The physical environment and its contribution to crime: A case study of Inanda in Durban, South Africa

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By

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DECLARATION

I, Bongukwanda Russell Khoza, affirm that this dissertation is my own work which I have never previously submitted to any other university for any purpose. The references used and cited have been acknowledged.

Signature of candidate……………………………………

On the ………………day of ………………………. 2019

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ABSTRACT

This study explored the occurrence of crime at Inanda, a township which is located in Durban from the province of KwaZulu-Natal, South Africa. This area is plagued with high rates of crime and this reality causes unrest in the community and this calls for effective measures to be undertaken to reduce it. The crimes prevalent include, but are not limited to the following: murder, dealing with drugs and its abuse, robbery and rape. Previous studies have revealed that there is a relationship between the physical environment of a place and crime (Cozen, 2002; Reynald, 2011; Schnell, 2017). Likewise, this study sought to investigate causal factors of crimes at Inanda by focusing on the physical environment of the area. It was conducted using a qualitative research approach, which applied a case study research design. It employed ten police officers from the South African Police Services who were interviewed for their experiences and understanding of crime occurring at Inanda. These participants provided data integral to the study and it was analyzed through a thematic analysis. In this analysis three themes emerged which are crime opportunity; challenges; and crime prevention. The findings obtained from these themes revealed that crime occurs as a consequence of poor living conditions owing to poor service delivery and infrastructural underdevelopment in the area. These conditions provide challenges to police officers and other law enforcement agents, and the community in their effort to combat crime. Against this backdrop, the study utilises the model of Crime Prevention through Environmental Design and makes recommendations on how it can be applied to reduce the negative effects of environmental conditions in the area. It is envisaged that doing so enhances the efforts of law enforcement agents and implementation of the model and other prevention strategies used in combating crime. These recommendations include increased resources, service delivery, research studies/projects, and government support of the crime prevention model.

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LIST OF ACRONYMS AND ABBREVIATIONS

ARP   Alexandra Renewal Project

AM   Ante Meridiem

BWT   Broken Windows Theory

CCTV   Closed Circuit Television

CPF   Community Policing Forum

CPTED   Crime Prevention through Environmental Design

CSIR   Council for Scientific and Industrial Research

GIS   Geographic Information Systems

IDP   Integrated Development Plan

NCPS   National Crime Prevention Strategy

NGOs   Non-Governmental Organisations

PM   Post Meridiem

PO   Police Officer

RAT   Routine Activity Theory

RCT   Rational Choice Theory

SAPS   South African Police Services

SCS   Safer Cities Strategy

SCP   Situational Crime Prevention

UK   United Kingdom

URP   Urban Renewal Programme

USA   United States of America

VPUU   Violence Prevention through Urban Upgrading

CHAPTER ONE

INTRODUCTION

1.

1.1. Introduction

From time immemorial, crime has been one of the causes of unrest in the society. As such, there is need to craft and adopt safety measures aimed at protecting people. Unfortunately, the reality is that crime can hardly be eliminated completely because naturally, people are unique and hold different values. Despite the fact that some people lead a crime-free lifestyle, others choose not to abide by the law. Owing to this diversity, crime is a phenomenon that has attracted the attention of the academic scholars, government sectors, organisations and criminal justice system, all of them working out ways of identifying its causes as well as developing strategies of preventing it. The following study dedicates itself to the achievement of the same goals.

The study is based at Inanda, in Durban, South Africa. It was selected because there is high prevalence rate of crime in the area. The study focuses on the relationship between this area's physical environment and the occurrence of crime. Precisely, this study is driven by the desire to explore the circumstances that contribute to the commission of crime at a given place. Beyond the examination of these circumstances, the study provides prevention initiatives that are based on the manipulation of the physical environment surrounding those places. These initiatives include the Crime Prevention through Environmental Design (CPTED), which is arguably the most significant initiative.

From the collected data, it emerged that Inanda area is characterised by poor living conditions owing to the poor service delivery and infrastructural underdevelopment which promote the commission of crime. To reduce crime and therefore improve the situation, recommendations have been made to implement the CPTED model as an initiative in accordance with each criminal issue that has occurred. Though the study may not be able to solve the issue of crime entirely, it offers different perspectives that can be applicable in fostering its reduction.

1.2. Background of the study

Inanda is an "African township situated in the Eastern region of KwaZulu-Natal, South Africa at 24 km inland from Durban" (South African History Online, 2018). It forms part of the "eThekwini Municipality where it is situated north-eastern periphery" (Marschall, 2012, p.

723). Its population is estimated to be dominated by Black Africans, 91, 5% of the total population being IsiZulu speaking people (Census, 2011). The area records "high rates of crime and other socio-economic issues, such as high levels of poverty and unemployment, high HIV/AIDS infection rate and other public health problems, shortage of housing and lack of transport options" (Marschall, 2012, p. 724).

Inanda is made up of different wards as demarcated by the eThekwini Municipality since it is a large area in terms of size and because many people inhabit the area. Due to the extensive size of the area, the study was narrowed to Ward 57, a location and a section of the township characterised by informal and formal areas including the issues noted above. This study places emphasis on the physical environmental factors that contribute to crime. In selecting Ward 57, the researcher hoped that its findings would proffer information that is representative of all the types of areas.

It has been noted that across the reviewed literature in South Africa, "aspects that have been researched range from victimisation and the sociological causes of crime, to strategies for fighting crime" (Harris & Radaelli, 2007, p. 1). At the core of this study is 'environmental criminology,' a perspective based on the assumption that "crime can be understood by considering potential offenders and their proximal and distal surroundings" (Brantingham & Brantingham, 1998, p. 31). By implication, instead of focusing on the characteristics of the offenders, places or locations where offences occur are equally important in fostering the occurrence of crime (Eck & Weisburd, 2015). Basing the research on the identified ward at Inanda, the researcher aimed at identifying and exploring the crimes in order to find out how they occur and the types of physical environment that attract them.

The CPTED model is described as "a process of designing security into architecture. It involves designing the built environment to reduce the opportunity for, and fear of, crime and disorder" (Atlas, 2008, p. 3). This model was applied as a crime prevention strategy specifically meant to deal with the issues of crime identified at Inanda. Its principles assume that community has a role to play in the prevention of crime and its role is as important as that of the law enforcement officials, the police. This crime prevention model maintains that the municipality ought to be involved in such initiatives since some crimes result from poor service delivery. It encourages government's participation in the fight against crime by supporting all efforts that involve the redevelopment of the area. Additionally, such efforts should include the improvement of the socio-economic status of the people. Admittedly, the application of the

CPTED model is costly and some of its crime prevention elements require that people get employed. However, the government can help make this a possibility.

1.3. Problem statement

Crime is an incessant problem and it continues to rise as the criminal justice system is failing to reduce it (Cozens, Saville, & Hillier, 2005). It has been noted (from 40 different countries) that resources have been channelled towards resolving this issue. However, there is little evidence to demonstrate the effectiveness of these efforts (Albanese, 2017, p. 14). South Africa is also caught up in this matrix as it is also experiencing high rates of crime (StatsSA, 2017). According to the statistics privy to the South African Police Services (SAPS), about 600 000 crimes were reported in the period between April 2016 and March 2017 (Malema, 2018). However, it is noted that there has been a decline in the rates of crime as compared to the period from 2015 to 2016. Regardless of this downward trend in crime rates, the communities are still concerned about their safety (StatsSA, 2017).

Inanda Township, as the core of this study, is the dominant among the ten locations from the province of KwaZulu-Natal, with the highest number of crimes reported in this place (about 14065) in 2017 alone (Crime Stats SA, 2015). The types of crime mostly reported include theft, robbery, murder and sexual offences (Crime Stats SA, 2015). The SAPS working with the eThekwini Municipality also conducted a study and reported that Inanda is counted among the other locations such as KwaMashu, Umlazi and Durban Central, surrounding Durban, which are the most dreaded for high rates of crime (Durban, 2017). In that study, 50% of the participants stated that due to the high prevalence of these crimes, they are in perpetual fear of becoming victims of crime which occurs on a daily basis (Durban, 2017).

Reports indicate that there are places within the township where crime is the most prevalent or which rather attract some of the most commonly reported crimes. Such places include 'shebeens' or illegal beer outlets (pubs or bars) (da Costa). These outlets operate for twenty-four hours a day, a situation which makes the problem even worse (da Costa, 2011). Sexual assault and drug usage are also commonly committed in these shebeens, while in other cases drugs are sold at taxi ranks (Safer Spaces, 2018). Burglary and housebreaking are also prevalent, and they target small businesses and homes because they lack proper services in terms of guarding their premises against crime (Safer Spaces, 2018). Rape cases occur in isolated or abandoned locations (Safer Spaces, 2018). Armed robbery, including mugging, often occurs around formal and affluent settlements in South Africa (Safer Spaces, 2018).

Stimulated by the identified crimes and the overall situation at Inanda, this study seeks to explore the physical environments in which they occur. As noted previously, the study zeroed in on Ward 57, a section of Inanda area that is prone to crime. Studies have recommended that "for the police to deal with crime and reduce crime levels, they have to understand the factors that make it possible for crime to be committed" (Masiloane, 2014, p. 130). The study examines the physical, environmental factors and the application of the CPTED model, which is intended to make crime prevention strategies function conveniently and effectively in the area. The findings of this study are set to play a key role in helping policy formulation.

1.4. Significance of this study

The study aims at contributing to the body of knowledge on crime in South Africa. This is expected to benefit the academia and the communities at large. It proffers the different perspectives of studying the nature of the phenomenon and further explores the different forms of interventions, in particular those which specifically refer to the relationship between the crime and its place of occurrence. In future, the findings of the study will assist in developing prevention measures that may be adopted in reducing crime in South African, including townships such as Inanda, where crimes are the most prevalent. The greater part of the study advocates for the CPTED and the measures aligned with it. The bodies that are set to benefit include the law enforcement sectors, particularly the South African Police Services and national strategies especially the National Crime Prevention Strategy (NCPS) and the Draft White Paper on Safety and Security. These safety structures are in sync with the study as they are driven by the same objective of reducing crimes in South African communities. Such safety structures are dedicated to the provision of safety for all the citizens; they provide ways through which local communities, such as townships and local governments can employ the CPTED model and benefit from it (Kruger, Lancaster, Liebermann, Louw, & Robertshaw, 2016). The model can be applied by developers from private companies, for example, real estate developers. Governmental and Non-Governmental Organisations (NGOs) may also benefit. For the academia, the study contains information that can be studied in Criminology, Architecture, Geography, Development and Engineering by students who may be interested in pursuing crime that arises due to the environmental design. In addition, for the discipline of Criminology, the study reconfigures the relevance of the Environmental Criminology, a discipline which offers insights that include the CPTED model.

1.5. Theoretical framework of this study

This study is underpinned by four theories which are: Routine Activity Theory (RAT); Opportunity theory; Rational Choice Theory (RCT); Broken Windows Theory (BWT). It is through the tenets of these theories the causality of crime can be linked to the physical environment through which it occurs. The RAT offers that the commission of crime involves offenders and victims who meet in a defined physical space, and this space merits consideration (Cohen and Felson, 1979; Felson & Cohen, 1980). Opportunity theory looks to the circumstances that permit the commission of crime (Richards, 2001). This theory was applied to account for how the physical environment creates crime opportunity. Before an offender decides to commit to a crime, they assess the probabilities of being successful. This incorporates evaluating the physical environment, seeking options favorable to their actions. As presumed in the RCT, they choose to disengage upon learning the consequences outweigh the intended rewards (Gilling, 1997; Welsh & Farrington, 2009; Hayward, Maruna & Monney, 2010). The BWT offers that negative physical environment conditions, such as broken streetlights, makes a place exploitable by criminals (Siegel & Worral, 2014).

1.6. Research questions and objectives of this study

1.6.1. Research questions:

1.6.1.1. What is the role of the physical environment on criminal activities at Inanda?

1.6.1.2. What can be done to the physical environment to reduce criminal activities at Inanda?

1.6.2. Research objectives:

1.6.2.1. To establish the role of the physical environment on the occurrence of criminal activities at Inanda; and

1.6.2.2. To explore and explain the techniques of CPTED model on its role to the reduction of crime.

1.7. Research methodology of this study

This study employed the qualitative research methods which allowed for the exploration of the different perspectives that explain the contribution of the physical environment to the commission of crime in Inanda area. It also helped design and organise the collection of the significant data. It has been regarded as a research approach which is suitable to investigating numerous social settings and people who occupy these settings (Berg, 2001). Understood in

that light, there were ten police officials from the SAPS of Inanda area who were selected to contribute to the purpose of the study.

The case study is Ward 57 of Inanda area, where the researcher collected data through interviews with the police officials as a means of obtaining information that was used to answer the research questions that guide this study. Using the qualitative research methods, this study focused on the phenomenon of crime at Ward 57 and explored how the physical environment of the ward contributes to its occurrence as perceived by police officers based in this ward. The procedures followed to achieve the results have been provided in the subsequent chapters.

1.8. Definition of terms
1.8.1. Crime
The term crime is used to refer to any act or behaviour that is unacceptable, or an action that violates the law of the society (Siegel, 2006). Individuals who commit crimes are referred to as criminals, offenders or perpetrators.

1.8.2. Physical environment
The term refers to the community's environment, which by definition, is described as follows:

> *It is the combination of private spaces (homes, stores, schools, factories, warehouses, etc.) and public spaces (streets, sidewalks, parks, parking lots, etc.) that make up the block, neighbourhood, sub vision, shopping centre, industrial park, downtown area, and other components of town or city* (National Crime Prevention Institute, 2001, p. 113).

1.8.3. Crime prevention
This entails any action designed to reduce the actual level of crime and/or the perceived fear of crime (Lab, 2010).

1.8.4. Environmental Criminology
Environmental Criminology is the study of crime that "does not focus on offender dispositions but on the characteristics of the crime event. It focuses on uncovering patterns of criminal and victimisation events and has been referred to as pattern theory" (Schneider & Kitchen, 2007, p. 32).

1.8.5. Formal and informal areas or settlements
1.8.5.1. Formal settlement
According to the National Upgrading Support Programme (2015, p.4), the South African policy and legislation says: "Formal settlements are settlements that are formally planned according

to planning norms and standards and which have gone through a statutory approval process". For this study, planning results in the establishment of proper access roads, housing and service delivery in these areas. In these areas, "land use and spatial standards are approved, and the necessary land rights obtained before construction starts" (National Upgrading Support Programme, 2015, p. 4).

1.8.5.2. Informal settlements

Informal settlements are those areas that have not undergone proper planning just like the formal ones. These areas are characterised by "poor households who have occupied the land for a range of reasons including that affordable land and housing products are scarce and complying with planning regulations is expensive" (National Upgrading Support Programme, 2015, p. 4). These two terms have been applied in this study because Inanda is an area that constitutes areas which have both formal and informal attributes.

1.9. Structure of the dissertation

Chapter one: Introduction

This chapter introduces the study by providing the background to the study, problem statement, research questions and objectives as well as the overall significance of the study.

Chapter two: Literature review

The chapter provides the information that is significant to the study by drawing from different scholars who conducted studies on how the place, or the physical environment affects crime. The significance of the chapter helped in exposing the researcher to the different perspectives on environmental criminology and in finding ways through which this study can contribute to the knowledge generated.

Chapter three: Theoretical framework

This chapter deals with the key theories that were instrumental in formulating the foundation on which this study is built. These theories were used to explain or justify the arguments and discussions that were sustained throughout the study.

Chapter four: Research methodology

The chapter provides a detailed description of the methods which were employed in conducting the study, especially the collection of information from Inanda area.

Chapter five: Findings of the study

Chapter five presents the findings drawn from the information collected at Inanda area.

Chapter six: Discussion

This chapter presents discussions that integrate the findings from Inanda area, and the information presented in the literature review as well as the application of the theories provided. It also merges the findings from Inanda area with the CPTED model and its key elements. As an addition, it includes limitations of study.

Chapter seven: Conclusion

This chapter presents the conclusions made from the overall study. It includes the recommendations for future research and practice.

1.10. Summary of the chapter

This introductory chapter has presented the aims, objectives, background of the study and the motivation for the researcher's interest in the topic. It also provides the significance of the study by explaining how it can contribute to the reduction of crime among the South African citizenry and its contribution to the academia as well. The chapter is an overview of the key features or elements of the whole study.

CHAPTER TWO

LITERATURE REVIEW

2.

2.1. Introduction

This chapter aims at reviewing the literature on crime and the physical environment of places in which the phenomenon occurs. A literature review is viewed as a summary of studies which have been conducted about a given topic or subject (Neuman, 2007). In line with this definition, this chapter identifies and organises scholarly studies that have been conducted on the phenomenon under study. There are studies conducted to unravel the history of crime and place; the factors affecting the physical environment and its contribution to crime and crime prevention measures that include the CPTED model. In undertaking the literature review, it is assumed that knowledge can be acquired and developed by accessing that which has been produced by others (Neuman, 2007). It is against this background that this study intends to contribute to the body of knowledge on crime and the physical environment of places in which it occurs. Against the backdrop of high rates of crime in South Africa, the need to conduct studies of this nature has been imperative. This especially takes into account the CPTED model of crime prevention.

2.2. An overview of the history of place-based criminology

The study of the relationship between crime and place in which it occurs can be traced to the 19th Century, at a point in time before Criminology functioned as an independent academic discipline (Schnell, 2017). It has emerged from late the 19th Century to the early 20th Century, when social scientists at the University of Chicago's Department of Sociology, often referred to as 'Chicago School', established that crime occurs as a consequence of urbanism (Lanier, Henry, & Anastasia, 2015). These social scientists employed the so-called 'social ecology approach', which places a great deal of emphasis on how an environment and community promotes crime (Miller, 2009). Classical approaches to the study of Criminology (otherwise referred to as the 'Classical School') focused on the provision of crime control by means of just punishment (Carrabine, Cox, Lee, Plummer, & South, 2009). In the 1920s, Positivism replaced its approaches with the emerging Chicago School (Miller, 2009). This is referred to as the 'Positivist School' (Cozens, 2002). The two schools differed in their perspectives, particularly on issues around whether it is effective to punish the perpetrators of crime (Cozens,

2002, p. 131). Whereas the Classical School advocated for the punishment of offenders, the Positivist School championed the idea of treatment as more appropriate (Cozens, 2002).

Prior to the advent of the Chicago School, two prominent sociologists, Englishmen Mayhew and Buchanan had already embarked on the study of ecological sociology in the 19th Century (Stark, 1987). Apparently, some portions of their work complemented that conducted by the members of the Chicago School. These aspects of the studies include the factors essential in the study of the influence of urban neighbourhood on crime. Such urban issues include "density, poverty, mixed use, transience, and dilapidation" (Stark, 1987, p. 895). The most prominent figures to emerge from the Chicago School are Ernest Burgess, Robert E. Park, Clifford R. Shaw and Henry D. McKay (Miller, 2009).

The period of 19th century introduced the idea of studying crime by focusing on how it is geographically distributed (Cozen, 2002). It is further noted that studies of this nature were indicative of the fact that Environmental Criminology is an integral addition to neighbourhood influence on crime (Cozens, 2002). However, it is ecological studies which were successful in that regard because the concept of environmental criminology was yet to be formally established (Cozens, 2002). More specifically, this situation was recognised in the post-1945 period. However, in the 1960s and 1970s, deliberate efforts were made for studies to focus more on the 'offences' as opposed to 'offenders' (Cozens, 2002). For that reason, it has often been asserted that environmental criminology remains pertinent to the academic community of Criminology to account for how crime occurs unevenly across various settings (Cozens, 2002). Considering this, the concept has attracted interest in recent years owing to the presence of crime 'hot spots' (Cozens, 2002). In other words, the need for adopting approaches that seek to study the environment around the places that record high rates of crime.

The period between the 1960s and the 1970s led to increased interest of relationship between crime and place through Environmental Criminology. To this end, urbanism was understood to have been transformed in a manner that makes it responsible for the occurrence of crime. However, more recent researches have indicated that the physical environment could be used to control crime, especially in the form of deterrence (Perkins, Wandersman, Rich, & Taylor, 1993). Precisely, some researchers maintain that "if physical features contribute to crime perhaps they can be changed and crime reduced" (Taylor, Gottfredson, & Brower, 1984, p. 304). In a bid to apply these perspectives, an architect named Oscar Newman (1972) developed the 'Defensible Space' Theory (Perkins, Wandersman, Rich, & Taylor, 1993). This theory

came after Jane Jacobs (1961) proposed the perspective that reduction of crime can be achieved through urban planning (Perkins, Wandersman, Rich, & Taylor, 1993). Regarding the Defensible Space Theory, Newman (1972) holds the view that "if public space could be segmented into small, controllable areas, this would encourage residents to exercise territorial control over these locations and would result in less crime" (Taylor, Gottfredson, & Brower, 1984, p. 305). Another criminologist, C. Ray Jeffery, between 1969 and 1971, recognised the necessity of introducing the idea of CPTED model, which forms part of the Defensible Space Theory (Cozen, 2002). This approach has emerged as a 'socio-physical' model that has transformed the ideas of the Defensible Space Theory into a more "community-based and holistic approach" (Cozen, 2002, p. 132).

2.3. Identifying crime patterns in places where crimes occur

Scholars have suggested the different techniques that help in the identification of crime patterns in places which are regarded as crime hotspots. These include, though not limited to, crime mapping, which involves the use of Geographic Information System (GIS) and the Predictive policing techniques (Wallace, 2009; Nakaya & Yano, 2010).

2.3.1. Predictive policing

According to Pearsall (2010), predictive policing is a method of collecting and analysing data on crimes that occur and the use of the results to plan effective measures that help curb future criminal incidents. It is a method which emphasises the adoption of proactive responses to crime as opposed to reactive ones (Pearsall, 2010). As a technique, it is synonymous with the Intelligence-led policing, a technique that involves initiatives aimed at informing strategies that include data analysis techniques meant to improve strategies that seek to strengthen the prevention and reduction of crime in a proactive manner (Rummens, Hardyns, & Pauwels, 2017). This policing strategy is intended for predictive and projection capability to track the occurrence of future crime incidents by examining those which have happened in the past (Ferguson, 2012). The analysts that assume role of performing this strategy make use of statistical data of the crimes that occurred and the type of locations through which they occurred (Ferguson, 2012). In recent years, resources have been channelled towards hot spot policing. Although there are positive consequences, the shortcomings manifest themselves when little is done to enhance the prediction of future crime incidents (Mohler, Short, Malinowski, Johnson, Tita, Bertozzi, & Brantingham, 2015).

For a long period, criminologists have devoted time to the studying of crimes and the places where they occur and they have embraced the importance of predictive policing, in relation to

the use of the historical data obtained from the crimes that occurred previously (Camacho-Collados & Liberatore, 2015). The main reason is that criminal activities that occurred previously are more likely to occur again in future (Camacho-Collados & Liberatore, 2015). However, in some cases, this technique is deemed biased with reference to privacy because not only does it use places where crimes occur, but it also contains information on certain individuals, whether they are offenders or victims (Hvistendahl, 2016). The bias is reflected in the idea that when these individuals are regarded as being at risk, they are more likely to be involved in criminal activities in the near future. That results in them being inspected by the police even when they have not committed any crime (Hvistendahl, 2016). Another disadvantage of predicting crime hot spots arises when it is stated that overtime offenders tend to shun the places where crimes occur, particularly the hot spots which are often targeted by the police, and instead, tend to commit crimes away from them (Ariel & Partridge, 2017).

2.3.2. Crime mapping

Traditionally, criminologists focused on the individuals known for their involvement in criminal activities in studying crime as a phenomenon (Ratcliffe, 2010). However, recent studies have started exploring the importance of 'place' as one of the factors that influence criminality (Ratcliffe, 2010). This has been achieved by 'crime mapping.' This process involves the conducting of spatial analysis within a range of activities in crime analysis (VijayKumar & Chandrasekar, 2011). In other words, this is a technique used to explore crime patterns by focusing on the types of location in which they occur (VijayKumar & Chandrasekar, 2011).

The implementation of the crime mapping technique helps in improving the identification of crime hot spots. This protects people as well as directing the police to the places that need to be patrolled (Sivaranjani & Sivakumari, 2015). The technique also involves the use of complex maps in order to achieve the objectives of exploring criminal activities. Firstly, crime mapping can be used to explore crime patterns. The factors of interest can be "day of week, type of crime, modus operandi or frequency" (Sivaranjani & Sivakumari, 2015, p. 44). Secondly, the technique helps in the exploration of the characteristics of the communities where crimes occur. These can refer to "slums, markets, colleges, parks, alcohol permit locations, and red-light areas" (Sivaranjani & Sivakumari, 2015, p. 44). Thirdly, crime mapping produces geographical maps that assists in tracking patterns of crime in defined locations. From within these maps there can be inclusion of police stations and zones for how community is divided, that can improve analysis of the patterns of crime (Sivaranjani & Sivakumari, 2015). This analysis also

takes into account the number of incidents and the times they occur (Sivaranjani & Sivakumari, 2015).

The employment of crime mapping increases detection of crimes and apprehension of individuals responsible for their occurrence (Levine, 2006). The bulk of the mapping is aided by Geographic Information Systems (GIS), a package of tools that gather data related to criminal patterns (Eman, Györkös, Lukman, & Meško, 2013). These tools form part of the tactical planning following the analysis of crime patterns (Levine, 2006). Police officials combine data, including "geological, geodesic, satellite, time and crime statistics data", produced by the maps (Eman, Györkös, Lukman, & Meško, 2013, p. 292). This data capturing system can capture the physical world and therefore explain it in the form of objects that can be examined and interpreted (Ferreira, ão, & Martins, 2012). The collected data captures information about crimes, arrests and, or other related information (Ferreira, ão, & Martins, 2012). In addition, the use of the GIS extends to help in the identification of hot spots (Lei, 2012). This offers clarity of distribution of crime across different spatial spaces. This also helps in the prediction of future crimes in a more precise and effective way (Groff & La Vigne, 2002). The application of the GIS and/or crime mapping ensures that the crime hot spots are geo-coded, which means to "address level data extracted from police recorded crime databases" (Ratcliffe, 2004, p. 61). The police get to know about the crime hot spots as presented by these databases. A practical example of utilisation of GIS is called 'CompStat'. This technology is used to track crime and measure performance of police against crime hot spots (Ferguson, 2011).

2.4. Concentration of crime at places
2.4.1. An overview of relationship between crimes and physical environment of places

According to Eck and Weisburd (2015), the relationship between crime and place is determined by five factors. First, there are facilities and or amenities in a community that attract crime. These can be shopping malls or liquor outlets. Second, some addresses record high rates of crime as opposed to others. In other words, crime is unevenly distributed across different places in a community. Third, the capability of a physical environment or rather physical features that increases difficulty for a crime to be committed. For example, use of burglar guards against burglary. Forth, the movement of potential offenders. This can refer to escape routes after committing a crime. Fifth, the selection of targets by the offenders. The physical environment is viewed as environmental features which are present in a given spatial setting and can be seen

through a human eye (Sherman, Gartin, & Buerger, 1989). From a sociological point of view, the concept of place is deemed as a geographical space occupied by social beings (Sherman, Gartin, & Buerger, 1989).

In the concept of Environmental Criminology, it is argued that crime commission is dependent on the assessment of offenders of whether they can be successful or not, and this success depends on whether a facility is criminogenic or has any form of preventive capability (Eck & Weisburd, 2015). In street robbery cases, for instance, facilities such as corner stores, banks and food restaurants are criminogenic as they facilitate the opportunities for its occurrence (Haberman & Ratcliffe, 2015). The robberies occur when these facilities are busy or during their 'peak usage times' (Haberman & Ratcliffe, 2015). Given this scenario, it is preferable that facilities like these provide means to guard against these potential crimes. They can include surveillance cameras and security guards that can make offenders identifiable and apprehended (Ceccato, 2014).

The type of offences that occur can determine the role played by the physical environment of places in the commission of crime (Sherman, Gartin, & Buerger, 1989). For example, it may be easy for rape to be committed at the places whose environment is characterised by dense vegetation and poor visibility which, from the offender's perspective, provides options for escape without being noticed (Ceccato, 2014). Conversely, research has unveiled the reality that intimate crimes are hardly attributed to where they occurred (Sherman, Gartin, & Buerger, 1989). A different perspective dismisses the idea of focusing on the type of crime as insignificant, and rather blames the concentration of the criminal activities that are attracted to a particular place. It emphasises that attention gets devoted towards crime hot spots (Braga, Papachristos, & Hureau, 2014).

2.4.2. Land usage

Research points to a relationship that exists between criminal activities and land usage (Kinney, Brantingham, Wuschke, Kirk, & Brantingham, 2008; Eck & Weisburg, 2015). This observation assumes that the study of Criminology yields more comprehensive results when reference is made to the characteristics of the built (physical) environment, rather than focusing solely on the criminal offenders and victims. One study stated that in most cases, non-residential areas, such as shopping centres and liquor outlets that operate at night are attractive to crime (Deryol, Wilcox, Logan, & Wooldredge, 2016). With specific reference to the these liquor outlets, criminal activities abound as a result of poor management systems the clubs put in place, a scenario which creates opportunities that set the stage for motivated offenders to

commit crime (Franquez, Hagala, Lim, & Bichler, 2013). Such opportunities include isolated restrooms and dark corners, for an example, where offenders capitalise on the opportunity to use drugs and to commit sexual assault (Franquez, Hagala, Lim, & Bichler, 2013). In the case of shopping centres, crime is often promoted by the absence of effective surveillance systems, and this could lead shoplifting that goes undetected (Kajalo & Lindblom, 2010). In other cases, some facilities get vandalised which often extends to small businesses and schools, and their occurrence is perpetuated by the preponderance of unsupervised adolescents around the environment (Steenbeek, Völker, Flap, & Oort, 2012).

Moreover, other places attract criminal activities because they are segregated and underdeveloped (Kinney, Brantingham, Wuschke, Kirk, & Brantingham, 2008). There are dilapidated houses and the unavailability of basic services meant for those who reside in them (Ezeh, Oyebode, Satterthwaite, Chen, Ndugwa, Sartori, Mberu, Melendez-Torres, Haregu, Watson, Caiaffa, Capon, & Lilford, 2017). They remain a preference to the criminal offenders because they find them accessible and easy targets (Kinney, Brantingham, Wuschke, Kirk, & Brantingham, 2008). Such environments have fewer resources people can use to catch the offenders (Kinney, et al., 2008). In some cases, the places are also known for accommodating criminal gangs, such as those found in the city of Rio de Jeneiro in Brazil and the city of Caracas in Venezuela (Ezeh, et al., 2017). In a study conducted in Kenya on crimes in the slums, it was also confirmed that the crimes that are committed are often linked to drug use (Wamucii, 2011). These issues of crime also prevail in South Africa, where emphasis has often been put on the need to improve the living conditions of the informal settlements (Bradlow, Bolnick, & Shearing, 2011). This improvement includes the provision of basic services and the reduction of other socio-economic problems especially poverty and crime (Cashdan, 2010).

