

**AN EVALUATION OF CLOSED-CIRCUIT TELEVISION  
SURVEILLANCE AS A CRIME PREVENTION MEASURE IN  
WINDHOEK, NAMIBIA.**

**By**

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for the degree of**

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**In**

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## DECLARATION

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### **AN EVALUATION OF CLOSED-CIRCUIT TELEVISION SURVEILLANCE AS A CRIME PREVENTION MEASURE IN WINDHOEK, NAMIBIA.**

I declare that the above dissertation is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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I further declare that I have not previously submitted this work, or part of it, for examination at UNISA for another qualification or at any other higher educational institution.



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## **ACKNOWLEDGEMENTS**

Firstly, I would like to thank God the Almighty for giving me the opportunity to live and contribute to the betterment of humankind. He is my source of strength, wisdom and a pillar where I can lean for support.

This research study is a product of so many people who contributed in different ways, but their names could not appear on this page because of the limited space. I am truly grateful for the support I have received from each and every one. In addition, the study would not have been completed without emotional support from my family members especially my two lovely daughters Christine Niitembu and Rachel Ndahambelela Ashiyana.

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## **DEDICATION**

I dedicate this piece of work to my parents, Mrs. Sabina Tulamomake Ashiyana and my late father Mr. Erastus Shuuya Ashiyana. They continue to inspire every step of my life and remain a driving force behind my achievements.

## **ABSTRACT**

The aim of this research study was to evaluate the effectiveness of CCTV surveillance system and measure the benefits it provides to residents of Windhoek. CCTV is a security control measure which is used by law enforcement bodies to detect and reduce crime. Although crime such as theft out of motor vehicles, ATM fraud, cellphone/bag snatching and robbery were reported to have been reduced in some parts of Windhoek after the system was installed, public perceptions towards the system remained worrisome. The study followed a qualitative method in collecting and analyzing data from various sources. Due to limited coverage of CCTV cameras in Windhoek, the researcher chose a non-probability sampling, targeting residents that are familiar with the system. The researcher assessed strategies and approaches applied by the police and private security companies when making use of CCTV to combating crime.

**Keywords:** Closed-circuit television (CCTV), control room, crime, crime displacement, crime prevention, crime prevention through environmental design (CPTED), privacy, security, security measures and surveillance.

## ACRONYMS

ANPR:	Automatic Number Plate Recognition
ATM:	Automatic Teller Machine
CBD:	Central Business District
CCTV:	Closed Circuit Television
COVID 19:	Coronavirus Disease of 2019
CoW:	City of Windhoek
CPTED:	Crime Prevention Through Environmental Design
FIFA:	Federation Internationale de Football Associations
FNB:	First National Bank
ICCPR:	International Convention on Civil and Political Rights
ICT:	Information Communication Technology
ITS	Intelligent Transport System
KCBD:	Kumasi Central Business District
NAMPOL:	Namibian Police
NRSC	National Road Safety Council
NSA:	Namibia Statistics Agency
NSI	Namibia Standards Institute
PSI:	Private Security Industry
PTZ:	Pan-Tilt-Zoom
ROI:	Return on Investment
SADC:	South African Development Community
SAPS:	South African Police Service
UDHR:	Universal Declaration of Human Rights
UPS:	Uninterruptible Power Supply
UNISA:	University of South Africa
VHF:	Very High Frequency
WCPOLS	Windhoek City Police Service
WHO:	World Health Organization

## TABLE OF CONTENTS

<b>COPYRIGHT .....</b>	<b>i</b>
<b>DECLARATION.....</b>	<b>ii</b>
<b>ACKNOWLEDGEMENTS .....</b>	<b>iii</b>
<b>DEDICATION.....</b>	<b>iv</b>
<b>ABSTRACT.....</b>	<b>v</b>
<b>ACRONYMS.....</b>	<b>vi</b>
<b>CHAPTER 1: GENERAL ORIENTATION OF THE STUDY.....</b>	<b>1</b>
<b>1.1 INTRODUCTION.....</b>	<b>1</b>
<b>1.2 PROBLEM STATEMENT .....</b>	<b>4</b>
<b>1.3 RESEARCH AIM, OBJECTIVES AND PURPOSE.....</b>	<b>5</b>
Aim.....	5
Objectives .....	6
<b>1.4 RESEARCH QUESTIONS .....</b>	<b>7</b>
<b>1.5 STUDY AREA (WINDHOEK): BACKGROUND AND SETTING .....</b>	<b>7</b>
<b>1.6 SIGNIFICANCE OF THE STUDY.....</b>	<b>9</b>
<b>1.7 THEORETICAL FRAMEWORK .....</b>	<b>11</b>
1.7.1 Crime prevention through environmental Design.....	11
1.7.2 Phenomenological Theory .....	11
1.7.3 Rational Choice Theory .....	12
<b>1.8 DEFINITION OF KEY CONCEPTS .....</b>	<b>12</b>
<b>1.9 CHAPTER OUTLINES .....</b>	<b>15</b>
<b>CHAPTER 2: RESEARCH METHODOLOGY AND RESEARCH DESIGN .....</b>	<b>17</b>
<b>2.1 INTRODUCTION.....</b>	<b>17</b>
<b>2.2 RESEARCH DESIGN .....</b>	<b>17</b>
<b>2.3 RESEARCH APPROACH.....</b>	<b>18</b>
<b>2.4 RESEARCH METHODS AND DATA COLLECTION TOOLS USED.....</b>	<b>19</b>
2.4.1 Literature Study.....	19
2.4.2 Document Analysis .....	20
2.4.3 Questionnaire .....	20
2.4.4 Interviews.....	20
2.4.5 Onsite Observation.....	22
2.4.6 Security measures audit form.....	23



2.4.7 Video reviews .....	23
<b>2.5 TARGET POPULATION AND SAMPLING .....</b>	<b>23</b>
2.5.1 Target population .....	24
2.5.2 Purposive sampling .....	24
<b>2.6 DATA ANALYSIS AND INTERPRETATION .....</b>	<b>25</b>
2.6.1 Qualitative data analysis .....	25
2.6.2 Data coding .....	26
<b>2.7 VALIDITY AND RELIABILITY .....</b>	<b>26</b>
2.7.1 Validity.....	27
2.7.2 Reliability.....	28
<b>2.8 ETHICAL CONSIDERSTIONS .....</b>	<b>29</b>
<b>2.9 LIMITATION OF THE STUDY.....</b>	<b>31</b>
<b>2.10 CONCLUSION .....</b>	<b>32</b>
<b>CHAPTER 3: LITERATURE REVIEW.....</b>	<b>33</b>
<b>3.1 INTRODUCTION.....</b>	<b>33</b>
<b>3.2 EMERGENCE OF CCTV.....</b>	<b>34</b>
<b>3.3 CCTV AND CRIME PREVENTION .....</b>	<b>35</b>
<b>3.4 ROLE OF CCTV IN CRIME DISPLACEMENT .....</b>	<b>37</b>
<b>3.5 LAYOUT OF CCTV.....</b>	<b>38</b>
<b>3.6 PERCEPTIONS AND INVASION OF PRIVACY.....</b>	<b>41</b>
3.6.1 Perceptions regarding CCTV .....	41
3.6.2 Privacy issues .....	42
<b>3.7 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED).....</b>	<b>43</b>
<b>3.8 CCTV IN SOUTH AFRICA, BOTSWANA AND BRAZIL .....</b>	<b>44</b>
3.8.1 Implementation of CCTV surveillance system in SA`s CBD.....	45
3.8.2 Implementation of CCTV in Gaborone (Botswana) .....	45
3.8.3 Implementation of CCTV in some CBDs in Brazil .....	46
<b>3.9 COVID-19 IMPACT ON CCTV .....</b>	<b>46</b>
<b>3.10 CONCLUSION .....</b>	<b>47</b>
<b>CHAPTER 4: DATA ANALYSIS AND INTERPRETATION .....</b>	<b>49</b>
<b>4.1 INTRODUCTION.....</b>	<b>49</b>
<b>4.2 INTERVIEW QUESTIONS AND QUESTIONNAIRES.....</b>	<b>51</b>
4.2.1 Interview Questions (Please see Annexure G).....	51
4.2.2 Types of Questionnaires (self-administered) .....	52
<b>4.3 DEMOGRAPHIC AND OPERATIONAL RESPONSES OF THE RESPONDENTS .....</b>	<b>53</b>

4.3.1 Questionnaire responses.....	53
4.3.2 CCTV Surveillance Operations: Control room operators .....	59
4.3.3 CCTV Surveillance Operations: Police and Security officers .....	69
4.3.4 CCTV Surveillance Operations: Public members.....	72
4.3.5 Interviews: Face to face responses.....	76
<b>4.4 DISCUSSION AND ANALYSIS .....</b>	<b>82</b>
4.4.1 Reduction and Prevention of Crime.....	83
4.4.2 UPS for CCTV cameras.....	88
4.4.3 Crime Displacement.....	89
4.4.4 CPTED-CCTV relationship .....	91
4.4.5 Privacy Issues.....	92
4.4.6 CCTV and COVID-19 .....	93
4.4.7 Traffic Regulation.....	94
4.4.8 The future and security technology.....	95
4.4.9 Issues of concern.....	97
<b>4.5 CONCLUSION .....</b>	<b>98</b>
<b>CHAPTER 5: FINDINGS, RECOMMENDATIONS AND CONCLUSIONS .....</b>	<b>99</b>
<b>5.1 INTRODUCTION.....</b>	<b>99</b>
<b>5.2 SUMMARY OF FINDINGS .....</b>	<b>99</b>
5.2.1 Findings associated with aim and objective of the study.....	99
5.2.2 Findings related to methodology.....	102
5.2.3 Findings related to literature review .....	102
5.2.4 Findings related to theories.....	104
<b>5.3 RECOMMENDATIONS.....</b>	<b>105</b>
5.3.1 Recommendations for police.....	105
5.3.2 Recommendations for private security.....	106
5.3.3 Recommendation for operators .....	106
<b>5.4 FUTURE RESEACH.....</b>	<b>107</b>
<b>5.5 GENERAL CONCLUSIONS.....</b>	<b>109</b>
<b>LIST OF REFERENCES .....</b>	<b>110</b>
<b>ANNEXURE A: UNISA RESEARCH ETHICS APPROVAL LETTER.....</b>	<b>120</b>
<b>ANNEXURE B: LANGUAGE EDITOR LETTER.....</b>	<b>123</b>
<b>ANNEXURE C: TURNITIN SIMILARITY INDEX REPORT.....</b>	<b>124</b>
<b>ANNEXURE D: REQUEST FOR PERMISSION TO DO RESEARCH LETTER (Draft).....</b>	<b>125</b>
<b>ANNEXURE E: PARTICIPANTS INFORMATION SHEET .....</b>	<b>127</b>

<b>ANNEXURE F: INFORMED CONSENT FORM .....</b>	<b>131</b>
<b>ANNEXURE F: INTERVIEW QUESTIONS (FACE TO FACE) .....</b>	<b>132</b>
<b>ANNEXURE G: QUESTIONNAIRE: CONTROL ROOM .....</b>	<b>137</b>
<b>ANNEXURE H: QUESTIONNAIRE: POLICE/SECURITY OFFICERS .....</b>	<b>143</b>
<b>ANNEXURE I: QUESTIONNAIRE: PUBLIC MEMBERS .....</b>	<b>149</b>
<b>ANNEXURE J: ON-LINE SURVEY A .....</b>	<b>154</b>
<b>ANNEXURE K: ON-LINE SURVEY B .....</b>	<b>158</b>
<b>ANNEXURE L: CCTV OPERATOR'S JOB DESCRIPTION .....</b>	<b>163</b>

### **List of Tables**

Table 4.3- 1. Problem areas in Katutura and Khomasdal (2011).....	<b>Error! Bookmark not defined.</b>
Table 4.3- 2. Number of respondents.....	54
Table 4.3- 3. Gender composition.....	54
Table 4.3- 4. Respondents age group.....	55
Table 4.3- 5. Qualification of respondents.....	57
Table 4.3- 6. Camera locations and some specific area .....	60
Table 4.3- 7. Location of participants .....	73

### **List of Figures**

Figure 4.3- 1. Map of City of Windhoek .....	9
Figure 4.3- 2. Number of respondents .....	54
Figure 4.3- 3. Gender composition .....	55
Figure 4.3- 4. Respondents age group.....	56
Figure 4.3- 5. Qualifications of respondents.....	58
Figure 4.3- 6. Windhoek policing zones .....	64
Figure 4.3- 7. Dome and bullet cameras .....	79

## **CHAPTER 1: GENERAL ORIENTATION OF THE STUDY**

### **1.1 INTRODUCTION**

The City of Windhoek (CoW) has enjoyed a positive economic growth since Namibia attained independence in 1990 (Nendongo 2011: 1). This growth has attracted a substantial number of people to Windhoek in search for employment opportunities and to better their living standards. As a result of the influx of people, there has been a marked increase in Windhoek's population, and this has subsequently raised the level of crime. As an effort to find solution to crime problem, a study was conducted to evaluate the closed-circuit television (CCTV) surveillance system as one of the security measures in place. This part of the study consists of a problem statement, significance of the study as well as an aim and objectives which explain the reasons why the researcher decided to undertake this research. Additionally, it provides research questions that were answered through probing and collection of relevant information from some security institutions and residents found in and around Windhoek.

According to the Namibian Police Crime Report (2018: 4), the high unemployment rate has a direct influence on crime incidents in the City of Windhoek. Therefore, the introduction of CCTV public surveillance was intended to be a control measure to combat crimes in the city and it has become an important tool for security risk management strategies. Globally, the CCTV initiative is part of the Smart City concept which is being implemented in many European cities while Africa is still lagging except for Cape Town and Nairobi because they have it in place (Tshiani & Tanner 2018: 56).

Initially, CCTV was developed to monitor private spaces but has been adopted almost all over the world and has become an indispensable security tool to prevent crime in public spaces (Lim 2015: 1). According to Minnaar (2007: 175), the detection of crime using CCTV in South Africa started long back in the 1970s. Then, the mining industry, especially gold and diamond mines were among the first to use it to protect against theft of these precious metals. Minnaar (2007: 176) further explains that it was however only used as an in-house security control measure against the smuggling and pilfering of gold and diamond from the mines. Equally in Namibia,

CCTV surveillance was introduced and implemented around the same time in mines that produced diamond and other precious metals. This is not surprising because then, Namibia was called the Southwest Africa and was administratively part of South Africa and the countries were therefore regarded to as one. According to Minnaar (2007: 177) the system spread to other industries such as retail, business premises and private homes in the 1990s and 2000s.

With the introduction and commissioning of the CCTV surveillance system in 2010, the Windhoek City Police Service (WCPOLS) were confident of reducing criminal activities and enhancing the existing policing measures. Aloe (2010: 4) explains that the aim of installing CCTV cameras around Windhoek is to reduce crime and assist the law enforcement officers in terms of quick response to scenes of crime. Minnaar (2012: 104) states that although CCTV has benefits for law enforcement agencies in terms of crime detection and investigations, some members of the public refer to it as an invasion of privacy and violates people's rights to privacy. Basimanyane & Gandhi (2019: 6) agree that the collection and storing of personal information by CCTV systems in public spaces constitute an invasion of privacy rights. According to Groot (2019: 8) there is a need to balance the loss of privacy and the use of CCTV to improve governmental services. Citizen discomfort under the pretext of loss of privacy should not limit municipal operations of providing safety and security in the city.

CCTV cameras are mainly used to monitor and record what is taking place in various locations in real time (Duncan, 2018a: 14). Cameras are known for deterring criminal and preventing crime by providing surveillance all day long (Molepo, Faimau & Mashaka, 2020: 145). They do this through collecting images which are transmitted to a device that records footages can be watched, reviewed and stored (Grill & Spriggs, 2005: 1). For example, in 2020, a 10-year-old girl was murdered and burned allegedly by her mother and her friend in Windhoek. The police relied on CCTV video footage which captured the suspects dumping the remains of the girl in the rubbish skip during the night (The Namibian, 2020: 1). This is a typical example of benefits that CCTV surveillance systems can provide to enable law enforcement officers to resolve criminal problems.

There are three types of CCTV systems, and these are used depending on the objectives that the end user aims to achieve. Molepo et al (2020: 146) explain that (1) fixed cameras are aimed at

focusing on a single view and permanently monitoring one place without moving. (2) A Pan-tilt-zoom (PTZ) camera system which is very flexible and have the ability to zoom images closer as well as swing vertically and horizontally following a moving object. The third (3) type of CCTV camera system is mobile cameras, where cameras are placed on police vehicles and are mainly used to monitor speed on the highways.

According to Ways & Pearson (2018: 83) the mere visibility or presence of cameras on the streets decreases crime because no person would have courage to commit crime while being monitored. CCTV is rapidly gaining popularity as a technical solution to security problems in terms of crime prevention (Moyo, 2019: 5). The use of CCTV camera system has evolved from the conventional (cassette recordings) to more advanced cordless cameras that are supported by the internet. Cameras are installed to monitor public and private spaces and are directly connected to control rooms. Moyo (2019: 81) further emphasizes on the integrity of the control room operators as one of the security aspects that should not be ignored. Control room operators require adequate security screening before being employed and must undergo rigorous training to be able to detect and identify commissions of crime on cameras. It is also important for operators to communicate clearly and in a timely manner to avoid misinformation and delayed response. Ratcliffe, Taniguchi & Taylor (2009: 747) state that the effectiveness of the CCTV system in reducing crime depends on the operators. Law enforcement officers who demonstrate competency, knowledge and skills in using the technology stand a good chance of reducing crime.

In order to provide the most effective security services yet at a low cost in addressing crime in any given society, Gill & Spriggs (2005: 97) analyzed and compared the cost-effectiveness of CCTV security intervention. Here the researchers wanted to determine the outcome that favours or contradicts the effectiveness of CCTV cameras. Crime reduction or reduction in fear of crime was measured with the number of resources invested in acquiring and installing the intervention (CCTV). Ratcliff & Groff (2018: 120) indicates that more investment in monitoring create a greater return on investment. CCTV, if properly handled, is capable of saving money that should have been used in other related police functions and related criminal justice costs.

According to Mare (2019: 21) although currently there is no law or policy in Namibia that regulates the handling of evidence collected with the aid of CCTV footage, video evidence

remains admissible in Namibian courts depending on the handling and chain of custody approach involved. Kgamanyane (2018: 17) defines video evidence as evidence generated from video footage which facilitates the process of identifying suspects of crime. According to Ratcliffe & Guidetti (2008:3) CCTV systems enable businesses to develop their own crime prevention strategies by employing intelligence-led policing. Business models are developed to coordinate crime detection activities and problem solving. The rise of the adoption of CCTV by the security industry has provided researchers with improved crime analysis. It has narrowed studies to more specific security areas rather than generalizing (Mazerolle, Hurley & Chamlin, 2002: 60). Therefore, this researcher had a motive to evaluate the operations of CCTV surveillance system as crime a prevention measure in Windhoek and was heavily induced by research of similar nature conducted at other different cities around the world in determining the effectiveness of this security intervention.

## **1.2 PROBLEM STATEMENT**

Problem statement determines the boundaries of the study and spells out specific problem the researcher intends to investigate (Fouche & Delport, 2011:108). As for this research study, the problem identified is the perpetual high crime rate in Windhoek despite having installed CCTV cameras as crime prevention measure. To feel this gap, the researcher decided to evaluate the role of the system and suggest possible remedial solution to the problem. The Windhoek City Police Service is increasingly concerned about the escalation of crimes in the city and has indicated that people continue to lose lives and valuable items on a daily basis at an alarming rate (WCPOLS, 2020). Lack of training among operators and inadequate coverage of CCTV have caused the problem to persist.

There is no doubt that in the foreseeable future the management and detection of crimes will completely depend on the use of information communication technology (ICT). Botha (2001: 1) assertively explain that information technology has become an integral part of businesses and it is growing at a rapid pace. CCTV is part of this information communication technology evolution which business leaders should embrace and make necessary changes in order to survive the competitive security market.

Although CCTV has a significant role to play in combating crime in Windhoek, the public opinion seems to suggest otherwise. Nendongo (2011: 88) finds that criminals mostly target people that are actively involved in economic activities, creating an impression that CCTV cameras installed around the city do not effectively protect them from crimes. Most victims of crime such as house breaking, ATM fraud and theft out of motor vehicles appear not to trust or aware about the existence of CCTV cameras in their neighborhoods resulting in huge number of unreported cases (WCPOLS, 2020). The general feeling among inhabitants of Windhoek especially those living in low-income residential areas and informal settlements is that cameras are only installed to serve the central business district (CBD) and more affluent suburbs. Ironically, Mare (2019: 21) finds that respondents from private security firms have different views and state that crime has reduced significantly in places that were regarded as crime hotspots before the installation of CCTV cameras. These divergent views did not provide a clear picture of where Windhoek stands in terms of usefulness of CCTV.

Moyo (2019: 168) finds that in Pretoria, South Africa, 51.6 percent of respondents think CCTV is very effective in reducing crime and only a negligible percentage (6.8%) thinks that the system is ineffective. Ways & Pearson (2018: 93) corroborated Moyo's finding by stating that the city of Baltimore's public opinion suggests that public surveillance system (CCTV) prevents crime and successfully assists in resolving criminal cases that would have been dismissed in courts of law for lack of evidence in the absence of eyewitnesses. To respond and address the problem of escalation of crimes as identified and to restore public confidence in the use of CCTV, the researcher conducted an in-depth examination to evaluate the effectiveness of the CCTV surveillance system in Windhoek.

### **1.3 RESEARCH AIM, OBJECTIVES AND PURPOSE**

#### **Aim**

In this study, the researcher intended to achieve certain accomplishments by linking questions to evidence collected. Doody & Bailey (2016: 22) define a research aim as an overall goal set by the researcher to accomplish. A research aim must enable readers to judge whether the researcher has achieved the set goal in the end. The principal aim of this study was to evaluate the closed-circuit television surveillance as a crime prevention measure in Windhoek.



Denscombe (2002: 29) expresses that the purpose of a research study requires the researcher to identify a relatively narrow and precise area to investigate instead of taking on a wide and general research area to examine. The purpose of this research study was to evaluate the usage of CCTV surveillance system by law enforcement agencies in terms of crime prevention, identify possible problems and provide solutions. Oates (2009:16) indicates that one of the reasons for conducting research is to add to the body of knowledge. Equally, the researcher intended to contribute to the body of knowledge in Namibia.

## **Objectives**

According to Bairagi & Munot (2019: 3) the objectives of the research study are to uncover hidden and undiscovered truth. Research objectives are small entities that are clear and specific in nature and the outcomes of these objectives culminate in the accomplishment of the ultimate goal of the research.

The researcher`s intention was to achieve a number of specific objectives that would lead to the accomplishment of the overall goals of the research.

And they are as follow:

- To analyze the level of training of operators that are responsible for implementing the technology`s functions of detecting crime and identifying criminals.
- To examine practical approaches used by the police when dealing with crime reported with the aid of CCTV and the effectiveness of those strategies.
- To determine the impact CCTV surveillance system has on crime prevention and crime reduction in Windhoek.
- To determine public perception on how the CCTV surveillance system affects crime in the city by focusing on victims of the crime, business, security personnel (public and private) and members of low-income communities.

- To make use of information collected during the study to improve the operationalization of the CCTV surveillance system.

## **1.4 RESEARCH QUESTIONS**

A research question is an open inquiry that provides facts to help challenge, examine, analyze or resolve a study problem and produce possible new research (Aparasu, 2011: 41). The researcher has identified primary and secondary questions which guide the progression of the study.

The primary research question was as follow:

- How effective is the use of CCTV surveillance system as a security control measure in preventing crime in Windhoek?

Secondary research questions are as follow:

- What level of training is required to effectively implement CCTV surveillance system to detect and reduce crime?
- How effective are the strategies used by the police when responding to crime reported with the aid of CCTV?
- What impact does CCTV surveillance system have on crime prevention?
- What is the public perception regarding the use of CCTV in the city?
- How will the information collected assist in improving the operationalization of system?

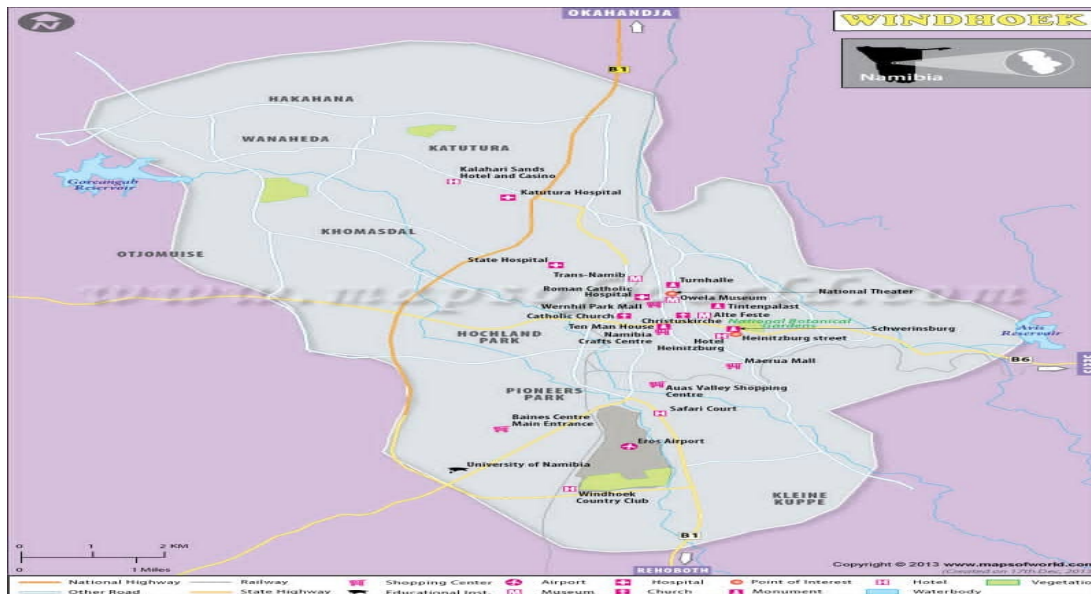
## **1.5 STUDY AREA (WINDHOEK): BACKGROUND AND SETTING**

Windhoek is the largest and capital city of Namibia which is located in the central part of the country. Being the administrative, commercial and industrial center of the country, Windhoek

also has the largest population hence its current status as the country's economic hub. Apart from being one of Africa's cleanest cities, Windhoek is also striving to become one of the safest city on the continent through its smart-city concept strategy (Aloe, 2010: 2).

Since the dawn of democracy 31 years ago, the City of Windhoek has been inundated with influx of people coming from different parts of the country in search for works and improved livelihoods. According to the Namibia Statistics Agency (NSA) (2011: 10) the population of Windhoek is expected to rise from 480 136 inhabitants in 2020 to 645 355 in 2030. Urban migration has led to a significant population growth in the city which has outpaced and affected urban economic activities undesirably. The lack of economic opportunities and high unemployment in the city has increased crime and violence rate especially among black communities (Nendongo, 2011: 4). People that are unemployed tend to develop feelings of hopelessness, despair, and some even reach a level of depression and disillusionment and end up committing crime (Clarke, 1978: 74). This state of affair is increasingly becoming a challenge to law enforcement agencies as some parts of Windhoek have turned into crime and violence hotspots.

