below)

   (ii) What time of the day was the crime perpetrated?
      1. Morning hours
      2. Afternoons
      3. Evenings & Night

(c) Why do you think your property/business was targeted for crime?

(d) If no why do you think your property has never been targeted for crime?

(2)

(a) In your opinion which are the most crime prone streets within Kabalagala commercial district?

   Street 1_____________________________________________
   Street 2_____________________________________________
   Street 3_____________________________________________
(b) Why do you think the streets identified above are the most crime prone (Tick applicable box)?

|   | (1) Inadequate/ineffective/lack of Target hardening | (2) Inadequate/ineffective/lack of Lighting | (3) Poor Management & maintenance | (4) Poor Landscaping | (5) Inadequate/ineffective/lack of/natural surveillance | (6) Inadequate/ineffective/lack of/off formal or organized surveillance | (7) Inadequate/ineffective/lack of/ Mechanical/electronic surveillance |
|---|----------------------------------------------------|------------------------------------------|-------------------------------|-------------------|-----------------------------------------------|-------------------------------------------------|------------------------------------------------------------------|
| Fences | Poor lighting | Broken Windows | Concealment areas | Opaque windows | Security patrols | CCTV | |
| Barriers | Inadequate lighting | Lack of lighting | Poorly maintained entrances | Isolated areas | Little visibility | Police call boxes | Electronic surveillance |
| | | | Poorly maintained surroundings | | Many barriers | Poor landscaping | |

Other reasons (State below)

(3)

(a) How safe do you feel in the streets of Kabalagala commercial district?
   (1) Safe
   (2) Moderately safe
   (3) Unsafe

(b) If unsafe, state why you feel unsafe?

(4)

(a) From your experience which time of the day encounters the least criminal activity in Kabalagala?
   (1) Morning hours
   (2) Afternoons
   (3) Evenings & Night
   (4) None of the above
(5)

(a) Which urban design interventions below do you feel will aid in preventing crime in Kabalagala commercial district (Tick applicable box)?

| (1) Target hardening | (2) Lighting | (3) Management & maintenance | (4) Landscaping | (5) natural surveillance | (6) Formal or organized surveillance | (7) Mechanical/electronic surveillance |
|----------------------|--------------|-------------------------------|----------------|-------------------------|-------------------------------------|--------------------------------------|
| Fences               | Street lighting | Repair broken windows | Remove areas where offender can hide | Promote transparent large windows | Security patrols | CCTV |
| Barriers             | Lighting within premises | Clean windows | Remove isolated areas | Windows and openings overlooking public spaces | Police call boxes | Electronic surveillance |
|                      |               |                              |                      | Promote mix use activities |                        |                              |
|                      |               |                              |                      | Poor landscaping         |                        |                              |

(b) Other interventions (State below)

_________________________________________________________________
c) What would be the challenge of implementing the following design strategies? (Tick applicable number)

| Design strategy | 1. Target hardening (fences, walls) | 2. Lighting | 3. Maintenance & management | 4. Landscaping (less bushes) | 5. Natural surveillance (community surveillance) | 6. Formal/organized surveillance (policing) | 7. Mechanical/electronic surveillance (CCTV) | 8. Shops with large windows | 9. Police call boxes with hotline |
|-----------------|--------------------------------------|-------------|----------------------------|-----------------------------|-----------------------------------------------|---------------------------------------------|-------------------------------------------|-------------------------------|----------------------------------|
| **Challenge**   | (1) Poor maintenance and management  |             |                           |                             |                                               |                                             |                                           |                               |                                  |
|                 | (2) Lack of skilled manpower to manage |             |                           |                             |                                               |                                             |                                           |                               |                                  |
|                 | (3) Vandalism                         |             |                           |                             |                                               |                                             |                                           |                               |                                  |
|                 | (4) High cost of installation         |             |                           |                             |                                               |                                             |                                           |                               |                                  |
|                 | (5) Theft                             |             |                           |                             |                                               |                                             |                                           |                               |                                  |
|                 | (6) Hacking of electronic equipment   |             |                           |                             |                                               |                                             |                                           |                               |                                  |
|                 | (7) Other                             |             |                           |                             |                                               |                                             |                                           |                               |                                  |

For others state below: ____________________________________________________________
(a) Do you monitor what takes place in areas outside your premises?
   (1) Yes
   (2) No

(a) If yes, how far do you monitor the spaces outside your premises?
   (1) 1 – 3 meters around property/business
   (2) 4–7 meters around property/business
   (3) 8–11 meters around property/business
   (4) More than 12 meters around property/business

(b) If no, why don’t you monitor what takes place outside your premises?