2.4.3. Guardianship

There are places which have increased risk of victimisation from crime (Song, Andresen, Brantingham, & Spicer, 2017). This is referring to 'victimology', which, according to criminologists, is based on the events that occur, leading to an individual becoming a victim of a crime (Walklate, 2011). This perspective also includes the issue of vulnerability which results from the surrounding physical environment where the crime is committed (Walklate, 2011). According to the Routine Activities Theory, the probability of a crime and/or victimisation occurring depends on three elements, which are; the motivated offender, a suitable target and the lack of a guardian (Cohen & Felson, 1979). One of the studies reviewed for this study refers to property-related crimes such as burglary, arguing that victimisation often occurs when

households are not occupied by their owners (Reynald, 2011). The absence of the owners promotes their vulnerability as there is a lack of guardianship in the environment (Reynald, 2011). On the other hand, occupied households afford fewer opportunities for motivated offenders to commit crimes (Reynald, 2011).

Research further indicates that places that attract throngs of people are usually attractive to motivated offenders (Groff & McCord, 2012). Examples of such places include neighbourhood parks, where many people visit, resulting in them becoming targets of crime (Groff & McCord, 2012). These parks are usually occupied by anyone, including potential offenders, and especially young people who are inclined towards engaging in delinquent or criminal behaviour. The reasons such places are mostly preferred by these motivated offenders is that they lack guardianship, lack formal control and they are poorly lighted which makes for surveillance difficult to achieve (Groff & McCord, 2012). These places are often referred to as 'crime attractors', and the same perspective puts these parks in the same category as night clubs (Groff & McCord, 2012). In a study, it was stated that well managed parks have low rates of crime, whereas the poorly managed ones are highly vulnerable to crime (Troy & Grove, 2008). Hence, an initiative must be taken ensuring that parks do not turn into liabilities that attract crime (Troy & Grove, 2008).

One of the studies refers to robberies that occur in subway stations, arguing that they afford offenders an opportunity to identify potential victims (McCord & Ratcliffe, 2009). These victims include those people who are not familiar with the places and those who are deprived of guardianship (McCord & Ratcliffe, 2009). Another perspective regards bus stops as also presenting motivated offenders with an opportunity to commit the crimes as their victims become more accessible (Hart & Miethe, 2014). Although a degree of guardianship exists for passengers in the presence of other passengers while inside the bus, they become victims as soon as they disembark from the bus (Hart & Miethe, 2014). In other cases, street robberies occur, and offenders prefer to commit the crimes in the dark, especially at night (Tompson & Bowers, 2013). The offenders find it easy to commit the offences because there is little or no lighting to provide some sort of guardianship (Tompson & Bowers, 2013).

2.4.4. Offender experience, knowledge and distance of places

Offenders tend to prefer places which offer the most suitable opportunities for the commission of crimes (Lundrigan, Czarnomski, & Wilson, 2009). This often depends on their experience regarding the success with which they had been able to commit the previous crimes (Lundrigan, Czarnomski, & Wilson, 2009; Deslauriers-Varin & Beauregard, 2014). For instance, serial

sexual assault cases are more likely to show consistency in relation to the locations in which they occur as opposed to different locations where serial offenders do not have experience or knowledge about (Harbers, Deslauriers-Varin, Beauregard, & Kemp, 2012). In addition, research shows that offenders who are involved in street robberies are usually familiar with the places they target because of their proximity to their homes (Bernasco, Block, & Ruiter, 2013). Offenders often target former locations they share history with, especially when they have had a family that once lived there but later moved elsewhere (Bernasco & Kooistra, 2010). On the other hand, some offenders are less likely to commit robberies in distant locations they are less familiar with (Bernasco, Block, & Ruiter, 2013). These types of crime, including robbery, are good examples as most offenders opt for them to reduce the effort of traversing distances in order to achieve their goals (Bernasco & Block, 2009). Other than familiarity with the location, the issue of distance remains an issue since these offenders do not often have access to cars, which renders it costly for them to move to other locations which are far away from where they live (Bernasco & Block, 2009).

2.4.5. When do crimes occur at places?

From another perspective, the experiences of an offender towards a place targeted for crimes can be explained by considering the times at which these crimes occur. It is argued that offenders are more likely to return to the place they were successful previously, and according to the times or days of the week when they were successful (van Sleeuwen, Ruiter, & Menting, 2018). In its findings, one study reported that some burglaries are committed at similar times of the day (Tompson & Townsley, 2010). Some are committed during the day, while others at night (Montoya, Junger, & Ongena, 2016). In committing such burglaries, however, offenders are cautious enough to determine whether there is any guardianship, such as surveillance, which deters their intention to commit crimes (Montoya, Junger, & Ongena, 2016).

In a study conducted in Tshwane, South Africa, the findings indicated that crimes, as they relate to time and the place targeted by offenders, are often dependent on the seasons of the year (Breetzke, 2016). In summer, especially in December, citizens are most likely to be victims of crime as they are usually on holidays and outdoors, associating with their families, friends as well as the potential offenders, a scenario which creates the opportunity for violent crimes or even property crimes (Breetzke, 2016). Reports show that about 50% of the violent crimes occur during weekends (Breetzke, 2016). Studies show that assault is among the most violent crimes. In another study conducted in Tshwane, the findings also indicate that December has the highest number of reported cases (Breetzke & Cohn, 2012). Regarding property crimes that

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include robbery, theft and burglary, a study conducted in Stockholm, Sweden, found that most of these crimes occur during the afternoons (Uittenbogaard & Ceccato, 2012). Contrary to the above violent crimes that are mostly reported in summer, property crimes indicate a slight difference in terms of distribution across the seasons of the year (Uittenbogaard & Ceccato, 2012).

2.5. Place-based prevention measures
2.5.1. Crime Prevention through Environmental Design

Since the 1970s, the CPTED model was developed in a bid to reduce crime through focusing on the environment chosen by the offenders when they commit crime (Reynald, 2011). The model was informed by the works of the pioneer criminologists such as Jane Jacobs, Oscar Newman and C Rey Jeffrey. Jane Jacobs shed light on this subject in 1961 when she published a book entitled '*Death and Life of Great American Cities*', in which she recognised the view that some parts of the cities in the United States of America were abandoned making them prone to crime and anti-social issues alike (Sutton, Cherney, White, & White, 2008). From the 1960s, sociologists have been studying the reasons why some places are often more prone to crime than others (Reynald & Elffers, 2009). Jane Jacobs (1961) was against the use of space in these cities as she referred to the built environment. She argued that "by allowing land-use to be fragmented into specifically concentrated zones (for example, commercial and residential), urban planners, of her time, inadvertently were helping ensure that cities became 'custom built' for crime" (Sutton, et al., 2008, p. 61). Traditionally, there were no residences in the inner city and people were obliged to return to the suburbs after conducting their activities during the day. Consequently, that invited criminal activities that would occur during the night (Sutton, Cherney, White, & White, 2008). On the other hand, during the day, when everyone was in the city, criminals would take the opportunity to conduct their criminal activities at the places of residence (Sutton, et al., 2008). Upon her realisation of these realities, it occurred to Jane Jacobs that perhaps it should be beneficial to the citizens to introduce physical features that would act as a mechanism that helps prevent these criminal activities in what is called the 'natural surveillance', especially because none of these criminal activities could be seen (Sutton, et al., 2008). By employing natural surveillance, the goal is to increase chances of catching offenders (Sutton, et al.,, 2008). At the core of this recommendation is that deliberate efforts should be made by city planners to reduce fear of crime and introduce amenities that encourage residents to be free to occupy or move around city centres regardless of time of day (Sutton, et al., 2008). In precise terms, the goal of such plans was to ensure more 'eyes on the streets' as is entirely intended under the natural surveillance initiative (Sutton, et al., 2008).

Research shows that most of the crime prevention techniques within the context of crime by environmental design refer to Oscar Newman's pioneering work (Reynald & Elffers, 2009). In the 1970s, the issues he recognised stemmed from the manner in which the goals of city planners emphasised the idea of large numbers of people being situated in high rise housing (Sutton, et al., 2008). Oscar Newman argued that this resulted in people exercising little or no control over the activities that concerned their residences and the overall surroundings. It was difficult to distinguish between private and public areas. There were "inadequate amenities, poor natural surveillance and lighting, numerous access routes, unrestricted pedestrian movements, dead-ends, cavernous corridors and poorly maintained facilities" (Sutton, et al., 2008, p. 62). Residents could hardly distinguish between the residents and outsiders, particularly the potential offenders (Paulsen & Robinson, 2009). Consequently, the residents lived in constant fear of crime which made other people to view such residences as unsafe. In response, the residences were supposed to be divided into small, manageable territories to deter potential criminals. The intended goal was to create a manageable physical environment which would then encourage every citizen to be actively responsible for protecting their personal belongings (Sutton, et al., 2008). As a result to the views of Oscar Newman, "American cities began to adopt building codes and zoning regulations controlling land use and development to protect public health and safety and to protect the character of residential neighbourhoods" (Ziegler, 2007, p. 861). It is against this background that the 'defensible space' principle was created, as it meant that people were bound to defend their space against crime and other anti-social activities they do not accept. The CPTED model was born out of the ideas of these two pioneers, and C Rey Jeffrey formalised the concept after their insights along with the idea of paying attention to criminology of place. However, this model has been watered down by little evidence that bears testimony to its effectiveness and the lack of the applicability of its underlying concepts as territoriality (Sutton, et al., 2008; Reynald & Elffers, 2009). The emergence of the CPTED model together with its developments are proving that the work of Defensible Space Theory is worthy. For example, it has been noted that the CPTED model has enhanced the use of surveillance, for it does not only apply to natural surveillance, but it also introduces other types of formal surveillance, namely; the employment of security guards and the use of mechanical security systems that involve the use of the Closed Circuit Television cameras (CCTV) (Reynald, 2011). The other weakness of the CPTED model lies in the fact that the processes that lead to success of reducing crime has not been established, understood and defined according to the concepts of Defensible space (Reynald & Elffers, 2009). In other words, it is not known what process of implementing the model works. The findings of one of

the studies indicated that putting emphasis on the mixed land usage proved ineffective as noted by Jane Jacobs, because it is reported to have inadvertently resulted in increased burglaries (Mohit & Elsawahli, 2010). If attention could be paid to proper methods, perhaps progress could be realised. This approach is important because even in the CPTED model, it cannot be overlooked that there is a gap in the understanding of crime and the application of elements that help in reducing it (Mohit & Elsawahli, 2010).

According to Newman (1972, p.3), Defensible space is defined as "a model for residential environments which inhibit crime by creating the physical expression of a social fabric that defends itself." The CPTED model emerges as a method that holds a similar goal. This model is a combination of elements that ensure that residents willingly contributes to preventing crime around their premises (Newman, 1972). It offers the residents an opportunity to partake in the manipulation of their physical environment in order to deter crime (Reynald & Elffers, 2009). Four key elements constitute this model, namely; territoriality, natural surveillance, image and milieu (Newman, 1972). In terms of territoriality, there are two ways through which the elements can be expressed in the defensible space, and these are; active and symbolic barriers (Ham-Rowbottom, Gifford, & Shaw, 1999). On the one hand, active barriers are the physical attributes such as high fences which deny outsiders access to the residence. On the other hand, symbolic barriers are based on indicating resident's ownership and protection, and they send a signal to outsiders that intruders are not tolerated (Ham-Rowbottom, Gifford, & Shaw, 1999). Furthermore, surveillance refers to the ways through which the physical surroundings do not block the view of activities occurring in a residential property (Newman, 1972). As a result, it has often been argued that "residents whose surveillance provides a clear view from both their houses and streets has an increased security" (Ham-Rowbottom, Gifford, & Shaw, 1999, p. 118). On the contrary, poor surveillance often offers an opportunity for residents to become victims of crime (Ham-Rowbottom, Gifford, & Shaw, 1999). Similarly, effective surveillance can contribute to less fear of crime (Newman, 1972). Image is an element whose basis is the physical appearance of the physical surrounding of the property, which is inclusive of the signs of vandalism and litter (Tijerino, 1998). The last and fourth element, milieu, refers to the location of the property. For example, having an alcohol liquor outlet near or adjacent to a school or park can have influence in crime (Tijerino, 1998). The CPTED model is in line with these principles since it is a fall out of the defensible space.

It should be noted that C. Rey Jeffrey's intention in introducing the CPTED model was to shift approaches to crime from the retributive, deterrent and punitive measures and redirect them

towards the consideration of contributions made by the physical environments (Mair & Mair, 2003). This paradigm shift is clearly reflected in his first book entitled *'Crime Prevention through Environmental Design'*, but his later works tended to focus on the influences, both psychological and physical, which relate to the environment and the offender (Mair & Mair, 2003). Precisely, the 1971 work is the original brainchild of the CPTED model and it emphasised the view that the environment indeed influences the behaviour of offenders, and the 1977 edition provides the date through which the pioneering work was revisited and this revised version included a new focus on the role of physical and psychological influences on crime (Paulsen & Robinson, 2009). The latest version of the CPTED model extends to encompass the principles held by the Defensible Space principle. This work recognises the work contributed by another criminologist named Timothy Crowe since 1999 (Mair & Mair, 2003). In addition, it appears that Jeffrey subscribed to the Psychological Learning Theory by B. F. Skinner, which contends that the physical environment is designed to offer both pleasurable and painful experiences to the offender so that they can potentially influence their withdrawal when they want to commit offenses (Paulsen & Robinson, 2009). This version is often viewed as a 'stimulus-response (S-R) model' as it allows an individual to learn from "punishment and reinforcements in the environment" (Paulsen & Robinson, 2009, p. 75). This implies that the physical design of the environment can be used as a means of evading reinforcements that lead to crime (Paulsen & Robinson, 2009). For the model to be more effective, it has been suggested that equal attention ought to be paid to both the offender and the physical environment, and precisely, "both external and internal environments, or to the environments of the place and the offender, respectively" (Paulsen & Robinson, 2009, p. 79). Similarly, the Defensible Space principle is watered down by its failure to address the internal environment of the offender (Paulsen & Robinson, 2009). Nevertheless, the CPTED model is currently expected to be inclusive of other factors reflected in the work of Timothy Crowe. However, this does not suggest that he is the only theorist recognised in the development of the model to date. All the works from other scholars are acknowledged and equally important to the subject at hand. Beyond the diverse scholarly approaches to the CPTED model, it is clear that the role of the model lies in reducing the menace of crime and improving the quality of human life (Cozens, 2011; Reynald, 2011).

It is also evident that the CPTED model is a model that draws on the work of environmental criminologists whose focus has been on the ways that seek to reduce opportunities of crime by altering physical environment features (Kim, LaGrange, & Willis, 2013). The goal of this crime

prevention model is to "dissuade offenders from committing crime while at the same time making sure criminals would easily be detected and arrested should they decide to commit an offense" (Owusu, Wrigley-Asante, Oteng-Ababio, & Owusu, 2015, p. 225). As opposed to the perception that crime results from social factors, the model holds the physical factors accountable, and these factors include land usage and street patterns surrounding an area (Marzbali, Abdullah, Razak, & Tilaki, 2011). If it is less rewarding to commit crime but rather risky and difficult, crime can be reduced (Ziegler, 2007). The elimination of crime through environmental approaches is administered by elements namely; "territoriality, surveillance, access control, target hardening, activity support, and image/maintenance" (Cozens P. , 2008, p. 281). These elements are fundamental in ensuring effectiveness in terms of reducing crime. In applying these elements, the CPTED model intends to 'design out' crime by eliminating opportunities capitalised on by offenders in their commission of these crimes (Cozens P. , 2008, p. 273). Furthermore, the model is driven by the principles, especially territoriality and natural surveillance, which have links with the Defensible Space concept (Blomley, 2004). Studies have stated that both the concepts of Defensible Space and CPTED model champion the manipulation of physical environment to be controllable and manageable to the residents (Newman, 1996; Owusu, et al., 2015). For instance, it has often been argued that "design elements, such as the positioning of windows, allow residents to survey public space" (Blomley, 2004, p. 617). Resultantly, it is highly probable that any criminal activity that occurs becomes detectable and it is therefore deterred. Understood in that light, the model assumes a proactive role as a strategy of controlling crime. This is particularly true because "it is a process that ensures the prevention of crime through the initial stages of planning in trying to eliminate the opportunities for the occurrences of crime" (Sakip & Abdullah, 2012, p. 341). However, it has also been argued that although there are advantages associated with using the physical environment to deter crime, it still remains that there is urgent need to develop and adopt proper and reliable methods to measure its effectives (Sakip & Abdullah, 2012).

The CPTED model has been recognised across Europe, North America, Asia (particularly in Malaysia), Australia and Africa (especially in South Africa and Ghana) (Marzbali, et al., 2011; Reynald, 2011; Xaba, 2014; Owusu, et al., 2015). In practice, the findings of one of the studies showed that in the USA, areas like Florida, Colorado and Tempe have, for example, been able to adopt the model, though its application was marred by challenges arising from little or no support coming from formal institutions in the country. This made it difficult to measure the effectiveness of the model (Schneider & Kitchen, 2013). The assumption is that if the model

can be implemented properly, it can improve the quality of human life and people can walk freely without suspecting that a crime may occur (Marzbali, Abdullah, Razak, & Tilaki, 2011). The challenge is that much of the knowledge on the CPTED model is introduced to the private sector with little effort being made by the governmental institutions to accommodate it (Schneider & Kitchen, 2013). On the other hand, in an attempt to compare the situations in the USA and the UK, the same study found that the CPTED model in the UK is not a privatised model, but rather, it is accepted in the public sector though its only shortcoming is that it functions under a low budget (Schneider & Kitchen, 2013). Nevertheless, it has been tried and positive results have been realised in some areas. A project was implemented in Manchester, New Hampshire, combining community policing and the principles of the CPTED model to test if changes occur in crime trends (National Crime Prevention Institute, 2001). This project was performed by a collective of police, community members and CPTED practitioners (National Crime Prevention Institute, 2001). The initiative produced positive results in terms of the reduction of specific crimes. In the area where the project was conducted, the results showed that "drug activity was reduced by 57 percent, robbery fell 54 percent, burglary reduced by 52 percent, and police calls for service dropped by 20 percent" (National Crime Prevention Institute, 2001, p. 126). In the South African context, the concept of CPTED is a new. However, an effort has been made to develop policies that help to accommodate it (Geldenhuys, 2015). Until recently, municipalities in South Africa have adopted strategies that relate to the model to refer to "specific context of crime issues and on a small, medium, or a large scale, depending on the requirements of the target area" (Geldenhuys, 2015, p. 24).

In addition to the challenges cited above, it has been emphasised that the model of CPTED model brings forth benefits as a crime prevention strategy. However, practitioners of the model must be educated about Environmental Criminology in depth so that they understand patterns of crime (Cozens, 2011). It is also recommended that there should be a collaborative relationship between the planners and the law enforcement organs, especially in countries where these initiatives have little or no impact on urban planning (National Crime Prevention Strategy, 2001; Cozens, 2011).

2.5.2. Core elements of the CPTED
2.5.2.1. Territoriality

This element emphasises the ownership of defensible space by residents in a bid to limit opportunities that lure offenders into committing crime (Sakip & Abdullah, 2017). In other words, the element indicates that residents exercise control over their places and make it clear

that criminality is unacceptable (Vagi, Stevens, Simon, Basile, Carter, & Carter, 2018). This ownership often manifests through symbols that stand as warning signs to potential offenders (Wortley & McFarlane, 2011). Territoriality and 'Defensible Space' are terms used interchangeably, and as a theory, it holds the view that residents not only protect their homes but the community as a whole (National Crime Prevention Institute, 2001). The principle of territoriality recommends that a public space be turned into a private territory that is communally controlled by all the residents in a community to protect themselves and their property against crime. It is added that exercising territoriality exposes potential offenders who do not belong in the community (Stollard, 2005). It becomes easy for residents to determine whether an individual making entry to a house is an intruder or owner. In 1969, the concept led to enhanced social control and reduction of crime (National Crime Prevention Institute, 2001).

2.5.2.1.1. Territorial barriers

Environmental criminologists have identified 'real' (physical) and symbolic barriers (Reynald & elffers, 2009). It has also been argued that a barrier may be either physical or perceptual (National Crime Prevention Institute, 2001). In using territorial barriers, some residents use a type of fencing that could possibly injure potential offenders while others make use of warning signs as forms of territorial markers (Wortley & McFarlane, 2011). "A 'beware of the dog' sign can serve as a perceptual barrier" (National Crime Prevention Institute, 2001, p. 56). It is important to note that the terms 'symbolic' and 'perceptual' are often used interchangeably to refer to non-physical territorial barriers. The symbolic barriers are used to communicate, psychologically, to a potential criminal that only supervised individuals can enter an area (Reynald & elffers, 2009). However, symbols or markers that residents may be using are less effective to some of the criminals who are motivated to commit crimes as they tend to ignore the presence of these symbols (Brower, Dockett, & Taylor, 1983; National Crime Prevention Institute, 2001). Such symbolic barriers are rendered more effective when they are reinforced by the presence of the residents, and in such situations the potential criminals may be compelled to consider withdrawal from the criminal act (Brower, Dockett, & Taylor, 1983).

Furthermore, it can be deduced that the principle of territoriality reinforces social cohesion in the community as every resident is entitled to contribute towards defending the territory against crime (Perkins, Wandersman, Rich, & Taylor, 1993). There is a possibility that any intruder or potential criminal who enters the territory secured with barriers is susceptible to punishment (Brown & Bentley, 1993). Residents can also alert the police when they notice a crime in progress (Brown & Bentley, 1993). The way the element of territoriality operates is in line with

the tenets of the Defensible Space theory in the sense that certain features of a territory defend the territory from potential criminals (Shaw & Gifford, 1994).

It is assumed that the use of territorial markers helps to disseminate information to the effect that the barricaded community is intolerant to crime and potential offenders (Perkins, et al., 1993). The purpose of the territorial markers is to disseminate to potential offenders that the premises they enter are cared for by the community at large (Perkins, et al., 1993). In the absence of this shared responsibility among the community members, crime is imminent. Quite often, such communities are characterised by 'incivilities' which take into account anti-social issues such as vandalism, juvenile delinquency and other social disorders (Perkins, et al., 1993). These incivilities are representative of "low-level breaches of community standards that signal an erosion of conventionally accepted norms and values" (LaGrange, Ferraro, & Supancic, 1992, p. 312). These anti-social issues and disorders are physical (based on the surrounding environment of a community) and social (based on behaviour of people), though this analysis is not applicable to felonies such as murder and rape (LaGrange, Ferraro, & Supancic, 1992). Here, the assumption is that "the physical decay and deterioration of a neighbourhood signify a lack of local concern and the absence of informal social controls, leading to citizen perceptions of neighbourhood disorder" (Franklin & Franklin, 2009, p. 88). An immediate consequence of that disorder is an increased fear of crime among residents (Park, et al., 2011). This fear is also related to the physical environment; however, social civility breeds greater fear than physical civility (Park, Hwang, Spicer, Cheng, Brantingham, & Sixsmith, 2011). At the core of the attention paid to incivilities is the need to note that the presence of these social anomalies is indicative of a low sense of territoriality, as residents show unwillingness to resolve social problems that prevail in their community, a scenario that invites potential crime (Perkins, et al., 1993). However, offenders may be less attracted to such communities as they might be perceived to have targets that are less attractive to the offenders (Perkins, et al., 1993). On the other hand, the use of a marker which, according to the offenders, may signal a 'profitable target', especially in burglary cases may attract offenders into committing burglary (Reynard, 2011). Nonetheless, exercising territoriality has proved to be successful in making residents feel safer (Brunson, Kuo, & Sullivan, 2001).

2.5.2.2. Surveillance

Surveillance is another element that entails the physical design of an area positioned to improve visibility to increase guardianship against potential criminal incidents (Sakip & Abdullah, 2017). According to the National Crime Prevention Institute (2001), there are two advantages

of surveillance. Firstly, it increases chances to catching criminals. Second, it has a deterrent effect. In the case of surveillance, offenders are often hesitant to commit offences for fear of being observed (Sakip & Abdullah, 2017). They avoid being seen because that increases the possibility of being apprehended (Cozens, 2002). Consequently, that discourages crime (Cozens, 2002). They may consider that their actions pose more risk than the intended rewards (National Crime Prevention Institute, 2001).

According to Skogan (1986), surveillance demands both observing incidents and acting as methods of monitoring all forms of behaviour that occur in a territory. In ensuring that effective surveillance is achieved, residents are called on to design and position their property on places that are not obstructive to visibility and this could effectively increase opportunities for the monitoring of any criminal behaviour (Brown & Bentley, 1993). The inclusion of lighting in front of homes is another option that can ensure the observation of all the activities (Cozens, 2002). When the physical environment is poorly lighted, criminals may go unnoticed or detected (National Crime Prevention Institute, 2001). The removal of vegetation, particularly bushes and shrubs, and similar surroundings where offenders can hide, should be considered as this often poses difficulty in administering surveillance (Cozens, 2002). Employing surveillance should be accompanied by proper visibility that permits observation of all activities pertaining to the physical environment of a place (National Crime Prevention Institute, 2001).

2.5.2.2.1. Natural surveillance

Researchers identified two types of surveillance which are relevant to the CPTED model and the Defensible Space principle. These types are; Natural surveillance and Formal surveillance. Natural surveillance involves the ability by the residents to observe any form of behaviour occurring in their neighbourhoods, including criminal behaviour. The more the physical environment of a place is utilised by its residents, the higher the chances for natural surveillance to be achieved (National Crime Prevention Institute, 2001). It is defined as "the impression that residents are keeping, or are able to keep, an eye on their neighbour's and their own property" (Stollard, 2005, p. 21). If the potential offenders believe they are being observed, they are likely to dismiss plans to engage in crime (Stollard, 2005). There are three common ways through which community members observe the activities that occur within their territories. The first one is the 'social observation' system, which is about the deterrent effect caused by people present in the vicinity of the places (National Crime Prevention Institute, 2001). The second way is the 'patrol observation' system, which is closely related to the deployment of law

enforcement agents across the community to scrutinize criminal activities that may occur (National Crime Prevention Institute, 2001). It is intended as a proactive strategy used to catch these activities as they occur. The third is the 'location-specific surveillance' mechanism, which commonly involves private security personnel being tasked to monitor physical security systems and reporting, or acting against, incidents that occur (National Crime Prevention Institute, 2001).

2.5.2.2.2.   Formal surveillance

This is a different type of surveillance that involves the use of technology to observe criminal activities as they occur. Among several other reasons, formal surveillance is preferred to other forms of surveillance because it is not susceptible to human errors that can occur in natural surveillance (National Crime Prevention Institute, 2001). The most common technology used in the application of formal surveillance is the Closed-Circuit Television (CCTV), which is used with the goal of monitoring potentially criminal behaviour in one's property (Cozens, 2002). It is also maintained that CCTV emerges as a strategy that corresponds with situational crime prevention which will be discussed in the subsequent sections (Welsh & Farrington, 2009). Contrary to the informal or natural surveillance, the use of the CCTV can also be referred to as the 'formal surveillance' system (Cozen, 2002). This is so because the system is either a substitute to security personnel or an approach that is set to improve the work of the security personnel (Welsh & Farrington, 2009). The use of the 'natural' surveillance system presupposes that it is a surveillance system that depends on one's ability to observe, which is different from the case of the CCTV. However, it has been argued that this method could be counterproductive as it may limit opportunities for other effective measures that require the use of security personnel to curb crime (Surette, 2005).

The application of the CCTV is preferred because crimes are recorded and police can act with accuracy (Welsh and Farrington, 2009). This is owing to its function as a tool that keeps evidence of a crime (Surette, 2005). Most significantly, the system is effective in capturing all the criminal activities, while simultaneously making it easy to identify individuals responsible for these criminal acts (Surette, 2005). However, it has been argued that the presence of the CCTV can end up endangering residents, when indeed its primary goal is to prevent that kind of contingency (Welsh, Farrington, & Taheri, 2015). "Its visible presence could give potential victims a false sense of security and make them more vulnerable if they relax their vigilance or stop taking precautions such as walking in groups at night" (Welsh, Farrington, & Taheri,

2015, p. 115). Another weakness is that in some cases, the system can result in the arrest of people for trivial instead of serious crimes (Surette, 2005).

2.5.2.3. Access control

Access control is a technique meant to limit the offender's access to their target (Stollard, 2005; Sakip & Abdullah, 2017) In other words, access control refers to measures that make it difficult for offenders to successfully commit crime, especially regarding the gaining of access to their targets. Since territoriality is a manner in which residents as well as owners actively participate in discouraging the occurrence of crime, access control is a segment of territoriality as it specifically focuses on barring criminal entry into someone's property (Reynald, 2015). Access control measures are intended to ensure that all the individuals who enter or utilise space within residents' territory do not harbour criminal intentions (Reynald, 2015). While territoriality emphasises the use of real and symbolic features in protecting 'residential properties' for owners, access control also covers the larger physical environment surrounding communal space (Reynald, 2015). It is logical that "the creation of smaller, more identifiable zones of control through territoriality makes access control easier and, in doing so, allows owners increased capability to determine what behaviour is or is not acceptable in their territorial zone" (Reynald, 2015, p.78). Access control can be successfully employed by considering the escaping of offenders after they have committed a crime. "Because many criminals look for an easy escape, limiting access to an area is an effective way to deter criminal activity" (Atlas, 2008, p. 61).

2.5.2.4. Target hardening

Access control is sometimes understood as synonymous with 'target hardening', which is based on increasing efforts and difficulty potential criminals must undergo upon their commission of crime (Lab, 2010; Sakip & Abdullah, 2017). For example, target hardening involves the installation of "locks and security screens in the way of potential offenders, quality of exterior doors, door frames, hinges and locks in residences" (Moffatt, 1983, p. 22). Target hardening ensures that such measures must be able to withstand forceful entry into some property (Reynald, 2015). Nonetheless, it has been noted that target hardening does not guarantee the prevention of crime. As such, persistent, determined and intelligent criminals can breach any target hardening tool (Lab, 2010).