Namibia is classified as a lower-middle income country but the rate of inequality in income distribution between poor and rich Namibians is very high with a Gini coefficient of 0.63 (Himavindu & Stage 2013: 2).



**Figure 4.3- 1. Map of City of Windhoek**

Source: [www.mapofworld.com](http://www.mapofworld.com)

The situation of an unequal income distribution in Windhoek as a capital City of Namibia is evidently reflected by the conditions in which people live. The affluent and well-off communities live in suburbs on the eastern part of Windhoek while the low income and poor residents inhabit the western part of Windhoek commonly known as Katutura and Khomasdal.

According to Namibian Police Journal (2020: 6) notwithstanding tight regulations of State of Emergency and intensified police operations to control the spread of COVID-19 in Windhoek, the rate of crime in Katutura continued to rise. Wanahenda Police Station reported an increase in criminal activities with more than 13% between June and July 2020. Housebreaking and theft, assault, theft and domestic violence dominated the list of crime reported during that period. Namibian Police Journal (2020: 7) reports that criminals took advantage of the lockdown to commit crime in Informal Settlements because there is poor CCTV coverage, high rate of unemployment and poor police/security services.

## 1.6 SIGNIFICANCE OF THE STUDY

Apart from finding ways to improve strategies to prevent and reduce crime in Windhoek, the researcher was able to identify shortcomings that the current system has and recommend

solutions to those shortcomings to enhance the operational capacity of CCTV surveillance system. Therefore, it was important for this research study to point out gaps to improve the crime prevention strategy in Windhoek. Lim, Eck & Kim (2016: 4) emphasize that there are gaps that need to be closed about open street (public) CCTV. The significance of this study lies in its ability to identify skills shortage in terms of system operation and respond favorably to those needs.

The community members can only trust security technological measures that have been explained properly and their functions understood. The study explored and thoroughly examined the operations of the CCTV public surveillance in Windhoek to determine its impact on ensuring a secure environment for all members of the society. According to Burger (2011), the installation of security measures such as CCTV cameras restores public confidence in South Africa Police Service. It was further explained that the current persistent incidents of brutality, criminal behaviours and abuse of authority by some of the SAPS members had damaged public trust and confidence. Therefore, the use of CCTV in Southern African cities has improved public safety and crime reduction. The significance of this study was to improve confidence in the police and their implementation of this security measure. Another important aspect of this research was to determine the involvement of the community in the use of CCTV. Does the community embrace the surveillance of their localities? This was one of the questions that the study attempted to answer. La Vigne, Lowry, Markman & Dwyer (2011) emphasize the importance of the involvement of the community input. Given that the community knows where crime hotspots are, therefore by involving them, it could build public support.

The recommendations of this study will be of benefit to a number of concerned people and organizations within the borders of the Windhoek municipality. Windhoek City Police Services and the Namibian Police are some of such organizations that will greatly benefit from the study and the researcher will make the final report available to them. Also, the study will be available to the community members who would want to know the outcome of the study and the recommendations thereof. Furthermore, the study could enable policy and law makers to craft informed policies and laws. Lastly, private security companies as stakeholder in security industry could benefit from the results of this study and in turn, improve their CCTV business operations.

## **1.7 THEORETICAL FRAMEWORK**

Theories are developed to clarify and understand phenomena (Dogbatse, 2020: 9). It is a system of concepts and the relationship between those concepts that together present a logical systematic and coherent understanding of phenomena of interest within some assumptions and boundaries. In this study of evaluating the use of CCTV in Windhoek, the researcher opted to use the following three critical theories that were found relevant to the study.

### **1.7.1 Crime prevention through environmental Design**

Lim (2015: 15) states that crime prevention through environmental design theory revolves around the defensible space theory. The defensible space theory involves the idea of crime prevention and neighborhood safety. Newman (1996: 9) argues that architectural and environmental design play an important role in reducing crime. Crime prevention through environmental design (CPTED) is a concept which emphasizes on aspects of the build environment, for example hardening the target, CCTV and access control as strategies to prevent crime (Lim, 2015: 16). The researcher finds this theory relevant to this study because CCTV form part of the instruments that can be used to strengthen the environment through constant surveillance of remote areas.

### **1.7.2 Phenomenological Theory**

Phenomenological theory is commonly used in qualitative research studies to measure and investigate the perceptions, awareness of target population and selection of an appropriate sampling size (Creswell, 2013:25). In other words, phenomenological research provides lived experiences to gain deeper insights into how participants understand those experiences. This simply means, under phenomenology approach the researcher enriches the study by letting views of those who have experienced a certain phenomenon be explored. The researcher finds this theory suitable and relevant to this study because it allows participants to express their lived experiences. In addition, the phenomenological study was chosen because it focuses on common experiences of participants through collection of data (Creswell, 2013:59).

### **1.7.3 Rational Choice Theory**

“Rational Choice Theory is component of situational crime prevention approach by which offenders seek advantages to themselves by their criminal behaviors. This entails making decisions among alternatives. These decisions are rational within the constraints of time, ability and the availability of relevant information (Hayward, 2007:233)”. This theory was developed with a focus on prevention of crime by reducing risk of criminal events. Clark (1997:9) expands the explanation by saying rational choice perspective provides basic rationale for defining place as important since it suggests that offenders will select targets and define means to achieve their goals. Rational choice can be used to describe crime event and offenders’ behaviors.

The researcher finds rational choice theory relevant to this study because with CCTV surveillance cameras in place, criminals are less likely to commit crime if they believe that they are being monitored and there is a high possibility of being apprehended. Since finding a safer place to commit crime is important to criminals, a likelihood of crime displacement to take place is very high. However, there are scholars who argue that although rational choice theory is known for considerable success of combating certain form of economic criminality in the community, much of the situational crime prevention strategy used lack flexibility (Hayward 2007:233). Rational choice theory failed to answer criticism brought forward by discipline such as psychology, political science and sociology which argue that not all offenders are interested in economic gain from criminality.

## **1.8 DEFINITION OF KEY CONCEPTS**

The following key concepts were prominently featured in the study and are briefly explained to provide clarity on what their meaning are:

### **Close Circuit Television (CCTV)**

Gill & Spriggs (2005: 1) define CCTV as a crime prevention and security measure with camera collect images, which are transferred to a monitor-recording device where they can be watched, reviewed and stored. McCahill & Norris (2002: 38) describe CCTV as a system which composed

of network cameras and components for monitoring, recording and transmitting images. It was further explicated that CCTV as a security tool has a great role in detecting and preventing crime although it needs to address some privacy issues (Khan, Aziz, Faruk & Talukder, 2020: 48).

### **Control Room**

According to Heebels & van Aalst (2020: 317) a control room is a room of semi-elliptical space where operators continuously monitor the cameras. Smith (2004: 376) states that in a control room, cameras are operated by human operatives [security and police] on duty on day-by-day basis with a sole purpose of providing effective and sustainable crime prevention services to the community. According to Gill & Spriggs (2005: 2) no CCTV system operates without a control room. The system can be monitored either full-time or for a limited number of hours per day from a control room.

### **Crime**

Crime is defined as an action that is considered wrong and punishable by the society (Ways & Pearson, 2018: 79). According to Kremar (1985: 470) the concept of “crime” is defined as behaviour in violation of the criminal law and liable for sanctioning by criminal justice agencies under political authority of the state. Criminologists define “crime” as an intentional act in violation of the criminal law committed without defense or excuse, and penalized by the court of law (Brown, Esbensen & Geis, 2015: 14).

### **Crime Displacement**

Eck & Weisburd (2015: 19) define crime displacement as the shifting of crime events from one place to another. Guerette (2016: 3) states that because of improved crime prevention initiative, criminals relocate from one place, time, target, offence or tactic to another. It basically means that the alteration of criminal activity as consequence of new preventative efforts brought about (Gabor 1981: 391).

### **Crime Prevention**

Crime prevention is a strategy used by law enforcement agencies to reduce crime in society (Clarke, 1997: 4). Crime prevention applies specifically to efforts made by government or related



authority to prevent and reduce crime, enforce the law and maintaining law and order (Moyo, 2019: 19). In addition, Tilley (2014: 6) explained that crime prevention is much wider than the earlier definition which only referred to measures taken by the police to reduce crime.

### **Crime prevention through environment design (CPTED)**

Cozens, Saville & Hillier (2005: 2) define Crime Prevention Through Environmental Design (CPTED) as a proper design and effective use of the built environment which can lead to a reduction in fear and incidences of crime and an improvement in quality of life. CPTED focuses on the relationship between people and the environment, and how the environment can be used to prevent crime (Cozens & Love, 2015: 4). The modern definition of CPTED has evolved beyond physical design, it now includes technological surveillance such as CCTV cameras and lighting (Reynald, 2011: 71).

### **Privacy**

Basimanyane & Gandhi (2019: 3) define privacy as a state of being free from public attention. Privacy entails non-interference with one's home, family or reputation. In the constitution of the Republic of South Africa, it includes the right not to have their person or homes searched as well as privacy of their communication infringed. The Namibia constitution, Act No 1 of 1990 in article 13 provides that searches of person or homes shall only be done when justified.

### **Security**

Rogers (2014) defines security as a process that entails the implementation of cost-effective security measures that, when taken as a whole, have the effect of reducing probability of loss-incurring events or reducing the impact of any loss-incurring event that might occur. Some scholars refer to security as “the absence of threats to acquired values” (Baldwin, 1997: 13). According to Sulovic (2010: 1) security is a pursuit of freedom from threats.

### **Security measures**

When people, policies, procedures, physical security, and technological measures are put in place to counter security breaches and increase security (Kole, 2015: 11). Security measures are strategies employed by institutions to ensure safety of everyone (Jennings, Khey, Maskaly &

Donner, 2011: 110). In addition, Van Jaarsveld (2011: 5) describes a security measure as a deterrent or barrier between criminal and valuable (vulnerable) assets. These barriers can be fences, alarm systems, CCTV systems, metal detectors etc.

### **Surveillance**

The National Instruction 3/2010 of South Africa Police Service explains surveillance as a covert method used to observe the movement of people continuously with the aim of obtaining intelligence (SAPS, 2010: 1). Surveillance are reliable techniques and technologies used by the police or any other security organization to watch over the public (Lyon & Wood, 2012: 325). Recent security surveillance is based on the observation of various environment from a protected area using specific instruments such as cameras, voice recording, electro-optic sensors and many other technological surveillance instruments (Thibault, 2007).

## **1.9 CHAPTER OUTLINES**

This part of the research dissertation explains the sequence in which chapters have been structured. The dissertation consists of 5 chapters, namely: general orientation, Research methodology and design, literature review, research findings and General conclusions.

### **Chapter 1: General Orientation**

In this chapter the researcher provided an introduction of the research study that has been embarked upon. It further clarified what the aims were; outline various objectives the researcher intended to achieve and purpose of engaging in this study. The significance of the study was explained briefly to pre-empt what was covered by the study. Since this study was about determining the effectiveness of CCTV system in Windhoek, this chapter also determined the problem statement and came up with a set of research questions that were answered in this research.

### **Chapter 2: Research Methodology and design**

In this chapter the researcher discussed the research design that was adopted to maximize the collection of data. Qualitative research methods were used as suitable approaches to collect,

analyze and interpret the data. This chapter also explained research tools such as the questionnaire, interviews, on-site observations and case docket analysis. In conclusion, the validity, reliability and limitation of the research study were also dealt with in this chapter.

### **Chapter 3: Literature Review: Operation of CCTV systems**

The researcher considered relevant literatures on the operations and effectiveness of CCTV surveillance in Namibia and elsewhere in the world. It also looked at the benefits and challenges which CCTV systems bring to the communities in terms of crime prevention. Lastly, the issue of invasion of privacy were reviewed and how to strike a balance between the right to privacy and crime surveillance.

### **Chapter 4: Data Analysis and Interpretation**

Chapter four is the heart of the research study. It presented findings, results and detailed discussion of the research results. Here the researcher made sense out of the data collected and made conclusions that answered the research questions.

### **Chapter 5: Findings, Recommendations and Conclusions**

This chapter summarizes the overall findings of the research study. It also includes the recommendations that ensure the improved utilization of CCTV surveillance system as a security intervention to reduce crime in Windhoek. The last part of this chapter speaks about areas identified for future research.

## **CHAPTER 2: RESEARCH METHODOLOGY AND RESEARCH DESIGN**

### **2.1 INTRODUCTION**

In this chapter the researcher explained the research methodology and research design used to collect and analyze data. Research design is a crucial phase of the research study which deals with planning aspects such as data collection approaches, experimental designs, and approaches for data sampling (Bairagi & Munot, 2019: 70). In explaining the meaning of what a research study is, Nayak & Singh (2021: 1) state that the quest for knowledge through objective and systematic methods of finding solution to a problem is called research. It was further explicated that “Research Methodology is a strategy that translates ontological and epistemological principles into guidelines that show how research is to be conducted and principles, procedures and practices that govern research” (Nayak & Singh, 2021: 1).

The researcher considered various options to collect relevant information regarding the study. These options were used to ensure that the study covered all the relevant information regarding the effectiveness of CCTV. The evaluation of CCTV surveillance system as crime prevention measure in Windhoek requires a rigorous and systematic approach in order to answer the research question sufficiently.

### **2.2 RESEARCH DESIGN**

Flick (2009: 128) refers to research design as a plan designed by researchers for collecting and analyzing data that enable researchers to find answers to their research questions. In addition, Bairagi & Munot (2019: 70) agrees by stating that research design is an overall plan that deals with aspects of complete design starting from data collection to the selection of the techniques of data analysis. The researcher selected the qualitative approach as the most appropriate for this research study because it requires in-depth examination of experiences of the participants. The researcher opted for qualitative approach because they needed to conduct a targeted research approach focusing on police officers on patrol, control room and other law enforcement officers that were familiar with the operation of CCTV.

Furthermore, research tools were used to shape and enrich the collection and analysis of data. Before engaging into fieldwork, a literature review of relevant literatures on CCTV surveillance system was undertaken to determine what other researchers have written about the effectiveness of CCTV technology. Document analysis and questionnaire survey are some of the techniques that were used to collect data from the participants. Interview methods such as one-on-one and group interviews were the primary methods of obtaining information. According to de Vos, Strydom, Fouché & Delport (2011: 341) one-on-one and group interviews are preferable when a researcher choose qualitative research method. More data collection was also conducted through on-site observation, security measure audits and case docket analysis.

### **2.3 RESEARCH APPROACH**

Research approaches are plans that spell out the process from broad assumptions to methods of data collection, analysis and interpretation (Creswell & Creswell, 2018). Alase (2017: 9) further states that research approaches are approaches whereby researchers choose at least one which can produce long lasting, credible and transferable research findings. Alase further explained that these approaches (qualitative and quantitative) are sort of in competition with one another to which one can produce remarkable research results. Qualitative, quantitative and mixed methods are the approaches that researchers commonly use when conducting scholarly studies (Alase, 2017: 9).

However, in this study, the researcher opted to make use of the qualitative approach only because he wants to concentrate on ideas, beliefs, and meaning of data. Assessing and analyzing the effectiveness of the CCTV surveillance system as part of evaluating their role in combating crime requires a qualitative approach because it would enable better understanding and production of a grandest research output. This approach enabled the researcher to solicit answers from both descriptive and explanatory questions on how the City of Windhoek use CCTV in the preventing and reduction of crime. This study demanded that the researcher do an in-depth examination of the experiences of people who participated in the interviews. The qualitative approach was also more useful in the interview sessions and open-ended questions. Matthews & Ross (2010: 142) expands the description of qualitative approach by stating that the research

questions are answered clearly by describing and explaining events and capturing the understanding of participants as well as their beliefs and experiences as they are.

## **2.4 RESEARCH METHODS AND DATA COLLECTION TOOLS USED**

Since the researcher opted to use a qualitative approach to collect and analyze data, Hennink, Hutter & Bailey (2020: 41) state that qualitative research uses specific types of research methods namely: in-depth interview, focus group discussion, observation, content analysis, visual methods and life histories. Research methods are basically tools and techniques for doing research (Walliman, 2017: 1). The researcher chooses research tools that are appropriate, suitable and convenient for data collection (Cohen, Manion, & Morrison, 2013: 375). In this study, the researcher chose instruments or techniques that were fit for purpose and practically able to be used to collect and analyze data. Below are some of the research techniques that were utilized in this study to collect data needed to evaluate the effectiveness of CCTV surveillance system in Windhoek.

### **2.4.1 Literature Study**

The researcher embarked on an extensive literature review of articles published by authors that did research on the operation of the CCTV surveillance system. The purpose of engaging in this exercise was to acquaint this research with the latest positive and negative discoveries regarding this subject matter. The search for literature further sought to determine research methods that were used by other researchers to collect and analyze data related to CCTV studies.

According to de Vos, Delport, Fouché & Strydom, (2011: 134) a literature study is a review of other authors' works aimed at contributing to a clearer understanding of the nature and meaning of the problem that has been identified. For example, a study of CCTV system conducted by Molepo et al, (2020: 157) in Gaborone Botswana reveals that CCTV installation increases risks to offenders thereby reducing the opportunity to commit crime. On the other hand, Ways & Pearson (2018: 80) asserted that CCTV improves the lives of citizens and their economic status. Before he embarked on this study, the researcher engaged in literature study with an intention of

understanding how CCTV surveillance system works and reduces crime in other places around the world.

#### **2.4.2 Document Analysis**

Document analysis entails a study of existing documents with an aim to understand their contents which in most cases is not written with an intention to conduct research (de Vos et al, 2011: 377). For the purpose of maximizing information search that were useful to answer the research questions, the researcher analyzed a number of important documents. Primary and secondary sources on CCTV surveillance systems were consulted and carefully analyzed. Google scholar search engine that provides academic and non-academic articles were helpful in obtaining information relating to the use of CCTV. In addition, the researcher made use of relevant books, local newspapers and criminal justice literature to enrich the study.

#### **2.4.3 Questionnaire**

The objective of a questionnaire is to probe and gather facts and opinions about the study from the people who are in the know (de Vos et al, 2011: 186). Questionnaire is one of the research instruments whereby a list of questions is used to collect information from participants (UNISA, 2016: 86). To gather information for this study, a questionnaire was created with a list of questions related to the operation of CCTV surveillance system within the area of Windhoek. To achieve informed responses from the respondents, the researcher drafted a questionnaire that was easy to understand and straight to the point.

#### **2.4.4 Interviews**

A large portion of the information in this study was collected through interviewing local residents. Matthews & Ross (2010: 197) declares that an interview is a special research instrument which facilitates the collection of data and has special characteristics and techniques to help the researcher to do a great job. Most of the interviews were recorded using an audio and the researcher had an opportunity to listen to the interviews again when analyzing information obtained from the participants.

The following interview techniques were used to interact with participants and collect relevant information:

- i. One-on-one/face-to-face interview
- ii. Focus group interview

### **One-on-one interview**

One-on-one interview is an in-depth interview by a researcher to get answers from the participants (de Vos et al, 2011: 348). This research technique is used to determine an individual's perceptions, opinions, facts and forecasts. For this study, the researcher employed the use of an unstructured face-to-face/ one-on-one interview to engage the participants casually and flexibly. Appointment to meet participants were secured at least two weeks before the meeting took place. Other forms of interview such as telephonic and e-mail were also considered for people with valuable information on the subject matter but could not be reached for face-to-face interviews.

For this study, the researcher managed to interview 20 police officers (including control room operators) from WCPOLS, 15 Nampol and 10 private security officers because they had a better understanding on the operation of CCTV in Windhoek. The interview included police officers of different ranks that is, from chief of WCPOLS, to station commanders to ordinary constables who had adequate knowledge in CCTV. Private security officials were also engaged through the one-on-one interviews so as to provide information on the same matter.

### **Focus Group Interviews**

Focus Group Interviews are designed to carefully focus on a group discussion to obtain perceptions on defined area of interest in a permissive non-threatening environment (Kingry, Tiedje & Friedman, 1990: 124). Similarly for this research study, two focus group interviews were conducted of which each group consisted of 7 people. One focus group interview was conducted at one of the police control rooms and the other interview took place at a private security control room. The purpose of these interviews was to understand how people felt regarding the operations of CCTV surveillance system and its impact on crime in Windhoek



while in group. The researcher identified groups of people such as police officers, street vendors, and sex workers among others. Here the researcher was interested in knowing through group interviews as to the particular crimes that could be prevented easily with the assistance of CCTV cameras. The researcher approached these interviews with open approach to allow participants to share and express their true feelings, perception and point of views freely towards the use of the CCTV surveillance system in their areas.

#### **2.4.5 Onsite Observation**

Walliman (2010: 100) describes on-site observation as a method of collecting data through observing things instead of asking questions. The aim of this method is to take a detached view of things while absent or not directly involved in the activities. According to Smith (2004: 386) on-site observation to security control installations may lead to some discoveries that could have been omitted in the study should the researcher opt not to conduct this exercise. When conducting this study, an onsite observation exercise was undertaken to inspect and collect first-hand information on how CCTV operates as a crime prevention measure. Good strategies were employed during on-site observation to determine good sources of information. The researcher visited various areas that were monitored with cameras at night as well as during the day. Places such as the control room, central business district (CBD) area, major intersections and some identified hot spots were visited at irregular intervals. These visits were aimed at familiarizing and identify persons, things or processes that needed an in-depth study.

The researcher visited various locations where cameras were mounted. The purpose of the visit was to see that which was being monitored, the range at which this was done, the lighting (especially at night) and the particular crimes that were targeted. The other purpose of onsite observation was to determine the manner in which the cameras were positioned and whether they could be tempered with by criminals or children. Lim (2015: 49) states that one of the onsite observation functions is to inspect whether the cameras are equipped with pan, tilt and zoom functions.

#### **2.4.6 Security measures audit form**

According to Olckers, (2007: 2) security measures audit form is a checklist of security control measures aimed at establishing whether all necessary security measures needed to prevent or reduce crime are present. The checklist ensures that CCTV surveillance system activities operate efficiently and correctly. Security measures such as security policy, CCTV policy regulations, response regulations, access control regulations are contained in the audit form. These security measures were audited in this study to determine whether they were performing the functions that they were acquired for. It is very important to audit security measures because the results of the audit can be used in improving the implementation of CCTV surveillance system.

#### **2.4.7 Video reviews**

Video review is an efficient way of extracting useful information from a huge amount of video content collected by tracing and detecting objects or activities of interest (Wang, 2013: 3). This research method was used by analyzing video recordings of crime incidents in the police archives. This gave the researcher an opportunity to see how effective CCTV surveillance system could do in terms of crime prevention. This technique (video review) presented the researcher with an understanding on how effective CCTV surveillance system was.

### **2.5 TARGET POPULATION AND SAMPLING**

University of South Africa (2016: 65) explains that sampling is a process used to select small set of observations out of a larger group that one intent to study. When sampling, a researcher selects a small portion as a representative of the larger group and makes a conclusion of a larger group (population) based on the characteristics of the small portion taken. In this section, the researcher explains the purpose of choosing a targeted population and why it was chosen. It further clarifies with reasons why purposive sampling was chosen as a suitable sampling method for this study. To avoid long, protracted and expensive examination of all things, the solution is

to examine some of them in hope that the information (data) you got is representative of all others (Walliman, 2010: 93).

### **2.5.1 Target population**

A target population is the population of interest which the research is interested of examining (Bairagi & Minot, 2019: 90). Target population needs careful selection to avoid unnecessarily spending of time and money. Avrakas (2008) defines a target population as a total group of element or individuals where the research might draw a sample from. The researcher in this study opted for a target population because the coverage of CCTV in Windhoek does not include the whole population of the city. The population samples were drawn from residents of Windhoek in areas such as: CBD, police officers, control room officials, business owners, selected residents where CCTV cameras were installed and some residents from informal settlement areas. The researcher also considered an equal sample number of gender representatives to have balance responses from both sides.

### **2.5.2 Purposive sampling**

The researcher chose non-probability sampling (purposive sampling) because it was difficult to reach the whole population of Windhoek within the stipulated time if he was to opt for probability sampling. Secondly, CCTV coverage in Windhoek was only limited to some areas such as CBD, major intersections, and in some affluent suburbs. In the interest of time and resources, it was only prudent to use a non-probability sampling whereby the researcher chooses the unit of analysis to work on (David & Sutton, 2011: 196). Endjala, Mohamed & Ashipala (2017: 14) express that purposive sampling as a sampling method allows for knowledgeable participants to be selected for study. The researcher used purposive sampling because this method enabled him to only deal with people who had knowledge in CCTV operations in Windhoek. Knowledgeable people helped the researcher in answering the research questions adequately by providing relevant information. The knowledgeable participants included police officers, control room officials and private company security officers.

## **2.6 DATA ANALYSIS AND INTERPRETATION**

The process of data analysis is much more than just analyzing text and image data. It involves a number of stages such as organizing the data, preliminary read-through, coding, organizing the data and forming an interpretation of them (Creswell & Poth, 2018: 248). In addition to that, Boeijie (2010: 76) explains that data analysis is a systematic process of searching and arranging information that was gathered through interviews and other means for the researcher to enrich their own understanding and be able to pass it over to others. The researcher organized data obtained through interviews, observations and the questionnaire and arranged it into categories. In principle, the researcher made sense out of data collected to answer the research questions. The purpose of data analysis exercise is basically to convert raw data into understood and readable findings. Data analysis for this study was organized into two analysis techniques namely: Qualitative Analysis and Data Coding.

### **2.6.1 Qualitative data analysis**

By using qualitative data analysis, the researcher induced reasoning and thinking when trying to organize and break down the data into smaller and manageable portions. The main ideas emanating from studying the field notes and listening to audio recordings must be recorded and entered into the research study as findings (Endjala et al, 2017: 14). Therefore, the researcher chose to be pragmatic and use this approach to analyze the effectiveness of CCTV system in Windhoek. de Vos et al (2011: 397) further state that qualitative data analysis is a process of bringing order, structure and meaning to a big number of unpackaged data collected. The researcher adopted qualitative data analysis because it helped in breaking large research data into smaller units which could be easily analyzed. de Vos et al (2011: 399) added that qualitative data analysis defined as both science and art. In scientific research, the analysis is often conducted in a methodological and organized systematic way, while in the arts, it takes a more fascinating and creative approach.

## **2.6.2 Data coding**

According to Cohen et al (2013: 559) coding simply means the labelling of pieces of information or texts which have the same idea or saying the same thing. Data coding was one of the approaches that were undertaken by the researcher during the analysis phase and enabled him to organize and understand the qualitative data. For a thorough data coding analysis to take place, the researcher engaged in content analysis of all interview notes recorded during the time of collecting data. A step-by-step process was followed to identify themes and integrate them.

“Coding involves taking data or pictures gathered during data collection process, dividing paragraphs, or images into categories and labelling those categories with term, often based in the actual language of the participants” (Creswell & Creswell, 2018: 262). Coding analysis of this study was done by both hand and computer. The researcher used coding methods to generate themes and descriptions. Small themes were generated which as a result that culminated into major findings of the research.