(c) In your opinion how does the surrounding environment that you monitor outside your premises influence crime?
   (1) Potential criminals are shy to intrude when you are watching
   (2) You act upon any perceived intruder
   (3) Potential criminals feel they are intruding

(9)

(a) In your view do you think people are aware that you monitor spaces outside your premises?
   (1) Yes
   (2) No

(b) If yes, how do you think people know that you are monitoring the spaces outside your premises?
   (1) Adequate/well designed signage
   (2) You act upon potential criminals (Look at them, chase them away)
   (3) Presence of security guards
   (4) Presence of barriers (fences, walls)
   (5) They see you see you look at them through windows
   (6) Presence of CCTV
   (7) Regular management and maintenance of surroundings (e.g., Cleaning)
   (8) Other reasons (State below)
(c) If no, why do you think they do not know that you are monitoring spaces surrounding your premises?

(10)

(a) Do you live on the premises?
   (i) YES
   (ii) NO

The end . . .
Thank you.
Dear Sir/Madam
I am an urban planner and humbly requesting for your time in answering the questions below. I am conducting research on urban design as an approach of crime prevention.

Objectives
Part of my research entails collecting data about perceptions of crime from the police/private security firms in Kabalagala commercial district.

Information confidentiality
The information you provide is strictly confidential and will only be used for academic purposes. Do not provide any personal information that will be prejudicial to you. It is also within your right to decline answering this questionnaire or some questions by notifying the interviewer that you do not wish to do so. You are allowed to withdraw your participation at any time. Your responses will be useful in improving safety and preventing crime in public spaces within Kabalagala commercial district. However, you are encouraged to respond to all questions.

Thank you for your time

Respondent’s details
Gender: ____________________________________________
Rank/Official position: ________________________________________
Service period in Kabalagala: ________________________________
Name of police post/station: ________________________________________

(Please fill in the relevant box or circle a number)
(1)

(a) From your records which streets/roads in Kabalagala commercial district are targeted the most for property crimes?

Street 1
Street 2
Street 3

(b) In the identified streets/roads above which property crimes are most prevalent?

(Tick the applicable box)

(c) In your opinion what makes the identified streets above high crime targets?

(2)

(a) From your records what time of the day does most criminal activity occur in Kabalagala commercial district (Rank according to prevalence of criminal activity where 1 = Never, 2 = Rarely, 3 = Occasionally, 4 = Sometimes, 5 = Frequently, 6 = Usually, 7 = Every time) (Fill in the corresponding number).

| Time                  | Rank |
|-----------------------|------|
| Morning hours(3.00Am-11.59Am) |      |
| Afternoons(12 Pm-4.59Pm)   |      |
| Evenings (5Pm-8.59Pm)     |      |
| Night(9Pm-2.59Am)         |      |
(b) Specify which type of property crimes occur for the selected time above?

(Rank according to frequency of occurrence of crime where 1 = Never, 2 = Rarely, in less than 10% of the chances, 3 = Occasionally, in about 30% of the chances, 4 = Sometimes, in about 50% of the chances, 5 = Frequently, in about 70% of the chances, 6 = Usually, in about 90% of the chances, 7 = Every time) (Fill in the corresponding number)

| Time     | (A) Morning | (B) Afternoon | (C) Evening | (D) Night |
|----------|-------------|---------------|-------------|-----------|
| Crime    |             |               |             |           |
| (1) Vandalism |         |               |             |           |
| (2) Arson    |         |               |             |           |
| (3) Burglary |         |               |             |           |
| (4) Robbery  |         |               |             |           |
| (5) Theft of cash |       |               |             |           |
| (6) Theft of other property |       |               |             |           |

(c) Why do you think the selected property crimes occur?

(3)

(a) Which of the following properties/places have been targeted for crimes in Kabalagala commercial district?