According to Gibson and Johnson (2016), two principles constitute access control as a crime prevention mechanism, and these are 'Target hardening' and 'Boundary definition'. On the one hand, target hardening is meant to prevent access to targets through "mechanical means or

human security in the form of security guards and police patrols" (Gibson & Johnson, 2016, p. 10). On the other, boundary definition involves the use of both real and symbolic barriers (Gibson & Johnson, 2016).

In addition, it can further be submitted that the overall goal of access control is to restrict the accessibility of the target which could lure criminal activities. In attempting to achieve this goal, however, there are several issues that often prevail. For example, in burglary crimes, the familiarity of offenders towards their targets has been the major stimulus. The burglars are comfortable where they are less likely to be recognised as strangers (Bernasco & Luykx, 2003). In other circumstances, the criminal's preferences are also being influenced by the familiarity of the built environment, or rather, the physical environment, which tends to offer criminals easy escape routes, as well as the routine activities of their victims (Bernasco & Luykx, 2003). On the other hand, access to unfamiliar neighbourhoods is time-consuming and requires more effort than required by burgling in familiar neighbourhoods (Bernasco & Luykx, 2003).

2.5.2.5. Maintenance

Maintenance is based on improving and ensuring that physical environment remains fully functional (Sakip & Abdullah, 2017). Researchers argue that "in order for spaces to look well cared for and crime free, they must be maintained to the standard of care that would be appropriate for that building type or use" (Atlas, 2008, p. 65). In the Broken Windows Theory, an area that is neglected, and exhibits lack of interest to fix the problems surrounding physical environment by its community, risks attracting the menace of crimes (Jacinta & Travis, 2010). By repairing faulty streetlights, painting buildings with graffiti, and cleaning neighbourhoods are examples of exercising this element. In a study of the Metro Stations, linked to the CPTED model in practice, the reports suggested that subways in Washington DC posed dangers to people (potential victims) because they reportedly had curves and corners that enabled offenders to hide and catch their victims off guard (La Vigne, 1996). As a result, residents resorted to the installation of long escalators and stairs, which made potential victims aware of their surroundings (La Vigne, 1996). Lighting was also improved to eliminate the shadows caused by the physical design of the subways (La Vigne, 1996). This also improved the surveillance system as well, because apart from lighting, it is reported that the CCTV system was installed as part of the changes (La Vigne, 1996).

2.5.2.6. Activity support

This element seeks to prevent the occurrence of crime by encouraging continued use of public space in an area (Sakip & Abdullah, 2017). This also involves the "repair, replacement and

general upkeep of a building or area" (Vagi, Stevens, Simon, Basile, Carter & Carter, 2018, p. 298). This element is in congruent with the natural surveillance system because it encourages the placement of facilities at places where all residents find it convenient to access and utilise them (Sutton, Cherney, & White, 2008). These facilities should cater for residents at the same time attracting people who can, even in unforeseen circumstances where crime can erupt, offer guardianship to the residents and their property (Sutton, Cherney, & White, 2008). The activity support element could include "mixed land usages that integrate residential, recreational, entertainment and restaurant precincts" (Sutton, Cherney, & White, 2008, p. 64). The purpose of the mixed land usages is to ensure the utilisation of all the public spaces throughout the day as a way of reducing the occurrence of crime. In this way, the management of public space is executed properly in terms of design and usage. Some researchers had this to say:

> *Giving various resident groups (e.g. parents and infants, the elderly, teenagers) their own dedicated spaces, and reinforcing the intended usage through appropriate design and management rather than leaving it to these groups to 'sort it out themselves', can reduce conflicts over space which, if unattended, can escalate into harassment and even crime" (Sutton, Cherney, & White, 2008, p. 64).*

It is further noted that activity support can restore trust in the community as well as attract legitimate users towards the improved physical environment (Sutton, Cherney, & White, 2008). This aspect is linked to that of incivilities alluded to earlier on in the sense that an improvement in the use of public space involves the elimination of disorders in the neighbourhood. By maintaining a positive image, it is more likely that residents will be confident enough to utilise public space.

2.5.3. Situational Crime Prevention

To further explain the relevance of the elements of the CPTED model in crime prevention, the application of the Situational Crime Prevention (SCP) strategy is key. In terms of the definition, "it refers to interventions designed to prevent the occurrence of crimes by reducing the opportunities and increasing the risk and difficulty of offending" (Welsh & Farrington, 2009, p. 33). Usually, the term 'situation' refers to "the immediate setting in which behaviour occurs, and neighbourhoods are one situational context that can influence the occurrence of crime" (Vold, Benard, & Snipes, 1998, p. 153). It is argued that the SCP strategy, similar to territoriality, communicates to the offender that a place is protected, cared for and chances of carrying out crime successfully are slim (Braga & Bond, 2008). In fact, if it is introduced it

leads to crime displacement whereby, they alternatively target other places they perceive as less risky (Braga & Bond, 2008).

The Rational Choice Theory is fundamental in broadening an understanding of the goals of the Situational Crime Prevention approach, especially the elimination of opportunities for criminal activities. The theory asserts that prior to commission of crime offenders weigh in costs and benefits (Cornish & Clarke, 1987). Just like the SCP strategy, CPTED model should make committing crime risky and difficult as target hardening and surveillance elements apply (Lab, 2010). To this end, the design of the physical environment increases risk, reduces rewards and opportunities (Welsh & Farrington, 2009). Apparently, the theories that support the SCP strategy and the CPTED model can be equated to the opportunity theories of crime (Vold, Benard, & Snipes, 1998).

Furthermore, the statements cited above imply that these two crime prevention techniques are implemented on the assumption that offenders engage in risk assessment before committing crimes. According to the National Crime Prevention Institute (2001), there are four ways through which offenders exploit this risk assessment. Precisely, they employ techniques such as detecting, deterring, delaying and denying. These strategies are based on the concept called 'risk spreading' summarised as follows:

> *"It is a method that involves the application of security services and procedures to deter possible criminal attacks, delay attackers so that they may be apprehended before completing the attack, and deny access to high-valued targets. Security devices include barriers systems, surveillance systems, and intrusion detection systems"* (National Crime Prevention Institute, 2001, p. 49)

The table below further clarifies these methods:

Goals	Outcome
Deter	Criminal is expected to decide not to commit a crime.
Detect	Criminal commits crime gets detected and a response, for instance, from police or security guards, is introduced as a follow-up.

Delay	Criminal gets delayed, for instance, through target hardening, as they commit crime until they are apprehended.
Deny	Criminal decides to commit crime, however, is unable to proceed because they cannot access their targets.

Table 1: *Four strategies of risk assessment*

(National Crime Prevention Institute, 2001).

With particular reference to territoriality as an element of the CPTED model, it is argued that perceptual barriers can only achieve deterrence, though it depends on whether the criminal is convinced that the used barrier increases risks and decreases reward or vice versa. In comparing the physical and perceptual or symbolic barriers, it is stated that physical barriers often apply three of the methods, and detection is the exception in this case (National Crime Prevention Institute, 2001). Surveillance leads to both deterrence and detection. Since this element employs techniques that detect any behaviour or person, criminals are aware of this reality, and they know the consequences that ultimately lead to their identification and apprehension, and as a result, they may be too hesitant to commit a crime. In this way, deterrence is achieved. This applies to both natural and formal surveillance techniques. The presence of residents around the neighbourhood results in deterrent because potential criminals believe they can be recognised easily, therefore risk is high that they will be punished following their actions (National Crime Prevention Institute, 2001). Furthermore, access control and target hardening are apparently inclined to delaying and denying a criminal to prevent the successful commission of the crimes. In this context, success refers to the criminal's ability to escape before any response that could lead to their apprehension occurs, regardless of whether they have managed to access their targets or not. The addition of activity support and maintenance elements is intended to reinforce the functioning of the previous elements of surveillance, access control and territoriality. With activity support in place, social events or shopping malls, for instance, that may have been built in an area increase the presence of observers who can detect crime. On the other hand, surveillance technology such as the CCTV requires the proper positioning of streetlights in an area for the provision of effective visibility.

2.5.4. Place-based policing

In addition to the crime prevention measures that relate to place and crime, the police also contribute to crime prevention. The occurrence of crime varies across time and space, based on frequency, and places that experience the highest frequency of criminal incidents being regarded as crime hot spots (Weinborn, Ariel, Sherman, & O'Dwyer, 2017). In that regard, law enforcement sectors are urged to dedicate adequate resources to place-based policing, which is also referred to as 'hot spot policing' (Weisburd & Telep, 2014; Braga, 2001). This crime prevention approach assumes that crime can be reduced if hot spots are removed or closely monitored. This should decrease likelihood that potential offenders and victims meet (Braga, 2001). For example, if a majority of crimes occur at night clubs the police can have these businesses shut down. It has already been noted in the SCP strategy that opportunities that lure crimes must be reduced, with the CPTED model being one of the strategies that can be employed. Hot spot policing strategies are other ways through which concentration of crime in places can be reduced. In these strategies it can be initiated that law enforcement agents devote more resources towards high-risk places (Braga, 2001). From a different perspective, it has been argued that crime occurs randomly, and although some places pose more risks than others, it is how much of it in those places occurs that draws attention (Braga, 2001).

In terms of the impact, it has been noted that hot spot policing records small reduction of crime but that should not dismiss the strategy because crime cannot be stopped entirely (Braga, Papachristos, & Hureau, 2014). Additionally, as far as its effectiveness is concerned, little evidence has been shown regarding the type of tactics that work effectively from the strategies employed (Groff, Ratcliffe, Haberman, Sorg, Joyce & Taylor, 2015). In that circumstance, the types of approach that are commonly applied include the offender-focused policing, 'aggressive order-maintenance' policing (also known as 'broken windows' policing), intelligence-led policing, problem-oriented policing, 'situational' crime prevention strategies and others that are central to the hot spot policing approach (Metcalfe & Pickett, 2018; Ratcliffe & Guidetti, 2008; Hinkle & Weisburd, 2008; Clarke, 1995).

2.5.4.1. Offender-focused policing

Offender-focused policing is a type of hot spot policing strategy that focuses on the individuals who perpetrate crimes in a particular area (Metcalfe & Pickett, 2018). The strategy is also referred to as 'focused deterrence' or 'pulling levers', but it is the least employed type of approach (Metcalfe & Pickett, 2018). In cases that involve violent crimes, the strategy has been utilised as a resolution (Groff, et al., 2015). Also, since it relies on deterrence, the offender

tends to desist from committing crime due to the awareness of the possibility or certainty of being apprehended, especially when they have witnessed other offenders being arrested (Groff, et al., 2015).

2.5.4.2. Aggressive order-maintenance policing

The aggressive order-maintenance policing strategy is utilised in situations where crime is regarded as a disorder that must be eliminated from the community (Metcalfe & Pickett, 2018). This approach draws from the 'Broken Windows' Theory which asserts that there are disorderly activities and conditions that lead to the breakdown of a community (McLaughlin, Muncie, & Hughes, 2003). In that regard, issues of crime are not exceptional, and if such disorder is ignored by those residing in the community, more illegal activities will occur (McLaughlin, Muncie, & Hughes, 2003).

2.5.4.3. Problem-oriented policing

Another strategy of crime prevention involves increasing police visibility in an area plagued with high rates of crime (Metcalfe & Pickett, 2018). This is intended to increase personnel who stands to offer guardianship to potential victims of crime (Lum & Nagin, 2017). This is expected to result in more arrests of criminals who commit crimes. Certain areas have a history of criminal activities that have been occurring for long periods of time and hence, measures need to be taken to reduce the opportunities that promote their occurrence. Such measures are collectively referred to as a strategy called 'problem-oriented policing.' Problem-oriented policing strategies require the presence of law enforcement agencies to attend to the various types of crimes that have existed in a community for long periods of time. These include, and are not limited to drug usage, prostitution and criminal gangs (Siegel & Worral, 2014). The police are tasked with developing and adopt cost effective and proactive approaches to these problems (Siegel & Worral, 2014). Also, the strategy complements other measures in reducing criminal opportunities that are expressed in the SCP strategy and CPTED model. The community can be lobbied into partaking in combating crime. They can be more vigilant and improve the physical environment conditions that increase crime opportunities (Lum & Nagin, 2017). This includes "improving lighting, closing problem bars, increasing closed-circuit television surveillance, or adjusting spatial and temporal patterns of police patrol" (Lum & Nagin, 2017, p. 52).

In addition, the problem-oriented policing strategy is intended to foster proactive measures in solving problems of crime that arise in different areas (Groff, et al., 2015). It is sometimes used interchangeably with 'community-based policing' which emerges as a crime control initiative

where the above-mentioned strategies, particularly the broken windows, are exercised (Mastrofski, Worden, & Snipes, 1995). Researchers have not yet agreed upon a definition of this concept. Nevertheless, it is often described as a collaborative effort between the police and members of the community in an attempt to eradicate problems of crime (Mastrofski, Worden, & Snipes, 1995; Somerville, 2009).

2.5.4.4. Intelligence-led policing

Moreover, the intelligence-led policing approach is as fundamental as the other strategies to hot spot policing mentioned earlier. The approach was developed as an alternative strategy to traditional policing approaches that are deemed ineffective, alongside other strategies such as problem-oriented policing and community policing (Ratcliffe & Guidetti, 2008). Put differently, the approach is a paradigm shift from the reactive policing approaches, to those which are proactive (Maguire, 2000). The intelligent-led policing approach is regarded as "a conceptual framework for conducting the business of policing", and it is argued that the strategy does not operate like the situational crime prevention approach (Ratcliffe & Guidetti, 2008, p. 111). The overall objective of this policing strategy is to produce intelligence-based measures that inform decision-making and the allocation of resources within the context of crime control initiatives (Sanders, Weston, & Schott, 2015).

2.5.5. South Africa and the CPTED

The advent of the CPTED model in South Africa dates back to the 1996 NCPS. This initiative or body is recognised in South Africa for developing crime prevention measures. It is known to be the first policy which introduced and detailed significance of CPTED model (Geldenhuys, 2015). It was followed by the White Paper on Safety and Security (1998) and together, the two policies secured its inclusion as part of initiatives against crime among other governmental strategies (Mothibi & Roelofse, 2017). The merging of the two policies came with the realisation that crime can be reduced through the use of law enforcement, the police and other strategies, including the CPTED initiative. This emphasized collaborative effort of both community members and government to curbing crime (Safer Spaces, 2015).

When the NCPS introduced the CPTED model, a project spearheaded by the Council for Scientific and Industrial Research (CSIR) and the Institute for Security Studies (ISS) was conducted (Kruger, 2005). The project had an aim similar to that of this study, that is, to study the relationship between physical environment and crime. The project was conducted in South Africa and the results led to the recognition of the CPTED model, which later attracted the attention of law enforcement and governmental agencies as well as private sectors (Kruger,

2005). The NCPS was assisted by the CSIR because there was little support received from government (Kruger D. M., 2005). As noted in the previous sections, it has been a challenge trying to measure the effectiveness of the CPTED model initiative in different countries. The project conducted by the CSIR was also subjected to these challenges. It has been further noted that when introducing the CPTED model, the NCPS did not perform practical tests to measure effectiveness of the model, its compilation was rather based on data compiled through research projects that detail guidelines as to how it can be applicable in the South African context (Kruger, 2005). Although these projects focused on the principles which were fundamental to the CPTED model, it is reported that they used examples and their outcomes were unintentional (Kruger, 2015). This is because the principles of model were not understood (Kruger, 2005). This may have resulted in little support coming from government and other initiatives involved in crime prevention.

In light of the challenges arising from the need to provide proof of how the CPTED model can effectively work for the country, other projects have been conducted in an attempt to apply this model of crime prevention. As already noted, the NCPS and The White Paper encourage the stakeholders in the locality to engage in crime prevention, and in order to achieve such benchmarks, municipal structures are often the focus. The reason for incorporating the municipalities is that they are close to the members of the communities and that they can implement the CPTED model initiatives in partnership with various local government departments and communities, in establishing security measures such as inner-city CCTV network system (Geldenhuys, 2015). A case in point was a project conducted by the Municipality of Polokwane, where the study considered the CPTED model. Resultantly, the municipality is reported to have "reduced vacant land or open spaces in residential areas, and public parks are well lit and maintained" (Mothibi & Roelofse, 2017, p. 49). Such efforts are in alignment with all the elements of the CPTED initiative. It is not clear as to how crime trends have changed as a result of the project. Neither was the information availed regarding the period the project began.

Furthermore, another programme was undertaken in the City of Cape Town, the Western Cape, in South Africa, and it applied the principles of the CPTED model (Geldenhuys, 2015). The programme is called Violence Prevention through Urban Upgrading (VPUU) and it was developed in 2005 in Khayelitsha community, which is located in the city (VPUU, 2016). The city initiated the programme in 2006 in an effort to reduce crime (Geldenhuys, 2015). The VPUU programme is dedicated to the improvement of urban environments and social standards

and the introduction of sustainable community projects to empower residents (Geldenhuys, 2015). Included in the components of the programme is the SCP and spatial intervention mechanisms through urban design, physical upgrading and the building of facilities (VPUU, 2016).

In addition, another project was conducted at KwaMashu and Inanda areas, and both are townships located in the province of KwaZulu-Natal. The project is entitled *'KwaMashu/Inanda Crime Prevention and Development Programme'*, and just like the VPUU initiative, it considers the SCP strategies and makes reference to the principles of the CPTED model particularly the mechanisms of reducing crimes in the localities (Safer Spaces, 2015). As alluded to earlier on, the CSIR has worked to ensure the inclusion of the CPTED model in its crime prevention measures apart from its involvement in the project. In a report compiled by the CSIR and other partners in the project, particularly Injobo ne Bandla, IDASA and IPT, on its progress, it was noted that the principles of the CPTED model can make key contributions to crime prevention, and it was suggested that they can be implemented and made to work "alongside other planning principles for well-performing settlements, such as the principles or objectives identified in the Durban Metropolitan Development Framework" (Safer Spaces, 2015, p. 4). The report follows from a research project also, which implies that it does not include practical measures that are required to assess the effectiveness of CPTED model in the South African context.

In addition, other measures that seek to complement the CPTED model in South Africa include the 2003 Safer Cities Strategy (SCS), the 2002 Urban Renewal Programme and the 2012/2013 Integrated Development Plan (IDP) (Geldenhuys, 2015). The SCS adopted the CPTED model as one of methods of ensuring safety among residents around Durban (eThekwini Municipality, 2011; Geldenhuys, 2015). The Urban Renewal Programme (URP) was launched in 2001 by the then president of South Africa, President Thabo Mbheki (Roefs, Naidoo, Meyer, & Makalela, 2003). The programme sought to stimulate urban regeneration through environmental design, while at the same time addressing crime through urban development initiatives (Geldenhuys, 2015). After its launch in 2003, the Alexandra Renewal Project (ARP) was implemented at Alexandra, a township in the province of Gauteng (Roefs, Naidoo, Meyer, & Makalela, 2003). Like other projects which have attempted to apply the principles of the CPTED model, the ARP also received minimal support from the government. It has often been reported that "The ARP Project Manager was concerned about the lack of support from national government. This includes financial assistance and the lack of a clear national policy

framework" (Roefs, Naidoo, Meyer, & Makalela, 2003, p. 59). In another report, it has been indicated that the IDP was developed for all the nine provinces and provides a holistic understanding of what the CPTED model is all about and how it can be applied in the broader framework of social development and urban planning design (Geldenhuys, 2015).

2.6.   Summary of the chapter

This chapter aimed at gathering information that is in sync with the key aims and objectives of this study. Firstly, it traced the history of the relationship between crime and its place of occurrence. Secondly, the chapter discussed the techniques used in studying crime patterns at the places where crimes occur. Thirdly, it explored the factors that influence the concentration of crimes at certain places. This discussion comprised the findings and examples where the physical environment contributed to the occurrence of crime. Fourthly, it presented the different types of crime prevention, with emphasis being put on the principles of the CPTED model, a strategy that seeks to prevent crimes that are influenced by the physical environment. Lastly, the chapter located the CPTED model within the South African context. It is through this section of the chapter that the significance of the model is outlined. It has been acknowledged that the CPTED model has not yet been tested in the practical sense and this study provides more insights into the ways through which future plans can effectively implement the model.

CHAPTER THREE

THEORETICAL FRAMEWORK

3.

3.1. Introduction

In this chapter, the theories that form an integral part of this study are explained in line with the significance of the physical environment to the crimes occurring at Inanda, Durban, South Africa. These theories are RAT (as Routine Activities Theory); Opportunity theory; RCT (as Rational Choice Theory); and BWT (as Broken Windows Theory). These theories form the foundation on which this study is built. According to Adon, Husseim and Agyem (2016), a theoretical framework provides ways of approaching a phenomenon and applying the relevant methods that lead to an informed conclusion that addresses the study questions and objectives. The theories that follow in the subsequent sections correspond to this study's key objectives and questions.

This study assumes that the physical environment ought to be explored in order to determine its contribution to crime and similar attention must be paid to other factors deemed likely to lead to crime, for example, socio-economic factors such as unemployment and poverty. The chapter clarifies how the theories cited above aid in unpacking these assumptions and influencing the overall study. In short, the theories seek to explain how there is always an opportunity to study the 'where' (places) of a crime as much as the 'who' aspects (offenders and victims) or 'why' it occurs.

Furthermore, it has been noted that offenders do not commit crimes randomly (Lab, 2010). Rather, they plan their criminal activities; they do not, at any given point in time and at any place, commit crimes without careful thinking. They do have reasons for committing crimes and that reasoning is followed by a clear idea of where they will execute them. In the same vein, to some degree, offenders make decisions on what to do, when, where and how to execute them (Lab, 2010). Hence, the discussions that follow seek to shed light on the influences that motivate criminals to commit crime. Such factors are discussed within the context of the theories cited above and reference is made to the physical environment.

3.2. The Routine Activities Theory

This theory was developed by Cohen and Felson (1979) to determine the circumstances that make it likely that a crime may occur. Three elements that have received much attention in explaining the likelihood of a crime are; a motivated offender, suitable target and lack of a capable guardian (Cohen & Felson, 1979). It is assumed that "when a motivated offender is presented with a suitable target that is not properly guarded against victimization, a crime is likely to occur" (Marcum, Ricketts, & Higgins, 2010, p. 145). This suggests that when an offender is presented with an opportunity, there is a possibility that a crime could be committed. This 'mutual occurrence' is dependent on the three elements (Lab, 2010).

In applying this theory, the intended outcome is to establish a relationship between the physical environment of the places and the crime itself. Regarding this view, it has been expressed that:

> *"The most important contribution of routine activity theory is the argument that crime rates are affected not only by the absolute size of the supply of offenders, targets, or guardianship, but also by the factors affecting the frequency of their convergence in space and time" (Sherman, Gartin, & Buerger, 1989, pp. 30-31).*

This citation presupposes that although the three elements are sufficient to explain the occurrence of crime, the conditions that cater for the time these elements come together cannot be glossed over. Both theorists who developed this theory could hardly ignore this sticking point. The theorists hold that crime should not be explained without circumstances surround its commission (Felson & Cohen, 1980). Hence, this explains why the objective of this study is to interrogate circumstances around the places where crimes occur, with less emphasis being put on the individuals involved in the commission of a crime. The key words in their statement are 'space' and 'time'. In validating their statement, the theorists referred to the Human Ecology Theory expounded by a sociologist named Amos Hawley, in a book entitled *'Human Ecology: A Theory of Community Structure' (1950).* The theory describes the manner in which people and their environment co-exist, and further dwells on the subject of space and time. The three concepts are alluded to in Hawley's (1950) book as follows:

> *"(1) rhythm, the regular periodicity with which events occur, as with the rhythm of work activity; (2) tempo, the number of events per unit of time, such as the number of criminal violations per day on a given street; (3) timing, the coordination among different activities which are more or less interdependent, such as the coordination of one worker's rhythms with that of another worker" (Felson & Cohen, 1980, p. 391).*

These concepts emphasise the importance of the circumstances that are suitable for the three elements of the RAT prior to the occurrence of a crime. Place, as the main focus of this study, is part of the factors to be explored. This approach involves little work as spatial research has successfully explained crime rate patterns as well as providing ad hoc explanations (Cohen & Felson, 1979). However, it is on rare occasions that the concepts of the Human Ecology Theory are used from the perspective of seeing criminal acts as events which occur at specific locations in space and time (Cohen & Felson, 1979). The current study is one of the attempts that seek to address this gap.

In addition, it is asserted that the major limitation of the theory is the lack of the evidence to test the ecological data at the actual places where offenders, targets and weak guardians converge (Sherman, Gartin, & Buerger, 1989). However, Felson and Cohen (1979) have recognised the likelihood of a person falling victim to a crime as a result of being at a particular place as opposed to others. In their example, they noted that household and family activities have lower risk of criminal victimisation than non-household and non-family activities, despite the problems associated with measuring the former (Cohen & Felson, 1979). It is also argued that the risk of victimisation varies directly with the social distance between the offender and the victim (Cohen & Felson, 1979). It is against this background however, that it has been argued that their finding does not address the times people spend on certain places. Instead, they simply explained national crime trends in relation to the national trends obtaining in the presumed place of routine activities (Sherman, Gartin, & Buerger, 1989). Hence, this necessitates the need to sufficiently explain how places influence the likelihood that a person may fall victim to crime.

Furthermore, the contribution of the elements of the theory to the overall objectives of the study cannot be overlooked. A motivated offender is an individual who is not only willing but also has the ability to commit a crime (Cohen & Felson, 1979). A suitable target is any object or person that is attractive to the offender and can fall victim to the crime committed (Cohen & Felson, 1979). The lack of a capable guardian refers to the absence of anyone with the ability to prevent the actions of a motivated offender from committing the crime (Cohen & Felson, 1979).

For the current study, the element of a suitable target has a significant role to play. In particular, it is useful for detailing the characteristics of the physical environment of places that are targeted by potential offenders. It should be noted that this element has four components that

correspond to the principles of the human ecology. These components are summarised as follows:

"(1) the value of the target affects its desirability for potential offenders. This includes both the monetary and symbolic value of property for use or resale and whatever prejudice, grievance, challenge, or sexual features affect the suitability of a personal target for criminal attack; (2) A target's visibility affects its risk of discovery by potential offenders of their informants; (3) Access to a target refers to the suitability of its site for legal or illegal entry for purposes of committing a violation, as well as the opportunity for escape; (4) The inertia of a target includes any factors which make it difficult to overcome for illegal purposes. For example, targets for property violations may be heavy, bulky, attached or locked, while targets for personal violations may be physically capable of resisting with or without weapons" (Felson & Cohen, 1980, p. 393).

Precisely, the four components are summarised as "value, visibility, access, and inertia of target" (Felson & Cohen, 1980, p. 393). It is imperative to understand the rationale behind the targeting of some places at Inanda. The other elements (motivated offenders and guardianship) also play a significant role in explaining the events that lead to a crime. A typical overview of the integrated elements would constitute the 'motivated offenders' as being the perpetrators of crimes, the target as referring to the places and persons or properties chosen by the offenders, and the principles of the CPTED model being applied for both target suitability and guardianship, whereby the intended outcome refers to finding a resolution to prevent the crimes. For instance, it can be deduced why some places are prone to crime by checking whether they possess any form of guardianship that deters potential offenders. It has also been noted that "routine daily activities affect the likelihood that property as well as personal targets will be located in visible and accessible places at particular times" (Felson & Cohen, 1980, p. 394). This is in line with space and time as well as human ecology. In some cases, the target comes to be involved depending on the degree of its visibility and accessibility to the potential offender.

3.3. Opportunity Theory

To substantiate the target suitability, the Opportunity theory comes into focus. The RAT manifests as a formal version of the Opportunity theory (Lynch & Cantor, 1992). The theory builds on the notion that rather than focusing on the offenders or the 'absence of social controls', attention should be paid to crime targets (Filbert, 2008). As mentioned above, the

RAT hardly clarifies as to how places contribute to crime. According to Wilcox, Land and Hunt (2003), focusing on the RAT implies that crime can be explained by whatever amount or rate of occurrence, location and distribution across social and physical space of the criminal acts. This analysis is achieved through applying what is referred to as the 'criminal opportunity context'. By definition, the criminal opportunity context refers to "the social and physical individual and environmental circumstances that affect the convergence in time and place of a motivated offender, a suitable target, and absence of capable guardianship" (Wilcox, Land, & Hunt, 2003, p. 15). This can be illustrated diagrammatically as follows:

Figure 1: Opportunity theory

This illustration integrates the elements of the Opportunity theory and those of the RAT (Wilcox, Land, & Hunt, 2003).

This illustration shows how the three elements of the RAT converge in the presence of an opportunity. This illustration also refers to the significance of space and time as previously discussed. As such, crime prevention measures, including the CPTED model and the SCP, focus on the reduction of opportunity as opposed to focusing on the criminal's inclinations to commit crime (Richards, 2001). According to the CPTED model, the reduction of opportunity can be achieved through environmental design. Both the model and the preceding theory assume that crime is less likely to occur if motivated offenders are deprived of the opportunities. The overall aim of prevention focuses on decreasing opportunity, which is "to make potential targets inaccessible or unattractive, and making commission of crime dangerous

or unprofitable to the criminal" (Richards, 2001, p. 3). The RAT is equally applicable because the three elements are considered. The criminal inclinations relate to the element of the 'motivated offender,' which also extends to their capability to successfully commit the crime (Richards, 2001).

3.4. The Rational Choice Theory

In addition to the Opportunity theory, the theory of Rational Choice is fundamental in ensuring a clearer understanding of the intended goals of the CPTED model and its elements as far as preventing crime is concerned. This theory was developed by Roland Clarke, who is also recognised for having led the introduction of the SCP in the 1970s (Hayward, Maruna, & Mooney, 2010). The tenets of this theory are premised on the assumption that risk committing crime depending on personal and situational factors (Atlas, 2008). These factors are summarised as follows:

> *"Criminal behaviour occurs when an offender decides to risk breaking the law after considering personal factors (the need for money, entertainment or revenge) and situational factors (potential police response, availability and access to target, lighting, surveillance, skill and tools needed to commit crime)" (Atlas, 2008, p. 54).*

The aforementioned offers that criminals utilise crime to satisfy personal needs which pose as 'rewards'. On the other hand, situational factors account for 'risks' that may accompany their actions. It is through these situational factors that Roland Clarke's SCP strategy builds from (Hayward, Maruna, & Mooney, 2010).