The researcher applied a process called content analysis. Content analysis simply means, content of each interview is analyzed and themes are identified from such interview. The following are the practical steps that were taken when categorizing description and themes:

- Step 1: Identification of the theme from the interview content
- Step 2: Assigning of codes to main themes
- Step 3: Classification of responses under the main theme
- Step 4: Integration of themes and responses into the report.

## **2.7 VALIDITY AND RELIABILITY**

Creswell & Poth (2018: 337) state that researchers should demonstrate openness and honesty in terms of how truthful the research process was conducted and its findings. According to Rose & Johnson (2020: 4) to increase the trustworthiness of a qualitative research, there is a need for researchers to improve their epistemological understanding and in-depth of literature review. Trustworthiness in qualitative research is increased through validity and reliability. Under the

validity and reliability section of this study, the researcher explains how valid and reliable the instruments and process used to collect information for the study were. Furthermore, Creswell & Poth (2018: 336) explains that apart from being reliable and valid, researcher also seek for data that are dependable and objective through auditing of research processes.

### **2.7.1 Validity**

“Validity refers to the integrity and application of the methods undertaken and the precision in which the findings accurately reflect the data”, (Noble & smith, 2015: 1). In this research study, the methods applied ensured transparency and integrity in the way data was collected. Melville & Goddard (1996: 37) added that validity basically refers to measurements used are accurate and dependable. The questions that were asked during the interviews and questionnaire survey were set in such a way that participants understood them as intended by the researcher.

Validity is a process which determines the accuracy of research findings from the researcher’s point of view, research participants and consumers of the study output (Rose & Johnson, 2020: 5). To ensure validity of the research process especially when conducting the interviews, the researcher, ensured that the participants were all asked the same questions. Even if the meaning of the questions might have slightly changed through translation in other local languages for better interaction with participant, the principle remained the same. To ensure trustworthiness and authenticity of data collected during interviews, the researchers should use a combination of literature review and document analysis techniques to identify patterns and trends (Ngwenya, 2012: 17).

Creswell (2013: 18) is of the opinion that the categories of validity below are important for research study:

- Content validity: Refers to data collected and satisfies the questions of the research study and covers every relevant aspect of the study. Does the content of the data collected answer the question?
- Criterion validity: Do the answers obtained reflect the true perception of the participants? This category refers to the measurements used for prediction are relevant and free from biasness.

- Construct validity: Are the recorded answers those of the participants? The data collected should reveal the true answers given by the participants.

This research study used triangulation method to analyze data collected. Triangulation is a qualitative research instrument aimed at testing the validity of the process followed to obtain research data. Triangulation increases the credibility as well as the validity of the research study by using multiple techniques of collection of data such as literature review, document analysis, interview and site observation (Noble & Heale, 2019: 67)

### **2.7.2 Reliability**

Noble & Smith (2015: 1) refer reliability as the consistency of procedure employed to analyze the data. According to Rose & Johnson (2020: 4) reliability is the dependability of the research with regards to suitable methods taken and the manner in which the methods are implemented in the qualitative research study. Reliability concerns about the consistence in the process (Rose & Johnson, 2020: 5). Reliability is established when a technique or instrument proves to be consistent. If the technique is applied to the same object repeatedly and it gives the same results every time (UNISA, 2016: 80).

To determine the reliability, the researcher compiled and submitted the questionnaire to the academic research supervisor for moderation. To further establish the reliability of this research study, a combination of various research techniques such as document analyses, literature review, interviews and questionnaire was used to identify common themes (Creswell 2014: 49). The researcher conducted all interviews himself and where ambiguous answers were given, follow up interviews were arranged for clarity.

Generally, reliability involves the evaluation of techniques used to gather data from participants (Ngwenya, 2012: 17). The evaluation of CCTV surveillance system in Windhoek required a well-tested technique of data collection to ensure reliability because of the diverse views regarding this technology. Standardized procedures and instruments were used to increase the reliability of the process. The researcher ensured that the process of data collection was consistent, and the findings of the study were obtained without and distortion.

## 2.8 ETHICAL CONSIDERSTIONS

The purpose of UNISA Policy on Research Ethics (2013: 2) is to remind researchers about their responsibilities and promote adherence to set code of conduct when conducting research. In line with Unisa Policy on Research Ethics, the researcher commits to adhere to the following research ethical principles:

- Informed and non-coerced consent

Participants should clearly and freely provide information without any undue pressure or coercion from the researcher or any other person. According to Walliman (2017: 42) it is difficult to trust research works that was suspiciously obtained through fraudulent or dubious means. Therefore, in this study, the researcher abides by all ethical principles as provided for in the UNISA Policy on research Ethics and ensure that consent was granted by every person that participated in this research project.

- Respect of different cultures

Researcher recognizes cultural settings and communities in which participants come from and allow them to express themselves in a manner and spirit that suits their cultural norms. Geoffrey & Gray (2016: 41) state that information which is obtained from participants in their vernacular language is considered reach and participants express themselves clearly compared to information obtain in a different language which is not theirs. In this instance, the onus lies with the researcher to ensure respect for different cultures and believes. It is imperative that researchers treat participants in the research project as an important element within the context of their community system and should respect what is sacred and secret to them (UNISA Policy on Research Ethics, 2013: 10).

- Respect and protect the rights of participants

Researchers should guard against anything which violates the dignity, privacy and confidentiality of each research participant. Creswell & Creswell (2018) state that in order to create a good relationship that is based on trust and understanding, researchers need to protect participants and promote integrity. In this research study the protection of participant`s rights to privacy and individual or institutions` confidentiality could not be compromised.



- Justice, fairness and objective

Researchers are reminded to be impartial, fair and objective when selecting research participants in order to obtain valuable research information. In this study, the researcher practiced social justice and fairness in every step of the research in order to obtain credible and reliable research outcome. As it is expressed by Geoffrey & Gray (2016: 41) that honest and justice should form part a base of each research study.

Denscombe (2010: 33) defines ethical considerations as an adherence to research requirements by which researchers should follow. Researchers should first and foremost protect the participants' welfares by ensuring that their right to privacy is protected. Creswell (2014: 87) explains that it is imperative that all participants be briefed on what the study is about before engaged into a study. Therefore, information collected for this study were given voluntary and participants were informed to freely withdraw information provided if they no longer wished to give such information.

Culturally, Namibia is a diverse country with about 11 different languages and most people felt more comfortable providing information in their vernaculars. Afrikaans and Oshiwambo are the most popular languages spoken in Windhoek and majority of the participants preferred those languages. People who participated in the interviews and survey questionnaire were given a Participant Information Sheet and the Informed Consent Forms to familiarize themselves before answering questions. The Participant Information Sheet explained the rights of the participants and an Informed Consent Form was completed by participants to give consent to the researcher to engage them. Participants were further informed that their participation was voluntary and that their views and opinions remained confidential and could only be used for this research study.

Consent must be given by a person that is properly informed and should be voluntary (Flick, 2009: 41). According to Creswell & Creswell (2018) researchers have obligation to protect research participants, develop trust and promote integrity for their research studies. Throughout the interviews, participants were consistently reminded of their rights to withdraw or decline any question that makes them uncomfortable or compromised. To ensure the consumer of the research findings that research was conducted following ethical guidelines, the researcher sought for ethical approval from the Ethics Review Committee at UNISA.

## **2.9 LIMITATION OF THE STUDY**

While conducting research on petty crime in urban setting in Namibia, Nendongo (2011: 46) discovered that willingness to participate, language deficiency and time factors were some of the limitations encountered. Since the researcher of this study conducted a research study in the same urban settings, similar limiting factors were experienced. The following limitations of the study were observed and overcame as follows:

- **Language barrier**

People who could not communicate in English competently found it difficult to read and understand the content of the Participant Information Sheet and Informed Consent Form. It was also a challenge for them to complete the self-administered questionnaire. However, the researcher sought for a translator who was not prejudiced or compromised by the process.

- **Willingness to participate**

Some potential participants were very reluctant to participate and gave reasons of being busy or excuses of having travelled out of town. Some potential interviewees simply developed cold feet and withdrew from the whole exercise. Incidences of participants switching off their phones to avoid meeting with the researcher was also observed. The researcher resolved this problem of unwilling participants by conducting some interviews over the phone and/or replaced some participants with people with the same understanding on CCTV surveillance system.

- **Time factor**

As the time to complete the research study was limited, the researcher was not able to interview each potential participant. The researcher relied on the assistance of some police officers from the Windhoek City Police Service, Namibian Police (NamPol), private security officials in administering questionnaires that did not need physical presence of the researcher.

Although there were a number of challenges experienced during the research, the researcher was able to overcome them by employing alternative solutions. The researcher was assisted by police

officers, security personnel and some members of the public to distribute and collecting questionnaires. Police officers and security officers facilitated the researcher`s work by assisting him to access places that would not have been accessible to members of the public.

## **2.10 CONCLUSION**

Chapter 2 of the study covered the research design and methodology used by the researcher to collect and analyze data. It explained methods, tools and instruments used to ensure that collection of data and that these were relevant, valid and reliable. It further outlined various ethical issues that had to be complied with by researchers to enhance research credibility. Like any research study, this project also had limitations. The research mentioned shortcomings which were experienced during the research process and how those shortcomings were resolved. The next chapter dealt with the review of literatures. The researcher consulted the works of other authors who have researched and written about CCTV surveillance system as a crime prevention tool.

## **CHAPTER 3: LITERATURE REVIEW**

### **3.1 INTRODUCTION**

In this chapter, the researcher reviewed and considered various research studies conducted on CCTV surveillance systems as a measure to prevent crime. It is very important to first hear what others has discovered instead of duplicating information that has already been documented. Research review provides researchers with opportunities to explore other studies that have covered similar research before. In essence, this discussion focused on the relationship between CCTV surveillance and crime prevention. It further articulated on issues of crime displacement, community perceptions and invasion of privacy. According to Basimanyane & Gandhi (2019: 1) a CCTV surveillance system is an indispensable security tool that contributes immensely to public safety, protection of people and properties as well as facilitates criminal investigations. It is widely known that many cities in the United States of America (USA) and around the world employ CCTV cameras to monitor, reduce and detect criminal activities (Groot, 2019: 6). CCTV improves the lives of citizens and enhances the economic status of people (Ways & Pearson, 2018: 80). A survey carried out by Gill and Spriggs (2005:19) indicates that the impact of CCTV installation is enormous. Their report concluded that the presence of CCTV in cities instils fear of crime and regulates public behaviors.

The increase in demand for security in the communities and fear for crime such as terrorism attack, robbery and theft has led to an increased demand of deployment of CCTV surveillance in public and private spaces (Valera & Velastin, 2005: 193). For example, the experiment of CCTV at Central Cape Town proved extremely successful, and more cameras were installed at crime hotspots outside the CBD as a result of such experiment (Minnaar, 2015: 184). The rise of CCTV into security industry has provided researchers with improved crime analysis because it has narrowed studies to more specific security areas rather than generalizing (Mazerolle, Hurley & Chamlin, 2002: 60). When selecting locations to install CCTV cameras, the first step is to look at areas where criminals believe their chances of being caught is low (Lim et al, 2013: 245). For effective CCTV operation, Minnaar (2015: 185) retaliates that there are some obvious camera

requirements that need to be met. Cameras with ability to pan, tilt and zoom are effective in monitoring an open street.

Although CCTV has been praised for reducing crime, the challenge has always been the mushrooming of unregulated CCTV cameras in cities (Basimanyane & Gandhi, 2019: 4). The advancement of technology and continuous monitoring of public spaces for safety and security purposes has always been intersected with privacy issues (Kuehn, 2019: 99). The right to privacy must be balanced with the right to safety and security because they are all recognized as basic and fundamental rights (Molepo et al, 2019: 157). According to Basimanyane & Gandhi (2019: 3) there is no universally recognized definition of privacy. Under the International Law, the right to privacy is protected in Article 12 of the Universal Declaration of Human Rights (UDHR) and Article 17 of the International Convention on Civil and Political Rights (ICCPR). In addition, the Human Rights Committee through the General Comment No. 16 of 1988 attempts to define privacy by giving examples such as unauthorized surveillance and searches of properties and homes of individuals which violates their rights to privacy. The findings of Khan, Aziz, Faruk & Talukder (2020: 54) indicate that the perception of police officers and community members of Bangladesh about the impact of CCTV against crime was overwhelmingly in its support as a tool that can be used to prevent crime as opposed to privacy infringement.

### **3.2 EMERGENCE OF CCTV**

The notion of photographic image in controlling crime dates back in the 1840s (Noris, McCahill & Wood, 2004: 110). Photographic images were used in England and France as early as 1850s to identify criminals that had escaped from custody (Rouille, 1987: 51). The development of CCTV in Britain began in the 1950s when police officers used it to enforce control at traffic lights and later pan-tilt and zoom (PTZ) cameras were introduced to monitor crowds. Gradually, CCTV surveillance spread into other areas such as retail, mining and subways stations to prevent staff assault and robbery (McCahill & Noris, 2002: np).

Despite poor image quality and regular technical failure of CCTV in 1960, the Met Officer in Derby identified areas where cameras could be installed to prevent and catch pickpocketing and deter theft of motor vehicles (William, 2003: 12). However, large-scale public surveillance only started in 1985 in Britain after the incidence of a bomb blast that killed at least 5 people at the

Conference Hotel where the then British Prime Minister was also in the attendance (Noris et al, 2004: 111).

Minnaar (2007: 175) states that the CCTV surveillance system was first introduced in South Africa by the mining and gambling (casino) industries. It was later adopted by private security entities to monitor and control access points of large companies. The security industrial revolution for improved ways of securing and safeguarding of assets has triggered new innovative ways of providing efficient security services. Some of the security innovation includes the erection of CCTV surveillance cameras (Pillay, 2020: 35).

In Gaborone (Botswana), public CCTV surveillance cameras were installed in 2018 and many cameras were erected at Gaborone`s eight (8) major malls where large number of people are found (Molepo et al, 2020: 150). The migration to 4G has made it easier to monitor CCTV through computer network which displays on mobile phones or tablet. Internet has significantly improved the use of CCTV whereby cordless cameras can also be used for the same purpose (Noimanee, Noimanee & Mounghaodeang, 2021 np).

Now with the introduction of CCTV system for public surveillance in Windhoek, the Windhoek City Police has recorded a significant crime reduction to an extent that some of the crimes dropped with 35% especially in areas where cameras are installed (WCPOLS 2010: 12). With the use of conventional methods of crime prevention such as police patrol, neighbourhood watch bodies, Women-and-Men networks crime rate used to be very high. Madamombe (2018: 33) asserts that CCTV is one of the security features used at automated teller machines (ATMs) in Namibia to protect bank clients against fraud and other related crimes.

### **3.3 CCTV AND CRIME PREVENTION**

CCTV surveillance is a specialized security service provided in particular areas such as Central Business District (CBD) of main Metropolitan areas of South Africa as a measure to control and prevent crime in support of other policing strategies (Minnaar, 2007: 175). According to Armitage (2002: np) the reduction of crime using CCTV is based on the following assumptions:

- **Deterrence:** The presence of a CCTV in a certain location inhibits criminals from committing crime in areas that are under surveillance. Usually if the risk of committing crime outweighs the benefits, then potential offenders opt not to pursue such risky operations.
- **Efficient deployment:** Where the right cameras are properly installed and monitor all angles deemed necessary, it often facilitates policing process in terms of detection, arrests, and investigations of crime.
- **Detection:** “CCTV cameras capture images of offences taking place” (Armitage, 2002). This has major impact of police winning cases, punishing of offenders and their removal from the society.

Valera & Velastin (2005: 193) explain that the 3<sup>rd</sup> generation CCTV system is automated and capable of detecting images in wider areas in motion or static. The system is more accurate in terms of information (image) capturing because of advanced camera sensors and functionalities. However, it also has disadvantages that need to be corrected through thorough research. Robust detection and tracking algorithms need behavioral analysis. The objectives of the CCTV installation has to do with safety perspective such as the reduction of criminal activities and threats to people and properties (Glanz, Nacerodien, Mokotedi, Koitsioe & Ntuli, 1996: np). In his study, Moyo (2019: 182) concluded that CCTV reduces crime in some circumstances where the implementation of the technology is carefully rolled out. CCTV is the most popularly used security measures in households and aviation industry. CCTV monitoring assists people to feel safer in places that are under surveillance (Khan, Azziz, Faruk & Talukder, 2020: 49). It was further explicated that CCTV facilitates investigations and helps investigators to resolve crime (Khan et al, 2020: 50). According to Ratcliffe & Guidetti (2008: 3) CCTV systems enable businesses to develop their crime prevention strategies by employing intelligence-led policing. Business models are developed to coordinate crime detection activities and problem solving. Murphy (1999: 383) expanded further by saying that footage generated by CCTV cameras contains reliable evidence of the visuals recorded and saved on video tapes or disks to modern devices such as USBs and external hard-drives.

### **3.4 ROLE OF CCTV IN CRIME DISPLACEMENT**

Crime displacement happens when any intervention is taken in any area to prevent crime (Khan et al (2020: 55). CCTV cameras in particular play a pivotal role in driving away criminals for fear of being caught committing crime on cameras. CCTV exposes the risk of detection and legal action against identified offenders. Eck & Weisburd (2015: 19) define crime displacement as shifting of crime events from one place to another. Under displacement context crime events often shift from crime-controlled areas to less controlled areas. Spatial displacement spoils crime prevention efforts and throws all benefits in doubt. CCTV is one of the crime prevention strategies which cause displacement of crime events to other places that do not have such crime control measures in place. Eck & Weisburd (2015: 19) further explained that displacement often receives less attention from researchers because it is always a secondary issue to investigate. Sometimes it is very difficult to detect if displacement took place if criminals have broadly spread themselves across all areas that are not covered by the CCTV cameras. La Vigne et al (2011: 19) however dispute the claim that crime is displaced to nearby areas because these areas do not often have similar attractions.

In addition, Hayward (2007: 233) explains that “Rational Choice Theory is a component of situational crime prevention approach by which offenders seek advantages to themselves by their criminal behaviors.” This means that due to CCTV cameras that would have been installed in a certain area, criminals tend to look for other new grounds for their criminal activities and avoid being captured on cameras while committing crimes. These decisions are rational within the constraints of time, ability and the availability of relevant information. Hayward (2007: 234) further explains that the routine activity theory seeks to explain the occurrence of crime events as the influence of several circumstances. The first of the circumstances is that there must be a motivated offender. Secondly, there must be a desirable target and thirdly, the target and offender must be in the same place and at the same time. Finally, the intimate handlers, guardians and place managers must be absent or ineffective. This basically means that for criminal activity to take place there must be a willing offender who has a desire to commit a crime in the absence of security control measures. With the implementation of CCTV system, it eliminates the motive, desired target and the manager of the targeted property is always



watching, which forces criminals to migrate to other places of the city for greener pastures (Hayward, 2007: 234).

Khan et al (2020: 56) confirm that generally, displacement occurs when the police or any security organization takes a decision to come up with security interventions aimed at preventing crime. CCTV is one of the security interventions which causes offenders to divert their criminal activities elsewhere thereby causing a displacement. Armitage (2002: np) explains that the introduction of the crime prevention measures (e.g CCTV) in a certain area impedes opportunities for offenders from committing crime. To avoid such prevention measures, offenders select other targets or change their choices of crime. Basimanyane & Gandhi (2019: 8) reported that the study conducted by Civilian Secretariat for Police in 1995 to 1996 indicated that there was a reduction of 8.8% in priority crimes in the CBD. It was further reported that although crime has decreased in the Benoni CBD, it has increased by 46% elsewhere in Benoni which clearly indicates that crime displacement has taken place.

According to Minnaar (2007: 195) the concern has been that, in the absence of scientific analysis or comparison of types of crimes reduced and those occurred in the adjacent areas, it cannot be confirmed for sure that crime displacement actually took place. Waples, Gill & Fisher (2009: 220) argues that spatial is a complex phenomenon because there are no specific standards methods identified yet. It is not correct to assume that crime displacement took place at the area next to places where CCTV is installed even if CCTV seems to be impactful. Waples et al (2009: 221) further state that CCTV can cause spatial displacement of some types of crime but not in a regular or uniform manner.

### **3.5 LAYOUT OF CCTV**

CCTV surveillance cameras can either be fixed or deployable. The fixed system is more common where cameras are fixed on poles in residential areas or affixed on lamp posts (Gill & Spriggs, 2005: 17). CCTV cameras collect images that are further transmitted to a control room where operators sit and monitor the criminal activities and it is where images are recorded and stored as digital information (Moyo, 2019: 2).

- **control room**

According to Valera & Velastin (2005: 192) CCTV consists of a number of cameras positioned in multiple remote locations and linked to a set of monitors installed in a single control room. Moyo (2019: 2) agrees that that cameras are installed at various remote areas to monitor and scan places, or they can also be controlled remotely by control room operators. Minnaar (2007: 192) explains that in order to monitor criminal activities 24 hours a day, Metro Police CCTV Control Room in Durban increased control room operators from 2 to 16 per shift to ensure effectiveness in preventing crime. The public plays a crucial role in reporting incidents in progress to control room, so that the operator's direct surveillance to those suspected areas (Gill & Spriggs, 2005: 12).

Smith (2004: 376) states that in the control room, cameras are operated by human operatives on duty on day-by-day basis with a sole purpose of providing effective and sustainable crime prevention services to the community. Smith (1995: 13) further states that operators at the control room carry personal Very High Frequency (VHF) radios which they use to communicate directly with officers in the field for effective responses to criminal activities in progress. Dogbatse (2020: 44) advises that the police or security firms need additional funds to maintain the control rooms in good condition to effectively implement its functions. Monitoring the arrays of CCTV cameras feeds can be very demanding and visually exhausting. Control room operators have resolved to arrange cameras with common scene into groups that share same semantic properties (Tatler, 2021: 21). The advancement of technology has simplified CCTV surveillance systems. Security managers have started installing cameras that can be monitored by law enforcement officers on laptops and mobile phones instead of spending hours in control rooms (Dogbatse, 2020: 21). CCTV control room operators get on-job training from operators that are already well established and experienced in operating the system (Smith, 2004: 384).

- **Types CCTV cameras**

It is imperative that CCTV surveillance system be equipped with relevant and modern cameras that are able to perform the function of surveillance effectively. It does not serve any purpose for an institutions to procure and install a system which lacks the necessary basic operational

functions. Security managers are encouraged to familiarize themselves with the most effective CCTV cameras in the market in order to gain maximum benefits from the intervention. Molepo et al (2020: 157) explains that pan-tilt-zoom (PTZ) cameras can rotate in a 360-degree angle and can zoom images closer that are 200 meters away even at night. PTZ cameras can be controlled by the operators in the control room with the purpose of viewing an incident in a specific location. Its ability to turn and zoom makes it flexible for control room operators to identify and focus on imminent threats (Pieterse, 2017: 12). In addition, Moyo (2019: 62) added that a number of cameras and a pan-tilt-zoom (PTZ) camera type, a good control room operation, and good system management skills contribute to the effectiveness of the CCTV towards prevention of crimes. Pieterse (2017: 11) explains that there is a type of a camera called a Bullet camera. This camera is suitable for outdoor surveillance, and it is resistant to dust, water and insects. Bullet cameras adapt to every environment and relatively cheaper compared to other types of cameras. Pieterse (2017: 11) further explains that for indoor surveillance Dome camera seems to have been a favorite in security business. This camera is in dome like shape, easy to integrate into most environment, and very difficult to predict which direction or angle it covers. In addition, Pieterse (2017: 12) states that there is also covert cameras that are mainly used to monitor areas or locations unsuspected. These cameras are normally housed in other objects to disguise their presence. CCTV control room operators must be able to recognize and identify the person or object involved in the commissioning of crime irrespective of environment, weather, or darkness (night) (Groot, 2019: 25). There are cameras manufactured with IR LED and can flexibly be used during the day and during the night (Pieterse, 2017: 14). These specific features can be found in most cameras such as PTZ, dome as well as bullet cameras. However, there is still a need for more research to help in identifying factors and operational characteristics which will make CCTV more effective and reliable despite new advancement in CCTV cameras (Moyo, 2019: 63).

- **Location of the cameras**

The location of cameras is generally selected and informed by the level of criminal activities taking place in such location. Essentially, the location where cameras are installed has a direct impact on the performance of the system. If the location has a low crime returns then the

performance of the CCTV will be low. On the other hand, in the location where crime is likely to happen more frequently than the performance of the system will be high. In this study of evaluating the role of CCTV surveillance system in Windhoek, the researcher sought to determine whether the locations of the cameras have an impact on crime prevention. According to Molepo et al (2020: 145) cameras were installed at malls because that is a breeding ground for criminal activities such as smash-and-grab from parked cars and purse snatching. Moyo (2019: 15) on the other hand states that cameras were installed in Johannesburg CBD because the level of crime in the area has increased due to many illegal foreign immigrants living in that area. Ways & Pearson (2018: 80) agree with Moyo that crime and violence in downtown business district of Baltimore City has made it unpopular and CCTV surveillance installation was intended to prevent and reduce crime. In Durban, 40 cameras were installed in 1995 to monitor and control the flow of traffic in the central business district (Glanz et al, 1996: np). In addition, Dogbatse (2020: 37) cameras were procured and installed in Kumasi Central Business District (KCBD) to ensure residents of Kumasi of their safety and security and to continue with their normal daily business without fear of crime. Hamburg Subway is fully equipped with CCTV surveillance system hosted at the main train station to monitor criminal behaviors such as vandalism and harassment of passengers (Zuraski & Czerwinski, 2008: 53).

Piza, Welsh, Farrington & Thomas (2019: 16) report that a significant reduction of crime in residential areas was recorded with crime having dropped with 12% in areas under study. The highest level of CCTV surveillance awareness was recorded in smaller residential areas. People in small residential areas understand how CCTV works and its impact on crime and violence (Gill & Spriggs 2005: 45). Study conducted in Cincinnati and Ohio in USA reveals that crimes such as theft, robbery, assault and burglary in residential areas were reduced because of CCTV installation in those areas (Khan et al, 2020: 50).

### **3.6 PERCEPTIONS AND INVASION OF PRIVACY**

#### **3.6.1 Perceptions regarding CCTV**

In their study regarding the perception on CCTV, La Vigne et al (2011: 56) states that if the perception of crime increases, the usage of CCTV also increases. In Kelowna (Canada) residents and tourists only started using the City Park after the police installed CCTV cameras. Victims of

crime and their relatives felt that the park was unsafe without additional security measures such as CCTV surveillance to control unbecoming behavior (Lett, 2002: 34). According to Ratcliffe et al (2009: 751) offenders' perception is based on the camera range, and whether the risk of committing a crime outweighs the benefits from such crime or not. Zurawski & Czerwinski (2008: 69) state that the perception of residents of Hamburg regarding the CCTV is not based on crime itself but rather on feeling of safety especially in public places.