(Rank according to frequency of been targeted where 1 = Never targeted, 2 = Rarely targeted, in less than 10% of the chances, 3 = Occasionally targeted, in about 30% of the chances, 4 = Sometimes targeted, in about 50% of the chances, 5 = Frequently targeted, in about 70% of the chances, 6 = Usually targeted, in about 90% of the chances, 7 = Targeted Every time) (Fill in the corresponding number).

| Property/place | Rank |
|----------------|------|
| (a) Bars and pubs |      |
| (b) Shops and warehouses |    |
| (c) Hotels and restaurants |   |
| (d) Public infrastructure (Street furniture, Public utilities, public buildings) | |
| (e) Public places (Parks, streets) |     |
| (f) Others |   |

For others (List below)
(b) Specify which type of property crimes have occurred for the targeted properties/places that you have identified above? (Rank according to the prevalence of property crimes identified above where 1 = Never, 2 = Rarely, in less than 10% of the chances, 3 = Occasionally, in about 30% of the chances, 4 = Sometimes, in about 50% of the chances, 5 = Frequently, in about 70% of the chances, 6 = Usually, in about 90% of the chances, 7 = Every time (Fill in the corresponding number).

| Crime type          | A. Vandalism | B. Arson | C. Burglary | D. Robbery | E. Theft of cash | F. Theft of other property |
|---------------------|-------------|-----------|-------------|------------|------------------|----------------------------|

Property/places

A. Bars and pubs
B. Shops & warehouses
C. Hotels & restaurants
D. Public property
E. Crowded public places (Parks, squares)
F. Other properties

(4) How effective has the police been in preventing and reducing crime in Kabalagala?
   (1) Not effective
   (2) Fairly effective
   (3) Very effective

(5) What measures can be used to prevent property crime other than using the police?
   (1) ____________________________
   (2) ____________________________
   (3) ____________________________
   (4) ____________________________

(6) Which of the following design strategies do you think might help in preventing crime on streets within Kabalagala commercial district? (Rank according to effectiveness in crime prevention where 1 = Extremely effective, 2 = Slightly effective, 3 = somewhat effective, 4 = Moderately effective, 5 = ineffective, 6 = Extremely ineffective) (Fill in the corresponding number).

| (A) Target hardening | (B) Lighting | (C) Management & maintenance | (D) Landscaping | (E) natural surveillance | (F) Formal or organized surveillance | (G) Mechanical/electronic surveillance |
|----------------------|-------------|-----------------------------|----------------|-------------------------|------------------------------------|-------------------------------------|
| Fences               | Street lighting | Repair abandoned buildings and keep buildings in good condition | Remove areas where offender can hide | Security patrols | CCTV | |
| Barriers             | Lighting within premises | Remove isolated areas | Windows and openings overlooking public spaces | Police call boxes | Electronic surveillance | |
| Fixed street furniture | Well maintained surroundings | Warning signs | | | | |

Other strategies (State below) ____________________________
### Design strategy

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 1. | Target hardening (fences, walls) | 2. | Lighting | 3. | Maintenance & management | 4. | Landscaping (less bushes) | 5. | Natural surveillance (community surveillance) | 6. | Formal/organized surveillance (policing) | 7. | Mechanical/electronic surveillance (CCTV) | 8. | Shops with large windows | 9. | Police call boxes with hotline |

### Challenge

(a) Poor maintenance and management
(a) Lack of skilled manpower to manage
(a) Vandalism
(a) High cost of installation
(a) Theft
(a) Hacking of electronic equipment
(a) Other
(7) What would be the challenge of implementing the following design strategies? (Rank according to the level of challenge where 1 = Minor challenge, 2 = Moderate challenge, 3 = Serious challenge) (Fill in the corresponding number)