The RCT stems from the Classical School of Criminology and it was developed by the Italian social thinker, Cesare Beccaria, who asserted that people act in pursuit of pleasure and to evade pain (Siegel, 2010). This is the rationale behind their criminal actions, and they make deliberate choices to commit crimes by first assessing the gravity of the punishment that is likely to follow. According to Siegel (2010), the more severe, certain, and swift the punishment is likely to be, the greater its ability to control criminal behaviour. Among other things, choice is the dominant element of The RCT. It is argued that "if opportunity is central to the event, it is choice that is central to involvement" (Gilling, 1997, p. 43). With regards to the aforementioned personal and situational factors, this argument stands to imply that the element of opportunity also applies as the criminals assess possible outcomes of their crimes. For example, they consider their targets and make decisions to act on the belief that there is an opportunity to do

so without suffering punishment (Gilling, 1997; Welsh & Farrington, 2009). For instance, it is argued that "in rational choice theory, opportunity takes on the central role in explaining a specific criminal event, conceived of in terms of the presence or absence of surveillance and physical security measures, and a constellation of factors weighing as either costs or benefits" (Gilling, 1997, p. 43).

The advent of CPTED model involves the designing of the physical environment in order to increase the risk associated with committing the crime, that is, in the eyes of a potential criminal. This is complementary to the RCT. However, in cases where their perceptions of risk differ, potential offenders are more inclined to engage in crime. When they believe they cannot be detected, identified and apprehended, their crimes are imminent (Atlas, 2008). The RCT provides two key ways of applying the CPTED model at Inanda area. Firstly, it accounts for reasons 'why' some parts of the area are chosen for crime. Secondly, it offers the basis through which the elements of the CPTED model become relevant to the prevention of crimes that occur in those areas.

3.5. The Broken Windows Theory

This study also uses the BWT which was proposed by James Q. Wilson and George Kelling in 1982 (Jacinta & Travis, 2010). Traditionally, the theory sees crime as resulting from the negative conditions obtaining in the neighbourhood of an area (Jacinta & Travis, 2010). In cases where a community lacks social cohesion, or ways of collectively addressing problems such as vandalism, in particular places, offenders see an opportunity to commit crimes (Jacinta & Travis, 2010). It is suggested that an intervention through measures that are intended to address the negative conditions in the places ought to be implemented. Generally, such conditions often include ensuring that there is proper lighting in an area by fixing broken down streetlights, since that makes visibility difficult to achieve any form of surveillance that the CPTED model seeks to employ. Territoriality is also an element that is to be considered as it encourages the strengthening of social cohesion in a community because this could increase the sense of responsibility among residents, which fosters their ability to act against crime within their territories.

By considering the assumptions behind the causality of crime, the usefulness of this theory raises questions to the practitioner of the CPTED model as to whether the intervention can function effectively considering the type of physical environmental conditions of the places in which it can be implemented. These questions ought to be addressed. This study acknowledges that what is central to this theory is that crime prevention depends on the ability of those who

reside in the community to work collectively to achieve this common goal. This, according to some researchers, involves the willingness of the citizenry to interact with the police and with each other to co-produce security in their communities (Fagan & Davies, 2000). The goal of the CPTED model is then understood to border on the need to create opportunity for these residents to exercise such security. Further, it has been noted that negative neighbourhood conditions cause fear (Siegel & Worral, 2014). By removing such conditions, faith in the community and social cohesion will be restored because residents will perceive their place as safe (Jiang, Mak, Zhong, & Webster, 2018). As such, the fixing of parks and the establishment of shops and increased visibility at night, for example, often results in less fear of crime in a community, allowing people to walk freely. Such remedies result in the creation of more capable guardians in a community. This corresponds with the introduction of activity support and elements of territoriality and natural surveillance from the CPTED model.

As a panacea, it is recommended that the police adopt measures that target all types of crime regardless of whether a crime is less serious or otherwise, because more often than not, smaller problems tend to gravitate towards bigger ones (Siegel & Worral, 2014). Also, the police have been encouraged to continue cooperating with communities as they address problems that affect them. The advent of community policing is a living testimony to such cooperation. It has been indicated that the 'broken windows' approach assumes that police administrators would be well served by deploying their forces where they can encourage public confidence, strengthen feelings of safety and elicit cooperation from the citizenry (Siegel & Senna, 2007). In the context of the CPTED model, this involves encouraging community members to treat their areas and the physical environment with civility. This also calls into question other common interventions such as the Defensible Space strategy and the community policing initiative.

3.6. Summary of the chapter

This chapter aimed at providing theories that are relevant to this study. These theories offer different perspectives that explain the occurrence of crime as a result of the physical environment as discussed in the previous sections. Firstly, the RAT contends that crime often occurs because some physical environments promote the convergence of motivated offenders and suitable targets in the absence of effective guardianship. Secondly, the Opportunity theory seeks to explain how crime opportunities present themselves in the physical environments. Thirdly, the RCT is based on the choices individuals make before committing a crime at certain places. As a panacea to crime, the CPTED model is intended to dissuade potential criminals by

increasing the risks that are associated with the crime. Lastly, the BWT advocates the idea of maintaining the physical environment to deter criminal activities.

CHAPTER FOUR

RESEARCH METHODOLOGY

4.

4.1. Introduction

This chapter focuses on the research methodology and design. It details the methods that were applied in obtaining information that answers the study's key research questions. This includes the various steps and procedures that the researcher undertook to gather and analyse the data. For the most part, it accounts for process of collecting, gathering and analysing information from participants from Inanda area's Ward 57 section. The chapter is broken into sections that explain and justify utilising the various methods and techniques. It starts with describing the characteristics of the selected areas in Inanda. Secondly, it describes the research approach and design adopted in this study. Thirdly, the chapter provides the research paradigm which justifies using the approach and design. Forth, it explains the process of selecting participants suitable for the objective of study. Fifth, it describes the instruments which were used to collect data, and this entails the process of working with the participants selected. The chapter also describes how the data were analysed. The chapter provides the details on how trustworthiness was ensured and how the researcher remained objective and consistent throughout the research process and analysis of data collected. Lastly, the researcher provides the details on how trustworthiness was ensured and how the researcher remained objective and consistent throughout the research process.

4.2. Location of the study

This study was conducted in Inanda, Durban, South Africa. It is an area demarcated according to wards because it is big. This study was conducted in Ward 57. This ward was selected because the study sought to understand the dynamics of crime by focusing on the physical environment. Therefore, the researcher identified a section of the Inanda area with different characteristics in terms of the physical environment. This ward comprises formal and informal settlements, and key areas which were significant are Newtown C (formal settlement) and Bhambayi (informal settlement). Additionally, participants in this study were selected for working with crime in the same areas, and some of them made examples that included other areas outside Ward 57. These areas are; Amawoti, Mangweni and Inanda Glebe. The areas are a mixture of formal and informal settlements and there were times whereby participants

answered to questions by making comparisons about the living conditions of these areas to explain crime prevalence.

4.3. Research approach and design
4.3.1. Research Approach

This study adopted a qualitative approach. The aim was to gain insight or different perspectives to explore the causes and prevention of crime by focusing on the physical environment using a case study of Ward 57 of the Inanda area. This research approach is fitting for the study because it permits exploring a social problem such as crime by drawing from "people's feelings, thoughts and experiences in depth" (Davies, 2007, p. 139). Undertaking this study required people's perspectives of their surrounding physical environment and experience with crime. For this reason, the researcher employed participants, particularly the police officers, to explain whether the physical environment contributes to crime at Inanda or not. The use of qualitative research approach was suitable because it is invested on how people view their social world (Taylor, Bogdan, & DeVault, 2016).

4.3.2. Research design

This study adopted a case study research design to explore the selected areas of Ward 57 of Inanda as they are prone to crime. This type of research design aligns with the qualitative research approach, and it helped in obtaining detailed information. It permits studying a phenomenon such as crime using different perspectives. As it has been noted earlier, crime has been studied in different ways with scholars stating that it is a phenomenon caused by internal factors, for instance psychological problems, and others theorizing that it occurs due to external influences such as unemployment and other socio-economic factors (Herris & Radaelli, 2007; Siegel, 2010). This study took a different stance to understand the phenomenon by studying the physical environment where crimes occur. By adopting this research design, different perspectives were exposed and used to produce findings to illuminate the topic. Apart from information collected from Inanda areas, there is inclusion of CPTED model provided as part of the study. These options allowed for a wider outlook into the phenomenon (Baxter & Jack, 2008).

CPTED and theories of routine activity, opportunity, rational choice and broken windows provided the researcher with the foundation for the study. They triggered curiosity as to whether it be argued that the physical environment influences crime. The case study design shaped how this study managed to get answers. A technique which made it possible is called

'exploratory' which is based on case studies seeking to explore a phenomenon (Yin, 1984; Zainal, 2007).

4.4. Research Paradigm

The research approach and design used in this study is consistent with the interpretive research paradigm. The interpretive paradigm was applied because it is based on understanding the social world as perceived by those who live in it (Weaver & Olson, 2006; Wahyuni, 2012; Antwi & Hamza, 2015; Rehman & Alharthi, 2016). It holds that reality is what people make of it. This study uses qualitative methods because the researcher is interested in obtaining perceptions held by people about their surrounding physical environment. Throughout the collection of the qualitative data, participants were asked to present their perceptions about commission of crime in the various areas in Inanda, with specific reference to the influence of the physical environment.

The interpretive paradigm not only aligned with the research approach applied, but it also describes the researcher's standpoint, which was to interact with participants who function from the selected areas and understand and interpret their views of their surroundings. Put differently, the researcher was required to gather data on how the physical environment contributes to crime at Inanda areas. As a result, participants were requested to share their opinions, based on their experience with crime, about whether the physical environment contributes to crime. It has been argued that "reality is individually constructed, there are as many realities as individuals" (Scotland, 2012, p. 11). The use of qualitative data as guided by the interpretive paradigm is fitting because interpretivists believe that reality is constructed by those who interact with it (Scotland, 2012).

4.5. Selection of participants

In selecting participants suitable for the study, the researcher used a qualitative sampling technique referred to as 'purposive sampling'. There were ten participants employed, consisting of members drawn from the SAPS in Inanda's Mtshibheni police station. The station is responsible for all crimes pertaining to Inanda as a whole. It is the main station in this area, and it is responsible for the satellite stations across Inanda. The researcher visited the station with the intention to arrange meetings with relevant officials and was granted permission to work with police officers dealing with crimes that occur in the areas surrounding ward 57. Gatekeeper permission was granted, ensuring that the researcher was assigned and directed to satellite stations where these police officers operate.

There are ten police officials who operate in Ward 57 satellite station called 'Vela', which is located at Newtown C. It is due to this reason the researcher only managed to employ ten participants for the study. Five members work during the day while others take the night shift. The technique was employed to select these police officers because of their experience of working with the problem of crime at Inanda. Their occupation exposes them to crime prone places, and the type of physical environment conditions through which crimes occur.

4.6.   Data collection

Data were collected after selecting participants, particularly the ten police officers working at Vela satellite station. The participants were asked to participate because of their experience with crime in the areas surrounding Ward 57. They provided information that was intended to explain whether the physical environment contributes to crimes affecting these areas. The data was collected using interviews which were audio-record and transcribed on paper. The process that led to the collection of this data is explained as follows:

4.6.1. Interviews

The data was collected through semi-structured interviews, which consisted of open-ended questions. These interviews were conducted one-on-one with participants in IsiZulu. This was done according to police officials' permission. Nonetheless, the researcher had prepared questions in English for participants who may not speak or understand the questions phrased in IsiZulu. The interview schedule can be found in Appendix C and D. In preparing the questions in IsiZulu the researcher was assisted by a translator to ensure that meaning is not lost. The reason for requiring a translator was because at first all the questions were written in English, and IsiZulu became a second option when considering that much of the population at Inanda comprises of IsiZulu speaking people.

The interviews were conducted in February 2019 and they were conducted at the Vela satellite police station. It was not easy for the researcher to conduct these interviews outside the station. As noted above, they work according to shifts and five police officials work a shift which lasts about 12 hours. Due to that, they are busy, and it was not possible to interview them while they were not at the station. When arranging these interviews, the only options were that the researcher comes early in the morning around 06:00AM (Ante Meridiem) to 08:00 AM. As an alternative to these times, another option was that the researcher would engage with them when they knock off at 18:00 PM (Post Meridiem), or interview the shift coming in at this time. Put differently, when the 18:00PM shift ends, there will be other police officials who take another shift from this time to work until the morning at 6:00AM.

4.6.2. Data collection instruments

The researcher, as the interviewer and research instrument, was guided by questions prepared prior to the interview sessions. During the interviews, the researcher could probe the interviewees as they responded. The researcher was attentive and responsive throughout. On the other hand, the participants, as interviewees, enjoyed flexibility of asking questions for clarity purposes as the interviews proceeded. Flexibility of semi-structured interviews assists the conversations between interviewer and researcher to engage in-depth (Cohen, Manion, & Morrison, 2002). Through this advantage, the researcher was able to capture a wide range of perspectives provided by the participants with clarity.

In keeping track of the interview, the researcher prepared an audio recorder and a diary. The majority of the interviews were audio-recorded, depending on the participant's permission. There was one participant who required the researcher to use diary to transcribe the interview. In taking this into consideration the benefit was to avoid potential loss of data. On the other hand, the tools were used in a manner that allowed participants to fully express their perceptions on physical environment of places where crimes occur. The questions asked were used to meet that objective accordingly. In addition to that all participants were reminded in each interview that their participation is voluntary throughout.

4.7. Data analysis

The data collected in this study was analysed using a research technique referred to as thematic analysis. This is a "method for identifying, analysing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 79). The method was undertaken because it is suitable to effectively utilize and obtain meaning contained in the responses of police officials in relation to the objectives of this study.

Thematic analysis is suitable for a qualitative study like this one at hand. It gave the researcher an opportunity to analyse data which cannot be interpreted in quantifiable techniques (Braun & Clarke, 2006). The researcher ensured that the analyses made were done with an intent to achieve transparency, consistency and a high level of attention that can produce reliable findings (Braun & Clarke, 2006; Nowell, Norris, White, & Moules, 2017; Castleberry & Nolen, 2018).

There are six steps through which this thematic analysis was conducted, namely "(1) be familiar with data; (2) generate initial codes; (3) search for themes; (4) review themes; (5) define and name themes; (6) produce a report" (Braun & Clarke, 2006). These are discussed below.

4.7.1. Being familiar with data

The steps were followed by researcher according to the research questions and objectives of the study. In step one, the researcher began by becoming familiar with interview data which were collected from each police officer. During the interviewing process, they were audio recorded and upon analysis they were transcribed. The researcher kept them in writing through notes because it is important that verbal data such as interviews be transcribed in this way (Braun & Clarke, 2006). They were then read repeatedly to ensure that all the responses were obtained, and a clear understanding was achieved.

4.7.2. Coding data

In step two, the researcher proceeded by coding data that had been transcribed. In that regard, this meant that the analysis had to translate data into codes which were in the form of keywords, key ideas and or statements related to each other. Some participants did not specify how the physical environment contributed to crime, including referencing CPTED as they responded. Instead, they reflected on their experiences on the type of places prone to crime. As a result, the researcher used this step to ensure that all the responses got equal chances to be coded because they could play a role at a later stage.

4.7.3. Searching themes

When gathering data through codes came to completion, step three followed as it sought to build from the previous phase. The codes which were produced were then grouped based on the meaning they conveyed as codes and translated into themes. For example, participants were consistent in stating that the areas have poor roads, and this makes them less accessible and it has a negative impact on the various efforts to combat crime. All the codes which highlighted these conditions were grouped together to create a theme which was later referred to as 'access roads'. The codes were put in context (Castleberry & Nolen, 2018). For an illustration of the grouping of codes according to themes that emerged see figure 2 and table 2.

4.7.4. Reviewing themes

Moreover, from the process of recognising emerging themes, step four was introduced and it was about refining themes. This was intended to check whether they are meaningful or relevant to achieving the objectives of the study. This also required that some attention be dedicated to comparing original data, audio recordings and transcriptions, with the themes developed. If there were inconsistencies, the researcher revised the analyses until final themes made sense.

4.7.5. Defining and naming themes

Step five emerged when the researcher had managed to produce themes previously and had to define and name them. This process involved going through each theme developed and having to create a name suitable for it. The naming came about through analysis and repeated reading of each theme to avoid misleading the reader of the final product.

4.7.6. Producing report

In the last step, the researcher came to conclude that the analysis and produce a report because themes have been developed fully, in relation to the data collected. The process is not restating data but rather to ensure that the report details all information pertaining to the study in an organised and logical manner.

4.8. Trustworthiness

In the process of conducting the study, the researcher ensured trustworthiness in order to produce reliable findings and conclusions. This was ensured in four ways which are namely; credibility, transferability, dependability and confirmability (Shenton, 2010). The discussions below explain how they were applied:

4.8.1. Credibility

The researcher was committed to using information that was provided by the participants. In the presentation of data, quotes from the participants are mobilised with interpretations of what they meant. In the discussion section, this data is used in combination with secondary data that is provided in other chapters throughout the study, such as the literature review and theoretical framework. There were sources, or rather projects, which have been conducted previously, that were used to validate or rather, show that there are elements of truth in the data provided by participants. The study is a case study and if put differently, the researcher triangulated data used throughout the study. This was primary data, such as the interviews, used in combination with secondary data, including journal articles, books and related projects, to meet the objectives of the study. The researcher addressed what is referred to as 'truth value' which is about "establishing confidence in the 'truth' of the findings" (Guba, 1981, p. 79).

4.8.2. Transferability

The researcher maintains that the study provides how the physical environment of an area may contribute to crime. According to Guba (1981), transferability is about 'applicability' of the study and as a result, the researcher contends that the information and data collected in this study can be used for future reference. Other scholars may conduct the same study and apply similar research methods in the future. The researcher is confident that they will discover

similar findings. For further emphasis, the findings that occurred in this study can be verified in the project '*KwaMashu/Inanda Crime Prevention and Development Programme*' (Safer Spaces, 2015). Additionally, the CPTED model has not been implemented to prove its effectiveness in reducing crime by changing the physical environment conditions either in the Inanda area or the country. Projects have only managed to provide guidelines as to how the model can be employed. Likewise, this study did not test effectiveness of the model but rather recommends that Inanda area's physical environment be improved to allow for prevention of crime to be implemented. The study serves to encourage that communities, organisations, criminal justice systems and other structures dedicated to the reduction of crime employ it. Future researchers should also utilise the findings to plan practical applications of CPTED or rather generate information that may help encourage employing the model.

4.8.3. Dependability

The researcher ensured that relevant research methods were utilised and were reliable to produce data relevant to achieving the objectives of the study. In terms of obtaining similar findings, it is important to note that participants were asked to provide their perceptions about whether the physical environment contributes to crime. The interpretations of these perceptions may differ across different researchers who may be interested in producing similar studies. However, the data on the situation of crime and the physical environment of Inanda was produced following reliable methods, hence it is deemed reliable. As it is argued "because the interpretivist researcher deals with human behaviour which is by its very nature continuously variable, contextual, and subject to multiple interpretations of reality, s/he is not able to produce exactly the same results" (Guba, 1981; Kivunja & Kuyini, 2017, p. 34). Considering this, it was the researcher's duty to exercise a level of interpretation that is fair and consistent. For the most part, this was achieved through using thematic analysis to obtain and interpret responses provided by the participants. The researcher ensured that all the steps that go into this type of data analysis were followed consistently. As a result of the process, findings gathered corresponded with other findings obtained in other studies done previously, which further improve the trustworthiness reliability of the conclusions drawn from this study.

4.8.4. Confirmability

This element refers to the role of the researcher in terms of maintaining objectivity in their study (Shenton, 2004). This includes avoiding bias, such as putting aside individual interests that result in the analysis of data and interpretation of findings that do not reflect the exact information obtained whilst conducting the study (Shenton, 2004). To achieve this, the

researcher ensured that all the data that was used to arrive at conclusions was not biased. There are limitations which are provided in chapter six to further explain how the researcher maintained a neutral stance throughout the study, especially ensuring that individual bias does not occur upon interpretation of data presented by the participants (police officials). In addition, the researcher conducted an external audit, employing an editor, to assess and examine the entire study to ensure that the researcher's interpretations do not have bias and that limitations are acknowledged.

4.9. Ethical considerations

In this study, the researcher obtained information from participants who were interviewed based on their experiences and perceptions of crime in Ward 57 of Inanda, Durban, South Africa. It is worth noting that the researcher acknowledges that "participants are autonomous people who will share information willingly" (Orb, Eisenhauer, & Wynaden, 2001, p. 94). This means that the process of collecting data through an interview was done in consideration of documentation that includes "confidentiality, informed consent, and privacy" (Orb, Eisenhauer, & Wynaden, 2001, p. 94). To this end, to conduct the study, researcher applied for:

- Ethical clearance from the Humanities and Social Sciences Research Ethics of the University of KwaZulu-Natal.

- Gatekeeper letter from the SAPS, allowing the researcher to work with police officials from Inanda police station to be included as participants in the study.

These documents guided and permitted the study to be conducted. They are located in appendices E and F. Prior to the interviews, each participant was offered a written consent form to sign for agreeing to participate in the study. This form consisted of details about the aims and objectives of the study, the participants' roles and those of the researcher in the study. This includes the length of each interview, ensuring anonymity and confidentiality, and how information will be used upon completing the study.

4.9.1. Informed consent

Furthermore, on the informed consent form, it was explained that participants are anonymous, and confidentiality is ensured. The researcher kept the identities of participants off the recorded data. Police officials' names were not used in the study, to refer to each participant. Instead, the researcher used PO (Police Officer) and a number next to it when they were quoted. For example, PO-6 stated that "shacks make it hard for police to deal effectively with crime …"

Their participation was voluntary, and the researcher ensured that they understood the objectives of the study. The researcher was committed to protecting the participants according to acceptable ethics standards, that the study must not cause any form of harm to the participants. According to principle, empirical studies should protect the welfare of those who participate in the studies (Berg, 2001). All conditions relating to their participation are laid out in the attached consent formed in the figures provided in the appendix A and B written in English and IsiZulu.

4.10. Summary of the chapter

This chapter provided an outline of the methodology that was employed as the study was conducted. It identifies the different techniques which were used and offers reasons that justify their selection and application. The study was conducted in Ward 57 of Inanda, Durban, South Africa. It used qualitative methods, whereby information was obtained from ten participants (police officers) who were purposefully chosen to be interviewed for their experience with crime at the selected areas from Inanda. In addition, the chapter provided ethical considerations that the researcher had to abide by, and it also notes how trustworthiness was ensured.

CHAPTER FIVE

FINDINGS OF STUDY

5.

5.1. Introduction

The study aimed at exploring the role played by the physical environment of Inanda area in contributing to crime. The following section presents the findings of the study following the qualitative data collected through semi-structured interviews with the members of the SAPS who are based in the selected areas. These areas include Newtown C, Bhambayi and Amawoti. Up to this stage, the researcher has analysed all the interviews using all the steps of the thematic analysis noted in the previous chapter. This process involves thorough reading and reviewing of data, coding data and developing the themes from the responses of the participants who were interviewed. Overall, the chapter seeks to examine the role played by the physical environment in promoting the crimes committed from the perspectives of the police officials who encounter crimes affecting Inanda areas. In other words, they expressed their understanding of the relationship between crime and the physical environment in which it occurs. These participants from the SAPS were suitable for the study because of their experience in handling crime and their responses are grouped into themes that emerged from the thematic analysis. The thematic map demonstrates how the researcher worked with data to formulate the themes. In addition, the participants also expressed their desire to remain anonymous and as a result, when their responses are utilised, including direct quotes, the identity of each participant is represented by codes that range from PO-1 to PO-10, with the acronym PO referring to Police Officer. The responses are presented in italics for all the participants.

5.2. Emerging themes

The produced themes were developed and summarised through a thematic network. As noted in the previous chapter, this approach is commonly employed in qualitative research as "a way of organizing a thematic analysis of qualitative data" (Attride-Stirling, 2001, p. 387). In order to clearly outline the manner in which the themes emerged, the data coding process led to three types of themes which are: global, organising and basic themes (Attride-Stirling, 2001). This was done as the themes were being developed after the coding stages in the thematic analysis. To prevent possible misrepresentation and to ensure consistency, the chapter presents only two types of themes which are, the main and the sub-themes because they are recognised in the thematic analysis.

The global theme is the topic of the study. Organising themes are: crime opportunity; challenges; and preventing crimes. These make up what has to be referred to as the 'main themes' of the following findings. On the other hand, 'sub-themes' correspond with the basic themes. Sub-themes consist of the following themes: housing; access roads and streetlights; illegal liquor outlets; lack of resources; locating crimes; and prevention measures (current measures, unsuccessful measures, and recommendations). To illustrate more clearly how the themes are connected, a thematic map or thematic network is presented below:

Figure 2: Thematic map or thematic network reflecting the developed themes

To elaborate and explain what is illustrated by the thematic map or thematic network, the researcher divided the findings according to the three main themes and the eight sub-themes. Firstly, crime opportunity is the first main theme (theme one) and it is connected to the following sub-themes: housing; access roads (and streetlights); and illegal liquor outlets. Secondly, challenges dealing with or responding to crimes is the second main theme (theme two) which consists of sub-themes, such as lack of resources and locating crimes. Lastly, the third main theme (theme three) refers to preventing crime and it encompasses sub-themes that include: the current crime prevention measures; unsuccessful crime prevention measures; and recommendations. Additionally, the illustration shows codes that occurred to each theme developed. The table below illustrates the themes according to the main and sub-themes as follows:

Main theme	Sub-theme
1. Crime opportunity	Housing
	Access roads (and streetlights)
	Illegal liquor outlets
2. Challenges	Lack of resources
	Locating crimes
3. Preventing crime	Current measures
	Unsuccessful measures
	Recommended measures

Table 2: Themes emerged through thematic analysis

The selection and organisation of the themes were based on the objectives of the study. These objectives include, and are not limited to, how the physical environment creates opportunities for the commission of crime, how it hosts and/or attracts criminal activities, and the recommendations proffered as prevention measures. The findings from the interviews the

researcher conducted with police officers further demonstrate how these objectives were achieved.

5.3. Presentation of the findings
5.3.1. Crime opportunities

From the collected data, crime opportunity emerged as the first main theme. The theme refers to the manner in which the physical environment of a place creates opportunity for the commission of a crime. It encompasses the signals that a physical environment sends to potential offenders. These signals manifest themselves in such situations whereby offenders commit crimes and escape unnoticed or the offenders find it easy to evade law enforcement officers. The researcher produced this theme owing to the fact that the participants consistently stated that the success of preventing or dealing with crime depends entirely on whether police officers work in a physical environment in which they find it easy to operate. They stated that at Inanda, there are areas which are prone to crime because their physical environment lures the perpetrators of crime and not the police.

The participants specifically reported that the crimes that are occurring at areas around Inanda can be attributed to the type of housing, the unavailability of access roads and the preponderance of liquor outlets. The participants implied that crimes are more likely to be committed if these three factors are not properly managed. The perpetrators of crime take advantage of the poor organisation of their surroundings. They further reported that there are formal and informal areas at Inanda and that in terms of frequency, the commission of crimes differs, whereby informal areas experience the most crimes owing to the condition of their physical environment.

At the core of this study is the need to address the question regarding what or how the physical environment contributes to the commission of crime. Under this theme, the responses from the police officials demonstrated the perception that crimes occur because perpetrators are presented with opportunities to commit them. In precise terms, the participants said that crimes occur because the physical environment of the areas around Inanda allows them the leeway to do so. It is reportedly easy for criminals to commit these crimes and it is difficult for the police to deal with the issue of crime because apart from dealing with people who commit it, there is the role of the physical environment that needs attention as well.

5.3.1.1. Housing

There are both formal and informal settlements within Inanda area. The researcher focused on areas in Ward 57, an entity which constitutes a combination of the two types of settlement. The

participants reported that the selected areas have both formal and informal housing, whereby Newtown C has more formal houses as compared to other areas such as Bhambayi, Mangweni and Amawoti, which have shacks as the most dominant type of housing inhabited by the residents of these areas. In relation to the opportunity that promotes crime, the participants stated that many crimes occur in the shacks and it is difficult to reduce them because the movement of the police is limited, and these shacks are congested. The major challenges include difficulty patrolling the area, where the participants stated that these issues make it difficult for the police to monitor the crimes in the community. It is worth noting that issues related to the physical environment are not limited to police officials as some crimes occur because people cannot utilise their physical environment to protect themselves from crime. In essence, such issues encompass fencing premises and exercising territoriality on their houses or property in order to prevent crimes such as house break-ins. The opportunities of crime arise partly because the police do not patrol the areas, which is an important crime prevention measure. Criminals are less likely to commit crimes in an area where there is police visibility as this tends to increase their risk of being apprehended. In addition, people's property is not safe since some people hardly practice target hardening through fencing and exercising territoriality in their houses and perpetrators often take advantage of that weakness. These two issues were consistently referred to in the responses provided by the participants.

5.3.1.1.1.   Formal and informal housing

The participants started by describing and outlining the physical environment of the areas of study. They compared the frequency of crimes, the types of roads and they paid attention to the housing design. In comparing Newtown C and Mangweni, Participant PO-1 stated that:

> *Newtown C is a formal area and a township. There are houses with 4 rooms each, tarred roads and there are no gravel roads. As a better developed area, it does not have shacks. On the other hand, there are shacks at Mangweni, which is a neighbour to Newtown C. In these areas, the houses are congested and there are no roads separating them. When comparing the occurrence of crimes, Mangweni experiences the greatest number of criminal cases. There are too many shacks at this area, so it is not easy for the police to use cars to patrol or get access to where the crimes occur.*

The findings show that the crimes that occur are unevenly distributed across the chosen areas. Participant PO-3 made the following comparison:

In terms of formal and informal development, some areas are more developed than others. Newtown C is more developed than Bhamabayi and Amawoti and they are known for comprising of shacks as the main form of housing. On the other hand, Newtown C, which is more developed than the other two, is made up of townships. Crimes differ between the types of areas. For example, Amawoti has the most cases of murder compared to all the other areas surrounding Inanda, including Newtown C and the neighbouring areas.