### **3.6.2 Privacy issues**

The deployment of countermeasures such as CCTV cameras must be discussed and agreed with people living in the area to avoid issues of violation of privacy and individual freedom (Kole, 2015: 109). Article 13 of the Namibian Constitution (Act no 1 of 1990) defines "privacy" as a right to non-interference with one's seclusion of their homes, correspondence or communication done in accordance with the law. Article 12 of the United Nation Declaration of Human Rights provides that "no person shall be subjected to arbitrary interference with his/her privacy, family home or correspondence and everyone has a right to the protection of the law against such interference or attack." Currently, there is no law or policy in Namibia which regulates the operations of CCTV surveillance system and this situation may lead to abuse such as invasion of privacy (Mare, 2019: 21).

In South Africa, surveillance of public spaces does not constitute violation of privacy, but the issue of privacy arises when images and private information collected by CCTV are stored and processed in the manner that could pose risk or harm the reputation of individuals (Basimanyane & Gandhi, 2019: 6). There has been a concern from a small section of the citizens regarding government intrusion into their private life, but this issue could not be sustained because the demand of more cameras from residents and neighbourhood watches neutralized this call (Minnaar, 2001: 197). In support of Minnaar's views, Moyo (2019: 148) explicates that, since there were very few people (participants) who expressed concern about invasion of privacy, the majority of the people in Johannesburg understand the need to enhance security by deploying extra security measures such as CCTV cameras.

In Europe, people from Enchede City consider privacy to information as the most important one (Groot, 2019: 39). In Germany, the Constitutional Court ruled that it is imperative in democracy to know who is under surveillance, why and by who (Noris et al, 2004: 121). However, surveillance of public spaces should meet certain requirements before carried out. Noris et al (2004: 121) further states that in Denmark, the surveillance of public places by private bodies is against the law and can only be performed by the police under strict regulations.

As supported by Khan et al (2020: 56) research outcome, 86% of the community members feel that CCTV cameras do not hamper their privacy in public spaces. In fact, Crime committed in public spaces are easily identified by means of CCTV cameras and the police or security officials rapidly respond. Additionally, according to Mare (2019: 21) the perception regarding the CCTV cameras among private security personnel in Windhoek is that the drastic decrease in crime occurrence in the central business district (CBD) especially theft was as result of CCTV cameras installation. However, the disadvantage is that there are still perceptions among community members who feel that there is not enough evidence to support the claim that CCTV cameras reduce crime. Cases of voyeuristic opportunism by CCTV owners focusing cameras beyond their perimeters to observe activities in the neighbors` yard is very rife.

### **3.7 CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN (CPTED)**

Cozens, Saville & Hillier (2005: 1) define crime prevention through environmental design (CPTED) as a proper design and effective use of the build environment which can lead to reduction of fear and incidences of crime and an improvement in quality of life. Since the conceptualization of CPTED in 1970, it has become a popular approach to prevent crime especially in Europe, North America, Australia and to a certain extend South Africa (Reynald, 2011: np). Macdonald & Gifford (1989: 77) state that one of the CPTED components is the defensible space which an improvement done on a property to reduce or protect it from criminals. Defensible space refers to a wall or fence erected around a building that increases the territorial advantage and helps to deter criminals.

Towards 2010 FIFA World Cup in South Africa many of the football stadia were improved to meet certain safety standards as demanded by FIFA. Therefore, one of the aspects considered

during the construction was CPTED, and defensible space was one of the method looked during the designing phase (UNISA, 2016: 29). CPTED strategies work better when accompanied by Situational Crime Prevention approaches. The two approaches can be applied to prevent crime because CPTED is more concerned about the environment while situational crime prevention is more on “actual” situation (Kole, 2015: 112). In order to build safer communities, crime prevention through environmental design (CPTED) strategies is that it largely focusses on reducing risk of crime events. CPTED reduces crime risks and fear through safer designs of buildings, the environment, and residential places (Minnaar, 2004: 44).

Crime prevention through environment design has many advantages which benefit communities through crime prevention and maintenance of law (Tomuta & Dang, 2017: 3).

- CPTED is a relatively cheaper security intervention and sometimes does not cost anything because of how the environment was designed.
- It gives communities an opportunity to participate in matters of crime prevention activities and possibly provide their inputs.
- CPTED incorporates both environment features and technologies to enhance crime prevention efforts.
- It supplements law enforcement efforts to easily combat crime in the areas where CPTED approaches are applied.

CCTV deter criminal activities through a perceived increase of likelihood of risk detection. CCTV surveillance measure is an example of hardening the target which is part of the objectives of CPTED theory to reduce and prevent crime (Cozens, Saville & Hillier, 2005: 3).

### **3.8 CCTV IN SOUTH AFRICA, BOTSWANA, AND BRAZIL**

The researcher chose to analyze the operations of CCTV surveillance systems in some cities in South Africa, Gaborone and some CBD's in Brazil. The aim of the researcher choosing to analyse South African case was because Namibia regards South Africa as better in terms of technological advances and use SA as a benchmark. As for Botswana, Namibia regards Botswana as a peer in terms of technological infrastructure. Therefore, by making this

comparative analysis the researcher aimed to find out how Namibia has progressed compared to her peers. The inclusion of Brazil was simply to determine the demand of CCTV in that country since it is located on a different continent and it's not in Europe where the system is popular.

### **3.8.1 Implementation of CCTV surveillance system in SA's CBD**

The emergence of Information Technology (IT) has contributed immensely to current security solutions with Private Security Industry (PSI) leading the application of CCTV system as an alternative security measure in South Africa (Pillay, 2020: 75). In recent years South Africa has seen a massive rollout of CCTV surveillance system in CBDs of different cities such as Johannesburg, Cape Town, Durban and Pretoria (Minnaar, 2007: 176). In addition, Kole (2015: 96) states that from 2013 South Africa has witnessed an increased involvement of CCTV system in Gauteng highway project (e-toll project). Basimanyane & Gandhi (2019:2) confirms that all major cities in South Africa have CCTV surveillance system and the system is mostly installed in CBD areas and along busy highways. Moyo (2019: 2) explains that Municipalities that claim to be understaffed and under-resourced in terms of police officers' availability use CCTV to monitor areas that could not be reached by police using smart cameras such as Automatic Number Plate Recognition (ANPR) and facial recognition software. However, although the CCTV surveillance seems to have more advantages of detecting, reducing and preventing crime, the capturing and storing of personal information through CCTV cameras violate and interfere with right to privacy of individuals (Basimanyane & Gandhi, 2019: 6).

### **3.8.2 Implementation of CCTV in Gaborone (Botswana)**

Private security companies in Botswana have been offering services to organizations and people who can afford. About 789 security companies were registered with the Office of the President as per legal requirement in Botswana but only 150 companies were active (Kole, 2015: 46). CPTED is a popular approach to reduce crime in the Western countries, but it is also rapidly becoming a norm in developing countries such as Botswana. CCTV or video surveillance could be seen/identified/observed in some shops but there were no indications of CCTV surveillance in public spaces (Cozens & Melenhorst, 2014: 74). Lately in Gaborone, CCTV cameras are installed in major malls to reduce physical opportunities for committing criminal activities and



increase the chances of catching offenders (Molepo et al, 2020: 145). Furthermore, Molepo et al (2020: 160) state that the same evaluation of CCTV in Gaborone can be extended to other cities around the country to determine the effectiveness of CCTV in those places.

### **3.8.3 Implementation of CCTV in some CBDs in Brazil**

According to Kanashiro (2008: 270) the installation of CCTV surveillance cameras for the purpose of public security has increased in the past two decades. The use of CCTV surveillance in public spaces has been considered as an alternative security solution for more than 25 years in Brazil. The installation of CCTV surveillance at the Parque da Luz in Sao Paulo promotes not only safety and security but also culture, leisure and tourism in the city (Kanashiro, 2008: 280). The concern has been however, the lack of dedicated legislation (law) to protect Brazilian citizens regarding their personal information and against violation of their rights to privacy (Firmino et al, 2018: 5). In the City of Vila Velha, Bracalli (2019: 156) discovered that even if there are surveillance cameras in public spaces, some cameras are non-functional and thus cannot perform their primary function they were installed for which is to maintain public security in the city. International CCTV companies have shown great interest in investing in Brazil in security surveillance especially after the country hosted two major sporting events: the 2014 FIFA World Cup and the 2016 Olympic Games (Firmino et al, 2018: 15).

## **3.9 COVID-19 IMPACT ON CCTV**

The World Health Organization (WHO) (2020: np) reports that governments used CCTV surveillance systems, tracking technology and other restrictive measures to control movement of people to slow the spread of COVID-19. In France, the government used CCTV in Paris metro to estimate the number of people wearing face masks (Honey-Roses, Anguelovski, Chirch, Daher, Konijnendijk van den Bosch, Litt & Nieuwenhuijsen, 2020: 6). CCTV was used to detect persons without face masks and when such persons are detected, information is sent to the authority which via GPS locates a camera which captured a person without a mask (Rahman, Manik, Islam, Mahmud & Kim, 2020: np). In Asian countries such as South Korea, Singapore and India, CCTV-based tracking was deployed to identify potentially affected people. China

invented the AI-powered thermal cameras that recognize face to monitor its citizens (Preethika, Vaishnavi, Agnishwar, Padmanathan, Umashankar, Annapoorani & Aruloli, 2020: 4). In China, the government used surveillance method such as closed-circuit television (CCTV) amongst others to track disease spread and enforce social isolation measures. This method is very effective in collecting information regarding people's movements and their health status (Rosenkrantz, Schuurman, Bell & Amram, 2021: 2).

### **3.10 CONCLUSION**

The lack of opportunities and high unemployment rate in urban centers continues to be the primary source of high criminal activities in many communities. As an effort to detect and reduce crime among communities, the demand for CCTV surveillance has become popular especially in urban settings. CCTV surveillance systems does not only detect and deter criminals from committing crime but also assist in investigations. The positioning of cameras and installation of right cameras such as PTZ provide advantages to the operators in catching offenders in the act. Many researchers indicate that the mere presence of the cameras does not in itself provide solutions to high crime rate, it needs to be supported by a dedicated and well-trained team of operators who are able to identify crimes on cameras and provide the appropriate response to the problem. Moyo (2019: 102) predicted the growth of CCTV benefits in terms of commercial, residential and public spaces. Cities around the world have invested in CCTV to improve the lives of their people. Although acquiring a CCTV surveillance system seems to be costly, the return on investment seems to have been good. For example, in Chicago, La Vigne et al (2011: 2) state that the city managed to save a significant amount of money on criminal justice cost compared to when there were no cameras installed. It also appears that the concept of crime displacement has not been clearly proven because some researchers argue that areas nearby the controlled areas often do not attract the same attention. In addition, although there are some members of the community who feel that surveillance of public spaces invades their right to privacy, this concern has not been really attended to due to high demand from law enforcement agencies for more CCTV cameras to prevent crime. The concept of crime prevention through environmental design CPTED was suggested by various researchers as the alternative solution to

crime prevention and crime reduction strategies. CCTV is also one of the CPTED approaches to hardening the targets and using the environment build to prevent crime.

Africa which has always been at the periphery of crime prevention development has been slowly embracing the notion of public surveillance. South Africa has been leading in terms of public surveillance using CCTV system in the Southern Africa Development Community (SADC) region. Most of its larger metropolitan areas are fully covered with cameras. Namibia and Botswana have also begun to install cameras especially in their capital cities like Windhoek and Gaborone respectively. There is also a strong presence of CCTV surveillance coverage in most of Brazilian cities and many international CCTV investors have shown interest in investing in Brazil especially after the 2014 FIFA World Cup and 2016 Olympics Games. Lastly, the impact of CCTV on COVID-19 has also been noticeable. Some countries use CCTV to determine their citizens' behaviors in adhering to health protocols in preventing the spread the coronavirus. Facial recognition cameras were used to identify people that are not wearing face masks in public spaces. In order to feel the gaps identified in the problem statement of this study, the research conducted a comprehensive research aimed a evaluating the role of the CCTV surveillance system in Windhoek. The next chapter was dedicated to the collection, analysis and interpretation of data and compiled finding of the study.

## **CHAPTER 4: DATA ANALYSIS AND INTERPRETATION**

### **4.1 INTRODUCTION**

In this part of the study, the researcher analyses and interprets the data collected during the study that were carried out regarding the use of CCTV in Windhoek. The study aimed at evaluating the use of CCTV surveillance systems as a measure to prevent crime in different parts of Windhoek. To collect relevant information for the study, the researcher identified a number of questions that were asked to respondents. Data presented and analyzed in this Chapter were collected through self-administered questionnaires, face-to-face interviews, onsite observations, and document analysis. Data collected were presented and analyzed in tabular and graph forms according to their categories as identified. According to Creswell & Poth (2018: 248) a researcher must decide how to present the data whether in table, matrices, and any other organized format easy to interpret.

The objectives of the research study were to analyze the level of competency of the CCTV surveillance system operators and examine policing strategies used by the law enforcement agencies when dealing with crime observed through CCTV cameras. In addition, the other objective of the study was to determine the perception of the community members on how they perceive the system effectiveness. The benefit of this study was to demonstrate that apart from monitoring potential crime incidents and provide appropriate responses, the CCTV also plays a significant role in crime investigations. Footages of scenes of crime can be used to identify perpetrators, witnesses and evidential materials that would have been omitted if there was no functional CCTV surveillance cameras in place. Video evidence or investigation with the aid of CCTV is one of the research areas which Namibian researchers need to explore further to assist in enhancing the performance of CCTV surveillance systems in the prosecution of offenders.

The primary question of this study was: “How effective is the use of CCTV surveillance system as a security control measure in preventing crime in Windhoek?” Various questions related to the primary question were developed and formed part of interviews and self-administered questionnaires. Three questionnaires were developed and divided into three categories namely: control room operators, police and security officers, and general public respondents. Apart from self-administering questionnaire, face-to-face interviews were also conducted with CCTV

control room operators, police officers, security officers and selected residents of various areas within Windhoek. Online surveys for police/security officers and public members were developed to maximize the collection of information. This was done to determine whether there were similarities in responses provided through interviews and questionnaires. These questions were developed to measure the understanding of respondents regarding CCTV and evaluate the perception of individuals towards the usefulness of CCTV cameras in their areas.

The researcher opted for the qualitative analysis of data approach to understand the meaning of data, beliefs and ideas of respondents regarding the technology. The analysis of data comprised of explanations that enabled the researcher to evaluate the use of CCTV surveillance system as a tool that effectively prevents or reduces crime in Windhoek. According to Pillay (2020: 264) “researchers use qualitative research methods to conduct interviews supported by qualitative questionnaires, emailing qualitative questionnaires to respondents, and documentary analysis techniques to achieve objectives of the research study.”

Members of the public who participated in the interviews and self-administered questionnaires included community leaders, community activists, vendors, shebeen owners, restaurant workers, sex workers, and taxi drivers among others. During the process of collecting data, the researcher concentrated on the following questions as the focus of the study:

- Whether the respondents were aware of any open-street CCTV surveillance cameras in their neighbourhood. The purpose of this question was simply to determine the awareness of CCTV surveillance cameras as a crime prevention tool among residents of different locations.
- Whether the respondents knew who manages the CCTV surveillance system and the operational procedures involved in handling crime incidents in their neighbourhood.
- Whether the respondents had noticed reduction in crime incidents after the installation of the CCTV surveillance cameras in the areas.

## **4.2 INTERVIEW QUESTIONS AND QUESTIONNAIRES**

### **4.2.1 Interview Questions (Please see Annexure G)**

Interviews were conducted through face-to-face or telephone methods and focused more on the following aspects:

- Understanding the knowledge and experience of the respondents on activities related to CCTV surveillance systems.
- The level of training the respondents had in security/police function in general and CCTV surveillance system operational training in particular.
- Determining which areas of Windhoek were covered by CCTV cameras and why other areas within Windhoek did not have CCTV surveillance coverage.
- Finding out about the entity/organization/company responsible for installation of open-street cameras in Windhoek.
- Returns on investment the police intends to gain from installing the CCTV surveillance system in terms of crime prevention.
- Determining how suspicious activities observed through CCTV are identified and how the response to incidents is carried out.
- Identifying types of crime that had been successfully reduced/controlled by the use of CCTV cameras.
- Determining the composition of CCTV control room and the number of operators sufficient to monitor crime per shift.

- How to collect and handle evidence from CCTV footages and how the evidence helped in resolving various crime incidents.
- Identifying external stakeholders of the City Police and the cooperation arrangements to fight crime together through the assistance of CCTV cameras.
- Community perceptions on how they felt about CCTV installation in their areas and how it contributed to their general safety.
- How the community felt about the invasion of their privacy by CCTV cameras continuously monitoring every activity every time.
- The effectiveness of CCTV surveillance cameras during COVID-19 lockdown and how it assisted the law enforcement agencies in controlling the movement of people.

#### **4.2.2 Types of Questionnaires (self-administered)**

The researcher developed three types of questionnaires that were used to maximize the collection of data from the respondents, and they are namely:

- CCTV operators (police and private security firms)
- Police/security officer (normally on patrols)
- Members of the public (in areas covered by CCTV systems only)

The questionnaires were divided into two sections, the first section focussed on the personal particulars of respondents while the second section concentrated on the operational information of the CCTV. Although these are three different questionnaires, they all followed the same patterns as explained above. In the first section of the questionnaires, the respondents were required to indicate their gender, age group and the level of education. In addition, as part of the first section (Section A) of the questionnaire, the respondents were expected to provide number of years of experience in police or security industry including whether they were familiar with the operations of CCTV surveillance system. However, in the second section (Section B), the

respondents were expected to provide more information regarding the operation of the CCTV surveillance system. Information related to the impact of CCTV on crime in their neighbourhood and the issues of privacy were some of the questions asked by the researcher. Furthermore, the questionnaires inquired about the role played by CCTV especially during the COVID-19 lockdown period.

## **4.3 DEMOGRAPHIC AND OPERATIONAL RESPONSES OF THE RESPONDENTS**

### **4.3.1 Questionnaire responses**

#### **SECTION A**

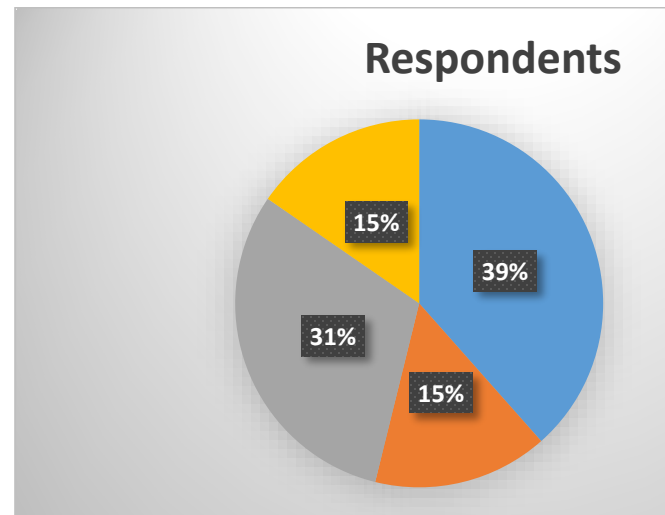
##### **a) Numbers of respondents**

Section A of the questionnaire consists of demographic statistical related questions which were mainly presented in the form of tables and graphs. It covered gender, age, and highest qualification of the respondents. Such information was crucial for the researcher to maintain balance, recognize biasness and ensure inclusiveness. The face-to-face interviews, self-administered questionnaires and online survey (Annexure G-L) involved a total of 87 respondents. Out of 75 questionnaires that were distributed equally between men and women, only 55 were returned with responses. The research also developed online surveys, and these were meant to reach potential respondents who could not be reached physically and they formed part of the total number of research respondents. Data were collected from members of the Namibian Police (Nampol), Windhoek City Police Services (WCPOLS), private security companies, CCTV control room operators and community members from various parts of Windhoek. Respondents were informed of their rights before taking part in the study. The information sheet was provided to them to explain the purpose of the study and that all information provided would be treated as confidential. The researcher further explained to them that the answers they provided would not be shared with a third party and would only be used for the purpose of this research study.



**Table 4.3- 1. Number of respondents**

<b>Institution</b>	<b>Number of respondents</b>
Nampol/City Police	18
Control Room Operator	12
Security Officer	12
Public Member	45
<b>Total Respondents</b>	<b>87</b>



**Figure 4.3- 2. Number of**

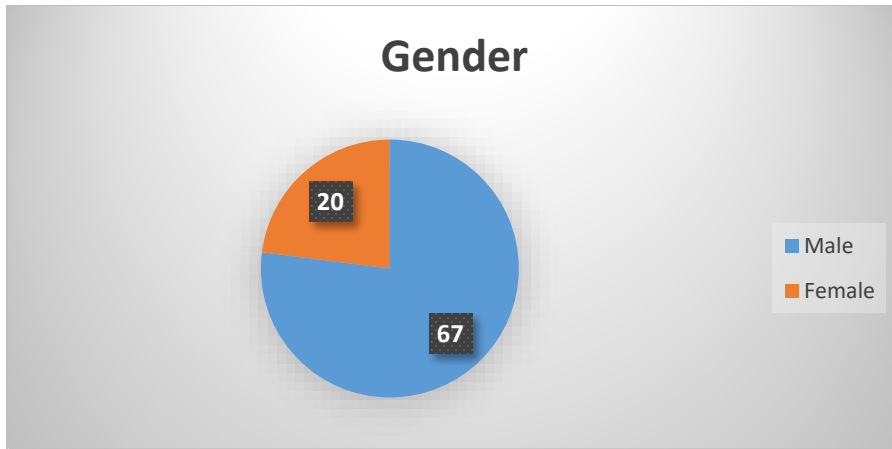
**respondents**

**b) Gender composition of respondents**

The study involved 87 people that were in various places and institutions in Windhoek for a period of one 30 Days. 67 of these respondents were male which represents 77% and only 20 were female which represents 23 of the total respondent population.

**Table 4.3- 2. Gender composition**

<b>Gender</b>	<b>Control room</b>	<b>Police</b>	<b>Security officer</b>	<b>Public member</b>	<b>Total</b>
Male	6	14	12	35	67
Female	6	4	0	10	20



**Figure 4.3- 3. Gender composition**

As it can be observed from the pie chart, CCTV control room operators in Windhoek were predominantly male. In fact, nine out of twelve operators were males which is a representation of 77% and only 23% were women. The same trend was observed in most control rooms that were visited while some control rooms had no women operators at all. Furthermore, it was observed that supervisors in all control rooms were men.

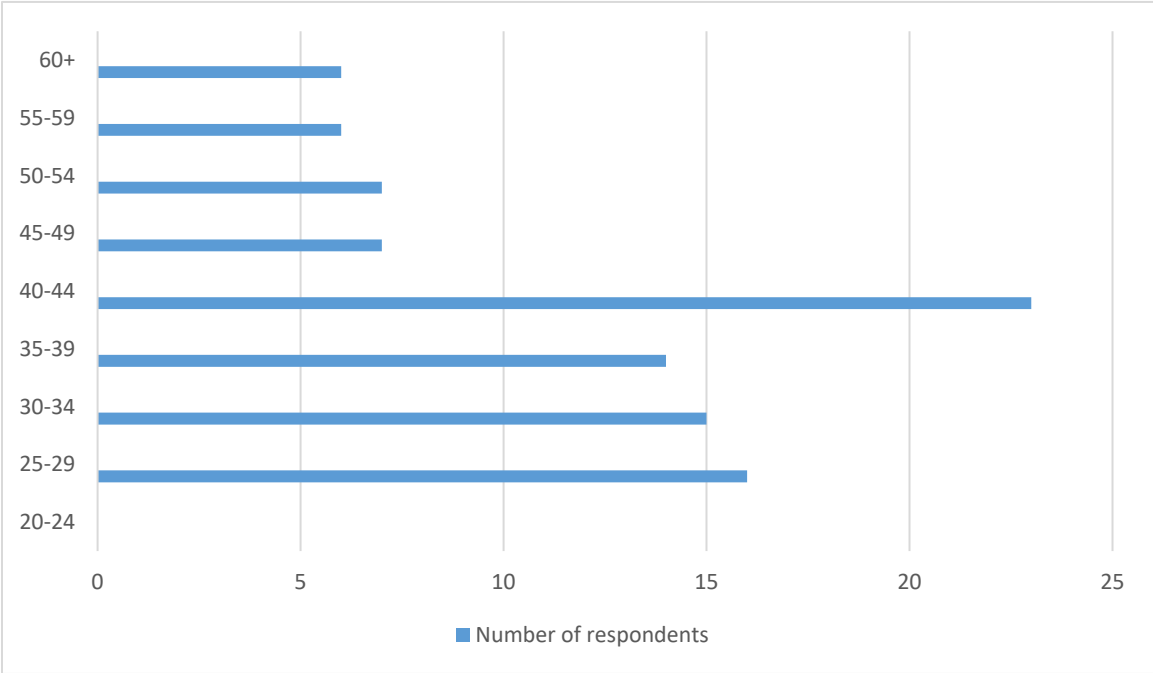
**c) Respondents age groups**

It was important for the researcher to determine the age groups of people who provided information regarding the operation of CCTV. Nine (9) age categories were created from the age of 20 to over 60 years with an interval of 5 years per age group. As it can be observed from the data shown in Table 4.3, age group category 40-44 had more participants compared to the other age groups. However, only 3 people over the age of 60 participated in this study.

**Table 4.3- 3. Respondents age group**

Age Group	Control Room Operator	Police officer	Security officer	Public Member	Total
20-24					
25-29		3	7	6	16
30-34	4	3	2	6	15

<b>35-39</b>		6	1	7	14
<b>40-44</b>	3	6		14	23
<b>45-49</b>	3		1	3	7
<b>50-54</b>		6	1		7
<b>55-59</b>		3			3
<b>60+</b>				2	2



**Figure 4.3- 4. Respondents age group**

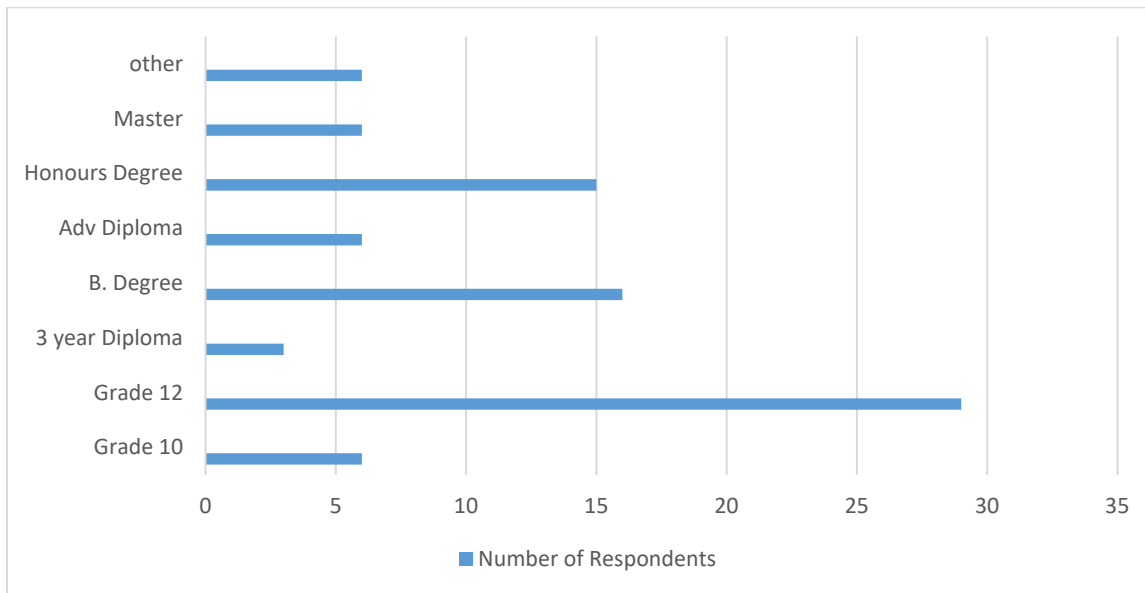
**d) Qualifications of respondents**

This part of the questionnaire required that each respondent indicates his/her level of education by providing their highest qualification. Qualifications ranged from grade 10 certificate (lowest) to doctoral degree (highest) (Table 4.4). According to the information collected, majority of the respondents were in possession of a grade 12 as the highest qualification. Interestingly, of the respondents, the most qualified were members of the public as 12 of them held an honours degree or postgraduate diploma. As to be expected, security officers employed by private security companies possessed lower qualifications which varied from Grade 10 to 12 as it can be

seen in the table below. This is chiefly so because the requirements for employment in the security companies is relatively lower compared for example to that of the police. However, this does not by all means belittle the services provided by the security companies. It was also observed that majority of the control room operators employed by private security companies to manage CCTV had undergone requisite training and this helped them operate the system effectively. Most of the CCTV training courses were conducted by trainers based in Namibia and only a handful training courses were attended in South Africa especially for the trainers and installers. The qualifications of participants categorized as members of the public included a variety of different qualification levels. Members of the public were mainly included in this study because they resided in the areas where public surveillance cameras were installed or because of their interests and awareness of CCTV operations or their willingness to participate in the study.