For other challenge, state below ________________________________

Thank you
Profile of Sample

Table 1: Age of property/business

| Age | Frequency | Percent | Valid Percent | Cumulative Percent |
|-----|-----------|---------|---------------|--------------------|
| Valid | 2 | 3.5 | 3.5 | 3.5 |
| 1 YEAR | 3 | 5.3 | 5.3 | 8.8 |
| 10 YEARS | 7 | 12.3 | 12.3 | 21.1 |
| 13 YEARS | 1 | 1.8 | 1.8 | 22.8 |
| 15 YEARS | 2 | 3.5 | 3.5 | 26.3 |
| 2 MONTHS | 2 | 3.5 | 3.5 | 29.8 |
| 2 WEEKS | 1 | 1.8 | 1.8 | 31.6 |
| 2 YEARS | 6 | 10.5 | 10.5 | 42.1 |
| 25 YEARS | 1 | 1.8 | 1.8 | 43.9 |
| 3 DAYS | 1 | 1.8 | 1.8 | 45.6 |
| 3 MONTHS | 1 | 1.8 | 1.8 | 47.4 |
| 3 WEEKS | 1 | 1.8 | 1.8 | 49.1 |
| 3 YEARS | 9 | 15.8 | 15.8 | 64.9 |
| 4 YEARS | 4 | 7.0 | 7.0 | 71.9 |
| 5 YEARS | 7 | 12.3 | 12.3 | 84.2 |
| 6 MONTHS | 1 | 1.8 | 1.8 | 86.0 |
| 6 YEARS | 1 | 1.8 | 1.8 | 87.7 |
| 7 YEARS | 2 | 3.5 | 3.5 | 91.2 |
| DONT KNOW | 5 | 8.8 | 8.8 | 100.0 |
| Total | 57 | 100.0 | 100.0 |
Table 2: Age of properties/business

| Valid          | Frequency | Percent | Valid Percent | Cumulative Percent |
|----------------|-----------|---------|---------------|--------------------|
| BOUTIQUE       | 16        | 28.1    | 28.1          | 28.1               |
| DEALER IN SECOND HAND HOUSEHOLD GOODS | 1 | 1.8 | 1.8 | 29.8 |
| COMPUTER REPAIR AND MAINTENANCE | 1 | 1.8 | 1.8 | 31.6 |
| COSMETICS SHOP | 2         | 3.5     | 3.5           | 35.1               |
| MOBILE MONEY   | 4         | 7.0     | 7.0           | 42.1               |
| UNISEX SALON   | 1         | 1.8     | 1.8           | 43.9               |
| DRY CLEANING   | 1         | 1.8     | 1.8           | 45.6               |
| SALE OF MERCHANDISE | 1 | 1.8 | 1.8 | 47.4 |
| CELLS          | 1         | 1.8     | 1.8           | 49.1               |
| BUREAU         | 1         | 1.8     | 1.8           | 50.9               |
| PHARMACY       | 3         | 5.3     | 5.3           | 56.1               |
| FASHION        | 1         | 1.8     | 1.8           | 57.9               |
| SHOP           | 4         | 7.0     | 7.0           | 64.9               |
| BUTCHERY       | 1         | 1.8     | 1.8           | 66.7               |
| DAIRY SHOP     | 1         | 1.8     | 1.8           | 68.4               |
| INSURANCE      | 1         | 1.8     | 1.8           | 70.2               |
| KIDS SHOP      | 1         | 1.8     | 1.8           | 71.9               |
| ELECTRICAL REPAIR SHOP | 1 | 1.8 | 1.8 | 73.7 |
| WINES AND SPIRITS SHOP | 2 | 3.5 | 3.5 | 77.2 |
| ELECTRONICS SHOP | 1 | 1.8 | 1.8 | 78.9 |
| VARIETIES SHOP | 1         | 1.8     | 1.8           | 80.7               |
| GAMBLING PARLOUR | 2 | 3.5 | 3.5 | 84.2 |
| WATCHMAKING    | 1         | 1.8     | 1.8           | 86.0               |
| PHONES SHOP    | 1         | 1.8     | 1.8           | 87.7               |
| HARDWARE       | 1         | 1.8     | 1.8           | 89.5               |
| SUPERMARKET    | 1         | 1.8     | 1.8           | 91.2               |
| BAR/PUB        | 2         | 3.5     | 3.5           | 94.7               |
| WASHING BAY/GARAGE | 1 | 1.8 | 1.8 | 96.5 |
| PHONES REPAIR SHOP | 1 | 1.8 | 1.8 | 98.2 |
| WINES AND SPIRITS DISTRIBUTOR | 1 | 1.8 | 1.8 | 100.0 |
| Total          | 57        | 100.0   | 100.0         |                    |