The comparison between Newtown C and Bhambayi areas indicates that most crimes occur at Bhambayi, which is an informal settlement. Participant PO-6 stated the following:

A comparison of Bhambayi and Newtown C exposes the fact that the former experiences more crimes than the latter. The reason for that scenario is that the shacks make it hard for the police to deal effectively with crime.

From the above responses, it can be deduced that informal houses are suitable for the commission of crime. Although earlier researchers have not been able to fully explain in detail the manner in which informal housing contributes to crime, reference has been made to issues of ineffective patrolling, which is due to the congestion of the shacks, which is the major characteristic of these areas. In relation to crime opportunity, this has sparked the argument that if police officers are always present, they can tackle crime or deter criminals from committing crimes. The congestion of the shacks limits the movement of the police, making it difficult to mount patrols which are effective in preventing crime.

5.3.1.1.2. Police Patrolling

Although focusing attention on patrolling as a strategy that has been argued not to have been executed properly, there is evidence pointing to other elements that need to be considered. When asked about how the physical design of housing contributes to crime, Participant PO-2 stated that:

Amawoti presents a good example of the contribution of the physical design of the area to the occurrence of crime there. The houses are congested to a point where it is difficult to determine the owners of the houses. This presents a challenge when it comes to the prevention of crime because the police cannot attend to the areas that are experiencing crime.

Amawoti has characteristics that are similar to those of Bhambayi and Mangweni and to that effect, Participant PO-2 stated that the police can hardly attend to those areas where crimes

occur. Arguably, patrolling is a proactive approach to the prevention of crime and the responses of the participants reveal the fact that police officers are more reactive than they are proactive in their response to crime. In addition, despite being reactive, the police are not effectively attending to crimes as they still have to deal with the issue of congestion which is posing difficulty in terms of locating the houses that are being affected by crimes. Participant PO-3 further details how the issue of congestion creates crime opportunities as a result of lack of effective police patrols:

> *It is not easy to patrol the area because of the manner in which people's houses are situated. The congestion of the shacks means that there are no access roads in the area. It is difficult to fight against crime in the areas where there are shacks because most of these areas are the same. They are working in favour of criminals because they can hide in them quite easily. The people who live in these areas even help these criminals to hide. If a police officer persists in demanding that the criminals be exposed, they risk being attacked and be dispossessed of their weapons. On the other hand, in well developed areas, fighting crime is less difficult because houses have house numbers which make it easy to identify the criminals when a complaint has been lodged with the police.*

The issue of congestion featured consistently in the responses of the participants within the context of the contribution of housing in promoting opportunities for the commission of crimes. Nonetheless, other perspectives also need to be explored, including the type of crimes which are exacerbated by the shacks in the informal areas.

5.3.1.1.3. Crimes related to housing

The participants also noted that certain crimes occur in the selected areas because people of different backgrounds converge in Inanda area and these people include criminals. Describing the situation at Amawoti, Participant PO-3 stated that:

> *Too many people who reside at Inanda come from different provinces. In fact, I liken the area to a hostel. Some of these people use it as their hideout because they committed crimes in the area where they come from. However, others come into the area with the hope of getting jobs.*

Participant PO-7 also made a similar comment:

What we have recently found out is that certain people who came to reside at Inanda are criminals who came to hide in the area for fear of being apprehended for other crimes they committed elsewhere. They know that Inanda is a big area and for that reason, the chances of being caught appear very minimal. They contribute a lot to the perpetuation of the crimes that are already in existence. These criminals come from the Eastern Cape, Matayitela, Lesotho and other areas.

The other crime that is exacerbated by the people who settle in these selected areas is drug consumption and its incidence differ between the informal and formal settlements. While the issue of drugs is offender-related, it remains a point that one can hardly ignore the contribution made by the shacks in the sense that criminals find it easy to deal in drugs within these areas as opposed to other areas. They can plant, sell and consume the drugs without the police keeping track of such activities. This, however, should not be misconstrued as to implying that drugs are not used in formal areas. The crime opportunities become more preponderant at the shacks because of the preference that has been noted by participants PO-3 and PO-7. In support of their observations and their perception regarding crime opportunity, Participant PO-2 stated that:

Even though I work at the Newtown C Police Station, I am aware of the fact that the surrounding areas such as Bhambayi and Mangweni are experiencing too much crime and that there are also foreign nationals who contribute to it. Although there are congested shacks, these foreign nationals come and build new ones in addition to those that are already there. The problem with that is that the drugs are supplied in greater quantities as the foreign nationals settle in. There are people who plant dagga, and, in most cases, foreign nationals introduce new drugs such as 'whoonga' into these areas. There were drugs before the foreign nationals arrived, but the numbers of people settling in these areas have soared and that has had a negative impact on the community.

The new drug that Participant PO-2 is referring to is called 'whoonga' and it is made up of a mixture of antiretroviral medication, cannabis and/or heroin. The drug is used even by young people, as young as 14 years old (Davis, Surratt, Levin, & Blanco, 2014). The drug the participants referred to is common in and specific to the informal areas. Participant PO-3 also reported that:

The crimes that are occurring can be attributed to the use of drugs, especially 'whoonga'. Ever since it was introduced, crime rates have been escalating. It is worse when it is used together with other drugs such as dagga or even alcohol.

This issue of drugs appears to have led to two other problems. Firstly, on its own, drug use is a crime and perpetrators find it easy to operate in shacks. Secondly, the consumption of drugs, especially 'whoonga', stimulates the commission of other crimes. Among such crimes is theft of other people's properties and selling them to get the money needed to purchase the same drugs. The manner in which this situation occurs is articulated in the discussions that follow. It is worth emphasising that the arguments made in the preceding sections do not imply that drugs are not being used in formal settlements. Participant PO-1 reported that:

At Mangweni, crimes mostly occur in shacks where the use of drugs is preponderant. On the other hand, Newtown C mostly experiences domestic violence as the major crime.

Participant PO-5 also added that the distribution of drugs does not target areas in informal housing only:

Although drugs are common at the areas with shacks, we cannot focus on them alone because these drugs are being used everywhere.

Moreover, the other type of crime the participants raised regarding the role of housing is house break-ins. The participants referred to the role fencing plays in people's houses in preventing crimes.

5.3.1.1.4. Fencing

People have different reasons for putting fence around their houses. Some residents want their houses to look attractive, others simply want privacy and there are people who use it to prevent potential crimes such as house break-ins. At Inanda areas, there are both fenced and unfenced houses. In relation to the current study, Participant PO-1 described the relationship between fencing and crime in the following statements:

Most houses are not fenced to prevent crime. Sometimes the fencing is there but it is so weak that criminals penetrate it easily. Also, there are houses which are fenced properly to prevent criminals from accessing other people's properties.

> *The most common type of fencing is the use of a wall with a razor wire on top of it.*

Apparently, this response is indicative of the fact that some houses are fenced for the purpose of preventing crime. It can be argued that the use of razor wire seeks to deter criminals as it poses a potential risk to the offender. For example, if criminals try to break into a house to steal something and they get spotted, the fence with razor wire makes escaping difficult. In other words, crime opportunities tend to decrease as perpetrators of crime need to plan their criminal acts more carefully. In other cases, criminals depend on bushes to carry out their crimes as Participant PO-10 stated:

> *Prior to the commission of every crime, criminals check whether they can escape easily once they have committed a crime. They like houses that have bushes around or anything they can use to evade being noticed.*

To give more specific examples, Participant PO-10 further compared a formal area called Inanda Glebe and the other selected areas of Ward 57, including Newtown C and Bhambayi. The participant provided the following details regarding house break-ins:

> *The environmental design at Inanda Glebe is better as it is less likely that criminals find a bush or forest they can use to commit crimes unlike at Newtown C and Bhambayi where people are presented with trees which they climb in order to jump into people's houses as they break into them or hide in bushes before or after committing a crime. It is much safer at this area than at Bhambhayi and other areas. Inanda Glebe's closeness to a school called Inanda Seminare makes the environment protected. There is use of security through fencing as residents evade being vulnerable to crime.*

Furthermore, there are other ways of break-ins that are being carried out and Participant PO-4 reported, thus:

> *The areas are not the same in terms of how they are designed or built. People in Newtown C have fencing around their houses. However, there are some houses that do not have the fence. Some people live in cottages where it is easy for criminals to break in through their windows, for example.*

Participant PO-5 also noted that this way of breaking in is common:

The criminals can break in through a window or through a roof.

The respondents made consistent reference to the point that house break-ins occur as a result of the absence of the owners. They stated that when a person's house is unoccupied and there is no fencing, the chances are high that criminals execute their criminal acts successfully. This applies to houses in both formal and informal residential areas. To that effect, Participant PO-10 reported that:

> *Crimes related to housebreaking are usually committed when house owners have left for their jobs. There are people called 'amaphara' who take advantage of the absence of the occupants of the houses and steal belongings from their houses. They take anything that can be resold. Sometimes when we interview a victim of housebreaking, they tell us they came back from work only to find their houses having been broken into. Such houses do not have any type of fencing because they are shacks.*

Regarding the issue of the owners being present at their houses, or vice versa, Participant PO-4 stated that in Newtown C, the following happens:

> *It is easy for criminals to execute their criminal acts when the houses are not occupied by the owners. Nonetheless, if their intention is to cause injury, the criminals do not mind breaking in even when the owners are present in their houses.*

Participant PO-9 further acknowledged the occurrence of armed robberies in the presence of house owners or occupants by stating that:

> *Mangweni is filled with criminals who are called 'Amaphara.' These criminals break into other people's houses. Some of them bring guns which they often use successfully in robbing owners of their property.*

'Amaphara' is an informal word that is used in South African townships to refer to young offenders, especially the youth who are 18 years old or younger. These offenders commit crimes including, but not limited to, drugs such as 'whoonga' and dagga (Mkhize, 2014). The English translation of the name 'Amaphara' is 'Parasite' and it is used in reference to the crimes these criminals are involved in, including house breaking, in the sense that they take anything at the expense of other people. As participants have noted previously, after the criminals have

consumed 'whoonga,' they end up committing other crimes as they attempt to make money out of it.

In addition to the absence of owners, Participant PO-3 also made the following submissions:

> *Some homes are fenced off, but others are not. However, crimes, especially robbery, occur in both types of houses. Somehow, criminals manage to break in. For example, in December most people spend time outside their houses and criminals manipulate that situation to their advantage and then break in.*

Regarding crime opportunities, the respondents argued that the perpetrators of crime find an opportunity to commit crime in two ways. Firstly, criminals often refrain from houses which exercise target hardening, with fencing presenting a risk for the criminals, and a case in point is the use of razor wire. Secondly, it is reported that criminals commit house break-ins easily when houses are not occupied. Precisely, crimes occur when there is no form of guardianship being exercised, whether actively (through presence of owners of house) or passively (through fencing).

5.3.1.1.5. Territoriality

On territoriality, the participants expressed the view that crimes, including house break-ins, occur because residents hardly exercise ownership of their space. The participants reported that perpetrators are presented with opportunities to commit these crimes because people do not organise their physical space. They expressed that another thing common in informal areas is that space is shared to an extent that people cannot control the utilisation of their premises, let alone determining who utilises it. Participant PO-10 referred to Inanda Glebe area and compared it with Bhambayi to substantiate this point as follows:

> *Another thing about Inanda Glebe is that people work with each other, and when they notice someone, they find suspicious in their community, they do a follow up to check whether or not the person is a criminal. In areas such as Bhambayi, criminals are at liberty to loiter around people's houses regardless of the danger they pose to the properties of the residents. This is a problem and what worsens it is that there are many people, which makes it hard for anyone to claim a space as their own because most of it is shared. They cannot control anyone who walks past their houses or utilises their premises.*

The difference between formal and informal settlements at Inanda area is control of space. People from informal areas are unable to control space because they reside in congested shacks

and it can be argued that the generality of the residence never opt for the use of fencing as a form of target hardening in order to prevent house break-ins because they share space with many other residents. In support of Participant PO-10, Participant PO-8 responded to the aspect of territoriality within the context of informal housing by reporting that:

> *It is not common to claim ownership of space in the areas where there are shacks because some residents are just tenants who exercise absolutely no form of ownership of the houses.*

The participants also consistently stated that opportunity arises as people exercise freedom of movement in informal settlements. Participant PO-10 describes the manner in which the most common forms of house break-ins happen, by stating that:

> *Many people pass by their houses, which could explain why and how easily someone managed to break in.*

In another case, crime opportunities occur as described by Participant PO-4:

> *In other cases, criminals break in by pretending to be personally acquainted with the owners of the houses.*

In addition to the freedom of movement enjoyed by the perpetrators of crime, it is noted that people at Inanda areas are unemployed, which is an issue not limited to the informal settlements. This means that lack of territoriality is also a challenge in areas such as Newtown C. For example, the problem arises when people cannot afford to erect fencing around their houses. This allows other people to utilise their premises wherever they want. To substantiate this point, Participant PO-5 reported that:

> *Most of the residents in these areas are unemployed and their houses are not strong. People's belongings are exposed to the criminals. This arises partly because much of the space is shared and so there is no way one can determine how much of one's yard is available. Anyone can walk past the houses, including the criminals, and this is why these criminals tend to steal any sort of property they can lay hands on. This is common at Amawoti, but there are numerous people who are also unemployed in Newtown C and Inanda A.*

In another perspective, Participant PO-6 reported that there are people who do not use fencing to prevent crime as they resort to territoriality:

Some residents just use fencing to indicate how much of the yard belongs to them without making a deliberate effort to defend themselves and their property from criminals.

Arguably, this is not a problem, however, because although the intention was not to prevent crime, the use of the fence comes with other benefits such as preventing crimes.

As perceived by the participants, at the core of territoriality is that the type of physical environment in which people live, particularly informal settlements whose conditions make it difficult for the residents to protect themselves from crime. The ideas produced here can gravitate towards housing and fencing. In terms of housing, residents live in shacks and they hardly claim enough space to control as opposed to the residents of such areas as Newtown C. Attached to the issue of fencing are issues to do with affordability and space.

5.3.1.2. *Access roads and streetlights*

This sub-theme focuses on the contribution made by lack of access roads and streetlights on crimes occurring in both formal and informal settlements. The availability of access roads depends entirely on the presence of the conventional road network in an area. Such roads can be used to access any part of the Inanda area. For this study, access roads refer to roads used at areas within the jurisdiction of Ward 57, including Newtown C and Bhambayi. Additionally, Amawoti roads will be referred to because participants used the area as one of the examples to validate their perceptions regarding the questions they were asked to respond to. On the other hand, this theme also alludes to the conditions of the roads as well as the state of the streetlights. The rationale behind focusing on access roads and streetlights is that participants regarded these features part of the physical environmental factors that lead to crime in the selected areas. The participants reported that there are areas that are bereft of access roads, let alone proper roads and streetlights. Consequently, this gives the perpetuators of crime a variety of opportunities to execute crimes successfully. Similar to the theme of housing, police cannot effectively deal with crime because they use patrol cars to attend to areas affected by crime. With reference to lack of streetlights, the participants detailed the types of crime that are likely to occur. Furthermore, they made comparisons between formal and informal settlements and came to conclude that the issues of streetlights and proper access roads are more common in informal settlements. All these issues are relevant to the objectives of the study.

5.3.1.2.1.   Lack of roads and its consequences

Most of the participants hinted that there are no access roads in the informal areas under study. These settlements consist of shacks and this scenario poses a challenge for police who are

mandated to patrol the areas and to attend to the areas reported to have crime. Inanda is a big area and the issues prevailing there imply that patrolling all these areas equally is not possible and that police officials have to walk on foot to access the areas where crimes would have been reported. In this way, crime opportunities arise. In describing Newtown C and other informal areas such as Bhambayi and Amawoti, Participant PO-6 stated that:

> *Newtown C is a township and it is developed, with a tarred road and the houses have numbers. One can say that it is a developed area because it is accessible. It is not like Bhambayi and Amawoti which are known for shacks, and there are no house numbers, making it difficult to attend to complaints. The police have to park their cars somewhere and then have to walk to the area of complaint. Newtown C is the opposite of these areas in terms of the nature of the physical environment.*

Police officers tend to park their cars and foot to the areas where crimes would have been reported. This is accompanied by a number of undesirable possibilities. Firstly, travelling on foot exposes the police to criminals who are themselves more familiar with shacks than the police. If a crime was in progress, the criminals find it easy to evade the police. In cases where criminals have to be chased by a car, the police will not succeed because they will be limited in their movement and opting to use patrol cars is deemed futile in this scenario. Secondly, it is not safe for the police to walk around the areas prone to crime as they can get spotted and killed by these criminals. Regarding the police's unfamiliarity with the shacks, Participant PO-5 stated that:

> *In cases where there are tarred roads, it is often easy to drive around the area as opposed to those areas that are populated by shacks. Usually, there are passages or lanes that separate the shacks though these are not useful to the police, anyway.*

This implies that even if roads are sometimes available, they are not suitable for cars. Furthermore, the responses by the participants show that the comparison between formal and informal areas, show a remarkably different situation. According to Participant PO-1, the situation is better at Newtown C. It is stated thus:

> *Police officials have to walk to the areas where crimes occurred. On the other hand, it is better to operate at Newtown C where police cars have easy access to the area because of the availability of proper roads.*

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In addition, issue of unavailability of roads also results in belated reaction to crime-related complaints. This aspect is explained in detail in the second main theme, and how this becomes a problem is also explained. Nevertheless, Participant PO-2 referred to Amawoti area, which is an informal settlement, stating with specificity that there are no roads there:

> *There are no roads which are in a state that can be used by cars. The police hardly attend to the areas that are experiencing crime with their cars. Since they have to walk, they cannot arrive on time.*

5.3.1.2.2. Lack of streetlights and its consequences

The issue of access roads focused more on the challenges that relate to police movement in the selected areas as they seek to prevent crime. In addition to lack of passable roads, lack of streetlights focuses on the type of crimes that are occurring on the roads. The participants stated that street robberies are common in the selected areas, and these crimes are linked to lack of streetlights by stating that when it gets dark, people walking in the streets are more likely to be victimised. The available data was drawn from the comparison which was made between the areas with streetlights and those that did not. In doing so, Participant PO-3 used Newtown C and Bhambayi areas and noted that street robberies occur in spots with poor or no streetlights at all. The response is as follows:

> *Newtown C has streetlights but there are parts of the area which have poor or no street lights at all and this makes people vulnerable to robbery cases. On the other hand, Bhambayi area has no streetlight at all and this runs contrary to efforts to prevent crime through environmental design.*

Participant PO-5 also compared formal and informal areas by reporting that:

> *Another problem is that there are streetlights in formal settlements and in informal one where shacks abound, they are not available.*

From the reports given by the participants, Newtown C emerged as an area with both proper and poor streetlights while on the other hand, Bhambayi does not have streetlights at all. In light of this observation, Participant PO-8 noted that criminals prefer street robbery because it works to their advantage. The participant made the following argument:

> The *areas that do not have any streetlights make it easy for criminals to mug people because they know they are not easily caught or recognised. Criminals like to mug people of their cell phones, and there is a growing trend where*

criminals are on record for stealing electricity cables belonging to the Municipality of eThekwini. We have been receiving many reports and the crime happens everywhere including Newtown C, Bhambayi and Mzinyathi.

Commenting on the unavailability of streetlights at Bhambayi, Participant PO-8 further revealed that electricity cables are being stolen in the areas under study. It is perceived that crime rates are escalating as a result of the unavailability of streetlights. In a statement that corresponds with the preceding statement, Participant PO-9 indicated that in these areas, there is an issue of electricity:

There are many problems of crime nowadays, and the crime rates can be attributed to shacks which do not have streetlights and electricity, which makes things worse sometimes. People get mugged on the streets because criminals know they cannot be easily recognised. When there is no electricity for any other reason; including load-shedding, in these areas the situation becomes worse because it offers them opportunity.

Participant PO-10 expressed the view that this is a concern which also poses danger for police officials patrolling the areas that are prone to crime. This is what the participant had to say:

In the shacks, the police are in danger, and the situation becomes even worse at night. The problem is compounded by the unavailability of street lights. A police officer may go there and attend a case but risks being caught and get killed by the criminals.

According to the participants, crimes such as street robbery occur at night owing to the absence of streetlights. Such crimes occur because it is safer for the criminals to execute them. In other words, they are a preferred type of crime because of the advantage of not being recognised or caught as they execute their criminal activities. Additionally, it appears the situation is compounded by lack of electricity in these areas.

Furthermore, there are areas which have had streetlights surrounding the residential areas, with Newtown C being a typical example because it is a formal settlement as opposed to Bhambayi and other areas of its kind. It has been noted that where there are shacks, there are no streetlights. In the formal areas, issues tend to differ as they do have streetlights. However, some sections of these formal areas have poor or broken streetlights. According to Participant PO-10, criminals are also responsible for breaking the streetlights by stating, thus:

The criminals are smart; during the night, they cut (or break) street lights, they cut wire off the poles so that the areas will be dark at night so that they can execute their crimes successfully. These criminals target people who knock off their jobs late at night. Usually the victims are people who work in the restaurants. They are mugged and robbed of their cell phones.

The participants also revealed that street robbery does not only occur at night as previous participants have consistently referred to. These crimes are a daily occurrence. They could occur early in the morning or during the course of the day. This issue is more related to crime opportunities criminals are presented with on the roads than on the issues that are specific to streetlights. Participant PO-6 reported:

Crimes often occur in the morning when people have left for work. Crime also happens during the day when it is quiet in the streets, that is, when there is less activity in the streets. Anyone who walks alone on the streets is vulnerable to this robbery. In the morning, criminals take advantage of darkness and pounce on those people who leave home at dawn. As soon as the sunrise, the criminals stop their operations as the streets get busier because they are afraid of being caught.

5.3.1.3. Liquor outlets

Under this sub-theme, the participants identified illegal liquor outlets as unlawful business operations that attract crime. In other words, these outlets are considered to be crime hotspots because of the diversity of the crimes that occur from within them. These liquor outlets are found both in formal areas such as Newtown C and around Bhambayi and other informal areas. The majority of the participants referred to these liquor outlets as 'taverns.' They stated that anyone in the community can operate these liquor outlets, and this is the reason why most of them are operating illegally.

Furthermore, the perpetrators of crime are drawn into committing crime because of the crime opportunities the physical environment provides to them. Residents who are intoxicated with alcohol present easy targets for the criminals. As explained by one of the participants, taverns close late and people who drink alcohol often stay longer into the night, a scenario which increases their vulnerability to crime. Some of them walk back to their residences and eventually fall victim to street robbery, for instance. Specific examples of the issues that come with the type of liquor outlets in question are articulated in the following section.

5.3.1.3.1. Liquor outlets operate illegally and close late

Since taverns operate illegally and close late, the participants raised the concern that they are a problem to community members who are not involved in alcoholic issues and police officials normally resort to shutting them down. The closure is often necessitated by the crimes that occur as a result of their operation. With reference to Newtown C, Participant PO-1 reported that:

> *The taverns that operate at Newtown C have an impact on the crimes that occur within that area. In some cases, police officials are forced to close these taverns because of the criminal activities that they cause. They go around shutting them down. The main reason is that some of these taverns operate illegally and close very late and that is not acceptable in terms of the law. If they persist disregarding the legal order to shut down, police officials resort to confiscating alcohol until the owners operate legally.*

This is also echoed by Participant PO-3 who emphasised that:

> *The taverns which operate illegally must be shut down. In fact, most of the taverns are unlicensed alcohol dealers and more often than not, they open until the next morning, which is not only unlawful but also unacceptable.*

Participant PO-4 stated that despite the orders to stop operating illegally, they reportedly continue to exist, and police officials continue to receive reports from concerned community members. The respondent had this to say:

> *The taverns that operate in these areas are illegal. For example, we still get reports from people about taverns being opened in their neighbourhood. This is being done illegally and without the police being aware of it.*

Another issue raised by participants was the unsuitability of the position of these taverns. Participant PO-8 had this to say:

> *There are numerous taverns in these areas too and some of them are adjacent to schools. Young people are exposed to alcohol and occasionally drugs. Aside that problem, people engage in fights in these taverns. They even stab each other, and some fights often end up in murder. At Newtown C, there is a police station called Vela with a bottle store or tavern nearby, a clinic and a school in one place, and that is a problem.*

According to Participant PO-7, in Bhambayi and Mangweni, these illegal taverns are attractive to criminals because they are not strict:

> *Bhambayi is full of illegal taverns. This is also common at a nearby area which is called Emangweni. These taverns are not fit to operate, and this is where criminals like to spend time in. However, there are a few taverns which are strict because they even have security guards in other areas of Inanda, including Newtown C.*

5.3.1.3.2. The liquor outlets as hosts of crime

In responding with specificity to questions regarding the types of crime, the majority of the participants identified murder, assault and rape. With reference to crime opportunity as a central theme, it was reported that the taverns increase the occurrence of these types of crime. On this note, Participant PO-2 provided the following details regarding the issues brought by these taverns:

> *Taverns operate without a license that permits them to do so. All the taverns are obliged to stop operating at 10:00 PM, but because many of their customers would still be occupying them, they close late and exceed the time allotted to them and that causes problems. People tend to fight in these taverns, women are often raped, and murder cases are also committed. Nowadays, the youth have passion for drinking alcohol, from as tender an age as 14 years. They buy the alcohol from the same taverns which operate illegally. The sellers forget that in alcohol, there is a percentage that is not suitable for these young people. When they drink alcohol, they lose self-control and criminals take advantage of them. When women are drunk, they become vulnerable to rape. Their state of mind makes them unable to distinguish between right and wrong, and between those people who are trustworthy and those who are not.*

From the preceding response, it is clear that people are easily victimised when they are not in their sober senses as alcohol takes control of their activities. Women become targets for rape and people get murdered during fights. In addition, young people also enjoy the freedom to purchase alcohol from these taverns and as a result, they also fall victim to crime. Participant PO-6 further reported that in other cases, people fall victim to street robbery when walking back home. The participant had this to say:

The taverns operate till late and that leads to problems. People easily get robbed when they are coming out of these taverns late at night. When people come to report these robbery cases, they usually state that they were drunk and were coming from the taverns. They report that they go to the taverns in groups, maybe of four people each, and on returning home later, someone pulls out of the group and decides to go back home alone and then becomes a victim of robbery. This happens to both men and women and other than being robbed, other people get raped. The victims say that they do not even remember where they got robbed or raped because they were intoxicated with alcohol. In addition, even people who are below the legal age of majority get to drink in these areas. In the groups of young people, there is usually someone who is old enough to buy alcohol for them.

When the victims of crimes report these cases of robbery, they explain that they could hardly avert the crimes because they were too intoxicated to act accordingly. According to Participant PO-9, the same obtains when it comes to rape cases. The respondent said that:

Cases of rape happen when people have consumed alcohol. In the morning, they do not remember what really happened and let alone recalling the individual who might have raped them. This crime is mostly perpetrated on women.

This study seeks to determine the contribution of the physical environment to the occurrence of crime. The two study objectives specifically required the study to identify the physical places that host crimes as well as explaining the manner in which the physical environment creates opportunities for the commission of crime. Basing on what has been submitted by the participants throughout their articulation of this theme of crime opportunity; illegal liquor outlets were identified as hot spots for crimes. This was a different perception regarding the previous sub-themes on housing and access roads which accounted for the challenges the physical environment of Inanda areas presents within the context of crime prevention. The second theme that follows this one expands on other issues which were consistent across the responses given by the participants.

5.3.2. Challenges

This theme ought to be examined because the participants consistently reported that it is difficult for them to work around the crime-prone areas at Inanda because of the way these areas are designed. At the core of the responses are issues bordering on the crime opportunities

that participants alluded to in previous sections. For instance, the participants expressed their views regarding the manner in which issues like access roads and congested informal housing impede the patrolling of the areas as well as the response to the reported crimes. In addition to the issues already noted, including difficulty moving around informal areas, there are instances when the police fail to communicate properly with people reporting crimes and they often face problems taking directions from them. The participants explained how these difficulties occurred. The other pertinent issue the participants raised pointed to inadequate resources being availed for police officials to operate within the confines of the physical environment of Inanda area. For example, gravel roads need to be suitable for patrol cars to drive around these areas. As a result of these challenges, the police officials are unable to respond rapidly to crime cases. The key themes developed to accommodate these concerns are; locating crimes and lack of resources.

5.3.2.1. Locating crimes
In relation to this sub-theme, the participants were concerned with how the police struggle to locate the places where crimes occur. Their reports confirmed that there are formal and informal areas within Inanda area. Newtown C is more of a formal area but the surrounding areas particularly Bhambayi and Mangweni are informal. This sub-theme is about comparing and explaining how the police locate crimes in the two types of areas, the formal and informal areas. As noted earlier on, most of the responses alluded to access roads and housing which cascaded from the previous theme. For example, the key issues include, and are not limited to, lack of house numbers for the police to be able to identify the houses which might have experienced a house robbery in Bhambayi, for instance.

5.3.2.1.1. Late reaction to crime
The participants revealed that one of the issues with the physical environment of the areas surrounding Newtown C borders on the quick response to crimes. In the previous sections, Participant PO-2 noted the issue of the lack of access roads and the fact that police officers have to walk to areas of crime. The same participant further added that:

> *If a crime is being committed, they will arrive late, when the criminals have already escaped.*

Participant PO-10 also expressed the challenge related to late reaction to crime reports by stating that:

If a house break-in is in progress, I am most likely to arrive late and this gives the criminals enough time to escape. There is something called "reaction time" which instructs every police officer to act immediately after a crime has been reported. I often get a call from a person reporting a crime and because of the conditions of the area I fail to arrive in time. Automatically, as a police officer, I stand to be blamed. The municipality must look into this issue.

The police are expected to respond quickly to a reported crime. This is vital because the police must be able to prevent further harm to a victim. However, it appears the police are faced with an unfavourable physical environment which makes them fail to respond quickly to crime reports in informal areas. The impediment is lack of access roads for the police to use their cars to get to the spot as and when the commission of the crime would be in progress. It was noted in the previous theme that the participants raised concerns on their slow movement to crime spots as they have to travel on foot. Also, it is not easy to react quickly because the police will be faced with another challenge of having to identify the exact houses or places where the crime would be taking place. Such challenges are not common at Newtown C where there are access roads and house numbers.