**Table 4.3- 4. Qualification of respondents**

<b>Highest Educational Qualification</b>	<b>Control Room</b>	<b>Police</b>	<b>security</b>	<b>Public Members</b>	<b>Total</b>
Grade 10/ Standard 8			2	4	6
Grade 12/ Standard 10	2	8	10	9	29
Certificate NQF Level 4					
Certificate NQF Level 5					
1 Year Diploma					
3 Years Diploma				3	3
Bachelor Degree	4	5		7	16
BTech					
Advanced Diploma	3			3	6
Honours Degree/Postgraduate Diploma	3			12	15
Masters		2		4	6
Doctoral					
Others (specify)		3		3	6



**Figure 4.3- 5. Qualifications of respondents**

The study also looked at the work experience (based on the number of years an employee would have worked for a company or done the same job) that each control room operator had. These included the police and security officers who participated by providing relevant information on the operation of the CCTV surveillance cameras system because it influenced the performance of their duties. Information provided by experienced respondents assisted the researcher to place certain weight on data obtained from them. All CCTV control room operators involved in the study had work experience of more than five years. The number of years included that they had served in the police/security and deployed elsewhere as police or security officers. Supervisors of individual control rooms were mainly interviewed through the face-to-face approach.

## **SECTION B**

Section B of the questionnaires (control room/police/security/public members) focused more on the operations of the CCTV surveillance systems and evaluated the roles of various stakeholders in the application of this technological crime prevention measure. Control room operators had a specific questionnaire (Annexure G) which focused on probing the processes taken when

suspicious activities were detected on cameras. It also evaluated the duties of the operators, the structure and how they managed the control room operations. There was also a questionnaire (Annexure H) that was developed with the intention to collect information from ordinary police and security officers who were not part of the control room but responded to incidents reported to them during their normal duties. The third questionnaire (Annexure I) was developed to record opinions of members of the public particularly on the effectiveness of CCTV surveillance in various places in Windhoek. In addition to face-to-face interviews the researcher received back a total of 55 (including online survey) completed questionnaires from all respondents and these were used for analyses.

#### **4.3.2 CCTV Surveillance Operations: Control room operators**

About 12 questionnaires were received from control room operators working for various law enforcement institutions such as Nampol, WCPOLS and private security companies in Windhoek. Of these companies, the cameras installed in the Nampol control room were used by police to monitor mainly specific sites in the regions. The Namibian (2018: 1) reports that the Ministry of Safety and Security spent N\$64 million in the financial year 2018/19 to procure and install CCTV surveillance cameras for three regions that were not yet covered. These cameras were mainly installed at police stations and some key national installations in the regions including the Khomas Region where Windhoek is located. Although the main focus of this research study was on surveillance cameras installed in Windhoek, some cameras found in Nampol were also regarded as essential sources of information as they monitored some parts of Windhoek.

Open-street cameras in Windhoek were installed at various crime hotspots as identified by various security institutions. The WCPOLS had installed about 110 cameras while the other cameras making a significant contribution had been installed by private companies especially around the CBD area. The names of the locations listed in Table 4.5 below were provided by control room operators and these are some of the places where CCTV cameras were installed. To avoid a long list of locations, the researcher merged some of the locations due to their proximity to one another for the purpose of effective analysis of this study. The table also indicates specific areas where cameras were mounted by either the WCPOLS, Nampol or private companies with cameras monitoring public spaces (street) activities.

**Table 4.3- 5. Camera locations and some specific area**

<b>Locations</b>	<b>Specific Areas</b>
Central Business District	<ul style="list-style-type: none"> <li>- Post street mall</li> <li>- Frans Indongo &amp; Werner List</li> <li>- Tall street</li> <li>- Wernhill parking</li> <li>- Mutual tower (north &amp; South)</li> <li>- Meteorites</li> <li>- Kasch Street -</li> <li>- Clock tower (north &amp; South)</li> </ul>
Katutura / Khomasdal	<ul style="list-style-type: none"> <li>- Evelyn Street</li> <li>- Sam Nujoma stadium</li> <li>- Otjomuise Pub</li> <li>- Wanahenda</li> </ul>
Windhoek East	<ul style="list-style-type: none"> <li>- Ausspannplatz</li> <li>- Suiderhof</li> <li>- Eros</li> <li>- Pioneerspark</li> <li>- Cimberbacia</li> <li>- Hochland park</li> <li>- Independence Stadium</li> <li>- Rocky Crest</li> </ul>
Malls	<ul style="list-style-type: none"> <li>- Groove Mall</li> <li>- Maurue Mal</li> <li>- Katutura shoprite</li> </ul>
University campuses	<ul style="list-style-type: none"> <li>- Unam</li> <li>- Nust</li> <li>- IUM</li> <li>- WVTC</li> </ul>
Informal settlements	<ul style="list-style-type: none"> <li>- Havana 4 way</li> <li>- Goreagab Dam</li> <li>- 8ste Laan</li> </ul>
Northern and Southern Industry	<ul style="list-style-type: none"> <li>- Northern Industry</li> <li>- Southern Industry</li> <li>- Lafrenz</li> </ul>
Road Blocks	<ul style="list-style-type: none"> <li>- Airport road</li> <li>- Okahandja road</li> <li>- Rehoboth road</li> </ul>
Private estates	<ul style="list-style-type: none"> <li>- Elsenheim, Finkenstain</li> <li>- Omeya, Avis</li> </ul>
Major Intersections	<ul style="list-style-type: none"> <li>- Hosea Kutako Ave</li> <li>- Independence Ave</li> <li>- Mandume Ndemufayo Ave</li> <li>- Robert Mugabe Eve</li> </ul>

As it can be observed from Table 4.5, the CBD had the highest number of cameras compared to the other selected places in Windhoek. This is so because the CBD is where various business activities take place, and it is where criminal activities frequently take place hence the demand for more cameras. It is not surprising that there are fewer cameras in Katutura, Khomasdal and informal settlement areas even though that is where the biggest part of the population of Windhoek lives. According to Himavinidu & Stage (2013: 2) Namibia has one of the most unequal societies in terms of economic income of citizens. The Katutura, Khomasdal and Informal Settlement were inhabited mostly by people with low income and were not likely to afford CCTV services unless it were installed by the municipality. Surveillance of public places was not only limited to the locations indicated in table 4.5 Institutions such as government offices, State-Owned Enterprises (SOE), airports, larger retail shops (Metro, Shoprite etc), Namibia Breweries, Hotels, fuel stations and university campuses had their in-house CCTV control rooms that were monitoring public spaces beyond their perimeter boundaries. Some of the institutions had agreements to have their cameras linked to the Windhoek City Police Service or private security companies control rooms for monitoring. Various institutions opted to outsource their CCTV operational functions to private security companies because they lacked capacity in the area of security surveillance and importantly, this allowed them more time to concentrate on the main functions of their businesses.

Regarding the question: Are all cameras working? With this question the researcher wanted to know if all cameras installed and monitored in control rooms were in good working order. The answer to this question was an overwhelmingly “yes” although when the researcher visited some control rooms, he could see that some cameras were off. The explanation provided was that cameras can go off due to bad weather, poor internet connectivity, and poor vision or sometimes act of vandalism by members of the public. Cameras which do not work should not be understood literally, because it also means that they do not meet certain standards (Bricalli, 2019: 152). In some instances, cameras could be found pointing to different directions that were not initially intended for monitoring. Cameras that are shifted away from the intended targets were considered not working. This problem cannot be picked up if the cameras are not monitored constantly.



The maximum number of cameras that each operator monitored on an 8-hour shift in many of the CCTV control rooms that were visited was 24. There are control rooms in which operators monitored more than 24 and they blamed this on the lack of manpower caused by inability of their institutions to recruit additional personnel due to economic reasons. It is humanly impossible to pay constant attention to 24 cameras for 8 hours uninterrupted, therefore in order to manage this problem operators have identified problematic areas and they rather pay more attention to cameras that monitor such areas. Some cameras can be set on auto-patrol mode and alerts the operator when a movement is detected. The auto patrol functionality relieves pressure from operators and improves effectiveness of CCTV surveillance. Monitoring of cameras is a very exhausting exercise and requires total attention from operators throughout the shift. Measures aimed at easing fatigue and improving productivity is always encouraged.

With regards to whether control room operators had received any specialized CCTV operator`s training before or during their service, majority of the police control room operators interviewed indicated that they had not attended any specialized course. However, it was further explicated that they received on-job training and that is how the monitoring knowhow was acquired. Since integrity is an essential element to all CCTV operators, the police ensured that all operators were vetted and received security clearance from the relevant security body. Internal regulation/policy requires that operators should be vetted before taking up employment in the CCTV control room. The purpose of vetting is to ensure that the right people are selected for this function because CCTV operations deal with confidential and sometimes very sensitive information, and therefore a high degree of integrity is required. On the other hand security company operators do not go through vetting process but some go through a certain level of integrity test conducted by employers. The researcher also observed that operators employed by private security companies underwent compulsory CCTV operation training before being deployed in the control rooms.

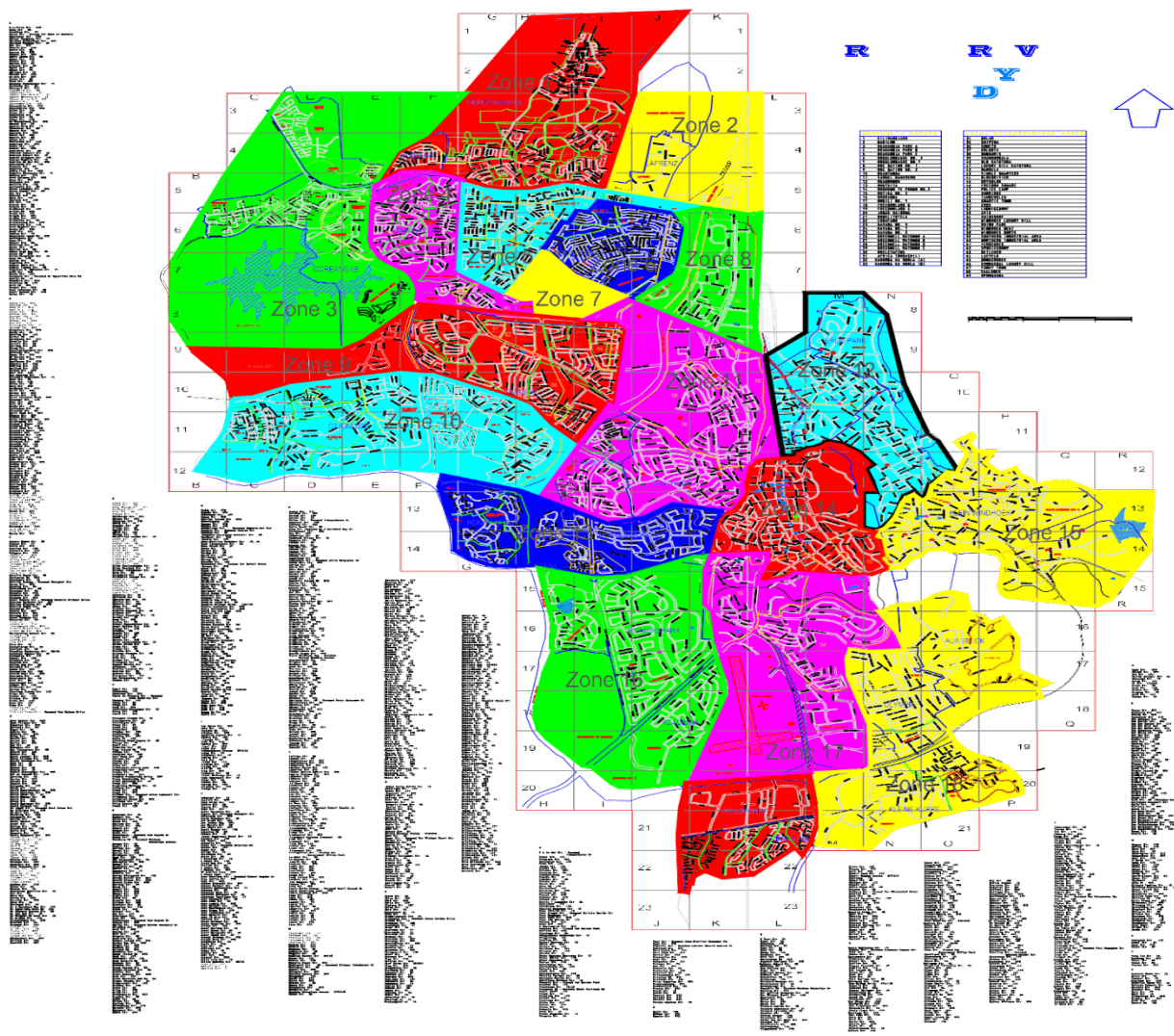
To the question: What do you normally do when on duty? The researcher expected the respondents to explain what their day-to-day duties entailed within the domain of a CCTV control room. In addition to that, the researcher expected operators to explain the steps normally taken when suspicious activities were detected. Moyo (2019: 125) explains that every reactive

activity has to be carried out by the control room in collaboration with patrol officers on the ground.

*“We monitor cameras by moving them around one by one to pick up suspicious movements and report incidents to members on the ground to provide a response or send member that are on standby. We also check the positioning of cameras and record all incidents in the in the occurrence book”* (Questionnaire A, 2021)

And another respondent stated:

*“When a suspicious activity is detected on camera, we communicate with the members on patrol via VHF radio or call them directly on their mobile phones if it is urgent and member needs to respond quickly. We also send members on standby just in case the zonal member cannot find the location that needs police attention”* (Questionnaire A, 2021).



**Figure 4.3- 6. Windhoek policing zones**

Source: <http://www.windhoekcitypolice.org.na>

Windhoek municipality area is divided into 19 policing zones by the WCPOLS Services. These zones were developed to manage and facilitate the deployment of police officers in various parts of Windhoek. WCPOLS officers are allocated to individual zones and supplemented by members of the Nampol, armed response security companies and neighborhood watch members. Minnaar (2005: 85) supports the private-public partnership policing because participants tend to share resources, knowledge, learn from one another and strengthening the strategies to prevent crime. The benefit of the partnership policing is that participants are able to share policing activities by jointly responding to crime in progress or even sharing the funding to expand CCTV operations (Minnaar, 2005: 91). In Windhoek, partnership policing still need to be strengthened especially

between private security and public police. At the moment, the reason why security institutions such as City Police, private security and neighbourhood watches are collaborating with the Namibian Police is because they cannot detain and charge suspects without the involvement of the Namibian Police.

In order for the CCTV to detect the commissioning of crime, there must be physical activities involved. Crimes committed in private homes or online are difficult to capture on open-street cameras. As for the question: Which crimes have been successfully resolved with involvement of CCTV surveillance camera? Respondents listed a number of crimes among others, and they are as follow:

- House breaking
- Theft
- Common assault
- Robberies
- Theft of motor vehicles
- Theft out of motor vehicles
- Bag/cell phone snatching
- Loitering
- Public indecency
- Malicious damage to property
- Assault
- Burglary
- Shop lifting
- Drug dealing
- Loitering

CCTV cameras play a significant role in detecting traffic violations. Cameras are installed at major road intersection to assist in tracing perpetrators of traffic rules and detect car accidents. In case of vehicle accidents on the road, the control room easily picks up those incidences and traffic officers are often deployed to the scene to regulate the traffic flow to avoid congestion. The researcher was informed that CCTV cameras had been instrumental in resolving hit-and-run

incidents in Windhoek. Perpetrators who run away after damaging traffic lights are often identified and face the appropriate consequences. This also applies to road users who violate traffic laws such as driving through red traffic lights, carrying prohibited goods and driving recklessly on public roads. Another CCTV achievement that has been noticed for the past few months is the regular recording of getaway cars used in robberies. The police have been able to successfully trace and identify some the cars used as get away vehicles. Equally the community members have also been helpful in sharing those images on social media for the identification and eventual apprehension of robbers.

Inadequate CCTV coverage in Windhoek has always been a concern especially among various security agencies. The issue of funding and expanding of the system to other public places that are not covered has been a serious problem. There are places in Windhoek where people get robbed or even killed while taking a walk. For example, a Windhoek businessman was killed in July 2020 while taking a walk at the Avis Dam (The Namibian, 2020: 1). If there were cameras in the vicinity of the place where the incident took place, perhaps law enforcement officers could have reacted on time. This is just one of the many incidents where camera monitoring could have helped in alerting the police to respond on time or identify the perpetrators. As the situation is currently that is, without CCTV coverage even if suspects were arrested, it would be difficult for the state to link these perpetrators to the case without substantive evidence.

According to the Namibia Tourism Board (2020: np) Namibia received around N\$1.7 million from international travelers in 2019 and about N\$10 million of revenue was directly earned because of tourism. Windhoek being the capital city of Namibia and most tourists use Hosea Kutako Airport to get to various destinations in the country, it is imperative to protect them from unscrupulous elements who would want to take advantage of their vulnerability. Tourists are very curious of anything they see for the first time and end up going to dangerous places where they can easily be robbed. The police have for several times reported crimes committed against foreign nationals (tourists) and in most cases they were robbed of their valuable items such as cameras, cellphones, computers and money.

When the respondents were asked about how CCTV can be improved to prevent crime effectively, they all requested that more cameras be installed and capacitate the operators with fast network.

*“There is a need to put up more cameras around the city in order to make the Windhoek a safest city in Africa”* (Questionnaire A, 2021)

Judging from the responses obtained from the control room operators around Windhoek, there is a clear need to expand CCTV surveillance system to all locations in Windhoek. Currently, there is a disproportion of camera coverage between Eastern suburbs (CBD, Eros, Olympia etc) and Western suburbs (Katutura, Khomasdal and Informal settlements) of Windhoek. Throughout the study it could be observed that majority of the cameras were on the Eastern side compared to the West side of Windhoek. For example, Informal settlements are generally regarded as breeding ground of criminals and criminal activities but there were barely cameras to monitor what was going on there. Generally, people who commit crime in affluent suburbs of Windhoek come from Katutura or Informal settlements. Therefore, it did not make sense to only monitor the place where the crime is more likely to take place and leaving out places where perpetrators flee to when done committing crime. Stolen vehicles were reported to have been recovered in the bushes near Informal settlements stripped and abandoned. Had there been cameras in these areas, some of the perpetrators could have been identified. It is also very brave for someone to commit a crime when he/she knows that there are cameras watching. CCTV surveillance system does not only monitor and detect the criminality but also increases fear of being caught.

Regarding the question: Who collects evidence from the CCTV recorded footages? There was no unanimous answer on whose responsibility it was to collect evidence of recorded footage from the CCTV system. Every interviewed operator provided a different answer from the other. It appears that there is no dedicated policy or regulations which guide the retrieval, handling and dispatching of evidence obtained from the CCTV. It mainly depends on the reputation of the institution performing this function. This state of affair could jeopardize the integrity of the evidence collected. As it stands, the onus is placed squarely on courts to accept or decline CCTV evidence presented to them. It should however be stated that there are procedures which investigators follow when collecting evidence of such nature, but these procedures are not

validated by relevant law or regulations as far as CCTV evidence is concerned. Kgamanyane (2018: 26) emphasizes that it is imperative for institutions entrusted with the function of investigation of cases to develop policies and procedures that are consistent with the country's constitution.

It was also acknowledged that there is a good understanding and cooperation among stakeholders especially when it comes to conducting investigations. Anti-Corruption and Nampol investigators had access to CCTV footages of any control room upon making formal requests. This cooperation between various stakeholders facilitated the process of administration of justice and improved the effort to prevent crime in Windhoek. The willingness of control room operators to provide assistance to investigators of crime is commendable.

In case an incident happens in public spaces, control room operators are able to playback the videos and review footages and act accordingly. The Namibia Police and WCPOLS have employed internal technicians who are responsible for repairs, upkeep of the system and provide technical support to operators. In cases where the system requires specialized maintenance that cannot be performed by the in-house technical team, it is usually outsourced to specialized companies. The researcher was further informed that only vetted companies were allowed to perform such maintenance. Most of the private security companies that participated in this study provided both CCTV services operations and installation services.

To the question: How long does the video recordings stay before it is run over or deleted? The answer to this question was that the WCPOLS system has a capacity to save recordings up to 1 month. On the other hand, the average capacity that private security CCTV surveillance systems had varied from company to company, and some had quite a large capacity to store data. Increasing the number of cameras decreases the saving capacity of the system unless the capacity is pushed up every time cameras are added to the system. Old records are stored in the archives in external hard drives, universal serial bus (USBs) and servers accessible only by technicians.

The operators in CCTV control rooms have also spoken out about the challenges they face during their day-to-day duties.

- Some complained about one operator monitoring too many cameras per shift, making it difficult for them to pay sufficient attention to all of them and missing out on crime incidents that would take place.
- Too many cameras on one screen pose challenges because those blocks of each camera become too small making it difficult for operators to concentrate.
- Police operators have raised a concern of not having received proper training on CCTV camera operations. Although many have comfortably embraced the skills of monitoring, they emphasized on the need for more training.
- Outsiders demanding for playback without following the established videos reviewing protocols often disturb the monitoring process.
- Regular network failure interrupting the continuous monitoring and detection of crime. These interruptions often benefit criminals because nobody is watching them until the network problem is resolved.
- Sabotaging of cameras.

#### **4.3.3 CCTV Surveillance Operations: Police and Security officers**

This questionnaire was developed to solicit opinions and perceptions of police and security officer on the effectiveness of the CCTV surveillance system in Windhoek area. It followed the same format as the control room questionnaire, but questions were set differently because of their different roles. These members were not part of the CCTV control rooms at the time they were asked to participate in the study. Questionnaires were primarily distributed to police officers from Namibian Police and WCPOLS, and security officers from various security companies operating in Windhoek. In addition, the researcher created an online survey of the same questions and was distributed to the same category of respondents through e-mail and WhatsApp. A sample of 30 officers (18 police and 12 security) was chosen to participate in the study. The ranks of these participants ranged from constable/guard (lowest) to commissioner (highest) with work experience ranging between 5 to 23 years in the police/security.



Regarding the question: Are you aware of open-street CCTV surveillance cameras in Windhoek? With this question, the researcher was trying to determine the awareness of CCTV surveillance cameras among law enforcement officers. The answer to this question was an emphatic “yes”, that all participants were aware of the existence of CCTV cameras in the streets of Windhoek. This is an indication that CCTV surveillance system was popular among law enforcement officials, and it was regarded as an important crime prevention tool. All participants seemed to know the places in Windhoek that had CCTV surveillance cameras and were able to mention a number of locations where these cameras could be found.

Contrary to Mare (2019: 20) who finds that interviewees from the law enforcement institutions feared to express themselves on covert operation information and deemed it as sensitive to be made public, the researcher of this study had little resistance from the same category of participants. Cameras installed by Windhoek Municipality and monitored by WCPOLS officers seemed to be popular among police officers. Meanwhile, security officers appeared to have knowledge on cameras that had been installed by the municipality and private companies and these monitored malls, private estates, university campuses, government institutions and other private businesses. This does not mean, however that the police were unaware of the cameras installed by other institutions.

How does CCTV surveillance system influence your work as a police/security officer?

There were a lot of positive responses to this question. It appeared that police and security officers appreciated the use of this technology as a measure to supplement the work of the law enforcement in their effort to prevent crime in Windhoek. The following responses were repeatedly provided by the respondents:

*“CCTV assist in early detection of crime; it makes my work easier especially when looking for evidence of incidents that took place in the area where there are cameras; perpetrator easily identified; perpetrators confess to crime;”* (online survey B, 20121)

According to Lim (2015: 1) the advantage of CCTV in public spaces is to increase the probability of arresting criminals and it also alerts the police about unbecoming behaviors at certain place leading to the police attending to the problem before it escalates. CCTV can help emergency responders to reach people who need urgent attention. For example: cameras are able to pick up vehicle accidents and the operator can inform emergency services with precision where the accident took place. The respondents stated that for crimes committed in open spaces such as robberies, house breaking, malicious damage to property, assault, and theft are easily identified by CCTV cameras and can easily be resolved with the aid of CCTV evidence. Recorded evidence facilitates the identification of criminals which in most cases leads to them to confess because of the availability of overwhelming evidence. The researcher was further informed that, as a result of CCTV installation in some parts of Windhoek, there had been a noticeable reduction in some criminal activities such as robberies and house breaking. Since there are many places without open-street CCTV cameras in Windhoek, respondents could not confirm if criminals moved over to areas that were less monitored.

As to how the message was passed on before they responded, the common method of communication among police and security officers is via radio (VHF radio) communication. Cellphones are used in instances where officers where a message transmitted through the radio is not clear or they do not want to alert suspects by talking through the radio. Although the official language in Namibia is English, in some instances officers are allowed to communicate in their vernacular to ensure that the receiver of the message understands clearly. The cooperation between the Namibian Police and Windhoek City Police made it possible for control room operators to inform any of the police officers available to attend to a scene of crime. Depending on the magnitude of the problem that needs to be attended to, private security companies usually contacted the police to help in responding to callouts or to provide reinforcement. Likewise, the neighbourhood watches that operated CCTV surveillance cameras for the safety of their neighbourhood often contacted the police to respond to incidences which required the police presence.