5.3.2.1.2. Poor signal

The participants also reported that there are certain parts of Inanda area which have poor communication signal. Consequently, crimes such as theft of motor vehicles are difficult to track. The police have to struggle to locate the places where the stolen vehicles are hidden in the area. The issue of poor communication signal is apparent because some cars can be recovered easily through the use of trackers. With reference to the cases occurring in Newtown C, Participant PO-3 reported that:

Newtown C is better than other areas at Inanda because it is a township. The crimes that occur there are different. There are cases of carjacking and in other cases, we find that criminals steal cars from other areas in Durban, such as Durban Central and Phoenix and hide them at Newtown C. Although, they are not common cases, they do occur. Some cars have trackers and there have been reports of cars being recovered at Newtown C. In addition, if the cars are not recovered in Newtown C, they are usually recovered in other surrounding areas and criminals often hide the cars at spots that they know will make it difficult for police to contact other police officials due to lack of signal.

From this response, it appears there are cases that are specific to Newtown C and in other cases, the vehicles get stolen from other areas in Durban and criminals are aware of the problem of lack of connectivity due to poor signal, a situation which offers advantages to them. Participant PO-9 also confirmed this problem by stating that:

> *The cases related to car theft are not so frequently reported. However, what is common is that criminals steal cars from areas such as Durban Central, Phoenix and hide them in other areas.*

Participant PO-10 further reported that:

> *There is an area called Mzinyako where police signal loses connectivity. As a police officer, one cannot communicate with other police officers at the station on arrival at such crime spots. The communication radio does not work and as a result, the police tend to use their private cell phones. The tracking devices of the cars are usually hidden there because these criminals take advantage of the problem of lack of signal. Criminals hijack or steal cars and hide them in those places without signal and wait to see if the police come looking for them, which is less likely because the tracking devices do not work. The criminals are smart, as they can only sell the car when their plans have worked out successfully. In other cases, the criminals just spend time in the taxi ranks monitoring the cars that come in and out of the area and scrutinising the drivers. For example, when they notice a woman driving, they know she is vulnerable, and they plan to hijack her. There is an area called Moweni which is near a cemetery. The network or signal there is bad. The criminals know that when they hijack anyone there, the victim has no way of contacting the police for help partly because it is a one-way road.*

In addition, other than the cases involving carjacking or theft of motor vehicles, Participant PO-5 added that as a consequence of the lack of signal, the police cannot use the call centre phone and instead, they use their private cell phones. The participant had this to say:

> *Sometimes the signal is weak or unavailable altogether in these crime hot spots and the police officials usually resort to using their private cell phones to communicate with people who may have reported the crime. This means that the police arrive late at the crime scene.*

This implies that in some cases, the police get reports of crimes and they struggle to obtain all the relevant details because of lack of signal. The details include difficulty in using landmarks to locate the crimes that would have been reported. In the discussion that follows, the importance of landmarks is articulated.

5.3.2.1.3. Landmarks

Some participants noted that police officers rely on landmarks and house numbers to locate the places from which the complaints or the crimes that are occurring are being reported. In identifying the challenges, the participants compared Newtown C and the surrounding informal areas. Participant PO-4 stated that:

> *In well developed areas, it is less difficult to locate crime scenes because the houses are numbered, which makes them easy to identify when a report has been made to the police. Even the people who report the case can easily direct the police. They can use any form of landmark or tuck shops available nearby as they direct the police. In the areas where there are shacks, these advantages are unavailable. The police get reports but when they get there, they struggle to locate the exact place where the crimes would have occurred.*

Commenting on the same issue, Participant PO-7 made the following statement:

> *Crimes usually happen in the areas where there are shacks, where there are no house numbers to assist police in locating the exact scenes where crimes would have occurred. Bhambayi is a good example of such places.*

From these responses, it stands out clearly that the police require that people who report crime direct them using landmarks near the places where crimes occur. This includes the use of house numbers. Regarding the main theme, the challenges arise in informal areas where people reporting the cases do not have landmarks to refer to when directing the police. To that effect, Participant PO-10 stated that:

> *Sometimes we use private cell phones to communicate with other police officers. An officer from the call centre from where most community members report crime, do not know the areas as much as the police who work in them do. The person who reports a crime tells them about a landmark such as a school to help give them an idea where they are, only to find that the crime scene is 10 kilometres away from it. To address this problem, the police tend to use their cell phones to confirm where the person who reported the case is. What happens*

is that when we get a report, we are told to go to landmarks such as a school or a hospital and when we get there, we find out that we would have driven past a crime scene. This means that we will get there late. The problem is that we often get blamed by the community.

The use of private cell phones appeared to be a resolution that the police opt for to circumvent the difficulties arising from working with the physical design of the areas where crime is prevalent. In this section, Participant PO-10 explains that it is also helpful to ensure that the police official who attends an area of complaint understands the directions provided to an unfamiliar police official at the call centre. In other words, the police at the call centre may be given the addresses that are not useful enough to ensure that the police official attending the crime arrives at the crime scene when the crime is in progress. Participant PO-5 referred to Newtown C and another area called Inanda A to prove that disparities exist in the situations. The respondent had this to say:

If one compares the inaccessible areas with Inanda A and Newtown C, one finds that it is better to locate the areas affected because in these areas, there are proper roads and house numbers which are useful to police officers at the police station.

Furthermore, Participant PO-5 describes the experiences of the police in dealing with crime occurring in informal settlements as follows:

It depends on whether the police cars can access the areas affected by crime or not. We wish if there were house numbers to help locate the areas where crimes occur. In most cases, when someone is reporting a crime, they direct the police to parts of the areas where it is more convenient for the police to reach. But the problem is that the police must walk to the affected areas after getting to the person who contacted them. Sometimes there is miscommunication between the person reporting the crime and the police. For example, the reporter may say that they are standing near a tuck shop and the police only find out that they are unaware of the existence of such a shop.

Crime prevention depends on whether the area being policed offers police options to effectively deal with it. In formal areas, locating crimes is easier because the police have freedom of movement, and they can easily get directions to a crime scene as the crime is in progress. On the other hand, there are challenges arising from operating in informal areas as these attributes

are not available. The issue of crime prevention becomes even more difficult if the police are not provided with the necessary resources. The issue of lack of resources is accounted for in the following sub-theme.

5.3.2.2. Lack of resources

The police officers policing Inanda area are deprived of the relevant resources needed to reduce crime. The participants who took part in this study have stated that the physical environment of the place at which the crime is committed has a contribution to make towards the criminal activities occurring in the area. They raised concerns about shortage of satellite stations, patrol cars and that police officials are too understaffed to service an area as big as Inanda. These challenges emerge as other issues that require consideration when initiatives that reduce crime are being implemented. For example, the deployment of more police officers could increase police visibility around those areas where crimes occur. In that instance, the police would be more proactive as they would be closer to crime scenes and that fosters instant response from the police. Lack of resources also affects the effectiveness of patrols. Compounding the situation are challenges like lack of proper access roads and congestion in informal areas though cases of street robbery and house break-in also occur in formal areas. These crimes can be minimised if perpetrators are exposed to the risk of being apprehended due to the increased presence of police officials in the areas affected by crime.

5.3.2.2.1. Shortage of satellite stations

Inanda area is currently being policed by one police station called Mtshibheni Police Station. Satellite stations are those smaller stations that consist of police officials deployed by Mtshibheni Police Station and there are only three of them operating at Inanda. These three are located at Newtown C, Inanda A and Amawoti. The satellite stations are used because Inanda is a big area. These sub-stations are intended to attend to cases that arise in the communities surrounding these stations. The participants who were interviewed for this study once worked at all the three satellite stations with the majority of them having gained more experience working at Newtown C station. According to Participant PO-10, there are inadequate satellite stations and the ones that are available are not suitable for all the victims of crime. The participant stated that:

> *Lack of resources is also another issue that needs to be attended to. The police do not have adequate resources to execute their work. For example, at Vela Police Station, there is no room that we can use to interview victims of sexual assault (or sexual offence). There must be a private room because such victims*

would have undergone traumatic experiences and the victims need to be cared for. They need to be protected but the facility does not allow such things to happen.

The participant whose sentiments are quoted above was referring to the conditions at Newtown C Police Station, stating that the station does not accommodate certain victims, especially those of sexual assault. As noted previously, rape occurs at the areas selected for this study. These areas include Bhambayi and Mangweni. Some of the participants noted that the police have received reports of domestic violence. Participant PO-2 reported that:

In most cases, it is domestic violence that is reported. People who are in a relationship or staying together get involved in both physical and verbal fights culminating in domestic violence.

Participant PO-4 further identified areas commonly known for domestic violence. The participant had this to say:

Newtown C, Inanda A, uMzinyathi and Matiwe are known for house robbery and domestic violence and Bhambayi and Amawoti are on record for murder cases.

Adding to the same issue, Participant PO-5 said:

Inanda A is commonly identified with house break-in and domestic violence. At Newtown C, most of the reports involve domestic violence.

The reasons for the occurrence of these crimes can be attributed to the cosmopolitan nature of Inanda area, as the area is inhabited by people from different backgrounds. Participant PO-7 noted that:

Police are seized with reports of contact crimes whereby people beat each other. Inanda is made up of many informal settlements inhabited by people from other areas, provinces or cities. These people would be seeking job opportunities in the industries surrounding Inanda. They get into conflicts because they come from different backgrounds.

After these cases have been reported, the police are obliged to ensure safety for all the victims of crime. According to Participant PO-10, the lack of satellite stations is a challenge that impedes the achievement of this objective. The respondent expressed the following sentiments:

To deal with the issue of domestic violence effectively, it is helpful to separate the people involved in it. We start by identifying the relatives who can offer them a chance to stay with them while their issues are being fixed. If this does not work, the last option would be to take one of the perpetrators to the police station. The perpetrator will have to sleep there until their problem has been resolved. Domestic violence is not right.

The participants raised another concern about the distance people have to travel to get to these satellite police posts. To that end, Participant PO-10 stated that:

The satellite stations we have are small and they are far away from some community members. Only three stations are available and are close to people. There is one at Inanda A, another at Newtown C and the last one at Amawoti. People who travel from Ematata spend plus or minus R50 to come and do an affidavit at Newtown C which is inconvenient for most of them. When crimes have occurred in their areas, they have to travel to the satellite stations to report the cases. There is need for more satellite stations. The satellite stations are important because they are close to people. Because of the conditions in the areas in which they live, we sometimes have to take the victims to one of the satellite stations to attend to their cases. The situation is unlike the one obtaining at Newlands, which is a more formal settlement with residential addresses.

5.3.2.2.2. Shortage of patrol vans

In discussing the issue of access roads, it emerged that some areas do not have roads for cars to use and other areas have poor roads. Therefore, crime prevention initiatives should aim at improving the state of the roads and opening up new roads the police can use to access crime scenes. In the light of these crime prevention initiatives, Participant PO-10 noted the challenges that relate to the current issue of access roads. The participant articulated the following issues:

Some parts of these areas have gravel roads which our cars cannot use. We need cars that are suitable for such roads. This must be made possible so that when we get to a crime scene, and when the victim requires attention from a hospital, it is possible to contact an ambulance, which must be able to come to the victim through a good road network. This is particularly true because in some cases, we take risks as police, to carry injured victims to hospital. We are

not allowed to do so, but we cannot afford to let people die unattended to. The problem with the police carrying the injured victims is that if the victim dies while on board the police car, it would be regarded as a breach of the police code of conduct. The police officer gets into trouble because a patrol van is not designed to carry a patient, or someone injured in the same way as an ambulance does.

Since the police are public servants responsible for providing a sense of safety around the communities in which they work, their key result areas include preventing crime and ensuring that victims of crime receive the best of the services in the aftermath of the crime. Participant PO-10 expressed the view that when police officials working at Inanda are faced with a situation whereby they have to assist an injured victim, it becomes difficult for them to assist because their patrol vans are not suitable for carrying patients. As a result, they resort to the engagement of other public servants whose responsibility is to ensure that such victims get hospitalised. To avoid confusion arising from the misinterpretation of this point, it is worth noting that the participant was not suggesting that patrol vans be designed like ambulances, but the idea is that the police be provided with patrol vans suitable for the type of roads and the physical environment the police have to deal with as they respond to criminal cases. The patrol vans must be suitable for the task of reaching out to crime victims in time so that they alert the relevant experts, such as para-medical doctors, if victims require immediate assistance. With reference to the physical environment as the central aspect of this study, the glaring challenge is that both patrol vans and ambulances are currently struggling to navigate the crime-prone areas under this investigation. The patrol vans being used by the police are not suitable for gravel roads. Resultantly, the police tend to respond belatedly to crime reports because they have to walk to crime scenes and the same applies to medical personnel as ambulances are equally unable to navigate these gravel roads. This is common in the informal settlements because of the type of physical environment they have.

According to Participant PO-8, private companies are better-resourced. The participant stated that:

> *The police do not have enough resources to reduce crimes. Security companies are even better than us in terms of resources. We do not have enough cars, and sometimes a police station has to rely on one car to patrol the whole area. It*

takes time to attend to areas where crimes have occurred as a result of lack of resources. Hence, we also need more stations to be opened up in the area.

Emerging from this response is the issue that patrol vans are inadequate and sometimes, a police station has to use only one van to attend to all the reported cases. This is a serious challenge because Inanda area is big and police must respond to all the reported crimes instantly. Compounding the shortage of patrol vans is the fact that police stations are understaffed.

5.3.2.2.3. Police officials are understaffed

The participants expressed the view that police officers are understaffed, a scenario which makes it difficult to cover all the crime-prone areas. Participant PO-9 recognised the importance of, and advantages that result from, patrolling an area. The concerns the participant raised in their response are as follows:

Patrolling crime-prone areas is a good strategy, but the problem affecting the police working in these areas is that they are seriously understaffed. They are expected to police a large area which is not possible. At a satellite station, there are only five police officials working in shifts from 06:00AM to 18:00 PM. Two officers use one police car while the other three work in the charge office. Traditionally, there used to be foot patrolling which was effective. Crime was not as much as it has become today because the police were active and scattered around the targeted areas and they were sufficiently staffed.

This means that only two police officers in a shift partake in all the activities occurring outside the satellite station, where they have to attend to all the reported cases. Precisely, the element of patrolling is arguably non-existent because the police officers are too inadequate to cover the vast areas surrounding their station. The suggestion made by PO-9 regarding foot patrolling is arguably not feasible as it could only be effective if more police officers were employed and deployed to the station. Participant PO-2 also emphasised the issue of understaffing by stating that:

There is a problem of understaffing as the police operating in the surrounding areas are very few. There must be more police officials employed to attend to the crimes occurring in the area. Also, the shortage of resources should be resolved as well.

A number of conclusions can be drawn from the challenges identified in this theme. Firstly, the physical environment of the places makes it difficult for the police to locate crimes in the

informal areas much in the same manner as it does in formal areas. The presence of proper access roads and house numbers as well as landmarks distinguishes the two types of areas in terms of dealing with crime. Secondly, the police officers tasked with combating crime and ensuring safety for all the community members cannot discharge their responsibilities because they are under-resourced. If the conditions in the physical environment were improved, there still would be problems of patrolling due to understaffing and shortage of patrol vans. The same challenges apply to satellite stations. Lastly, based on the question of crime opportunities that guided this study, it should be stated that until the resources are provided, crimes will continue occurring because Inanda is a big area. Although police movement is possible in areas such as Newtown C and Inanda Glebe, the police still face challenges culminating in failure to respond quickly to crime reports due to the inadequacy of resources.

5.3.3. Preventing crime

Theme three is based on crime prevention measures and according to the participants, these measures can be implemented. The two themes dealt with in the previous sections delved into the factors that increase the likelihood that crimes may occur. This largely dovetailed with the two objectives underpinning this study within the context of crime opportunities and the type of places that host criminal activities. The other objective that is central to this study refers to the principles of the CPTED model as a preventive initiative that seeks to curb crimes that occur as a result of the physical environment. The participants stated that the SAPS has not been able to expose police officials to this model. As a result, the participants' responses were perceptions that expressed the quest for understanding how the model works. This called on the researcher to explain the principles of the CPTED model during the interviews. In the end, the participants were able to identify the current measures and the previous ones that have not been introduced though they are reflective of the CPTED model. Although they were not specific in some of the recommendations they made, the participants noted the techniques that correspond with the principles of the model, and the following chapter further explains such issues.

5.3.3.1. Current measures

The members of the South African Police Services are not familiar with the CPTED model in the practical sense as noted earlier on. Consequently, the majority of the participants identified community policing as a strategy apart from viewing it as a measure the police used to reduce crime. It is an initiative based on the role community members should play in crime control.

The role of the community is reflected in the Community Policing Forums (CPF), and Participant PO-1 explained the functions of such an initiative as follows:

Currently, there is the Community Policing Forum. It is a community-based strategy used to fight against crime as a community. People of the community use the Community Policing Forum to report the criminal activities affecting their area. It involves the police and it is useful in identifying offenders in the area because as a structure, it is made up of members who are familiar with people within that particular community. These people know the people who are most likely to commit crime. For example, in house break-in cases, it becomes easy to identify people who might be responsible for the perpetration of crimes in the community.

Participant PO-8 noted that because of their familiarity with the community, the members of the CPF also assist in recovering stolen property. The participant said:

The only Community Policing Forum that is working is at Amawoti. It is not at Newtown C. The members of the Community Policing Forum are helpful because they sometimes take it upon themselves to identify suspects who might have been responsible for crimes. They even identify them by their names and they know their homes or houses because they are a part of the community. They even help in the recovery of the property stolen by these people through housebreakings and other types of crimes.

The CPF are community-based structures which are working in collaboration with the police. Participant PO-10 referred to them as 'eyes of the police' in the following statements:

In terms of the Community Policing Forum, there are meetings held every month. The initiative would be more helpful if the Crime Prevention through Environmental Design model can be addressed. However, other areas do not have the Community Policing Forum. What I have learned from those which are operating is that the community members also need to be educated on how they should operate. They need to know the roles they ought to play in combating crime. They are the 'eyes' of the police, and if they can try to work and become active for 24 hours, we can be able to reduce crime. However, community members often refrain from reporting crimes to the police. When crimes do occur, the police are always held responsible yet community members

somehow contribute to their occurrence. In my view, the police, municipality and councillors, the Community Policing Forum and community members need to be educated about crime. All the mentioned parties need to know the role they ought to play when a crime has occurred. Or rather, they should know how to prevent the occurrence of crime. When a crime has occurred and community members refrain from reporting it, they would have automatically connived with the perpetrators of the crime. A good example is the use of 'whoonga'. It is difficult for the police to find it until someone informs them. We recruit informers but ensure that their identity and connection to us remains secretive. People do not report crimes because they fear that they will be exposing themselves to the criminals who might be in a position to avenge.

Although the CPF is perceived to be an effective approach to crime prevention, there are challenges on how the initiative can be carried out. Participants argued that more education needs to be provided to members tasked with the responsibility of dealing with crime. It appears that members of the Community Policing Forum sometimes act without informing the police. Participant PO-3 substantiated this point as follows:

There is the Community Policing Forum which is operating currently, but it has been discovered that the people within these structures do not understand the role the strategy should play in combating crime. Sometimes, the members of the Community Policing Forum beat up people suspected of having committed a crime instead of inviting police officials to deal with the suspected offenders. This is a problem because they often act without sufficient incriminating evidence proving that the person indeed committed the crime. For example, they sometimes beat up someone for walking late at night without proving their criminal inclinations. All the parties must be educated on their role in the Community Policing Forum and the same can be done with the Crime Prevention through Environmental Design initiative.

Adding to the issue of members of the CPF not acting as they should in dealing with criminal matters, Participant PO-1 stated, thus:

The Crime Prevention through Environmental Design can be effective in combating crime, but although there have been structures such as the Community Policing Forum, there have also been flaws that come with them.

Sometimes they do not operate appropriately. The members sometimes engage in mob justice. For example, when a teenage boy has been caught stealing or committing any type of crime, they take the decision to punish him without bothering to inform members of the South African Police Services, which is a misunderstanding of their role. They are trying to correct wrongdoing by using the wrong approaches.

The participants further identified measures that can be linked to the CPTED model. Unsuccessful measures were identified together with others which were recommended for the CPTED model, the CPF and the street committees as well. These measures are discussed below.

5.3.3.2. Unsuccessful measures

The participants noted that previously, the Municipality has made attempts to reduce crime primarily through enforcing techniques that are akin to those articulated in the CPTED model. Nonetheless, these measures were unsuccessful. It is worth noting, however, that the majority of the participants focused on surveillance and expressed appreciation of the benefits that can be reaped upon its introduction. Participant PO-1 reported that:

We have not been exposed to the Crime Prevention through Environmental Design as members of the South African Police Services but knowing how it works has been elusive. There have been attempts to install cameras at Dube Village which is near Newtown C, in order to step up surveillance, but the strategy was not successful.

Surveillance is an integral part of the CPTED model and in describing the situation at Dube Village, Participant PO-2 noted that:

The cameras are good at identifying people who have committed crimes but the mall in Dube Village is small and it is not easy to use such a surveillance system. It is the members of the South African Police Services who attend to the crimes that occur there.

Participant PO-3 was more specific on the time the sense of surveillance was introduced. The participant reported that:

The surveillance cameras which were installed at Dube Village and Ohlange, are not working. They were introduced during the 2010 FIFA World Cup.

According to Participant PO-6, the type of crime that can be monitored through surveillance is shoplifting. The mall at Dube Village is deemed vulnerable due to lack of surveillance. The participant commented that:

> *At Dube Village mall, there is shoplifting in most cases.*

5.3.3.3. Recommended measures

In their responses, the participants acknowledged the CPTED model as an initiative which can complement the current strategies being employed by the SAPS and the CPF. However, community members need to be educated on how to deal with crime. Other recommendations paid attention to the need to improve the physical environment which should incorporate the work of the CPTED model. Their perceptions bordered on how the model can work or otherwise if it got implemented at areas within Inanda community. Participant PO-1 noted the following:

> *People should be encouraged to design their houses and put fencing that can help deter criminals from committing crimes. The Community Policing Forum and the Street Committees can encourage the community to work as one, and neighbours should report crime even when they are not the ones who have been victimised.*

The community should be exposed to the principles of the CPTED model and the CPF can partake in ensuring that crime prevention of that nature is a possibility. In addition, there are street committees which are noted. They are measures which the SAPS has encouraged but it has not been able to fully employ them. Participant PO-1 further indicated that:

> *The government has also requested for the development and adoption of 'Street Committees' and 'Neighbourhood Watch'. Currently, these have not been implemented because people are not aware of how they work. As the police, we sometimes try to ask the community to implement this initiative because it has the potential to reduce crime. It is reported to be working in developed countries. When proposing that these Street Committees be introduced, we usually suggest that each road or street in a certain part of the community should select members of a Street Committee. People from that street may report to their Street Committee upon becoming victims of crime. The reason these committees are needed is that the Community Policing Forum covers a large area as opposed to Street Committees. These Street Committees ensure that all*

parts of the community are covered because it is possible that other areas may
be neglected or overlooked by the Community Policing Forum.

Participant PO-4 suggested the need for the CPF to function throughout the day, adding that it should become more active and distributed across all the areas of Inanda. This participant made these recommendations in the following statements:

There is the Community Policing Forum which operates at Amawoti, but the
problem is that not all the areas have these structures in place. They must be in
every place. Also, these structures should operate during the day and night and
everyday though they should not take the law into their hands but rather, report
criminal cases to the police whenever they have been committed. The
community must work as a collective entity. If a certain house is being broken
into, whoever notices it, the police must be contacted immediately. The people
must not keep quiet because it is not their houses being broken into. Injury to
one member is injury to all.

Moreover, other participants explained why the CPTED model may not be implemented by simply referring to the socio-economic status of the community members of the selected formal and informal areas. In response to such issues, Participant PO-5 noted the following:

I do not think the model can work because of unemployment. People build their
houses depending on how much they can afford. Some of the houses they build
do not offer enough protection against crime as suggested by the Crime
Prevention through Environmental Design. This model can work for those
people who are employed and therefore can afford to install cameras in their
premises, for example. The municipality must find means of applying the model
of the Crime Prevention through Environmental Design. It must fix roads so
that all the areas can be accessible to the police and street lights ought to be
put up to reduce cases of street robbery.

There are people who can afford to apply the principles of the CPTED model although others cannot. Affordability is dependent on whether people are employed or otherwise. The issue of unemployment cascades to the problem of housing that was identified in the first theme which tackled the issue of crime opportunity. The general perception is that if people can take control of the security of their houses, fencing the premises and exercising territoriality, crimes can be reduced. The introduction of the CPTED model must also extend to encompass the issue of

access roads. According to Participant PO-10's views, the principles of the CPTED model can be enforced effectively if the municipality becomes actively involved in the crime reduction crusade. This includes providing essential services and improving accessibility to crime-prone areas. The participant stated that:

> *In order to effectively combat crime, environmental design has to be considered. As the police, we are not involved in everything. For example, the leaking of water is a crime on its own because it wastes water and the police have to order the municipality to replace the pipes. They have to patch it up and they have to ensure that street lights are erected along the road. The municipality should ensure that all the areas are accessible to make it possible for the police to operate efficiently. This is a problem that also affects the use of ambulances. The police cannot be made to use their cars to ferry injured persons during an emergency. In the event that such persons die, they are regarded as having been in the jurisdiction of the police. As police, we are not allowed to carry a person who is injured using a police car. An ambulance is the most appropriate mode of transport, but due to lack of access roads, rescuers sometimes resort to the remaining option, which is the use of a wheelbarrow. The issue of access roads has to be considered if the police are to effectively deal with crime. We cannot even patrol all the areas because our car cannot reach out to other sections of the areas which do not have access roads. This means that even though we can try to deal with crime, we do not afford to offer equal coverage to all the areas.*

By and large, the discussion of this theme indicated that crime continues to occur because current measures such as the CPF are not effective because members do not react to crime accordingly. There are other measures that were unsuccessful and these include street committees and the use of surveillance cameras. These initiatives had the potential to reduce crime, and surveillance resembles principles of the CPTED model. In light of these problems, one of the recommendations advocated the idea of reducing crime at areas around Inanda through educating people about crime. This educational campaign should also include members who are involved in current structures, the CPF and street committees, and the community at large on the CPTED model. The model must be explained to the police, the CPF, the community and the municipality, explaining how it can be beneficial in terms of crime prevention and how it can be executed effectively. Reference was made to the socio-economic factors that make the implementation of the CPTED unlikely and one of the suggestions was

that all these parties work collectively, and the municipality fixes and provides access roads and houses for people who cannot afford to apply the CPTED model due to unemployment.

5.4. Summary of the chapter

This chapter aimed at providing insights into how the physical environment of the areas at Ward 57 contributes to crime at Inanda as perceived by police officers who work there. Firstly, the researcher found out that the physical environment indeed offers opportunities for the perpetration of crime which perpetrators easily take advantage of. Secondly, the responses showed that the police hardly locate the scenes where crimes occur because of the barriers in the physical environment. Lastly, the responses of the participants demonstrated that there is no proof of the CPTED model being implemented and working to prevent crime. As such, the dominant perception is that mechanisms should be explored as to how it can be introduced and implemented effectively to reduce the rate at which crime is occurring as a result of the physical environment.

CHAPTER SIX

DISCUSSION

6.

6.1. Introduction

The previous chapter provided insights into how the physical environment of the areas at Inanda contributes to crime as perceived by police officers who were interviewed for this study. This chapter discusses those findings, exploring a variety of perspectives from other scholars. This discussion also identifies the elements of the CPTED model that can be applied to the crime prevention mantra. It further provides the conclusions that derive from the study's research questions and findings. It further presents the limitations associated with the methodology used in carrying out the crime prevention model. The study then proffers a number of recommendations, including crime reduction strategies, and implications for future research to address these limitations.

6.2. Summary of findings

6.2.1. Background

According to the police officers who participated in the study, the role played by the physical environment of the places where crime is committed is the creation of opportunities which the perpetrators of crime capitalise on. This implied that the perpetrators of crime succeed in executing their criminal activities because the conditions obtaining in the physical environment are conducive for the perpetration of crimes. In explaining the situation at Inanda and KwaMashu, a study reported that "the occurrence of crime in these places can be attributed to various aspects, such as poor opportunities for surveillance, limited visibility, access and escape possibilities to criminals, a lack of responsibility for these areas, landscaping, deterioration, etc." (Safer Spaces, 2015, p. 24). Cohen and Felson (1980) argue that circumstances around the perpetration of a crime matter, and according to the RAT, the environmental circumstances present favorable opportunities which lure motivated offenders into committing crimes. The key elements of this theory are the target, the offender and guardianship. This theoretical understanding resonates with police officers' perception that people become victims of crime because there is no form of guardianship in the physical environment of the crime scene. According to the participants, the police officers have the responsibility to provide guardianship as security to the community. However, they are unable to square up to that obligation because they find it difficult to operate within the physical environment of the area they are supposed to be policing. The Opportunity theory is also

significant in so far as it provides more insights into the relationship between the commission of crime and the physical environment of the crime prone area. The theory contends that the three elements converge across time and space, and the absence of guardianship creates an opportunity for the commission of a crime (Wilcox, Land, & Hunt, 2003). For example, the participants reported that they can hardly patrol areas with informal housing and poor or no access roads. In cases where street robbery or house break-ins are in progress, the police cannot react quickly and by the time they do, the offenders would have escaped. It has also been noted that certain areas are prone to criminal activity because there are particular places in the area which criminals can use with ease as escape routes (Geldenhuys, 2015).

In their responses, the police officers compared the areas of Ward 57 under the jurisdiction of Inanda area. They divided the areas into formal and informal settlements. These areas were Newtown C, Bhambayi and Mangweni. The key differences the police officers identified were based on the type of housing, the issue of access roads and liquor outlets. On the one hand, Newtown C is characterised by proper housing and the availability of access roads and as such, it was classified under the formal settlement. On the other hand, Bhambayi and Mangweni were classified under the informal settlement type because they are made up of informal housing and they do not have proper access roads. In relation to the presence of liquor outlets, the participants noted that these outlets are available in both types of settlement, and that they are significant because the majority of them operate illegally and they contribute to the occurrence of crime. In addition, the interviewed police officers also referred to other areas outside Ward 57, including Amawoti and Inanda Glebe as they further substantiated their points.