To improve the use of CCTV surveillance system in Windhoek, the respondents suggested a number of interventions that should be put in place to reduce crime. Government should assist

the Municipality of Windhoek by funding the installation of more cameras in areas that did not have or had less cameras. State-Owned Enterprises and private businesses should invest in the security of the people and places they operate in. They should also assist in putting up cameras especially in Katutura where the majority of their employees lived and also as part of their corporate social responsibility. By so doing, they would be contributing towards the fight against crime. It was clear from the onset that every respondent had confidence in the operation of CCTV because they all had pleaded that more cameras be installed in all parts of the city. Deploying more cameras in areas that are regarded as crime hotspots may help reducing crime significantly.

One of the respondents justified the need for more cameras by saying:

*“Smart City Concept of Policing needs to be adopted to Central Government level which will then allow law enforcement to collaborate with private businesses that have CCTV cameras to aid law enforcement effort and assist in investigation of offences”* (Online Survey B, 2021)

CCTV cameras are useful policing tools for crime prevention strategies; therefore they should be protected from vandalism and any such act observed must immediately be reported to ensure continuous monitoring and detection of crime. The Use of CCTV should not only be a crime prevention measure that law enforcement agencies focus on, but crime prevention should involve the entire population to ensure a safe Windhoek in particular and Namibia at large.

#### **4.3.4 CCTV Surveillance Operations: Public members**

The purpose of law enforcement in any society is to maintain law and order and provide protection to all citizens. The Police Act (Act 19 of 1990) provides that the function of the Namibian Police is to preserve internal security, prevention of crime, investigation of crime and maintain law and order. The powers and functions of the Windhoek City Police Service are enshrined in the Municipal Police Service Regulations (reg. 2833 of 2002) which is to prevent crime, enforce traffic law and enforce municipal by-laws in complimenting the works of the Namibian Police. In addition, Security Enterprises and Security officers Act (Act 19 of 1998) provides the establishment of security enterprises with the function of protecting lives and

properties. In essence, the community members are the primary recipients of the benefits for all the legislations mentioned above. Equally community members are the beneficiaries of security measures such as CCTV surveillance system installed in Windhoek.

The purpose of this questionnaire was to engage the members of the public and solicit their opinions on how beneficial the CCTV had been thus far. Since the advent of CCTV in Namibia there had not been a comprehensive study on the effectiveness of this technology. Therefore, the researcher decided to embark upon this project and approve or disapprove perceptions around the usefulness of the CCTV surveillance system. Among members of the public who took part in completing the questionnaire, face-to-face interviews and online survey, only 7% were involved in security-related works and the rest were not involved in the security.

**Table 4.3- 6. Location of participants**

<b>Locations</b>	<b>Number of participants</b>
1. Damara Location	2
2. Khomadal	4
3. Eros	3
4. Hakahana	2
5. CBD	10
6. Havana	5
7. Windhoek North	2
8. Otjomuise	4
9. Windhoek West	3
10. Klein Kuppe	3
11. Pioneerspark	4
12. Hockland Park	3
<b>Total Number</b>	<b>45</b>

About 67 percent of respondents indicated that they were not aware of CCTV cameras in their neighbourhood. Only 33 percent of respondents were aware that there were cameras in their

neighbourhood. Those that were aware of cameras in their neighbourhood stated that most of the cameras were mounted on electric poles but could not say with certainty when the cameras were installed.

Regarding whether the community was involved in deciding on the installation of the cameras in their areas, interestingly, most cameras were installed without consulting community members. Cameras installed by WCPOLS in different places in Windhoek were mainly identified based on the frequency of crime occurrence. A minimum community engagement if any was conducted before such an undertaking was implemented. Private persons who could afford to install cameras at their houses usually did not ask for permission from neighbors to do so even though the monitoring goes beyond the borders of their premises. However, as Khan et al (2020: 56) said, over 80% of the respondents do not think CCTV interfere with privacy. In fact, people often request footage to see what happened and who was involved should there be an incident that have occurred in the neighbourhood. Though the interviewed people did not complain about the presence of cameras in their neighbourhood, the use of cameras need to be regulated in order to have a uniform and standardized operational usage.

To the question: Who facilitated the installation of CCTV surveillance cameras in your area? In this question many respondents mentioned that cameras in their areas were installed by Windhoek City Police Services. Only a small number of people said that cameras were installed by private security that were either living at private estates or a flat complex. With this question, the researcher was trying to find out who had contributed more public/open-street cameras in Windhoek. As a department of Windhoek Municipality, the WCPOLS cameras were the most popular among the public members. There were few who said that cameras in their areas were installed by neighbourhood watch. The researcher was informed that, what happens was that members of a certain residential area contributed money and bought cameras to ensure the safety of their neighbourhood.

The researcher was also informed that some members of the public had been harassed for visiting or walking through certain neighbourhood. As much as CCTV surveillance cameras were installed to monitor and detect potential crimes, there were instances where some residents

especially in the neighbourhood of the well-offs were abusing the system by preventing human movement in those areas. Some viewed it as racial discrimination especially against young black residents of Windhoek. Article 21 (g) of the Namibian Constitution provides that persons shall have a right to move freely throughout Namibia. Therefore, CCTV should not be used to limit people's movement arbitrarily because they look suspicious or of a certain race. Suspicious movements observed at odd hours however cannot be justified as freedom of movement.

Regarding the question, who respond to criminal activities observed on CCTV in the respondents' residential areas, many indicated that it was WCPOLS. This is so, because the WCPOLS had the most cameras that had a wide coverage of many areas around Windhoek. Nampol also responded but they did that in collaboration with the WCPOLS especially when there was a shortage of manpower. It must be underscored that all these law enforcement agencies were operating in the same space, therefore cooperation was crucial to effectively combat crime. In the main, private security responded to the properties of the clients or people's residences that had standing arrangements with them. Emergency response companies also collaborated with the Nampol to provide backup, effecting arrest and when there was a search to be conducted. These collaborations should be formally strengthened by memoranda of understanding which spells out the responsibility of each party as opposed to current ad hoc practice.

To the question: Have you noticed any reduction in crime occurrence after the installation of CCTV in your area? With this question, the researcher wanted to know from the members of the public if they had observed a reduction in any type of crime in their areas since cameras were placed in those areas. 63.6 percent of the respondents stated that they did not see any reduction in crime occurrence in their areas. This finding partially answers the researcher's question of why crime escalated continuously despite having so many cameras installed around Windhoek. In the problem statement of this study, the researcher indicated that crime prevention and reduction had become a concern even though CCTV surveillance cameras had become popular among law enforcement officers. Popularity of CCTV cameras cannot be equated to its effectiveness. It was difficult to assess the effectiveness of CCTV cameras installed in private houses in preventing or reducing crime. This was partly because these cameras were not constantly monitored and their

being functional depended on the owner's ability to maintain them. There is no question about the ability of CCTV cameras in private houses to identify and detect criminals, but in most cases, they picked or recorded such acts after the incidents took place. A mere 36.4 percent of respondents had indicated that there was a reduction in some crimes. When asked to list the types of crime that had been reduced, respondents mentioned housebreaking and robbery. It could not be established whether the reduction of crime reported by some respondents whose neighbourhood had cameras was displaced to places where respondents did not observe any reduction in crime occurrence. Displacement takes place when open-street CCTV surveillance cameras implementation in one area forces criminals to move to areas without CCTV cameras (Lim, 2015: 39). Displacement comes in different forms namely: temporal, spatial, target, method or crime type. This means that displacement takes place in different forms but not necessarily the same way it used to happen on the other side. Criminals are usually fearful of being caught in-the-act or identified and therefore they vacate those locations equipped with CCTV surveillance cameras to more safe areas. The respondents who had cameras in their neighbourhood narrated some incidents which happened and how they were resolved with the assistance of the CCTV surveillance cameras.

*“My neighbor's car mirror was stolen but the camera installed at the pole next to my house was used to assist to identify the perpetrator's vehicle registration number who was later arrested and returned the stolen mirror”.* (Questionnaire 1, 2021)

And the other one added that:

*“The person was walking in the street from work around 20:00 in the evening, two suspects attacked him and robbed of his wallet, mobile phone and shoes. They further stabbed him with an unknown object and died on the spot. The perpetrator was later identified and arrested with the assistance of the CCTV footages”.* (Questionnaire 9, 2012)

#### **4.3.5 Interviews: Face to face responses**

According to Walliman (2011: 99) face-to-face interviews are suitable for qualitative data collection because it can be used for general and specific responses. In addition, the interviewer

is able to judge the quality of responses and notice if a question was understood or not. For the purpose of obtaining sufficient data for this study, the researcher conducted face-to-face interviews with various respondents. The interviews were conducted from the 1 December 2021 to the 02 January 22. This period excludes when the researcher had to go back to some respondents to request them to provide further clarity or additional information. Since the researcher chose a purposive method of sampling to collect data, numerous respondents were identified for interviews. Control room operators, police officers, security officers and some members of the public. One-on-one interviews primarily focused on managers, supervisors and operators of CCTV surveillance systems at institutions which operate open-street cameras. Officials from Namibian Police, Windhoek City Police Department and private security companies were interviewed and provided information to the study.

There was a general consensus among people interviewed that CCTV surveillance system was a reliable technology which had a potential of reducing crime and change people behaviors towards criminal activities. What came out unclear however, was the extent at which this security measure controlled crime in Windhoek. More than 60 percent of the members of the public interviewed held a strong view that CCTV surveillance had not been effective in dealing with crime in Windhoek and this seemed to be the perception of the public towards the system. Contrary to the law enforcement agencies (the police and private security), they saw CCTV surveillance system as a critical tool to combat crime in Windhoek. CCTV cameras enhanced police/security performance compared to the conventional policing methods such as patrolling and reactive policing. Detection of crime had improved because the police did not solely rely on members of the public to call the charge office to report crimes. Also, CCTV cameras improved the response time. Some police respondents estimated that the response time had dropped to 10-15 minutes at most after an incident would have been reported. Some members of the public did not agree with statements of the officers on the response time stating that sometimes the police took too long to attend to incidents in their neighbourhood. It was also observed that some areas in the informal settlements had poor lighting which made it difficult for operators to notice what was going on before alerting the response team. Informal settlements lacked municipal services such as roads (streets), streetlights and police services (including CCTV surveillance cameras)



because they were not part of the formal setup of the municipality yet. Therefore, the police struggled to access some of the areas on time to provide police services promptly.

#### **a) On-site observation**

During the on-site observation visits to CCTV control rooms, the researcher was able to observe how the operators monitored the areas under cameras surveillance. The researcher also had an opportunity to interview some operators who mentioned that lack of sufficient operators made the work demanding and exhausting. In some control room, an operator monitored about 24 cameras on three separate screens. This number can be overwhelming depending on the areas that one is monitoring. Some cameras can be set on auto-patrol especially cameras that are monitoring areas that are less busy to allow operators to focus on cameras showing hotspots. The Police had identified the CBD, Evelyn Street in Greenwell Matongo location, Havana four way, some road intersections and others as hotspots. Interestingly, areas considered as hotspots by private security companies were different to those mentioned by the police because of different target groups. Private security companies specialized more on properties and persons they were hired to protect but this does not mean they cannot respond to criminal activities detected on their cameras. Apart from private security companies, the WCPOLS also seemed to have less cameras in Katutura, Khomasdal and informal settlements compared to other parts of the city. Given that these areas had a reputation for high incidents of crime and the fact that they accommodated more residents of Windhoek, they deserved to have a bit more cameras than other localities.

The researcher also visited hotspots in residential areas such Evelyn Street, Havana Four-Way and Otjomuise shops to observe the positioning of cameras. The on-site observation was done during the day as well as during the night. Although the cameras were well positioned, there were some isolated blind spots that could be used to commit crime. The researcher could also observe police vehicles patrolling the areas which was an indication that the intention of having police near such areas was for them to be able to respond timeously should something happen.

#### **b) Types of cameras and range**

William (2003: 15) explains that the phasing out of analog technology as a result of industry evolution culminated into CCTV camera digital image resolution which is measured in pixels. Many of the cameras installed by WCPOLS in different localities were pan-tilt-zoom (PTZ) functional compliance. Meaning they could move horizontally or left to right (panning), rotate (tilt) and bring images closer (zoom). The zoom function can clearly zoom in an object (s) which is more than 1 kilometer away and still be positively identified. PTZ cameras are very effective in detecting criminal activities because the operator is able to zoom and see what is happening and can also follow someone fleeing a scene of crime. They are expensive and comes with high maintenance cost compared to bullet and dome cameras. They also have night vision functionality where the cameras have active infra-red (IR) which provides light to the dark area but not visible by human eyes. The quality of night vision mode of camera is compromised because it only displays black and white image which is often challenged as substantial evidence in courts of law. PTZ cameras are also popular among private security companies but usually make use of bullet and dome cameras because of the nature of sites they are monitoring. PTZ cameras are more for open-street monitoring and remote areas because of its ability to reach far with zoom functionality.



**Figure 4.3- 7. Dome and bullet cameras**

Retrieved: <http://getkisi.com/domecamera-vs-bullet>

Image 4.1 depicts the examples of a dome and bullet cameras. The dome camera is on the left-hand side of the picture in a dome-shape while the bullet-shaped camera on the right hand side of the picture is the bullet cameras. These cameras are very common among security installers and found on many premises around Windhoek.

### **Dome cameras**

These types of cameras are suitable for indoor environment and it covers a wider angle compared to bullet cameras. It can also zoom images closer but is preferred for shorter distance monitoring. It is normally housed in a black round glass and commonly found in the corridors of many buildings especially offices in Windhoek. Modern dome cameras have more functions such as pan-tilt-zoom (PTZ) and an in-built sense to detect moving objects. According to Pieterse (2020: 11) dome cameras are different and difficult to see as to the direction they are facing.

### **Bullet cameras**

Bullet cameras are usually installed outdoor especially at entrance gates and around the buildings. It can also be installed in big and open warehouses where the roof is high enough. In Windhoek, bullet cameras can be found at some road intersections mainly for road traffic monitoring. These types of cameras have a better range compare to dome cameras and can as well zoom images closer.

### **c) Maintenance costs and camera standards**

In order to keep monitoring and detecting criminal activities uninterrupted throughout the year, there must be a CCTV surveillance system maintenance plan in place. The researcher discovered that most of the CCTV surveillance service providers had in-house technicians who provided maintenance services to the systems. WCPOLS for example, spends approximately N\$ 1.1 million per year on average in additional cameras and maintenance of existing cameras. They also outsourced major repairs to vetted companies which cannot be done by in-house technicians. It was however not clear if all cameras installed by WCPOLS and private security companies were cleared by the Namibia Standard Institute (NSI) and met the standard required by the institute. On the other hand, respondent from the Nampol stated that all cameras installed in

Windhoek and in the region where certified and cleared by the NSI before commissioning. It was further revealed during interviews that plans were underway to equip all road intersection with bullet cameras to control traffic violations and facilitating the tracing of escaping vehicles.

#### **d) Return on investment**

Regarding the return on investment earned as result of installing CCTV surveillance cameras, respondents expressed positive outcomes of return on investment. Apart from the ability of the CCTV surveillance systems to detect and deter criminals from committing crimes, there had been adequate return on investment obtained from the implementation of this intervention. Due to constant monitoring of some areas, the police/security officers would not need to drive around patrolling thereby saving fuel. Also, the reduction in driving police/security vehicles for patrol reduced vehicle maintenance and money aimed for maintenance could be diverted to other priority areas. Deterring criminals from committing crime in areas that are monitored with CCTV saved law enforcement from cost associated with arresting suspects, detaining, investigation and prosecution. It was further revealed that the law enforcement agencies no longer had to recruit so many employees because some of the functions had been taken care by cameras. Management of these institutions must ensure cost-effectiveness when spending money on additional cameras and only install a number of cameras necessary for that identified area. There should be a delicate balance between security and money spent. Law enforcement entities should employ security risk control measures (including CCTV) that are effective to avoid financial losses.

Currently, law enforcement agencies in Windhoek collaborate when responding to incidents of criminal. Nampol as the state police institution plays a pivotal role in ensuring that other law enforcement agencies received the required assistance when needed. In many cases incidents observed on CCTV cameras by either WCPOLS or private security companies were reported directly to Nampol especially where the response required a stronger reaction. Incidents like CIT heist, armed robbery and violent strikes required Nampol to take a lead because they were better equipped to deal with such violent situations. Nampol had more members that could be deployed at any given time depending on the situation that demanded to be attended to. However, without

a proper guidance on how and when to involve many members, the operation or response may not be as effective as it should be. Collaboration is also needed during investigations. Nampol, private security, neighbourhood watches, WCPOLS, ACC should cooperate in creating synergy that ensure better crime prevention strategies. This can only happen if there are formal agreements to ensure that systematic applications are developed to guide the cooperation. This collaboration and sharing of resources and intelligence amount to good return on investment.

#### **e) Hesitance by private security control officials to provide information**

Many of the police officers (Nampol and WCPOLS) were free to express themselves on every question posed to them but the researcher noticed hesitance in some security officers. In some questions, some security respondents opted to refer the researcher to their supervisor even if the question was seeking for the respondent's own opinion. The research kept on assuring them of the confidentiality of the information provided and that the information would not be linked to them in any way or form. Even though the researcher used the legal route by requesting for a permission from management of private security, some of the answers given to the researcher by some of the security company respondents were:

*"You should ask that from menier"* (Interview 1, 2021)

Or some managers from security companies would reply to requests for an interview as follows:

*"We can assist you on that but for now we are focusing on other priorities"* (Interview 2, 2021)

## **4.4 DISCUSSION AND ANALYSIS**

Having visited CCTV control rooms, sites where cameras were erected, listened to respondents, and observed how the system operated, the researcher decided to reflect on the process and analyze the outcome of the exercise. Some aspects as expected stood out than others and it is what this section of the dissertation is discussing. Respondents interviewed in the form of questionnaire and face-to-face interviews expressed their opinions and perceptions regarding the operation of the CCTV surveillance cameras in Windhoek. The main research question of the

study that needed to be answered was to determine the effectiveness of using CCTV surveillance system as a security control measure to prevent crime in Windhoek. It was for the researcher to interpret the findings in a readable and comprehensive approach and to determine whether the objectives of the study were met.

#### **4.4.1 Reduction and Prevention of Crime**

The purpose of procuring and installing CCTV surveillance cameras in Windhoek is to reduce and prevent crime through detection and deterrence. Khan et al (2020: 49) states that CCTV surveillance cameras warn people about their conduct which is considered as a crime prevention technique. Reduction of crime should be understood from two different perspectives namely: law enforcement perspective and public perspective. These two groups of people had different exposure to CCTV operation hence they had different perceptions of the technology. Law enforcement organizations did not doubt the potential CCTV possesses in prevention crime because they experienced it on a daily basis. CCTV surveillance had been used successfully to reduce especially crime elsewhere in the world before it was introduced to Namibia. Therefore, the focus should not really be on whether the system works or not but rather concentrate on the applications of the system to Namibia's circumstances. There was positive feedback especially from the control room operators on how the system had been useful in detecting crime and identifying suspects involved in perpetrating those crimes. There was a unanimously agreement among respondents that CCTV had been successful in reducing crimes which were committed in public spaces where cameras could capture activities in real time. Robberies, house breaking, theft out of motor vehicles, theft of motor vehicles, cellphone/bag snatching and assault were some of the crime that could easily be detected on cameras and some had reduced significantly in places where there were cameras. The CBD had the largest number of cameras because it was the busiest place in Windhoek and attracted more criminals than any other place in Windhoek. The police had indicated that some types of crime had reduced because criminals were aware that the place was under surveillance. In the absence of clear empirical evidence indicating that there had been a reduction of crime because CCTV is yet to be considered by future studies.

CCTV has also been successful in monitoring and detecting vehicle accidents on the road. Once detected, the control room informed traffic officers to rush to the scenes and facilitate the flow of traffic. Emergency personnel were also informed, and they dispatched vehicles to the accident as

soon as it was detected to save lives. In case where emergency vehicles not being able to access an accident scene, the CCTV was always at hand to identify uncongested routes for the ambulance and other emergency vehicles to use. Cameras were also linked to traffic lights to capture road users that violated traffic rules and they would be issued with traffic fines. This is the reason many drivers in Windhoek have accumulated so many traffic fines especially taxi drivers. The most common traffic violations are speeding, driving through red traffic lights and stopping/parking at places that are not designated for that purpose. CCTV cameras at some intersections in Windhoek have successfully changed motorists' behaviors on the road for fear of getting fines.

CCTV is an essential tool for investigations. According to Kgamanyane (2018: 21) for CCTV footage to be admissible in court of law as evidence, it must have been obtained legally, procedurally and managed properly throughout. Respondents from the police and security control rooms stated that one of the reasons cameras were installed was to assist in the investigations of crime. Recorded footages of CCTV are analyzed by investigator when probing information to prove their cases. In the control room of WCPOLS, operators were able to control cameras by rotating, zooming and playback the recorded footage but had no access that would allow them to alter any information recorded by the cameras. This was done to preserve the integrity of the footages and protect it from being tampered with. Technicians responsible for CCTV surveillance system of the WCPOLS were the only staff members that had access to the server where information was kept and could retrieve such information when requested to do so. The system had a capacity to keep information (footage) for 1 month before it was discarded. Footage that was critical and could be used to resolve cases was stored in the archive. The one-month period for which saved footage was kept given the limited storage capacity was very short and needs to be expanded up to at least 6 months.

At the beginning of this study the researcher set objectives of the research that should be achieved. The first objective of the study was to analyze operator's level of competency for implementing the function of detecting crime. From the sample obtained from the WCPOLS control room, the interviewed operators had minimum qualification of a Diploma and their average age ranged between 30 to 49 years. Diploma is quite an advanced level of education for

an operator and their age category indicated maturity. However, respondents indicated that they never went through any specialized training course to operate CCTV and everything they knew was acquired at work. Training is an essential component in the security environment because criminals keep changing their way of doing things to avoid being caught. Specialized training of operators from time to time may improve their performance and eliminate complacency. The sample of private security operators indicated that although many operators had lower education level compared to the police, most of them had received operators training from their companies.

The second objective was to examine strategies used by the police when dealing with crime reported with the aid of CCTV and the effectiveness of those strategies. The collaboration among Nampol, WCPOLS, security companies, Neighbourhood watches and the public was commendable. The researcher was informed that private security control room operators had access to the police any time they needed police assistance. It also emerged that WCPOLS control room could directly report incidents observed on cameras to the Nampol. Although there were no policies or memorandum of understanding detailing with how this collaboration should be carried out there was certainly a good cooperation between these entities. The establishment of neighbourhood watches in many of the locations in Windhoek had improved crime prevention strategies. Windhoek is divided by WCPOLS into 19 policing zones and each zone is allocated a number of police officers to manage. When a suspicious movement or activity was observed on cameras, the control room alerted the members in that specific zone to respond. In the control room, some members stayed on standby just in case the members at the specific zone were not able to attend to the problem then the standby group could be dispatched to the area. Police officers on standby were also used as backup for incidents that required more people to overcome. The implementation of cameras to supplement the zonal strategy had significantly improved the police response time.

Determining the public perception on how CCTV surveillance system affected crime in the city by focusing on victims of the crime, business, security personnel (public and private) and members of low-income communities was the third objective to be achieved in this study. As it was mentioned earlier in this section, the use of CCTV in Windhoek had two perspectives. The perspective of Law enforcement entities has already been explained above, here, the researcher



will deal with perspectives of members of the public. Largely, the public perception on the CCTV was based on its unavailability in all localities in Windhoek. This conclusion does not tell whether the CCTV surveillance system is effective or not. Of all the respondents that were asked to comment on the effectiveness of the system, over 60 percent responded that it was not effective. Members of the public felt that there was a need for the installation of more cameras because criminals continued to harass people in their neighbourhood because there were no cameras. They further expressed disappointment with the municipality for ignoring their requests to install cameras and alleged that only well-off areas of Windhoek were provided with cameras. Residents who were victims of crime or had unresolved cases felt the police were not taking their matters serious. It was further revealed that community members who decided to form neighbourhood watches especially in localities at the western side of Windhoek found it difficult to convince the Municipality to erect cameras in their areas. Lack of funds had always been cited by the municipality as the biggest challenge facing the expansion of open-street cameras to other places.

In October 2021, a mass land grabbing took place at 8ste Laan Informal Settlement in the Otjomuise area for close to a week. Grabbing municipal land is an illegal act as per municipal bylaws. The residents felt that the police should have picked up the activities on cameras earlier and dealt with the land grabbers before the situation escalated the way it did. Delaying responding caused the public to lose confidence in the system and this may have confirmed the public perception that CCTV surveillance system was just another ineffective police measure meant to waste state resources. The standoff between the police and land grabbers which resulted in arrests and police using teargas on the angry mob could have been avoided. Although there are some cameras in those areas, the community members questioned the seriousness of the police towards the safety of people living in low-income residential areas.

The fourth objective of the study was to determine whether the use of CCTV surveillance system had yielded return on investment (ROI). The interview conducted revealed that the WCPOLS had saved a substantial amount of money on fuel and maintenance of vehicles that could otherwise have been driven around patrolling in various zones. The police also gained intangible benefits through the implementation of CCTV Surveillance system. Deterrence of criminals from

committing crime because of fear of being caught on cameras is an example of one of such intangible benefits. Reduction of crime in areas being monitored by surveillance cameras spared the police resources of responding to every incident. The old city habit of bumping traffic lights especially during the end of the month was costly to the city since it had to replace them. Given that cameras had been installed at some intersections culprits were often identified with the assistance of cameras and fined for damaging municipal properties. Before the introduction of CCTV surveillance system in Namibia, security alarm systems were the popular security measure among private security companies. Security alarm is still relevant and widely used to date. The problem with the alarm is that it can be triggered by any movement even when something falls onto the building. The response team often had to respond to too many false alarms which had been costly to the companies in terms of fuel used to rush to and from the scenes. When the researcher visited the CCTV control rooms of some private security companies, it was observed that many of the clients of these security companies had integrated the two systems (CCTV and alarm). When the alarm went off, the control room would be able to see what might have triggered the alarm and that determined whether to send a response team out or not. This is another typical example of return on investment accomplished when CCTV cameras were installed.

**But, why is the rate of crime in Windhoek still very high despite having CCTV security measure in place?**

The CCTV surveillance system does not work in isolation and for it to succeed in preventing crime it needs a support from other security components (Gill & Spriggs, 2005: 2). Factors that contribute to a successful implementation of the system are a well-equipped control room, dedicated and well-trained operators and effective communication. The integration of various security control measures coupled with a dedicated work force always led to an effective implementation. The reason why Windhoek continues to experience high crime incidents is because there is no synergy among security measures in place. The researcher outlined a number of factors which contribute to a continuous rising in crime rate even though there are CCTV surveillance cameras in Windhoek:

- The public had placed too much expectation on CCTV surveillance cameras which by far were still insufficient to monitor a considerable area of Windhoek. WCPOLS system was still a project under progress and required assistance from the government, local businesses and other institutions to expand CCTV coverage to all corners of the city.
- Open-street cameras can only effectively be used to detect and deter crime that would ordinarily be committed in public spaces such as robbery, bag/cellphone snatching, assault, motor vehicles related offences. Crimes committed in private homes or offices such as domestic violence, rape, fraud and corruption were difficult to capture on cameras and these were some of the common offences in Namibia at the moment.
- In general, the Namibian Police and WCPOLS were experiencing serious staff shortage. The researcher was informed that Nampol had lost a significant number of police officers over the past few years through resignation, death, retirement and dismissal. These police officers had not been replaced by an equal measure. Similarly, the WCPOLS had not recruited new members for six years. Therefore, the problem was not the effectiveness of system rather lack of capacity to operate it at maximum.
- Lack of empirical data to justify the claim that crime had been increasing despite the presence of CCTV surveillance cameras in some streets of Windhoek. This is a research area for scholars involved in security studies to conduct a dedicated study on this issue and find out if the claim is true.