6.2.2. Physical environmental factors contributing to crime at Inanda areas
6.2.2.1. Housing
According to the police officers interviewed for this study, crime opportunities arise due to these three factors. In terms of housing, the police officials reported that their movement is limited where there is informal housing. The underdeveloped infrastructure and poor service delivery has led to alarming rates of crime and violence (Safer Spaces, 2015). The police officers further noted that Bhambayi and Mangweni are made up of congested shacks and the police find it difficult to attend to the reported cases. This accounts for police's belated response to the reported crimes. The issue of congestion is a consequence of overcrowding in the areas of Inanda. Congestion also creates social tension among community members, a scenario which then contributes to crime (Safer Spaces, 2015). The police also indicated that there are

crimes which are more likely to occur at informal settlements than at the formal ones. To substantiate that point, they referred to house break-ins as examples of such types of crime which occur due to the type of housing in an area. The participant further stated that people in the informal areas do not fence off their houses, the shacks in particular, partly because they cannot afford it and partly because there is inadequate space as their houses are congested. The other factors identified by one study include "the penetrable nature of the majority of the shacks, doors and windows that cannot lock, and a lack of access to telephonic and other means of communication to call for assistance" (Safer Spaces, 2015, p. 15).

With particular reference to the CPTED model, the above cited factors resonate with the element of target hardening. The police officers held the view that target hardening is not exercised in the informal areas selected for this study. The intention of target hardening is to make it difficult for perpetrators to commit crimes (Sakip & Abdullah, 2017). This corresponds also with the tenets of the Routine Activities Theory. While target hardening prevents access to a target, the RAT advocates that the presence of any form of guardianship has a positive bearing on crime prevention. An example of target hardening which was consistently referred to was fencing off the premises with razor wire. With reference to cases of house break-ins, it was noted that sometimes the crime occurs due to the absence of the owners of the property. It was noted that people's houses become more vulnerable when they are unoccupied (Reynald, 2011). This problem obtained across all the types of residence, including those in the formal settlements. The issue is explained as follows:

> *"The dormitory nature of formal townships makes the inhabitants vulnerable to crime. Due to a lack of unemployment opportunities in their immediate environment, people are forced to leave these areas during working hours, leaving their properties, the elderly and the children exposed to criminal activities during the day"* (Safer Spaces, 2015).

Regarding the issues of housing, the findings indicated that people in informal settlements refrain from exercising any form of territoriality around their houses. This increases opportunities for the commission of crime. Territoriality is another element of the CPTED model and it encourages residents of an area to send warning signals to potential offenders that if they committed crimes including breaking into a particular house, severe punishment would be meted out to them (Wortley & McFarlane, 2011). Fencing is arguably another indicator of territoriality. If the element of territoriality is applied, it is capable of having psychological

effects on the perpetrator's perspective regarding crime (Reynald & elffers, 2009). They might feel too dissuaded to commit a crime because access to a target is so restricted that the risk of being apprehended would have increased. Perpetrators often get discouraged when the risk outweighs the benefit. Also, the intended goal of territoriality is to indicate to these potential offenders the codes of behavior that community accepts and those it does not (Reynald, 2015).

It was also reported that drugs are being used in the shacks. Some of these drugs are planted, especially dagga, while others are being sold. The police reported that sometimes such issues are not reported. The police were called on to "encourage citizens to report crime" (National Crime Prevention Institute, 2001, p. 129). It is argued that in a community which exercises territoriality, drug use would not occur at an alarming rate as perpetrators would be aware of the risk associated with being reported and the punishment that they are likely to incur as atonement for the crime committed. In addition, the BWT emphasises the fact that residents control their space to prevent it from giving off signals that attract crime. The residents must attend to issues of physical environment that lead community breakdown (Siegel & Worral, 2014). The element of territoriality is in sync with the BWT because it emphasises the need for people to control and exercise ownership of their space in the residences. For instance, if crime reduction has to be effective, use of drugs must be reported and people's houses ought to be fenced properly. According to the interviewed police officers, the issue of fencing is not common in informal settlements where shacks abound (as informal houses). In fact, formal settlements are more capacitated to exercise territoriality as the police officers noted. Apart from that, in informal settlements, houses are congested and residents cannot afford fencing. Another reason for lack of territoriality in informal settlements is that space is shared and it is not clear as to how much a person owns in terms of the space around their house. The residents are unable to restrict anyone's movement, including that of the potential offenders. Consequently, perpetrators have the freedom to move around the houses committing crimes, in particular house break-ins.

6.2.2.2. Access roads and streetlights
6.2.2.2.1. Access roads
The police officers further noted that the issue of informal housing at Bhambayi and Mangweni is exacerbated by lack of proper access roads. The problems that arise include, but not limited to, little or no patrolling and failure to react instantly to crimes because police officers have to walk to crime scenes. Patrolling is an approach which is perceived to be effective because the police respond quickly to crime (Siegel & Worral, 2014). Researchers argue that the visibility

of patrol cars on the streets and the rapid deployment of police officers to the scene of a crime are viewed as effective methods of crime control (Siegel & Senna, 2007). The police officers asserted that these strategies do not work in informal settlements because there are inadequate access roads to be used by patrol cars. They stated that the situation is worsened by congested houses in the informal settlements. On the other hand, they reported that formal areas are more accessible because the existence of access roads makes their movement possible. In the CPTED model, there is an element referred to as 'access control', which is related to target hardening. The access control element is concerned about making targets less accessible to offenders and it also emphasises the need to control access roads to allow the community members to work around their spaces (Reynald, 2015).

Consequence to lack of access roads, the police officers stated that crime opportunities occur because when crimes are reported, they respond late. The major issue is that they cannot use their patrol vans. Instead, they resort to walking to crime scenes. The rationale for police officers to respond quickly to crime scenes is to speed process of apprehending those who violate the law (Siegel & Worral, 2014). The police officers gave an example of a house robbery which was in progress, and they reported that in informal areas, the police have to walk to that house where a crime was reported to have been occurring, and to make matters worse the houses do not have house numbers to use. This means they have to struggle to locate the house and this often leads to belated reaction to crime. In confirming this situation at Inanda area, it was reported that "the lack of street names or numbers on houses, limits police or emergency services to locate crime victims or react to complaints" (Safer Spaces, 2015, p. 27). Police officers also noted that due to lack of roads and congested housing, when a victim of crime gets injured, police cars and ambulances do not arrive on the scene on time. In most cases, a person is ferried with a wheelbarrow from the scene where they may have fallen victim to a place where the ambulance would be waiting. According to the police, this problem is not common in the formal areas.

Furthermore, police officers intimated that they sometimes require landmarks to locate crime scenes but they still respond lately to crime reports. When a crime has been reported, the police rely on these landmarks to obtain directions leading to the area of complaint. As noted earlier, there are no house numbers and access roads police can use in informal areas. Additionally, there is shortage of landmarks the police can use in informal settlements, and those that are available may be far away from the crime scene or not familiar to the police officers working

at the call centre. It was not disclosed as to how the police officers at the call centre identify the landmarks. However, it can be assumed that they resorted to the use of geographical maps.

There are negative implications these challenges may pose to the policing techniques that are based on the need to identify the places where crimes occur. For this study, this refers to crime mapping and the GIS, which rely on the technology that uses geographical data to study crime. These pieces of data often include housing and street patterns in an area. Crime mapping involves mapping out crimes that are specific to an area. The technology is based on spatial analysis and it uses the GIS to obtain the geographical data of an area (VijayKumar & Chandrasekar, 2011; Eman, Györkös, Lukman, & Meško, 2013). This implies that if crime mapping was employed in the selected areas at Inanda, the police would require details about the physical environment of these areas. It is possible that the police are unable or struggle to make use of house numbers and access roads to get the direction to where crimes occur. On the other hand, they would have been presented with enough attributes to utilise in locating crime scenes.

In addition, police officers reported that they came across problems related to signal in some parts of the areas under study. This is another reason which accounts for the reasons the police often respond lately to the reported crimes. When there is poor signal, the police find it difficult to communicate effectively with the people who might have reported the crimes. For instance, when a crime has been reported, there is often miscommunication about the directions especially where police officers may be unfamiliar with the landmarks provided by police the officer who received the crime report. Reporting crime has often been hampered by the apparent "lack of access to communication technology in many settlements, especially in some informal settlements, making it difficult for residents to contact the police or emergency services" (Safer Spaces, 2015, p. 27). The majority of the interviewed police officers stated that they often resorted to the use of private cell phones which reportedly worked regardless of the poor signal. The police officers also made reference to the challenges enco.

untered in tracking cases of theft of motor vehicles that use trackers. These vehicles are stolen from different areas including Durban Central, Phoenix and Newtown C. The perpetrators of the crimes make use of those parts of Inanda areas where the signal is poor because loss of signal renders the trackers undetectable. The police officers narrated that there have been cases

whereby some cars were recovered only to find out that they had trackers installed in them but they were difficult to detect.

6.2.2.2.2. Streetlights

In relation to the issue of access roads being available in some areas, the police officers reported that crime opportunities arise due to lack of streetlights. They identified street robbery as the most common case which occurs as a result of poor lighting on the streets. Although this type of crime occurs throughout the day, the police officers intimated that the activities that occur at night and at dawn, are often linked to lack of streetlights. Perpetrators of these crimes engage in risk assessments whereby, according to the police officers, lack of streetlights at night works to their advantage. The advantage is that they are less likely to be caught when or after committing the crimes. In their execution of the crimes, street robbers consider the following factors: "place and time of day, the method of approaching the victim and the use of violence and weapons" (Deakin, Smithson, Spencer, & Medina-Ariza, 2007, p. 55). Street robbers often prefer locations which they are most familiar with and contemplate the possible escape routes (Deakin, Smithson, Spencer, & Medina-Ariza, 2007).

Furthermore, the police officers expressed the perception that it is difficult to apprehend offenders who are suspected of having committed crimes in informal settlements. The police officers acknowledged that their movement is limited and some of them are even unfamiliar with the passages the offenders utilise as they evade apprehension. In that way, crime opportunities arise. Reflecting on the situation at Inanda area, "a lack of street lighting aggravates the situation and increases opportunities for criminal activities at night" (Safer Spaces, 2015, p. 15). Under the RAT, lack of guardianship is also applicable because in their selection of victims, offenders consider potential guardians in the physical environment. However, lack of proper streetlights increases the victim's exposure to motivated offenders. In terms of the victims of house breaking, lack of streetlights can also be considered as the key contributor (Safer Spaces, 2015). Some police officers reported that some of the robbers are responsible for breaking streetlights. According to the BWT, such issues need to be attended to before everything else because they create opportunities for the commission of crimes (Jacinta & Travis, 2010; Siegel & Worral, 2014). According to the CPTED model, the fixing of streetlights aligns with the element of 'maintenance', which is about improving the physical features that are faulty and therefore assist motivated offenders in committing crimes. It should be made easier for people walking in the streets to evade motivated offenders. The elimination of shadows and poor lighting is quite central in this particular connection (La Vigne, 1996).

6.2.2.3. Liquor outlets

Moreover, the police officers interviewed for this study reported that at the selected areas at Inanda, the preponderance of liquor outlets contributes to crimes and these outlets have often been regarded as crime hot spots. These liquor outlets are distributed across formal and informal settlements. For the most part, it was reported that this issue contributes immensely to murder, assault, rape and street robbery. It was noted that these liquor outlets operate illegally; they close late and for this reason; and they cause the occurrence of crimes. The interviews showed that there are facilities which attract crime and those that detract it (Eck & Weisburd, 2015). The Opportunity theory bases its conviction on the assumption that there is always a place where the three elements, the motivated offender, guardianship and the target converge, an assumption the RAT also alludes to. These assertions presuppose that there are factors which make it likely and less likely that a crime may occur. In the light of that view, illegal liquor outlets are perceived to facilitate the increase in opportunities for the occurrence of crimes. The police officers noted that they operate without putting in place measures that prevent crimes. They noted that they are not strict and as a result, perpetrators of crime, like other community members, take advantage of this weakness. This explains why they are regarded as crime hot spots.

According to Eck and Weisburd (2015), in studying crime and place, there must be five factors to be considered which are; (a) identifying places targeted, (b) comparisons of frequency of crimes in those places and others, (c) the physical features of those places, (d) what informs the selection of these places, (e) and the suitability of committing a crime. It has been noted why the liquor outlets are targeted and that the majority of the crimes occur as a result of them. These factors play a key role in understanding what really transpires during the commission of crimes. The police officers stated that the people who are intoxicated with alcohol are vulnerable to crime as they cannot defend themselves against crimes. Drunkenness makes them easy targets. To explain this, the police officers used examples of street robbery and rape cases. They stated that because the liquor outlets close late, people walk back home only to be pursued by the motivated offenders. As far as street robbery cases are concerned, the people who are intoxicated with alcohol get mugged. The police also reported that women are vulnerable to in rape cases and the same patterns recur. As soon as they finish drinking alcohol, and as soon as the liquor outlets close, they leave and get followed. In other cases, women get raped by men whom they were drinking alcohol with especially when they have run out of money to purchase their own alcohol. It was also reported that these liquor outlets operate throughout the day and

apart from victimizing those coming out these liquor outlets, they commit crimes at nearby areas (Safer Spaces, 2015).

The Broken Windows Theory encourages people to work collectively to fix crime related issues within their communities (Wei, Hipwell, Pardini, Beyers, & Loeber, 2005). The police officers confided in the interviewer that there are many illegal liquor outlets operating in the areas under study and anyone can start operating them. As noted before, it is imperative that any form of disorderly activity be attended to before it invites other issues, including criminal activities (Siegel & Worral, 2014). Community members must ensure that illegal outlets are reported to the police so that they are shut down. The police officers reported that there were times when they urged the operators of illegal liquor outlets to shut down following reports from concerned neighbours.

6.2.2.4. Lack of resources

Several challenges have been identified by police officers as they explained the point that crimes continue to occur as a result of the physical environment of Inanda areas. Firstly, the police officers reported that there is shortage of patrol vans. In some areas, there are poor roads and the patrol vans used by police officers are not suitable. Secondly, the police are too understaffed to service Inanda, a large area which needs adequate police officers to patrol it effectively. There are inadequate police officers to attend to the reported crimes expeditiously. The participants stated that in satellite stations, there are only five police officers on duty and of these, three remain behind working at the charge office while the other two use the only patrol van at the station to attend to the reported cases. Lastly, the respondents reported shortage of satellite stations. They indicated that Inanda area is large with merely three stations operating at Newtown C, Amawoti and Inanda A. Compounding the shortage of stations are the poor conditions at the police stations and the stations are reportedly very small. They are not suitable for serving all the types of victims of crime especially the victims of sexual offenses. One police officer expressed the view that it is important that the various types of victims are accorded separate rooms when they are interviewed because some of their cases are sensitive and the police must at all times prevent secondary victimisation. Further victimisation should be avoided because it is defeating the purpose of the criminal justice system (Orth, 2002).

6.2.3. Applying the CPTED to reducing crime at Inanda areas

This study identified different measures that can be employed to reduce crime within the context of the relationship between crime and the place at which it occurs. The following discussions revolve around the whole methodology of applying the CPTED model as a

complementary crime prevention strategy. There are two ways through which crime can be directly dealt with at Inanda, and these involve the use of the police as a law enforcement component and the use of the CPF. These structures work cooperatively to reduce crime. However, the police officers reported that members of CPF still need to be educated about how they can properly deal with criminal issues. For example, it was noted that some members resort to mob justice, whereby the people accused of having committed crimes get physically assaulted by community members. The participants reported that at law, such actions are not acceptable because the police ought to be notified about the suspects and if there is sufficient incriminating evidence, they are dealt with through the legal route. Regarding the CPTED model, the SAPS has not orientated the model to police officers. The discussions that follow should be viewed as recommendations advising stakeholders on how Inanda areas can manipulate and utilise the elements that are central to the model, namely; territoriality, access control or target hardening, surveillance, maintenance, and support activity.

6.2.3.1. Reducing opportunities

The police officers who were interviewed for this study reported that the physical environment of Inanda areas creates crime opportunities. They identified three factors through which these opportunities occur, namely; informal and/or dilapidated houses, lack of access roads, lack of streetlights and the preponderance of liquor outlets. They affirmed that these factors indeed contribute to the crimes that occur from within the area. As a result, crime prevention strategies that are accompanied by the CPTED model must be able to reduce the opportunities the physical environment presents to motivated offenders. According to Stollard (2005), three elements guarantee success of crime commission and these are opportunity, ability and motive. Applying the elements of the CPTED model requires the consideration of these three elements. The physical environment design must be built with the purpose of limiting both opportunity and ability of the criminal (Stollard, 2005). Elements such as territoriality and access control and/or target hardening complement the three elements noted by Stollard (2005). Additionally, the four elements, deny, deter, detect and delay, provided by the National Crime Prevention Institute (2001) are important as they provide more clarity on issues articulated in this sections and in others that follow.

The participants reported that there are cases of house break-ins that occur in connection with the condition of housing. People's houses are not fenced properly to protect them from these types of crime. House owners do not exercise territoriality and target hardening; hence, their properties are exposed and criminals simply capitalise on the opportunities this laxity affords

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them. This issue was reported to have been occurring at houses in both formal and informal areas of Inanda. To address these problems, the respondents recommended that the residents must improve the type of fencing they use around their houses. Territoriality barriers must be used as they have a deterrent effect on the potential criminal. These measures include the use of warning signs displayed on the fence to indicate that the property is private and that there are adverse consequences arising from unauthorised entry. This form of crime prevention is largely perceptual because it has a psychological effect as it deters offenders from engaging in criminal actions. Alternatively, physical barriers such as use of barbed wire and razor wire effectively must be impenetrable (National Crime Prevention Institute, 2001). Barriers of this nature must increase the likelihood of the criminal being detected as they attempt to penetrate the fence (National Crime Prevention Institute, 2001). As suggested by the RCT, it is assumed that if the cost of doing crime outweighs the benefits, a criminal often chooses to withdraw from it. In light of that, the more difficult it is to penetrate a barrier, the more likely chances of being detected arise (National Crime Prevention Institute, 2001).

Furthermore, access control and target hardening are best achieved by making it difficult for criminals to reach the properties they would have targeted. If an attacker finds it easy to break through the type of fencing utilised, they must be faced with stronger mechanisms that prohibit their access to targets. For example, the locking system used on gates and doors should be reinforced by replacing padlocks and chains with built-in locks which are more difficult to break (National Crime Prevention Institute, 2001). The purpose of target hardening applied in this way is to deny the offender access and delay them until they give up or get caught in the act. However, the likelihood that offenders are caught in the act is dependent on the time it takes for detection to take place and for the response to occur before they can escape. The police reported that in informal areas, the type of housing makes it difficult for police officers to respond instantly to reported crimes as they are being committed. They stated that the houses are congested and they must get to crime scenes on foot, which gives criminals enough time to commit crimes and escape. This means that although the elements of territoriality and target hardening may be beneficial to people through preventing house break-ins, changes must occur to allow the police to access the area. The conditions of roads must be improved to support transportation to and from the areas (National Crime Prevention Institute, 2001). In short, the elements of the CPTED model should reduce opportunities for the escape of criminals, while simultaneously increasing access options, including access roads, for the police to respond quickly to reported crimes. With reference to the house break-ins, police officers also added

that people do not exercise territoriality in the sense that they do not control people who utilise their space. In informal settlements, this is worsened by the fact that much of the land is shared and this exposes people's properties to crime such as theft. This situation corresponds with the element of access control as well, whereby both elements encourage that residents control all the activities that pertain to their neighbourhood, including taking note of people who do not belong to the community and regard them as potential offenders. It has been noted that the introduction of territorial barriers prevents unwanted trespassing (National Crime Prevention Institute, 2001). According to Atlas (2008, p.55) in terms of access control and target hardening, the criminals can be prevented by using the following tools: "installation and usage of locks, bars on windows, unbreakable glass, intruder alarms, fences, safes, and other devises make crime more difficult to carry out".

6.2.3.2. Increasing risk and reducing rewards

The elements of the CPTED model seek to influence offenders not to commit crimes by manipulating the physical environment. This entails designing the physical environment so that when criminals plan their crimes, they engage in a cost-benefit analysis, pondering on the high risk the commission of the crime poses. Although the above discussion depicts access control through target hardening and territorial barriers as strategies that aid in the apprehension of attackers, one can argue that there are inherent risks that occur indirectly because primarily, residents tend to focus more on making it difficult for offenders to access targets or influencing them to abandon their intentions, but sometimes erroneously believing that offenders would not be successful in committing the crimes. Another element that is more inclined towards increasing risks and rewards is surveillance, and both types of surveillance, natural and formal, are employed to achieve this. With reference to natural surveillance, the risk tends to increase because of the presence of 'human observers' who can bear witness to the crimes as they occur. The police officers patrolling around an area could be among the observers. On the other hand, formal surveillance is based on the utilisation of technological gadgets such as the CCTV cameras which compensate for the absence of human observers in the environment. In the crimes that involve house break-ins at Inanda area, the CCTV can help identify individuals responsible for the crimes and this is a risk that perpetrators might not be willing to take. In addition, the presence of neighbours in the vicinity of houses that get broken into often results in witnesses willing to attest to the commission of such crimes. Police officers also noted that the occurrence of street robberies may happen in the full glare of people walking in the streets thereby witnessing the victimisation of other residents. The observers may also turn up as

witnesses that help reveal the identity of robbers. These are benefits that come with surveillance.

The police officers also reported the issue of lighting in the area which they attributed to lack of or poor streetlights. The purpose of employing the CPTED model should be able to encourage the presence of both formal and natural surveillance. Poor lighting, or lack of lighting, makes surveillance less possible throughout the day. For example, it was reported that street robberies occur at night, in the morning and during the day. The absence of lighting makes some areas or people vulnerable to street robberies committed at night, when both forms of surveillance are not working. Street robbers capitalise on the advantages that are brought by poor or lack of lighting. "Darkness increases the ease with which a criminal can use surprise to gain control of his or her victim" (National Crime Prevention Institute, 2001, p. 88). Nonetheless, even if these individuals were to be detected and the police informed, there is the issue of lack of access roads which the law enforcement agents might have to grapple with. Another impediment they have to deal with relates to lack of lighting. As noted in the participants' responses, it is further observed that with the issue of lighting, police patrols and residents being present in the streets at night is hardly a reality because they fear possible victimisation of street robberies. Poor or no lighting is reported to impede observing crimes that occur, while allowing criminals cover to hide in shadows as they inspect residents walking or wandering in the streets (National Crime Prevention Institute, 2001). Hence, it is suggested that the practitioners in the CPTED model alter physical environment of community to be favorable for police mobility (National Crime Prevention Institute, 2001).

Furthermore, in their responses, police officers reported that people who are suitable targets at night are those who work in restaurants and knock off late at night, and those coming from liquor outlets. They are targeted because there is no form of guardianship that can prevent these robberies. Guardianship should include police officers, but due to the fact that they cannot patrol these crime-prone areas, especially the informal settlements where there are no or inadequate access roads like in the formal areas, such guardianship becomes ineffective. Improving streetlights in these areas leads to more visibility. This in turn increases the chances of detecting criminals and their activities. Streetlights might increase the chances of having human observers around crime scenes. When a crime is in progress, human observers may choose to report it to the police, or attempt to apprehend these individuals themselves. Such individuals may be regarded as capable guardians under the RAT. This is why it is argued that

for effective surveillance observers must be able to act. Being present to observe a crime alone does not make a difference (Cohen & Felson, 1979; National Crime Prevention Institute, 2001).

The key issue that arises from these discussions is that applying the elements of the CPTED model at Inanda areas also requires that poor streetlights and overall lighting be improved. This must consider the element of surveillance because it offers risks which the potential offenders might not wish to subscribe to. In short, it can be summarised as follows:

> *"When streets and other areas used by pedestrians are well lighted, criminals are more easily seen and identified. Knowing this, potential attackers may hesitate to commit their crimes in well-lighted areas. Adequate street lighting also encourages honest citizens to move about without fear, thus decreasing the possibility of attack to the extent that social surveillance permits"* (National Crime Prevention Institute, 2001, p. 86).

In addition, improving lighting to complement surveillance must not only focus on natural surveillance. Formal surveillance techniques can be useful also, as it is argued that the "CCTV and lighting may act as psychological deterrents that increase perceived risk" (Atlas, 2008, p. 55). Both forms of surveillance can dissuade the potential offender from committing the crime.

6.2.3.3. Increasing social cohesion and eliminating neighbourhood disorders

According to the Defensible Space model, an area must be designed in ways that encourage residents to control it (Taylor, Gottfredson, & Brower, 1984). For example, it was stated that housing is congested in the informal settlements such as Bhambayi and Mawoti, and resultantly, people are unable to control it. The conditions do not encourage residents to work collectively to deal with common issues that include crime. Both Defensible Space theory and the CPTED model refer to this strategy as territoriality because it is based on residents' control over their territory. This is an important issue practitioners ought to reckon because to reduce crime, all the measures stipulated in the CPTED model must strengthen social cohesion among members of a community on which they are applied. It is argued that community involvement in crime prevention is important as people are intimately aware of the types of problems encountered in the areas they live (Geldenhuys, 2015). As noted before, the CPTED model initiative is intended to contribute to the reduction of opportunities for the commission of crime, making it difficult for criminals to commit crime and increasing the risk associated with it. To achieve that milestone, the involvement of residents is imperative. "Physical design can be used to stimulate social attitudes and behavior, which can help reduce opportunities for crimes

and the fear of crime" (National Crime Prevention Institute, 2001, p. 119). The Broken Windows Theory holds the same assumption that crime is a community-based problem and hence, it requires that residents cooperate to address it (Jacinta & Travis, 2010).

Employing the CPTED model in Inanda community, especially the areas selected for this study, requires the application of two elements: support activity and maintenance. Support activity involves the manipulation or development of the physical environment so that it facilitates human activities in a particular community. For example, sport fields and parks can be developed for recreational activities. It was reported that young people, 'amaphara', are involved in crimes occurring at the selected Inanda areas owing to inadequate recreational facilities. Arguably, the addition of sports fields may help young people to devote their energies to recreation and therefore refrain from delinquent activities. The introduction of these facilities depends on the availability of vacant land identified or opened at Inanda. This is related to the need for "alternative uses for land, however care needs to be taken to ensure that conflict over ownership of the public spaces does not occur" (Safer Spaces, 2015, p. 25). Regarding the reduction of street robberies, practitioners may facilitate the introduction of benches lined along the roads where people can sit, for instance while waiting for taxis. In turn, this may increase the presence of capable guardians emphasised in the RAT and this may complement natural surveillance. However, the positioning and location of these resting places must be carefully selected. The police officers reported that there are people who get robbed while waiting for taxis. In light of that, it has been submitted that practitioners may have to recommend "reduction of exposure to crime by improving public transportation, and transit waiting stations can be located near areas of safe activity and good surveillance" (National Crime Prevention Institute, 2001, p. 128).

The element of maintenance focuses on fixing the physical environment. It encourages that broken streetlights are replaced or improved, access roads are provided and made suitable for all types of vehicles, including police vans and the type of fencing still enforces territoriality and access control in people's houses. Police officers reported that in the selected areas at Inanda, people responsible for house break-ins often use trees to jump over fences around the houses. This occurs especially at Newtown C. It has been recommended that any object which assists criminals be removed. The physical features used against crime must be fully functional (La Vigne, 1996; National Crime Prevention, 2001; Sakip & Abdullah, 2017). Also, the participants noted that there are houses at Newtown C with fencing that is not strong enough to prevent intruders from breaking into people's houses. If the practitioners of the CPTED

model were to recommend better fencing, they need to stress the need to maintain effectiveness by ensuring that the fence is checked repetitively for possibilities of being faulty or rusty. Some criminals may temper with the fence (National Crime Prevention Institute, 2001).

The police officers reported the existence of surveillance cameras which have been exercised before but it could not work. This surveillance system was installed during the '*FIFA World Cup*' hosted by South Africa in 2010. These cameras must be reinstalled and located in all the areas and they should be inspected consistently to ensure that their effectiveness does not diminish. In addition to these examples, the following sentiments were expressed regarding the conditions relating to maintenance specific to Inanda areas:

> *"The crime situation is aggravated by a lack of maintenance in many areas with respect to broken lights and overgrown and neglected public open spaces. Derelict areas with litter and garbage scattered all over, with graffiti on walls, contribute to urban decay and have a negative influence on the image of the area. In turn, they create a fear of crime and a perception of unsafe public open spaces, with the result that people avoid these areas where possible and fail to take responsibility for them"* (Safer Spaces, 2015, p. 27).

This citation summarises the issue of lack of maintenance and its consequences. The BWT and the element of territoriality are evident as references were made on how members of community become disinterested in areas that are less cared for.

Furthermore, the police officers reported that the majority of crimes occur as a result of illegal liquor outlets that are operating at areas around Inanda. These crimes include rape, murder and robbery. Applying the BWT, liquor outlets can be regarded as one of disorders that must be eliminated. If the social cohesion among community members is improved, it would be possible to eliminate the disorders. Currently, there are structures such as the CPF, an initiative whereby the community members of Inanda area work with the SAPS to reduce crime. They can help eliminate these illegal liquor outlets. This cooperation between the police and the people is important to create a sense of community responsibility in terms of reducing crime. In addition, if liquor outlets were to operate legally, they would have to employ the elements of the CPTED model such as surveillance, maintenance and support activity. The owners of these liquor outlets may have to employ security guards to provide natural surveillance and access control. This will ensure a sense of safety for people by controlling who and what (for example, weapons) enters the residential area. The police officers stated that the illegal liquor

outlets that are operational in the area are not strict and criminals are attracted to them. The employment of security guards can help ameliorate the crime situation. In addition, there can be installation of Automated Teller Machines (ATM) which can also rescue the situation as police officers stated that people coming out of these liquor outlets fall victims to street robberies. To limit movements, people can withdraw money from the ATMs to purchase alcohol from the liquor outlets. The location of these liquor outlets would also have to be closely considered because it has been report that at Inanda areas "in many cases shebeens are located opposite schools or crèches, endangering children and making them more vulnerable to crime. Similarly, shebeens opposite taxi ranks also make passengers more vulnerable to crime" (Safer Spaces, 2015, p. 28). Police officers also raised concerned regarding the positioning of liquor outlets.