#### **4.4.2 UPS for CCTV cameras**

It is imperative for CCTV systems to have reliable uninterruptible power supply (UPS) to maintain an uninterrupted monitoring of areas. Criminals tend to take advantage of power cuts to commit crime especially at night when it is difficult to identify people in the dark. According to Pieterse (2017: 18) when supplying UPS to the system it is important to provide the correct UPS which supplies adequate and stable source of power to the cameras. When CCTV system operators were asked whether the system was connected to an alternative power supply which

kicked in when in case the grid power went off, the answer was that the system was connected to a backup power which took 6 hours depending on the usage. This UPS had the ability to keep the control room working and many of its functionalities operational. It was also explained that there were remote cameras that were powered with solar energy. The challenge with cameras that depend on solar power however is that they only function properly when the batteries are fully charged. A long cloudy day may deplete the power and may affect the functioning of the cameras. There were some respondents who also indicated that they did not know if the cameras had back up power and how long the USP could last.

#### **4.4.3 Crime Displacement**

Khan et al (2020: 55) confirms that displacement usually happens when any intervention is implemented in any area to prevent crime. The increasing of open-street cameras in the CBD and institutions such as banks, large retail shops and malls running their in-house CCTV surveillance systems have reduced an opportunity for criminals to commit crime with success. The possibility of some offenders to have moved to less monitored areas within Windhoek or to smaller towns is highly probable. The police respondents believed that some well-known criminals had moved out of Windhoek for fear of being caught and probably moved to other towns with similar or close economic settings to those of Windhoek. This displacement of crime occurred because the implementation of CCTV in the CBD is a threat to criminals' operations. This occurrence has a negative impact in areas that are not covered by the technology especially informal settlements and neighbouring towns as criminals compete for criminal opportunities in those unsafe areas.

Hayward (2007: 233) explains that "Rational Choice Theory is a component of situational crime prevention approach by which offenders seek advantages to themselves by their criminal behaviors". This means that as a result of installing CCTV cameras in the CBD, criminals would tend to look for other new grounds for their criminal activities and avoid being captured on cameras while committing crimes. These decisions are rational within the constraints of time, ability and the availability of relevant information. Hayward (2007: 234) further explains that routine activity theory seeks to explain the occurrence of crime events as the influence of several circumstances. It continued to be explained that first there must be a motivated offender. Secondly, there must be a desirable target and thirdly, the target and offender must be in the

same place and same at same time. Finally, the intimate handlers, guardians and place managers must be absent or ineffective. This basically means that for criminal activity to take place there must be a willing offender who has a desire to commit a crime in the absence of security control measures. The implementation of CCTV system eliminates the motive, desired target and the manager of the targeted property is always watching which forces criminals to migrate to other places of the towns for greener pastures.

Of recent, there has been an increase of armed robberies surfacing at the coastal towns of Namibia especially in Walvis Bay and Swakopmund. In 2021 alone, Erongo Police reported a record robbery incident which commonly target cash-in-transit security company vehicles and elderly residents of these towns. This increase in robbery could be attribute to CCTV intervention in Windhoek and as a result criminals could have moved to the coast where open-street surveillance cameras are few. Here are some examples of robbery incidents as reported by the Namibian newspaper:

*“A group of robbers attacked a Chinese man on the 2<sup>nd</sup> April 2021 at Tutaleni Location in Walvis Bay and robbed him an amount N\$30 000 meant for his workers` salaries.”* (The Namibian, 2021)

*“An elderly couple was gang robbed at Ocean View in their home in Swakopmund on the 15<sup>th</sup> July 2021 and ran away with N\$600 000.”* (The Namibian, 2021)

*“Woermann Brock Supermarket in Mondesa in Swakopmund was robbed on the 12<sup>th</sup> August 2021. The robbers stole more than N\$147 000.”* (The Namibian, 2021)

*“Five robbers hit a cash-in-transit vehicle transporting money from Pupkewitz Megabuild in Walvis Bay on the 25 September 2021. An amount of N\$900 000 was taken by the robbers”.* (The Namibian, 2021)

*“The Erongo police reported a Housebreaking and robbery that took place on the 26 October 2021 in Swakopmund. An elderly man living alone was robbed of his VW Polo vehicle and goods worth N\$60 000”. (The Namibian, 2021)*

The above robbery incidents could not have happened by mere coincidence but there are factors which might have triggered them to happen. Swakopmund and Walvis Bay became a nest soft target for criminals because security measures in Windhoek were hardened by installing open-street cameras. Those incidents portray characteristics of crime displacement. There were robberies reported in other towns across the country as well but were not as severe as that in the coastal towns.

#### **4.4.4 CPTED-CCTV relationship**

CCTV surveillance system cannot succeed in preventing and reducing crime on its own. Complementing security measures should be implemented collectively in order to supplement the efforts aimed at combating crime in communities. According to Minnaar (2005: 88) strategies to prevent crime largely focus on reducing risks and that is where Crime Prevention Through Environmental Design (CPTED) approach plays a critical role. CPTED involves three fundamental aspects namely: Natural territorial reinforcement, Natural surveillance and Natural access control.

- Natural territorial reinforcement

Natural territorial reinforcement strategy encourages home and business owners to take control of their spaces by reinforcing the physical elements. For example, the installation of CCTV surveillance cameras at one`s house makes it more private and expresses ownership. This strategy has become popular among middle income residents of Windhoek and are mainly catered for by private security companies. Many houses in the suburbs that are consider of well-offs in Windhoek are equipped with security devices such as CCTV, electrical fence and intruder`s alarm to enhance the safety of their homes.

- Natural surveillance

The Natural surveillance concept is basically the notion of keeping all areas of a space easily observable by engaging in normal activities. This form of CPTED is implemented by placing physical features, activities and people maximize visibility of the surrounding. An example of this CPTED is de-bushing areas in order to increase visibility and these bushes are conducive for criminals to hide after committing crime. It includes also the installation of open-street cameras to constantly monitor the movement of residents of the City. WCPOLS and some security companies' CCTV surveillance systems are currently responsible for providing maximum visibility in many areas of Windhoek.

- Natural access control

Natural access control has to do with the ability to deny criminals an opportunity to access targets. This is done by strategically placing an obstacle or structure which can decrease criminal opportunities. Examples of natural access control are: landscape features, fences, lighting, etc. Windhoek's three main exit/access roads have permanent roadblock points installed a few kilometers out of the city. At these points, the police prevent drivers with outstanding fines from leaving without settling them. The landscape along the road makes it difficult for people to take alternative roads to avoid the roadblock. The roadblock point is also equipped with CCTV surveillance cameras to monitor activities and record them should it be necessary. In actual fact, CCTV surveillance system is a part of CPTED crime prevention approach which hardens the build environment to prevent or reduce the incidences of crime and improve the quality of life.

#### **4.4.5 Privacy Issues**

Although community members living in informal settlements such as Havana, Goreagab and 8ste Laan might not be aware, some cameras installed in their areas invade their rights to privacy. For instance, most if not all of the bathing cabins in informal settlements are roofless exposing them to camera monitoring that are often mounted high on the poles. Some bathing cabins are directly under those poles where cameras are mounted which makes it very easy to identify the person bathing. This is a clear violation of people's dignity. Basimanyane & Gandhi (2019:3) state that extending your CCTV cameras beyond the perimeter of public spaces into private homes could

be patently illegal. Article 13 of the Namibian Constitution provides that “no persons shall be subjected to interference with the privacy of their homes”. Given the high crime rate in Windhoek especially in the informal settlements, security providers and community members should first strike a balance between crime prevention measures and right to privacy of residents affected.

Generally, the researcher did not experience issues of privacy violation being prominently featured throughout the meeting with the respondents. This could be due to the following reasons: (1) law enforcement agencies prefer CCTV because of its efficiency in detecting criminal activities compared to the conventional approach of combating crime and would dispel any suggestion of violation of privacy claim. (2) Since the coverage of CCTV cameras in Windhoek is still low and the majority of the public members do not see the influence of CCTV cameras on crime in their localities yet. (3) Cameras were installed without having consulted residents properly and there are no sufficient warning labels cautioning residents that there are cameras in the area. Molepo al et (2020: 153) state that Section 5 of the Electronic Record Act 2014 of Botswana provides that the public should be informed about CCTV cameras operation in public spaces with visible warning signs. Equally, installers and operators of CCTV in Windhoek should consistently stick to such practice of warning the public that there are cameras monitoring in their areas. As it stands, Windhoek has very few warning signs in place and some signs are not clearly visible as required. Installing CCTV surveillance cameras without warning them that they are being watched constitute violation of privacy rights because this camera can captures images beyond public spaces.

#### **4.4.6 CCTV and COVID-19**

When the idea of installing CCTV surveillance cameras was first conceived nobody thought that the system would be useful during disease outbreaks. When Coronavirus (COVID-19) broke out nonentity anticipated that CCTV would be at a center stage of controlling and assisting the security cluster in maintaining law and order in Windhoek. On the 17<sup>th</sup> March 2020 His Excellency the President of Namibia Dr. Hage Geingob declared a state of emergency for the whole country because of the outbreak of COVID-19. Article 26 of the Namibian constitution



stipulates that the President may by Proclamation in the Gazette declare a state of emergency for any public emergency threatening the lives of Namibian people. During the state of emergency period, the security cluster was tasked with additional security function of ensuring that residents adhered to COVID-19 protocols.

The police used CCTV surveillance cameras to monitor and control people who assembled in large crowds against Covid-19 protocols as advised by the Ministry of Health and Social Services. Respondents indicated that it was easy to notice where the people were gathering in crowds over the required limit. CCTV was also used to detect bars and shebeen owners who were trading during lockdown against the regulations. Many offenders were successfully prosecuted for violating COVID-19 regulations, thanks to the effectiveness of the CCTV surveillance system in some parts of Windhoek.

The CCTV was equally helpful when the curfew was introduced to further curb the spread of the virus. Criminals who thought it was easy to commit burglary in monitored areas while people were confined in their houses between 21:00 PM to 05:00 AM were caught in the act. Cameras were necessary in distinguishing essential workers from the non-essential worker especially after curfew time. CCTV cameras served as a deterrent tool for criminals who were scared to move around after the curfew and commit crime because they knew that cameras could spot them. The police also revealed that during lockdown there were a decline in some criminal activities because the movement of people was controlled. Large crowds during lockdown could be observed at places including bank ATMs and grocery stores especially during the end of the month. In the main, people needed to buy essential household goods, but CCTV was able to identify those places and members were often dispatched to maintain order and ensure that Covid-19 protocols such as keeping social distance were observed. This applied to suspicious movements observed on cameras for example drug dealers and other illicit traders on the streets.

#### **4.4.7 Traffic Regulation**

After a robust and rigorous mission of collecting data from all respondents who were identified as potential sources, the researcher was inclined to conclude that the impact of CCTV had mainly been felt more by traffic law violators than any other offenders. The system has been very

effective and reliable in capturing vehicle registration numbers of vehicles that were involved in violating traffic rules. The system has also been very effective in identifying accidents on the roads by spotting traffic lights that were not functioning. Traffic officers were often dispatched to assist in ensuring that the flow of traffic was not negatively affected by the interruptions.

As a result, the police have issued 18 000 warrant arrests to defaulters in paying their traffic fines between the period November 2021 to April 2022. In 2020, about 31 395 drivers were fined for violating traffic rules in Windhoek. Although the number of offenders of traffic rules are high for a population of less than 400 000 inhabitants, this is an indication that cameras erected at many road intersections in Windhoek were indeed working. It was further explained that about 80 percent of those fines were given to taxi drivers who had become habitual traffic rules violators. The WCPOLS revealed to the researcher that there was a budgetary provision to erect more cameras at the remaining intersections. The rationale of this undertaking was to trace routes of vehicles that usually flee scenes of crime for example after a hit-and-run incident or robbery.

Some members of the public expressed concerns regarding the cameras capturing only vehicle numbers without verifying the person driving a vehicle at the time a transgression was committed. The police responded to this claim that there is an assumption in that Road Traffic and Transport Act, Act 22 of 1999 provides that the owner of the car is presumed to be the driver until proven that it was someone else who was driving. Meaning that Owners of vehicles who received fines should be able to prove that they were not driving their vehicle at the time these fines were issued.

#### **4.4.8 The future and security technology**

The future of policing will heavily be influenced by the evolvement of technology. Many of the security or police strategies will be centered around the usage of technological security equipment. CCTV surveillance system will also evolve but the concept of preventing and reducing crime will remain the same. Therefore, it is imperative that the management of law enforcement entities to always be mindful of technological changes and incorporate it in their strategic planning. Currently, the majority of criminal investigations processes depend on the use

of technology including the analysis of videos evidence generated by CCTV. As a Capital City of Namibia, Windhoek will surely take a lead in this endeavor. In the meantime, WCPOLS reported on its website that they have also implemented SMS lines, digital speed and red light detection cameras, Total Control System information management system, Automatic Number Plate Recognition System and the use of social media in addition to CCTV surveillance cameras as technological measures to prevent crime and promote safety on the road.

a) Situational crime prevention

Hayward (2007: 235) explains that situational crime prevention is the interventions directed in a specific form which involves the management, design or manipulation of the environment aimed at reducing the opportunities of committing crimes. Law enforcement entities are therefore encouraged to implement deterrent measures to ensure that public spaces, buildings and people do not become targets of crimes. Technological measures such as CCTV surveillance system are crucial in enhancing physical security surveillance of the environment. In order to improve the prevention of crime in Windhoek, law enforcement should make use of situational crime prevention approach when developing security strategies.

b) Integrated Security

Security challenges confronting the communities should be addressed through a comprehensive and integrative approach. This approach encompasses all other security measures developed to prevent crime including CCTV surveillance system. No single security measure has ever succeeded in preventing crime in isolation. Unisa (2014: 71) defines “security” as a process which involves the implementation of cost-effective security measures that whenever applied as a whole have the great effect of:

- Reducing the risk of crime incidents
- Reducing the impact of crime that might have been caused

In principle, this basically means that when all risk control measures are implemented together, they form a stronger and resilient security system. Going forward the law enforcement agencies and other institutions which make use of security interventions as a crime prevention mechanism should be prudent in the way they select the types of security measures to implement.

#### **4.4.9 Issues of concern**

In the problem statement of this research study, the researcher raised a concern about the escalation of crime in Windhoek despite the availability of CCTV surveillance system. Residents of Windhoek continue to lose their lives and properties at an alarming rate. This research study report some of the reasons that explain why the crime rate in Windhoek continues to be very high. The following factors below are some of the reasons the crime in Windhoek is still on the increase: high youth unemployment, lack sufficient police presence and population growth.

##### **a) High youth unemployment**

According to NSA (2018: 8) in a report titled The Namibia Labour Force Survey conducted in 2018, Namibian youth unemployment rate stood at 33.4%. In Namibia the youth category is defined as the people between 18 to 35 years, and this is the most active group of the population. These statistics were released 3 years before this research was conducted and surely the national dynamics have significantly changed including the impact of COVID-19. Therefore, the current unemployment rate is estimated to be higher than the one released in 2018. It is for this reason that some young people resort to committing crime in order to get some cash for survival. In addition, the NSA (2016: 23) reports in its Namibia Statistical Abstract Report that out of 2380 prisoners in Namibia, about 1522 were young people between the ages of 17 to 35. This mean 64% of people in prisons are the youth. Thus, CCTV may not make much difference in preventing crime if a significant number of young people continues to be unemployed.

##### **b) Population growth versus lack of security manpower**

Namibian`s 2011 Population and Housing Census reported that the population of Windhoek was about 325 858 and it was expected to experience a 3% growth rate per annum. In 2021, the

population of Windhoek was estimated to be around 446 000. This is a significant growth within only a 10-year period. The researcher was further informed that the WCPOLS did not recruit new police officers in the last 6 years and Nampol is also experiencing a serious shortage of police officers due to overwhelming retirement, resignation, death and dismissal. Even though the City of Windhoek and Namibian Police had introduced various technological security measures to prevent and reduce crime, the capacity to operate these interventions to their maximum potential remained a challenge. Lack of security manpower remained one of the reasons why the rate of crime remained high in Windhoek. Therefore, the use of CCTV surveillance cameras will have minimum impact on crime prevention if the number of system operators and that of the police officers involved does not improve.

#### **4.4 CONCLUSION**

This chapter provided detailed findings of the role of CCTV surveillance system in Windhoek. The researcher used various tools to collect information from different participants. There were three categories of research participants who assisted in evaluating the CCTV surveillance system as a crime prevention measure. Questionnaires were distributed to target groups namely: the police, security officers and selected members of the community. Interview questions were also drafted to collect data from participants who were identified for one-on-one interview sessions. Information collected through interviews and questionnaire were compiled and properly coded to enable the researcher to make sense out of those data. The second part of this chapter dealt with the analysis of data collected. The discussion focused on the objectives of the research as identified in chapter 1. The research analysed the data collected and determined whether the objective of evaluating CCTV as a crime prevention measure were met. The following chapter will summarize the findings of this research study and provided recommendations to improve the used of CCTV surveillance system in Windhoek.

## **CHAPTER 5: FINDINGS, RECOMMEDATIONS AND CONCLUSIONS**

### **5.1 INTRODUCTION**

In this chapter, the researcher summarized the findings of the research study and presented them in different categories of findings. These findings were drawn from a larger collection of analyzed data and summarized for readers to easily understand them. This section further provides recommendations that may potentially assist security industry in Namibia to improve the use of CCTV surveillance system. The last segment of the chapter 5 dealt with general conclusions of the study in which the research provided last conclusion remarks of the study.

### **5.2 SUMMARY OF FINDINGS**

According to Williman (2010: 52) the most important reason for conducting research is to produce a new knowledge and understanding, and disseminate information for everyone to know about your findings. This section of the study highlights the main findings of the role of CCTV as crime prevention tool to reduce crime in Windhoek. The researcher summarized the findings in a manner that are easily understood. The summary consists mainly of gaps that were identified during the study and need to be addressed to improve the operation of the system. Findings were presented in different categories namely: findings related to aim and objectives, theories, methodology and literature reviewed.

#### **5.2.1 Findings associated with aim and objective of the study**

The findings were presented in line with the aim and objectives of the study which is to evaluate the role of CCTV as a crime prevention measure in reducing crime. The researcher further divided these findings in various segments and grouped them accordingly.

##### **a) Awareness by society/security /police**

- i. About 67 percent of respondents of community members interviewed indicated that they were not aware of CCTV cameras in their neighbourhood. This clearly shows that majority of the community members were not consulted or informed when cameras were

installed in their localities. Community members know where crime hotspots are in their locations and by involving them in the process of installation of CCTV may help to eliminate blind spots. The purpose of cameras is to detect and deter criminal activities in the communities therefore it is important that community members are made aware of such development. Community participation in crime prevention programs is essential because people feel part of the solutions. Community involvement enhances law enforcement efforts to combat crime effectively. It also encourages community members to desist from committing crime and start reporting criminal activities without hesitation.

- ii. There was however an overwhelming support by respondents who appreciate the purpose of having open-street CCTV cameras installed in their neighborhoods. Those residents have identified a need to have more cameras installed in all parts of Windhoek including informal settlement areas to reduce crime. As a result of disproportion of cameras in Windhoek, criminals migrated to areas which do not have sufficient CCTV coverage. Now there is a disproportion of cameras coverage between Eastern and Western suburbs of Windhoek. The majority of cameras are on the eastern side of the city compared to the western side where informal settlements are located.
- iii. Insufficient warning signs in many of those localities where cameras are installed to warn residents that they are being monitored violates people's rights. Without those signs in place, the installation of cameras in those areas violates people's right to privacy of their homes. Although the aim of installation of cameras in residential area is to detect and deter crime, proper and acceptable procedures must be followed. Community living in informal settlements are the victims of this violation. Some of the structures in these areas are roofless and one can easily zoom-in on someone using a bathroom.

b) Regulation and policy gap

- i) The findings further revealed that the study have identified a policy gap that need to be closed insofar as the use of CCTV in Namibia is concerned. As it stands Namibia has no legal instruments which regulate the operation of CCTV as a security control measure. This state of affair may lead to an abuse of the system if there are no policy or regulations

to regulate it. Currently, evidence retrieved from CCTV footage are left to the discretion of the courts to decide whether to accept or reject it. Each institution which operates CCTV has developed its internal rules of how to retrieve, store, transport and dispose of CCTV footage. In the police, the function of footage retrieving, and storage is entrusted with information technology officials

c) Lack of police manpower

- i. It was further discovered that in some control rooms police officers were overwhelmed by the number of cameras they monitor per shift. Monitoring too many cameras may be exhausting and may lead to fatigue among operators which could easily defeat the purpose of having CCTV facilities in place. The researcher identified a shortage of police manpower in the police. The Namibian Police have not recruited new officers for more than five years. Equally, Windhoek City Police has not been able to recruit a significant number of police officers in the past five years. Human resources are a vital component for effective utilization of CCTV surveillance system in preventing crime. Those that have resigned or retired should be replaced to avoid overburdening the remaining workforce.

d) Training of operators

- i. The police operators have raised a number of challenges which hinder the smooth monitoring of crime. One of those challenges was that they have not been formally trained to operate CCTV cameras since appointed to work in control rooms. Although most of the operators have mastered the art of CCTV surveillance, advanced training could have improved performance effectiveness. On the other hand, private security operators have indicated that they have undergone CCTV training before taking up employment at the control rooms. This clearly shows the commitment some private security companies are putting in to provide quality CCTV surveillance service. Some private businesses in Namibia have developed standard CCTV operator's job description that must be complied with by job seekers (see Annexure L)



### **5.2.2 Findings related to methodology**

The study of CCTV surveillance system as security measure to prevent or reduce crime is probably the first or one of the few studies conducted in Namibia thus far. Since there is a lack of academic research in this area, this study became relevant to institutions that are using CCTV as a security intervention for prevent crime. Qualitative research method selected for this study enabled the researcher to understand the perceptions which respondents had towards the role of the system. This research methodology enabled the researcher to probe more on how police, security and public members understand the role of CCTV in their localities.

Being an unfamiliar research area, the researcher struggled to find sufficient literature regarding the role of CCTV system in Namibia which made the collection of data less inclusive. Due to the sensitivity and confidential nature in which CCTV is regarded at some institutions, it was also challenging to obtain some of the critical data. Some private security firms were not open to the researcher and were hesitating in divulging some of the information required. Questionnaire distributed online especially on WhatsApp groups could not get enough respondents as anticipated. It looked like security related surveys do not attract people's attention. Financial constrain was one of the biggest challenges which affected the collection of data negatively. The researcher could only manage to gather a small amount of money for copies, transport around Windhoek and food for volunteers who were requested to assist in distributing questionnaire. Since the researcher is a full-time employee, it was challenging to balance to be between work commitment and studies. The researcher also had a challenge of assembling focus groups as members of the group kept on withdrawing at the last minutes leading to multiple postponement of meetings.

### **5.2.3 Findings related to literature review**

Literature reviewed for the purpose of this study unanimously agreed on the role that CCTV plays in the communities which is to prevent and reduce crime. CCTV is more specialized crime prevention tool which detects acts of crime when taking place (Minnaar, 2007: 175). In this

section, the researcher discussed the findings of the study that are related to those highlighted in literature reviewed.

- i) Just like in Windhoek, there has been a massive rollout of CCTV surveillance system in CBDs of different cities such as Johannesburg, Cape Town, Durban and Pretoria in South Africa especially in recent years (Minnaar, 2007: 176). Lately a city such as Gaborone has been populated with cameras in an effort to reduce crime. CCTV cameras are installed in major malls to reduce physical opportunities for committing criminal activities and increase the chances of catching offenders (Molepo et al, 2020: 145). This shows that cities around Southern African region including Windhoek had started using CCTV surveillance systems as crime prevention measures. Crime such as terrorism attack, robbery and theft has increased in demand for security in the communities. This fear has led to an increased demand of deployment of CCTV surveillance in public and private spaces (Valera & Velastin, 2005: 193).
  
- ii) A number of literatures have agreed that crime reduction using CCTV is based on the following assumptions:  
Detection: According to Armitage (2002) images of criminals are easily detected on CCTV cameras and footage can be produced as evidence  
Deterrence: In some South African CBDs, CCTV cameras are not only used to reduce street crime but also to deter criminals from committing crime while being monitored (Minnaar, 2010: 176)  
Effective deployment: Moyo (2019:15) states that cameras were deployed in Johannesburg CBD because that is where crime regularly occur. The researcher finds that cameras in Windhoek too were installed in areas where crime mostly occur.
  
- iii) Privacy violations

The issue of privacy violations were not raised as cause for concern in this research study. Most of the literature reviewed regarding the use of CCTV corroborated the findings of the research

conducted in Windhoek. Minnaar, (2001: 197) explains that issue of privacy could not be sustained because the demand of more cameras from residents and neighbourhood watches neutralized this call for protection of individual privacy. In a study conducted by Moyo (2019: 148) further explains that, since there were very few participants who expressed concern about invasion of privacy, many residents of Johannesburg understand the need to improve security by developing extra security measures such as CCTV cameras. In their research Khan et al (2020: 56) provided evidence that 86% of the community members felt CCTV surveillance system does not invade their privacy in public spaces.

#### iv) Crime displacement

As it was witnessed in this research study, the installation of CCTV cameras in Windhoek had increased crime occurrence elsewhere especially at Walvis Bay and Swakopmund. Other writers has also expressed the correlation between CCTV and crime displacement. According to Khan et al (2020: 56) displacement generally occurs when the police or any security organization decides to implement security measures aimed at preventing and reducing crime. What CCTV system does, is to eliminate the motive, desired target and the manager of the targeted asset, which compels offenders to move to other places of the city for greener pastures (Hayward, 2007: 234). Minnaar (2007: 195) thinks that there is still a need for thorough scientific analysis or comparison of types of crimes reduced and those occurred in places where displacement is said to have taken place. As it stands, it cannot be independently verified whether crime displacement has taken place or not.

#### **5.2.4 Findings related to theories**

The researcher identified three theories that were deemed to be relevant to this study, namely Crime prevention through environmental design, phenomenological and rational choice theory. Theories are used to guide the research and provide the researcher with a framework in which to operate when collecting and analyzing data. The findings revealed that crime prevention through environmental design theory which was identified as one of the theories relevant to this study was found to be applicable to the study. For CCTV surveillance system to be effective in detecting and deterring the commission of crime, there must be a favorable environment.

Structures such as electrical poles and tall building may be used to erect cameras to facilitate the monitoring of surrounding without environmental hindrances.