6.2.3.4. Increasing resources

Although the CPTED model initiative can help reduce crime at Inanda area, there are still issues of resource constraints which may threaten its effectiveness. The police officers noted that the majority of the inhabitants of Inanda areas are unemployed and they may not afford employing the elements of the CPTED model. They may not be able to afford to securely fence around their houses to exercise both territoriality and access control. As a result, the respondents suggested that municipality takes an active role in helping ensure that the initiative is introduced. This includes the fixing of streetlights for surveillance. Municipalities are the first contact of problems pertaining to communities, and they stand as governmental structurers tasked with a responsibility to improve their living standards through service delivery (Geldenhuys, 2019). Among other services, municipalities have a role to play in crime prevention. As such, "municipalities and SAPS have to share ideas regarding the prevention of crime where new infrastructure or developments are proposed" (Geldenhuys, 2019, p. 28). The police officers also raised concerns about ineffective patrolling, stating that they are unable to access areas that are prone to crime because of the pathetic condition of the roads, especially in informal settlements. Precisely, the municipality has a role to play in improving the police's contribution to crime reduction. Furthermore, the SAPS must also employ more police officers and increase the number of police stations around Inanda area. The concern raised by the police officers was that Inanda area is so large that the current members and stations are inadequate. In addition to these challenges, it has been emphasised that for the CPTED model to work, there is need to "increase neighborhood identity, investor confidence, and social cohesion" (National Crime Prevention Institute, 2001, p. 129). It may assist to co-opt other investors apart from the SAPS and the Municipality to help in ensuring that enough resources are availed. It

has been observed that "crime prevention partnerships are a necessity and require leadership and coordination, sustained involvement and community participation" (Geldenhuys, 2019, p. 28).

6.3. Limitations of the study

6.3.1. Police are not familiar with CPTED

When the police officers were asked to provide their perceptions regarding the CPTED model, they professed lack of familiarity with the model. They categorically stated that it has not been introduced to the SAPS. As a result, the researcher resorted to explaining and describing how it works, drawing from scholarly literature presented in this study and referred to relevant examples. Although the researcher explained the concept, there was no guarantee that had fully understood the significance of this model as far as curbing crime is concerned. To address this issue and avoid biases that could have influenced their responses, the researcher encouraged them to offer their experiences with crime in the selected areas, and explaining how they think the physical environment contributes to the specific crimes they identified. With the responses they provided, the researcher produced meaning stating whether or not the physical environment contributes to crime. For example, the police officers stated that street robberies that are occurring at night may be attributed to lack of streetlights. The CPTED model encourages that lighting be improved in areas where crime is prevalent.

6.3.2. Difficulty arranging meetings to sit for interviews

The police officers were reportedly so busy that it was difficult to arrange interviews with them. They work according to shifts. The first shift starts at 06:00 in the morning and ends at 18:00 in the evening, allowing the second shift to continue from that time until the next morning, at 06:00 AM. The only opportunity the researcher had was to schedule interviews with the police officers who were willing to be interviewed in the morning when the night shift knocked off. For the other shift, interviews were conducted when the police officers had arrived in the morning. To that end, two of the interviews were conducted at night. The problem with that scenario was that some police officers may have agreed to conduct interviews when they were tired and not in their proper state of mind, which could have resulted in them not expressing their answers to questions asked with honesty and objectivity. They may have been more interested in conducting the interviews than in helping provide more information.

6.3.3. Difficulty conducting interviews at small satellite stations

It has been noted already how understaffed and small police stations are at Inanda area. This made it difficult for both the researcher and the police officers to communicate effectively. For

example, a community member could come to report a crime that required the attention of the police officer being interviewed. Another challenge was the noise which had the potential to make the transcription of interviews difficult. For example, the researcher was not familiar with the names of areas the respondents identified as examples, and because of noise, they were compelled to repeat their answers, which was frustrating.

6.3.4. Short interviews

The researcher intended to conduct interviews for 45 minutes on the belief that it would be enough time for the collection of more information to satisfy the demands of this qualitative study. The majority of the interviews were less than 25 minutes long. Nonetheless, the researcher had to ensure that all the questions were answered. Initially, the researcher intended to interview 20 police officers but ended up just interviewing 10 of them. As noted previously, the police officers reported that they were understaffed. It would not have made things difficult had the researcher gotten to work with twenty police officers with interviews lasting for 25 minutes or less. In that case, data saturation would have been easy to notice. The concern is that since the interviews were short, it is possible that more information could have been withheld by the police officers. Put differently, the researcher feels that future researchers must consider conducting more interviews with more police officers to increase the chances of obtaining more objective results. Nevertheless, the researcher continued probing for more information, relevant questions were asked and the answers given were useful for this study. Additionally, through a consistently done thematic analysis, the researcher managed to obtain enough information that was corroborated by other studies.

6.3.5. Participants selection

In addition to the need to conduct more interviews, future researchers must be more flexible in their selection of participants. The researcher recommends that the problem of crime does not have to be dealt with by the SAPS alone, but rather, members from the municipality and the community at large need to be involved. They understand the problems affecting Inanda area and, it is a limitation of this study that only the members of the SAPS were used. Although they offered invaluable information for this study, inclusion of other participants from other stakeholders would have provided a wider range of perspectives, and that fusion of perspectives could perhaps have validated and invalidated some information provided by the police officers who participated in this study. The researcher acknowledges this limitation and recommends that future researchers ought to address it. One of the objectives of the study was to apply the CPTED model to the prevention of crimes that occur and as such, the inclusion of other

participants will improve an understanding of where the elements and resources of the model can be allocated. The municipality, for instance, could have been roped in to provide its perspectives regarding development plans that seek to address the physical environment of Inanda area, including those that have worked, or those that could not succeed and how they are planning to overcome the challenges. They could have provided, and perhaps validated, information about the removal of surveillance cameras that police officers noted as contributing to increase in crime trends. Community members could have provided their own perspectives on how crime affects their wellbeing and the structures of the CPF could have made similar contributions.

Notwithstanding the fact that these weaknesses can be problematic, the objective of the study was to offer the principles of the CPTED model that can help address the crime situation at Inanda. The researcher ensured that this was achieved. If there were issues left out or rendered invalid, the recommendations made can still apply to the area of Inanda for future use because crime is a phenomenon that continues to occur, as the current trends bear testimony. It is also worth noting that the key reason for selecting members of the SAPS is because the core aim of this study was to explain the manner in which the physical environment contributes to crime and these participants were suitably qualified to provide that information. According to Safer Spaces (2015) report on the project conducted at Inanda and KwaMashu areas, the factors identified by the police officers were valid as they were reflective of the situation as it obtains at Inanda area.

6.4. Summary of the chapter

This chapter comprises discussions that bind the findings of this study together. These discussions include the factors that were identified at Inanda areas, such as housing, access roads, streetlights and liquor outlets, as contributing to crime. It was explained that crimes arise because of the conditions around these factors, and for each one, it was suggested how the principles of the CPTED model can be applied to reduce the crimes that occur as a result of it. In the end, the limitations of the study were presented to account for its strengths and weaknesses. Among these limitations are the challenges faced regarding the conducting of the study and a provision was made as to how these impediments were addressed, especially to avoid drawing biased conclusions.

CHAPTER SEVEN

CONCLUSIONS

7.

7.1. Introduction

This chapter concludes the study by providing recommendations for the adoption of appropriate policy, practice and future research based on the relationship between crime and the physical environment of a place where the crimes occur. This subject requires more attention because of the possible benefits it could offer to the South African communities in terms of crime reduction. The study can be used as a point of reference in prevention measures that are applying the CPTED model in the South African context, and also as an academic product. One of the major limitations the study laid bare is that the CPTED model has not been tested practically in terms of its effectiveness, and as a result, future research projects must attempt to fill up this gap. This must be applicable to all the projects conducted in the country in order to invest more into this model of crime prevention.

7.2. Summary of findings and conclusions

The study aimed at exploring the physical environment and its contribution to the occurrence of crime. The study was conducted at Inanda, Durban, South Africa. It identified factors that are contributing to crime in the area. The recommendations were also proffered as to how the CPTED model can help in crime prevention. It is worth noting that the study was not solely about the CPTED model, but rather, the model was introduced as an option that can be applied to other issues that may require that the conditions in the physical environment be fixed. This is imperative because the study acknowledged other existing alternatives to crime reduction. At the selected areas of Inanda, there are crime prevention strategies such as law enforcement and community policing. The integration of the CPTED model and the factors identified in the area was considered within the context of these other approaches to crime prevention. Suggestions were made to integrate all the three approaches; for example, the improvement of streetlights is intended to complement the application of the CPTED model and the work of police officers who are mandated to patrol the areas under spotlight. Within the context of community policing, there are structures such as the CPF, an initiative that cooperates with the members of the SAPS. Similarly, the CPTED model is cognisant of the involvement of community members in working towards the reduction of crime.

The study findings are a testimony to the contribution of the different factors of the physical environment to the commission of crime. The most significant factors, as identified from Inanda areas, are; informal housing, lack of access roads, the unavailability and/or the malfunctioning of streetlights and the preponderance of liquor outlets. These factors prevailed in the reports given by the police officers who consistently pointed out that there is poor service delivery and lack of infrastructural development in the area. The most obvious consequence is the escalation of crime rates because the police cannot operate single-handedly to reduce crime. However, in Inanda, there are areas that have better infrastructure. There are both formal and informal settlements in Inanda, and the findings revealed that the police officers find it easier to operate around those areas which are formal. The reason is that such areas are more accessible apart from having improved infrastructure. Contrary, the informal settlements are characterised by poor housing, lack of access roads and streetlights. In addition, the preponderance of liquor outlets has significant contribution to crime because it is part of the various types of physical environment that contribute to the crimes that occur at Inanda. There are illegal taverns that operate in both formal and informal settlements and the findings show that they exacerbate criminal behaviour.

At the core of the study findings is the contribution the identified physical environmental factors make through the creation of crime opportunities. The findings indicate that the poor conditions of housing, the unavailability of access roads, lack of streetlights and the presence of liquor outlets contribute to the escalation of crime. Crimes such as house breaking occur as a consequence of poor housing design. The police respond to reported crimes belatedly as they have to walk to the areas where crimes would have occurred, or where crime may be in progress, because there are inadequate access roads in informal settlements. The police find it difficult to locate the places where these types of crime occur because some houses do not have house numbers. The houses are congested and police officers cannot navigate through the area with precision. This scenario does not obtain at formal settlements. Also, the police cannot evenly distribute their patrol schedules across the areas because the formal areas have access roads which can help the police to utilise patrol vans. That situation is not found at those places which are informal. However, since Inanda is a large area, police officers are too understaffed to service the whole area. This again makes it difficult to effectively patrol the area.

The conditions reflected in the identified factors make members of the community vulnerable to different types of crime. Apart from house breaking, there is street robbery which occurs because perpetrators are aware of the fact that police officers are not visible in the area as they

cannot conduct effective patrols. There are poor or no streetlights in some parts of the areas of Inanda. Resultantly, there has been an increase in opportunities for these robbery cases that often prevail at night. Illegal liquor outlets are also reportedly contributing to these street-based robbery cases and other crimes such as rape, assault and murder. These liquor outlets are targeted by motivated offenders and anyone who frequents them is a potential victim of crime. Crime opportunities arise when people leave these liquor outlets late at night and they are unable to defend themselves against any form of attack because they are intoxicated with alcohol. This is not to imply, however, that people drinking in these outlets are all victims as others are perpetrators.

The SAPS, working in conjunction with the Community Policing Forums, is dedicated to the provision of safety amongst the people living in the areas under study, and can benefit from the inclusion of the CPTED model. The model is made up of five elements, namely; territoriality, surveillance, access control and target hardening as well as maintenance and activity support. In this study, these elements are regarded as imperative in helping reduce the crime opportunities that arise as a result of the physical environment of the areas of Inanda. The study makes recommendations on how each factor can be addressed within the context of these elements. The first and critical issue relates to the need to reduce, or eliminate the physical environmental factors that create opportunities for the commission of crime. This must include an improvement in the visibility and accessibility of police officers. The second strategy seeks to increase risk, simultaneously reducing the rewards, associated with the crime. For example, residential houses must be designed in such a way that they are not easily accessible, difficult to penetrate and must increase the chances of apprehending the offenders. The third strategy relates to the increase of social cohesion and the elimination of neighbourhood disorders. All these strategies revolve around the desire to encourage the community in its entirety to contribute towards crime reduction. Residents can start off by maintaining their fences, roads and discouraging and reporting any form of disorderliness or criminal conduct. These measures encompass the outright elimination of illegal liquor outlets. The goal is to create a sense of community responsibility in which residents live in less fear of crime and an increased sense of security. This is important for the application of the CPTED model despite the fact that it is more inclined to the manipulation of the physical environment in order to reduce crime. Lastly, there is urgent need to increase the resources for the police officers and other community members in their fight against crime. Employing the CPTED model can be costly and the South African Police Services, together with the Municipality of Inanda must work towards attracting

more resources that make projects such as this one a possibility. They all have the responsibility to create a safe environment for the whole of Inanda community.

7.3. Recommendations
Drawing from the findings, this study makes the following recommendations:

7.3.1. Government support
For the CPTED model to function and uplift Inanda area and others alike, the South African government must offer sustainable support and assistance. It was noted that the model is yet to be implemented and tested on how it contributes to the practical reduction of crime in South African communities that are prone to crime. However, the practical element has not been possible due to lack of resources and support from government. The implementation of the model can be costly to municipalities and other community members, and hence, it is imperative that the government of South Africa must offer financial assistance to all the projects that intend to apply the model as a crime prevention strategy.

7.3.2. Policies and the practice of the CPTED
South Africa has developed national policies, strategies and approaches that are dedicated to the prevention of crime in South African communities. These issues have been articulated in this study and government must recognise these efforts by offering any type of support that is required. There is a variety of them, with the NCPS and the White Paper on Safety and Security being the most common. These policies recognise the necessity of employing the CPTED model in the country because it has the potential to reduce the rate of crime that is affecting communities. For the practitioners that may be interested in applying the model, these policies provide guidelines on how it can be executed and these issues must not be overlooked. This study is also one of the projects that can be considered for its findings and recommendations give direction on how the model can be applied to prevent crime.

7.3.3. Service delivery
It is imperative that municipalities must improve service delivery and infrastructure if the efficacy of the crime prevention measures is to be realised. They must provide better housing, access roads and streetlights, while simultaneously eliminating illegal liquor outlets. In this study, these issues were identified as the factors of the physical environment that contribute to the escalation of crime in areas around Inanda.

7.3.4. Resources
The members of the SAPS who formed part of this study expressed the feeling that they are too under-resourced to work towards the reduction of crime. There are high crime rates in

communities such as Inanda, and as such, the areas must be provided with adequate resources for them to work towards crime reduction. The CPTED model is one of the possible strategies that can be implemented to improve community functionality as far as crime reduction is concerned. The participants submitted that they are understaffed and have inadequate stations, and this is another problem that the SAPS must consider, especially when areas as large as Inanda are considered.

7.3.5. Employment

The socio-economic status of the people living at Inanda area renders them too incapacitated to afford the application of the CPTED model. As a capacity building strategy, more job opportunities ought to be increased to ensure that people secure employment and therefore exercise the elements of the model.

7.3.6. Education

It was noted that the members of the CPF and the community at large are not educated on how to deal with crime. Projects and workshops have to be developed with the deliberate intention to fill this gap. In this study, the findings show that some crimes go unreported. For example, the planting of dagga at informal houses often continues unabated. It was reported that the members of the CPF are tasked with the responsibility of representing community members in dealing with crime, and of course in collaboration with the SAPS. Nonetheless, the challenge is that these representatives sometimes act singlehandedly as they tend to disregard the need to inform the police officers, a scenario which often leads the adoption of illegal ways of dealing with criminals. The solution could include the improvement of awareness through educating stakeholders on crime-related issues. If conducted, these workshops can teach everyone about their roles as far as crime prevention is concerned.

7.3.7. Future research

Academic studies and projects on criminology must be inclusive of the SAPS, municipalities and the community members. Within the context of crime and its physical environment, municipalities can offer their development plans and the principles of the CPTED model can be merged with them accordingly. Among other intended outcomes, the model works towards the reduction of the menace of crime in a particular community, and the same studies and projects must include the CPF and community members as this opens the opportunity for obtaining information from people who have been victims and those who have been perpetrators of these crimes.

7.4. Summary of chapter

This chapter presented the aim of this study. It summarised the findings and made conclusions based on these findings. It explained the significance of the CPTED model and offered recommendations that seek to ensure that it gets implemented in South Africa. The chapter also acknowledged the role of the South African Police Services and the CPF, and the presence of other measures that are currently being employed to reduce crime. The elements of the CPTED model must be applied in collaboration with these measures, and for future use, it can be merged with the future plans of municipalities.

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APPENDICES

APPENDIX A: Informed consent form in English

Informed consent

Dear Participant,

My name is Bongukwanda Russell Khoza (*214540711*). I am a Masters candidate studying at the University of KwaZulu-Natal, Howard College Campus. The title of my research is: "The physical environment and its contribution to crime: a case study of crime at Inanda, Durban, South Africa". At the core of this research, the aim is to understand the causes of crime by focusing on the contributing factors of the physical environment of places where crimes occur.

The objectives of this research project are outlined as follows:
- To identify and outline the physical environment of places that host criminal behaviour at Inanda, Durban, South Africa.
- To explore the role of the physical environment of these places in creating opportunities for criminal behaviour to occur.
- To identify Crime Prevention through Environmental Design (CPTED) techniques, and explain the role they can play in reducing the prevalence of criminal behaviour at Inanda, Durban.

I am interested in interviewing you so as to share your experiences and observations on the subject matter.

Please note that:

- The information that you provide will be used for scholarly research only.
- Your participation is entirely voluntary. You have a choice to participate, not to participate or stop participating in the research. You will not be penalized for taking such an action.
- Your views in this interview will be presented anonymously. Neither your name nor identity will be disclosed in any form in the study.
- The interview will take about 30-45 minutes.
- The record as well as other items associated with the interview will be held in a password-protected file accessible only to myself and my supervisors. After a period of 5 years, in line with the rules of the university, it will be disposed by shredding and burning.
- If you agree to participate please sign the declaration attached to this statement (a separate sheet will be provided for signatures)

I can be contacted at: School of Social Sciences, University of KwaZulu-Natal, Howard College Campus, Durban. Email: khozabongukwandarussell@gmail.com ;
Cell: 0846888567.
My supervisor is Prof Shanta Balgobind Singh, who is located at the School of Social Sciences, Howard College Campus, Durban of the University of KwaZulu-Natal. Contact details: Email: Singhsb@ukzn.ac.za. Phone number: +27 31 2607895

The Humanities and Social Sciences Research Ethics Committee contact details are as follows: Ms Phumelele Ximba, University of KwaZulu-Natal, Research Office, Email: ximbap@ukzn.ac.za, Phone number +27312603587.

Thank you for your contribution to this research.

DECLARATION

I……………………………………………………………… *(Full names of participant)* hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from the project at any time, should I so desire. I understand the intention of the research. I hereby agree to participate.

I consent / do not consent to have this interview recorded.

SIGNATURE OF PARTICIPANT   DATE

…………………………………………………………………………………………

APPENDIX B: Informed consent form in IsiZulu

Ifomu lemvume locwaningo

Sawubona mhlanganyeli,

Igama lowenza ucwaningo ngu-Bongukwanda Russell Khoza (214540711) owenza umkhakha owe-Criminology and Forensic studies kwizinga le Masters degree, kwinyuvesi yaKwaZulu-Natal, Howard College Campus. Isihloko socwaningo: "The physical environment and its contribution to crime: a case study of crime at Inanda, Durban, South Africa". Inhloso yaloluucwaningo ukufunda kabanzi ngokubheka ukuthi ngabe bukhona yini ubudlelwano phakathi kobugebengu nezindawo lapho benzeka khona. Ngamanye amazwi, inhloso ukuthi kubhekwe ukuthi ukhona yini umthelelo wesakhiwo sendawo ekudaleni ukuthi ubugebengu benzeke.

Ngaphambi kokuba siqale ukuxoxisana, kufanele ngiqinisekise ukuthi uyaluqonda ulwazi olulandelayo oluphathene nocwaningo. Injongo zocwaningo ilezi ezilandelayo:

- Ukwazi ukuthi izindawo lapho kwenzeka khona ubugebengu zikhandwe kanjani

- Ukuthola ulwazi ukuthi lendlela ezikhandwe ngazo lezizindawo zinomthelela kanjani kubugengu obenzekayo

- Ukwazi ukuthi imodeli ebizwa nge- Crime Prevention through Environmental Design (CPTED) ingaba namuphi umthelela ekwehliseni izinga lobugebengu kulezindawo obenzeka kuzona

Ngifisa ukukubuza kabanzi mayelana nolwazi lwakho oluphathelene nocwaningo.

Ngicela uqaphele okulandelayo:

- Lonke ulwazi oluqoqwe kulolu cwaningo luzosebenziswa ukuqhuba ulwazi kwimfundo ephakeme. Nanoma ulwazi oluqoqiwe luzosetshenziselwa izinhloso zocwaningo, ulwazi oluzokwazisa ukuthi ungubani noma umuzi wakho alusoze lwaziswa emphakathini kunoma yimuphi umbiko wocwaningo noma isishicilelo (incwadi ekhishiwe).

- Ukubamba iqhaza kwakho kungokuzithandela ngokuphelele. Ungenqaba ukubamba iqhaza ekuxoxisaneni, futhi ungayeka nganoma yisiphi isikhathi uma ungasafuni ukuqhubeka. Unelungelo futhi lokweqa yinoma yimuphi umbuzo ethile uma ungafuni ukuyiphendula

- Unelungelo lokubuza imibuzo nganoma yisiphi isikhathi ngenkathi ukuxoxisana kuqhubeka, noma ngemuva kokuthi ukuxoxisana sekuphelile sikhathi esizothathwa ukuqeda ukuxoxisana sizokwehluka kuye ngokuthi yizigaba ezingaki zephepha lemibuzo ezifanelekile kuwe, kodwa isamba sesikhathi esiyi-avareji saloku kuxoxisana cishe yihora.

Uma ufisa ukubuza kabanzi ngocwaningo ngitholakala ka: School of Social Sciences, University of KwaZulu-Natal, Howard College Campus, Durban. Kwi I-emiyeli: khozabongukwandarussell@gmail.com ; Ungishayele ucingo: 0846888567.

Umphathi wami ohlola ucwaningo igama u-Prof Shanta Balgobind Singh, otholakala ka-School of Social Sciences, Howard College Campus, Durban of the University of KwaZulu-Natal. Uma ufisa ukuxoxisana naye mayelana nocwaningo utholakala: I-emiyeli: Singhsb@ukzn.ac.za, kucingo: +27 31 2607895.

Lolu cwaningo lubuyekeziwe lwaphinde lwavunyelwa yikomiti lezimilo lokubuyekeza laseNyuvesi ye-KwaZulu-Natal, ebizwa "Humanities and Social Sciences Research Ethics Committee". Uma unemibuzo noma izikhalazo uzoxoxisana no Ms Phumelele Ximba, University of KwaZulu-Natal, Research Office, kwi-i-meyile: ximbap@ukzn.ac.za , kucingo: +27312603587.

Ngokusayina ngezansi, ubonisa ukuthi uyavuma ukubamba iqhaza kulolu cwaningo, nokuthi ukubamba iqhaza kulolu cwaningo kungokuzithandela ngokuphelele.

Ngiyabonga ngokuthi uthathe iqhaza kulolu cwaningo

ISICELO

I .... (amagama agcwele womhlanganyeli)
ngalokhu ngiyaqinisekisa ukuthi ngiyaqonda okuqukethwe kwale dokhumenti kanye nemvelo
iphrojekthi yokucwaninga, futhi ngiyavuma ukuthi ngihlanganyele kuphrojekthi yocwaningo.

Ngiyaqonda ukuthi nginelungelo lokukhipha iphrojekthi nganoma yisiphi isikhathi, uma
ngifisa. Ngiyaqonda inhloso yocwaningo. Ngiyavuma ukuhlanganyela.

Ngiyavuma / angivumi ukuba le ngxoxo iqoshwe.

ISIGINESHA SOMUHLANGANYELI: USUKU:

. ...

APPENDIX C: Interview schedule in English

Interview questions:

SAPS Members

1. Demographic details:

- Rank
- Years of experience

2. What type of crimes are reported at Ward 57 of Inanda?
3. In terms of frequency, which areas between the formal and informal are most targeted for these crimes at Ward 57?
4. How do the formal and informal areas of Ward 57 differ in physical environment?
5. From your experience working at Inanda, what locations, sites or properties specifically attract criminals and or crime at Ward 57 of Inanda?
6. Who do you think are perpetrators of the crimes that occur and why they target Ward 57 of Inanda?
7. Can you describe the physical environment of the places targeted for the crimes that occur?
8. From your perception and experience, does the physical environment influence the crimes that occur at Ward 57 of Inanda?

9. Do you think the physical environment of these places boost success rate of perpetrators of crime?
10. If yes, what factors of the physical environment make these places vulnerable from the crimes reported?

11. Can you provide examples of crime incidents that occur because the physical environment is favourable to the perpetrators?
12. What measures have been taken by the SAPS to reduce the incidents of crime from the identified places?
13. Are there any strategies that have been implemented to improve the conditions of the physical environment of these places?
14. If no, what do you think can be done to the physical environment to prevent future crimes at Ward 57?
15. If yes, what is your opinion on their effectiveness?
16. What is your perception on using Crime Prevention through Environmental Design as a crime prevention strategy?
17. Do you think it is a model that can work at Ward 57 and Inanda areas as a whole?
18. Any other comments?

APPENDIX D: Interview schedule in IsiZulu

Imibuzo yokuxoxa:

Amalungu e-SAPS

1. Imininingwane yomuntu:

- Umsebenzi

- Iminyaka yokusebenza

2. Yiziphi izinhlobo zobugebengu ezibikwa kwiWadi 57 ye-Inanda?

3. Ngokwemvamisa, yiziphi izindawo phakathi kwezithuthukile nezingathuthukile okubhekiswe kakhulu kulolu bugebengu eWard 57?

4. Uyini umehluko phakathi kokukhandwa kwezindawo kwiWadi 57 ye-Inanda?

5. Ngokwamava akho osebenza eNanda, yiziphi izindawo, amasayithi noma izakhiwo eziheha ngokukhethekile izigebengu kanye noma ubugebengu eWard 57 eNanda?

6. Ngabe ucabanga ukuthi obani ababangela ubugebengu obenzekayo futhi kungani bakhetha ku-Ward 57 yaseNanda?

7. Ungakwazi yini ukuchaza isakhiwo esibonakalayo sezindawo eziqondiswe ubugebengu obenzekayo?

8. Ngokombono nangesipiliyoni sakho, ingabe isakhiwo esibonakalayo sinawo umthelela kubugebengu obenzeka eWard 57 eNanda?

9. Ngabe ucabanga ukuthi isakhiwo salezi zindawo sikhuphula izinga lokuphumelela labaphuli bobugebengu?

10. Uma kunjalo, yiziphi izici zezindawo ezibonakalayo ezenza lezi zindawo zisengozini yobugebengu obubikiwe?

11. Ngabe unganikeza ngezibonelo zezehlakalo zobugebengu ezenzeka ngoba isakhiwo sendawo ebonakalayo iyahambiselana nokwenza ubugebengu?

12. Yiziphi izinyathelo ezithathiwe yi-SAPS ukunciphisa izehlakalo zobugebengu ezindaweni ezihlonziwe?

13. Ngabe akhona amasu asetshenzisiwe ukwenza ngcono isimo sokwakhiwa sendawo yase Ward 57 ye-Inanda?

14. Uma kungenjalo, ucabanga ukuthi yini engenziwa kwisakhiwo sendawo ukuvikela ubugebengu obuzayo eWard 57?

15. Uma kunjalo, yini umbono wakho ngempumelelo yabo?

16. Ngabe uthini umbono wakho ngokuvinjwa kobugebengu kusebenziswa i-Crime Prevention through Environmental Design?

17. Ngabe ucabanga ukuthi kuyimodeli engasebenza ezindaweni ezikuWard 57 nase-Inanda isiyonke?

18. Ngabe kukhona okunye ofisa ukukusho?

APPENDIX E: Ethical clearance

UNIVERSITY OF ™
KWAZULU-NATAL

INYUVESI
YAKWAZULU-NATALI

20 November 2018

Mr Bongukwanda Russell Khoza 214540711
School of Applied Human Sciences
Howard College Campus

Dear Mr Khoza

Protocol reference number : HSS/1475/018M
Project title: The physical environment and its contribution to crime: A case study of crime Inanda, Durban, South Africa

Full Approval – Expedited Application

In response to your application received 20 August 2018, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol has been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

Dr Shamila Naidoo (Deputy Chair)
Humanities & Social Sciences Research Ethics Committee

/pm

cc Supervisor: Professor Shanta Balgobind Singh
cc Academic Leader Research: Professor M Mthembu
cc School Administrator: Ms Ayanda Ntuli

APPENDIX F: Gatekeepers letter

South African Police Service · Suid-Afrikaanse Polisiediens
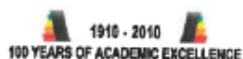
| Privaatsak | Pretoria | Faks No. | (012) 393 2128 |
| Private Bag X94 | 0001 | Fax No. | |

Your reference/U verwysing:

My reference/My verwysing: **3/34/2**

THE DIVISIONAL COMMISSIONER: RESEARCH
SOUTH AFRICAN POLICE SERVICE
PRETORIA
0001

Enquiries/Navrae: **Lt Col Joubert**
A/C Thenga
Tel: **(012) 393 3118**
Email: **JoubertG@saps.gov.za**

Mr BR Khoza
UNIVERSITY OF KWAZULU-NATAL

RE: PERMISSION TO CONDUCT RESEARCH IN SAPS: THE PHYSICAL ENVIRONMENT OF PLACE AND ITS CONTRIBUTION TO CRIME: A CASE STUDY OF CRIME AT INANDA, DURBAN, SOUTH AFRICA: UNIVERSITY OF KWAZULU-NATAL: MASTERS DEGREE: RESEARCHER: BR KHOZA

The above subject matter refers.

You are hereby granted approval for your research study on the above mentioned topic in terms of National Instruction 1 of 2006.

Further arrangements regarding the research study may be made with the following offices:

The Provincial Commissioner: KwaZulu-Natal:

- **Contact Person:** Col Van der Linde
- **Contact Details:** (013) 325 4841 / 082 496 1142
- **Email Address:** vanderLinde@saps.gov.za

Kindly adhere to paragraph 6 of our Attached letter signed on the **2018-10-05** with the same above reference number.

LIEUTENANT GENERAL
DIVISIONAL COMMISSIONER: RESEARCH
DR BM ZULU

DATE: 2018|10|30

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