The second theory identified for this study was phenomenological theory. This theory was found to be relevant and applicable to the study because it is commonly used in qualitative research to measure and investigate the perception of people in a certain area. This research used a qualitative method to collect and analyze data. Qualitative researched allowed respondent to express their experience and perceptions regarding the operation of CCTV surveillance system in Windhoek. It is for that reason that the researcher felt that the phenomenological theory is relevant to this study.

The third theory identified for the study is rational choice theory. This theory explains that the offender seeks to find loophole in the system in order to gain advantage. The findings of the study alluded to the crime displacement which took place because cameras which were installed in Windhoek. The research found this theory appropriate and relevant for the study because the installation of CCTV in Windhoek is aimed at closing security gaps that could have been exploited by criminals if there were no security measures in place.

### **5.3 RECOMMENDATIONS**

Based on the findings of the research study, the researcher decided to compile a number of recommendations that may assist in improving the use of CCTV surveillance system in Windhoek. These recommendations are linked to security gaps identified in the findings of this research study. The researcher provided specific recommendations for police, security and for operators in general.

#### **5.3.1 Recommendations for police**

- i) Given the support, confidence and trust law enforcement officers had in the CCTV surveillance system, the Namibian Police and WCPOLS should mobilize resources to install more open-street cameras in public spaces around Windhoek especially in crime

hotspot areas. The future of effective crime prevention lies in the hands of technology hence there is a need to start using technological security measures.

- ii) Cameras installed in public spaces for the purpose of monitoring and detecting crime, there is a need for the police to discuss and agree with a community living in those areas before such installations are implemented. There is a serious need to address communication gap between the police and the community members regarding the operations of CCTV and its benefits thereof. The community should be sensitized and made aware of the presence of cameras in their areas and the functions of those cameras.
- iii) The police or any other institutions involved in the operation of CCTV surveillance system should lobby relevant government organs to develop a dedicated policy or regulation that are aimed at regulating the use of CCTV surveillance systems and other security technological measures in the country. This should also include the collection and handling of video evidence generated by CCTV and other security devices. With a clear policy or regulations in place, issues of system abuse, low standards and invasion of privacy may be addressed.

### **5.3.2 Recommendations for private security**

- i) Private security firms have requisite technical expertise in CCTV installations and operations. Therefore, there is a need to formalize cooperation between the private security companies and the police on issues related to installation of systems, response to crime incidents processes, sharing of resources and possible integration of systems. Currently, these entities operate in isolation which makes it difficult to effectively prevent and reduce crime in Windhoek because there is weak collaboration among law enforcement agencies.

### **5.3.3 Recommendation for operators**

- i) Control room operators play a critical role in the operation of the CCTV surveillance system and therefore they should go through specialized training and regular refresher

courses to improve their monitoring skills. The police and private security companies should adequately invest in training of personnel to maximize the usage of CCTV which may lead to effective crime prevention.

- ii) Operators are exposed to all sorts of information such as confidential, sensitive and even secrets. Therefore, it is advisable for institutions employing an operator for the purpose of operating CCTV to undergo a security clearance before taking up such assignment. Operator should be vetted to determine their suitability and ability to handle sensitive materials that might be captured on cameras.

#### **5.4 FUTURE RESEARCH**

Pillay (2020: 287) states that during the research process there were areas identified as aspects requiring further research. Therefore, in this study the researcher also identified several areas that required further enquiries that could not feature in the research at hand. This research study focused on the evaluation of the CCTV surveillance system as a crime prevention measure in Windhoek. CCTV surveillance system is a broad subject which needs to be dissected into different approaches in order to comprehensively understand its nature. A further study is required to conduct a comparative analysis of statistical data focusing on the system to determine whether it has indeed reduced crime in a specific area within a specific period of time. Another area worth researching is the collecting and handling of video evidence generated by CCTV. Finally, it would be necessary for other researchers to look into aspects of legislation that might be developed to regulate the use of CCTV and the technical configuration of the system in Namibia.

#### **GENERAL CONCLUSIONS**

Ways & Pearson (2018: 80) claim that there is a correlation between the implementation of CCTVs and a decrease in criminal activity. It is for this reason the researcher decided to undertake a study of evaluating the role of CCTV as a crime prevention measure and determine whether such correlation indeed exists. As a target area, Windhoek has been experiencing a worryingly high crime rate. This problem was caused by lack of surveillance in some of the areas

regarded as hotspots. The study had a number of objectives that the research intended to accomplish. One of those objectives was to determine the impact CCTV has on crime prevention and crime reduction efforts. The research also aimed to analyze the level of training possessed by operators to effectively operate the system. The study was conducted in Windhoek that has a population which is slightly under 500 000 inhabitants. Ultimately, the significance of the research was to identify shortcomings and suggest solution in order to enhance CCTV operation capacity.

In this study, the researcher learned about two distinctive perspectives regarding the operation of CCTV surveillance system and its effectiveness as a crime prevention measure in Windhoek. Law enforcement officers favorably praised the system as the most effective modern technique of preventing crime in communities and if correctly implemented it had the capacity to reduce crime significantly. On the other hand, although members of the public residing in and around Windhoek were aware of the existence of the technology, the majority did not seem convinced that CCTV contributed sufficiently to the reduction and prevention of crime in their localities. The coverage of CCTV cameras in Windhoek was still very low especially in the Katutura and Informal Settlements and this was the reason some community members were not content about this system. Lack of funds to expand the surveillance to most residential areas around Windhoek was identified as the main challenge that the Municipality of Windhoek faced. The research further identified other reasons why the crime rate in Windhoek continued to escalate despite the presence of the CCTV surveillance system. High unemployment and rapid growth in local population as well as lack of sufficient police in the streets of Windhoek were some of those reasons.

In conclusion, the presence of open-street cameras in some public spaces in Windhoek deterred and instilled fear among criminals. CCTV cameras enabled the police to detect crime and identify criminals involved in committing crime. Consequently, the presence of cameras had led to many criminals leaving Windhoek in search for softer targets elsewhere. Coastal towns had been identified as the victims of crime displacement due to frequent robberies incidents experienced in Swakopmund and Walvis Bay. Therefore, the expansion of the system to other places that had not yet been covered should be encouraged. Law enforcement should mobilize

resources to acquire more cameras and other required security control equipment to improve crime prevention processes in Windhoek as well as in other parts of Namibia that are going through crime problems.



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**ANNEXURE A: UNISA RESEARCH ETHICS APPROVAL LETTER**

UNISA 2021 ETHICS REVIEW COMMITTEE

Date: 2021:11:22

ERC Reference No.: ST80

Name: K Ashiyana

Dear Mr Kefas Ashiyana

**Decision: Ethics Approval from  
2021:11:22 to 2024:11:22**

**Researcher:** Mr Kefas Ashiyana

**Supervisor:** Mr TE Banda

*An evaluation of Closed-Circuit Television surveillance as a crime prevention measure in  
Windhoek, Namibia*

**Qualification:** MA in Security Management

Thank you for the application for research ethics clearance by the Unisa 2021 Ethics Review Committee for the above mentioned research. Ethics approval is granted for 3 years.

*The low-risk application was reviewed by the CLAW Ethics Review Committee on 22 November 2021 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.*

The proposed research may now commence with the provisions that:

- 1. The researcher will ensure that the research project adheres to the relevant guidelines set out in the Unisa Covid-19 position statement on research ethics attached.**
2. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.

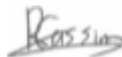


3. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the CLAW Committee.
4. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
5. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
6. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
7. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.
8. No field work activities may continue after the expiry date **2024:11:22**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

*Note:*

*The reference number ST80-2021 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,



Prof R Cassim  
Chair of CLAW ERC  
E-mail: [cassir@unisa.ac.za](mailto:cassir@unisa.ac.za)  
Tel: (012) 429-6780



Prof OJ Kole  
Acting Executive Dean: CLAW  
E-mail: [koleoj@unisa.ac.za](mailto:koleoj@unisa.ac.za)  
Tel: (012) 429-8305

**ANNEXURE B: LANGUAGE EDITOR LETTER**

**Proof of editing**

STMBondvo editing services  
148 Aramburg  
Mpumalanga  
South Africa  
Cell.: 0603467091

Date: 14 April 2022

This is to certify that I have edited the draft thesis of the following candidate:

**Names and Surname:** Kefas Ashiyana

**Student number:** 41983025

**Title:** An evaluation of closed circuit television surveillance as a crime prevention measure in Windhoek, Namibia.



**Dr ST Maseko**  
**Director**  
**STMBondvo editing services**

# ANNEXURE C: TURNITIN SIMILARITY INDEX REPORT

## Turnitin Originality Report

Processed on: 08-Apr-2022 07:35 SAST  
 ID: 1805007244  
 Word Count: 42423  
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AN EVALUATION OF CLOSED CIRCUIT TELEVISION SURVEILLANCE AS A CRIME PREVENTION MEASURE IN WINDHOEK, NAMIBIA By Kefas Ashiyana

2% match (Internet from 22-Jan-2020) <a href="http://uir.unisa.ac.za/bitstream/handle/10500/26222/dissertation_moyo_s.pdf?isAllowed=y&amp;sequence=1">http://uir.unisa.ac.za/bitstream/handle/10500/26222/dissertation_moyo_s.pdf?isAllowed=y&amp;sequence=1</a>
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< 1% match (Internet from 28-Dec-2018) <a href="http://uir.unisa.ac.za/bitstream/handle/10500/24677/dissertation_banda_te.pdf?isAl=&amp;sequence=1">http://uir.unisa.ac.za/bitstream/handle/10500/24677/dissertation_banda_te.pdf?isAl=&amp;sequence=1</a>
< 1% match (Internet from 16-Dec-2021) <a href="https://uir.unisa.ac.za/bitstream/handle/10500/28182/dissertation_tshangela_s.pdf?isAllowed=y&amp;sequence=1">https://uir.unisa.ac.za/bitstream/handle/10500/28182/dissertation_tshangela_s.pdf?isAllowed=y&amp;sequence=1</a>
< 1% match (Internet from 27-Jan-2019) <a href="http://uir.unisa.ac.za/bitstream/handle/10500/24803/thesis_VanderWatt_M.pdf?isAllowed=y&amp;sequence=1">http://uir.unisa.ac.za/bitstream/handle/10500/24803/thesis_VanderWatt_M.pdf?isAllowed=y&amp;sequence=1</a>
< 1% match (Internet from 13-Nov-2019) <a href="http://uir.unisa.ac.za/bitstream/handle/10500/25963/thesis_juta_a.pdf?isAllowed=y&amp;sequence=1">http://uir.unisa.ac.za/bitstream/handle/10500/25963/thesis_juta_a.pdf?isAllowed=y&amp;sequence=1</a>
< 1% match (Internet from 15-Oct-2021) <a href="https://uir.unisa.ac.za/bitstream/handle/10500/25072/dissertation_teixeira_cds.pdf;sequence=1">https://uir.unisa.ac.za/bitstream/handle/10500/25072/dissertation_teixeira_cds.pdf;sequence=1</a>
< 1% match (Internet from 26-May-2016) <a href="http://uir.unisa.ac.za/bitstream/handle/10500/19682/thesis_nretorius_wl.pdf?isAllowed=y&amp;sequence=3">http://uir.unisa.ac.za/bitstream/handle/10500/19682/thesis_nretorius_wl.pdf?isAllowed=y&amp;sequence=3</a>

## **ANNEXURE D: REQUEST FOR PERMISSION TO DO RESEARCH LETTER (Draft)**

[Company Name]  
P.O Box  
Windhoek

Dear Sir/Madam

### **RE: REQUEST FOR PERMISSION TO CONDUCT RESEARCH FOR A MASTER DEGREE IN SECURITY MANAGEMENT**

My name is Kefas Ashiyana, (UNISA student number: 41983025) currently a registered student for a Master of Art in Security Management. The title of my research is: **AN EVALUATION OF CLOSED CIRCUIT TELEVISION SURVEILLANCE AS A CRIME PRIVENTION MEASURE IN WINDHOEK, NAMIBIA.**

Given the background, I would like to request for permission to conduct fieldwork research and interviews with your organization/company`s employees, especially those involved and familiar (control room operators and patrol officials) with the operation of CCTV surveillance system.

#### **DESCRIPTION OF RESEARCH PROJECT**

The main aim and purpose of this study is to evaluate the effectiveness of CCTV surveillance as a crime control measure in Windhoek. In actual fact, the purpose of this study is to critically assess and determine the extent of usage of the CCTV surveillance system by law enforcement agencies and the impact it has on combating crime in Windhoek. The study aims to provide clarity about what was believed to be true about the CCTV surveillance system regarding crime prevention based on the current perceptions. The researcher wants to explore this subject by going into the communities and to seek new insights. The aim is to seek answers to what was believed before the study is undertaken. It further seeks to improve formulation of national policies regarding the use of CCTV and identify areas that need further research. Generally, Namibia is lugging behind in terms of research. Therefore the researcher hopes that this study will contribute to the body of knowledge especially in the area of crime prevention. Being the capital city and economic hub of Namibia, Windhoek presents ample research opportunities and equality CCTV surveillance is one of those research areas which need to be explored. The researcher is hopeful that the findings of this study will assist in creating a model that can be used to optimally manage criminal activities in Windhoek. Additionally, the findings will enable policy and law makers to develop informed laws and policies that have significant impact on crime prevention and reduction in the communities.

#### **INTERVIEWS**



The researcher will conduct one-on-one interview based on Schedule of Interview Questions (see attachment). The interviews will revolve around some of the following questions:

- How long have you been working with CCTV surveillance system?
- What impact does CCTV surveillance have on crime reduction in Windhoek?
- Which types of crime are often effectively identified by CCTV surveillance system while in progress?
- How effective was CCTV during lockdown?
- What do you think should be done to improve the operation of CCTV surveillance system?
- What have been the biggest CCTV achievement so far?

#### CONFIDENTIALITY OF COLLECTED RESEARCH INFORMATION

Information obtained from research participants will be treated with utmost confidentiality to protect the integrity of the data. The identity of the respondents will remain synonym and will not be linked to any organization or characteristics.

Participants in the research interviews will be selected on voluntary basis and each participant will duly give informed consent to the researcher in writing before interview takes place.

All interview information obtained by the researcher will be transcribed and viewed only by him.

The final product of this research will be document in the form of academic dissertation and respondent will only be identified numbers or codes allocated to each of them.

If any confirmation or other information is needed, Banda TE (Research Supervisor) can be directly contacted at the following: Email: [bandte@unisa.ac.za](mailto:bandte@unisa.ac.za)

I am looking forward to your positive response in this regard.

Kind Regards

---

Kefas Ashiyana

## ANNEXURE E: PARTICIPANTS INFORMATION SHEET

### PARTICIPANT INFORMATION SHEET

Date:

Dear Prospective Participant

#### **RESEARCH PROJECT: AN EVALUATION OF CLOSED CIRCUIT TELEVISION SURVEILLANCE AS A CRIME PREVENTION MEASURE IN WINDHOEK, NAMIBIA**

My name is **Kefas Ashiyana** a student (student number: 41983025) at the University of South Africa (UNISA) in the Department of Criminology and Security Science, School of Criminal Justice in the College of Law, doing a **Master of Art Degree in Security Management**.

My Supervisor is **Mr. Tebogo E Banda**, a Senior Lecturer in the Department of Criminology and Security Science.

#### PURPOSE OF THE RESEARCH STUDY

The main aim and purpose of this study is to evaluate the effectiveness of CCTV surveillance as a crime control measure in Windhoek. In actual fact, the purpose of this study is to critically assess and determine the extent of usage of the CCTV surveillance system by law enforcement agencies and the impact it has on combating crime in Windhoek. The study aims to provide clarity about what was believed to be true about the CCTV surveillance system regarding crime prevention based on the current perceptions. The researcher wants to explore this subject by going into the communities and to seek new insights. The aim is to seek answers to what was believed before the study is undertaken. It further seeks to improve formulation of national policies regarding the use of CCTV and identify areas that need further research. Generally, Namibia is lagging behind in terms of research, therefore the researcher hopes that this study will contribute to the body of knowledge especially in the area of crime prevention. Being the capital city and economic hub of Namibia, Windhoek presents ample research opportunities and equality CCTV surveillance is one of those research areas which need to be explored.

The researcher is hopeful that the findings of this study will assist in creating a model that can be used to optimally manage criminal activities in Windhoek. Additionally, the findings will enable policy and law makers to develop informed laws and policies that have significant impact on crime prevention and reduction in the communities.

#### WHY ARE YOU BEING INVITED TO PARTICIPATE?

First of all, your participation in this study is highly appreciated and valued. We have identified you as a suitable participant because of your position and experience in your

community/organization/company involving (managing/supervising/operating) the operation of CCTV surveillance system. We view your involvement as responder to CCTV surveillance to crime in progress as a valuable asset to this study.

We got your contact details from your organization/company after a request was extended to recommend an individual that would be suitable in participating in this research study. A total number of 25 persons (including yourself) will be interviewed regarding their involvement and position in the operation of CCTV surveillance system in Windhoek.

#### WHAT IS THE NATURE OF YOUR PARTICIPATION IN THIS STUDY?

The interview will be conducted through one-on-one semi-structured questions and self-administered questionnaire to enable the researcher to obtain as much information as possible to your participation. Interview will also be used to probe and gain in-depth information at your disposal regarding CCTV surveillance system. The research counts on your expertise in this area would want you to provide as much valuable information as you can. The interview should not last longer than 30 minutes and will be conducted at a time and place of the participant's convenience. Interview session will be recorded in writing form as well as voice recording.

Below are some of the questions that will be asked:

- How long have you been working with CCTV surveillance system?
- What impact does CCTV surveillance have on crime reduction in Windhoek?
- Which types of crime are often effectively identified by CCTV surveillance system while in progress?
- How effective was CCTV during lockdown?
- What do you think should be done to improve the operation of CCTV surveillance system?
- What have been the biggest CCTV achievements so far?

#### CAN I WITHDRAW FROM THE STUDY EVEN AFTER HAVING AGREED TO PARTICIPATE?

Research participants are doing us a big favour and are not under obligation to continue with interviews even when they are no longer comfortable to do so. Participation in this research study is **absolutely voluntary** and participants can withdraw even after they have duly agreed to take part. Withdrawal from participating does not bear negative consequences to the participants. Furthermore, participants are free to request the researcher to delete records that have been recorded prior to withdrawal if the participant so wishes.

#### ANY NEGATIVE CONSEQUENCES IF YOU PARTICIPATE IN THIS RESEARCH PROJECT?

The researcher assures you of your safety and the safety of information that you are going to provide. Information provided by the participant is regarded as confidential and will be treated as such throughout till the process is completed. Participants` personal details will not be revealed unless permission is given by the participant to have his/her personal details revealed.

#### WILL THE INFORMATION THAT YOU GIVE TO THE RESEARCHER AND IDENTITY BE KEPT CONFIDENTIAL?

Research will follow the following steps to ensure that information provided by the interview/participants are protected and kept confidential:

- Identities of all participants will not be revealed to any person and there is no exception to this rule.
- Researcher to maintain the identity of the anonymous and remove all identifying characteristics from the information provided.
- All interview information obtained by the researcher will be transcribed and viewed only by him.
- Information obtained during interview from respondent will be stored electronically and protected with a secure password by the researcher.
- The final product of this research will be document in the form of academic dissertation and respondent will only be identified numbers or codes allocated to each of them.

Your name will not feature anywhere in the research report and no one will know your participation in the research. Respondents will be identified with number codes to avoid revealing their names. The researcher is the only person that will have access to data collected in the interview to maintain confidentiality.

#### HOW WILL THE RESEARCHER PROTECT THE SECURITY OF DATA?

In terms of document security, the researcher will ensure that research documents are locked away in a lockable cupboard to prevent it from being accessed by any person. Information stored in the computer will be protected with a secure password.

#### PAYMENT OR ANY INCENTIVES FOR PARTICIPATING IN THE STUDY

Participants will not be offered any payment, incentives or any form of inducement to participate in the study. Payment of research participants may compromise the integrity of information to be collected.

#### HAS THE STUDY RECEIVE ETHICS APPROVAL?

This research study has received a written approval from the University of South Africa (UNISA) Research Ethics Committee of the College of Law. The copy of such approval is available with the researcher and can be obtained from him if the participant so wishes.

#### HOW WILL I BE INFORMED OF THE FINDINGS/RESULTS OF THE RESEARCH?

The final research findings can be obtained from Mr. Kefas Ashiyana on contact number +264 812864230 or [ashiyanakefas@yahoo.com](mailto:ashiyanakefas@yahoo.com). The final research Dissertation will be submitted to UNISA and will be accessible electronically at UNISA library database where all dissertations are stored.

My Supervisor is **Mr. Tebogo E Banda** and be contacted on [bandate@unisa.ac.za](mailto:bandate@unisa.ac.za) should you need additional information regarding this research study.

Thank you for your time reading for reading this information sheet.

---

**Mr. Kefas Ashiyana**

**ANNEXURE F: INFORMED CONSENT FORM**

**Consent to participate in the research study to be conducted by Mr. Kefas Ashiyana (researcher) in Windhoek**

---

I ..... hereby confirm my consent to being interviewed for the research project on the topic *“An evaluation of Closed Circuit Television as a crime prevention measure on Windhoek, Namibia”*

I understand and agree to the record writing and voice recording of the interview and the recording can be deleted if no consent was given.

I have read and understand the purpose of the research study as explained to me by the researcher and by the information sheet covering letter.

I understand that I can end or cancel my consent or involvement in participating in the research anytime I decide to or no longer feel comfortable.

My participation in this research study is voluntary and I have enough time to ask questions when seeking for clarity.

I understand that the findings of this research study will be published but my identity will remain anonymous.

I hereby co-signing this agreement that the researcher undertakes to maintain confidentiality, anonymous and privacy of the interviewee.

\_\_\_\_\_  
(Interviewee signature)

\_\_\_\_\_  
(Interviewer signature)

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Date)

I, (interviewer signature) \_\_\_\_\_ certify that I have explained the content of this document to the interviewee.

## ANNEXURE F: INTERVIEW QUESTIONS (FACE TO FACE)

### FACE TO FACE INTERVIEW QUESTIONS

Interview guide:

1. Name of the institution:.....
2. Date of interview:.....

#### Personal details

Age:.....

Educational Level:.....

Position:.....

Gender.....

#### Type of crime occur

1. In your opinion, what are the common crimes that are usually committed within the city of Windhoek?
  - i).....
  - ii).....
  - iii).....
  - iv).....
2. What do you think are the major factors that contribute to crime within?
  - i).....
  - ii).....
  - iii).....
  - iv).....
3. When were the cameras installed

.....  
.....  
Effectiveness of CCTV cameras

4. What is the objective of installing open-street cameras in Windhoek?

.....  
.....

5. How effective (impact) do you think this system has been so far (elaborate)?

.....  
.....

6. What benefits does the city/police gets by investing in the CCTV technology?

.....  
.....

7. What are the challenges facing the CCTV? Maintenance, vandalism, funds for expansion

.....  
.....

8. Where in Windhoek, are cameras installed?

.....  
.....

9. Which type of crime are normally easy to control with CCTV?

.....  
.....

10. Is there any national or internal CCTV policy or framework on how should it operate?

.....  
.....

11. What are the design standards (specifications) for the CCTV cameras installed in the city?

.....  
.....



12. Do you think, CCTV actually assists the police in the prevention of crime in Windhoek?

.....  
.....

Cost and management of CCTV cameras

13. What is the cost of installing the CCTV cameras?

.....  
.....

14. What is the cost of managing and maintaining CCTV?

.....  
.....

15. How many camera are installed so far?

.....  
.....

Return on investment

16. How much have you earned or lost as result of installing a CCTV?

.....  
.....

Strategies for effective use of CCTV cameras

17. In your opinion, what policies should be put in place for effective use of CCTV?

.....  
.....

18. What should be done to empower the police to ensure effective use of CCTV cameras in fighting crime?

.....  
.....

19. Do you think, there is a need to expand CCTV surveillance to all localities in the city?

.....  
.....

20. How does CCTV evidence used in resolving crime?

.....

.....  
21. Who collects evidence from the CCTV recorded footages?  
.....  
.....

22. How successful has the CCTV evidence been in the prosecution of offenders?  
.....  
.....

23. Do you think, government should help in making funds available to install more cameras?  
.....  
.....

Response Approach

24. Who are the response stakeholders (Nampol, private security, neighbourhood watch)?  
.....  
.....

25. For which crime observed on cameras does the response team normally send out?  
.....  
.....

26. Where does the response team normally stay before being send out?  
.....  
.....

26 What is the approximate average time of response to scene of crimes?  
.....  
.....

Control Room

27. How many CCTV camera do you monitor?  
.....  
.....

28. How many cameras does a single operator monitors when on duty?

.....  
.....  
29. What level of training do operators have?  
.....  
.....

30. In which languages do operators use to communicate to officer on the ground?  
.....  
.....

Invasion of privacy

31. Do you thing open-street cameras intrudes people`s privacy?  
.....  
.....

32. Do you know any person(s) who think CCTV cameras invade the privacy of their homes  
or spaces?  
.....  
.....

Covid 19 pandemic

33. What role did CCTV cameras play during Covid 19 lockdown period?  
.....  
.....

34. Was it successful in doing so?  
.....  
.....

## ANNEXURE G: QUESTIONNAIRE: CONTROL ROOM

### RESEARCH PROJECT TITLE:

*An evaluation of Closed Circuit Television surveillance as a crime prevention measure in Windhoek, Namibia*

---

### INSTRUCTIONS:

Kindly help me answer the following questions as honestly as possible. Your identity will be kept confidential and no respondent will be identified or linked to any company or organization in any way in the research findings by name or otherwise. The answers provided will only be used for this research study.

### SECTION A: PERSONAL INFORMATION

Question 1: Gender

Gender	(X)
Male	
female	

Question 2: Age

Age	(X)	Age	(X)
20-24		25-29	
30-34		35-39	
40-44		45-49	
50-54		55-59	
60+			

Question 3: Highest Educational Qualification

Highest Educational Qualification	(X)
Grade 10/ Standard 8	
Grade 12/ Standard 10	
Certificate NQF Level 4	
Certificate NQF Level 5	
1 Year Diploma	
3 Years Diploma	
Bachelor Degree	
BTech	
Advanced Diploma	

Honours Diploma	Degree/Postgraduate	
Masters		
Doctoral		
Others (specify)		

Question 4: How many years of work experience do you have in the police/private Security industry?

.....

Question 5: How many years of work experience do you have in your current position?

.....

Question 6: What is your current position within the domain of a control room: CCTV?

.....

Question 7: Have you gone through any specialized training/course related to CCTV operations?

.....

.....

**SECTION B: CCTV SURVEILLANCE OPERATIONS**

Question 8: Which areas/sites (locations/suburbs/malls/ private estates) are monitored by this control room currently? (list all sites)

- |        |         |
|--------|---------|
| 1..... | 4.....  |
| 2..... | 5.....  |
| 3..... | 6.....  |
| 7..... | 11..... |

8.....

10.....

Question 9: Are there cameras at Informal settlement areas? Please explain

.....  
.....

Question 10: What do you normally do when you are on-duty in the CCTV control room?

.....  
.....

Question 11: What process is followed when suspicious activity is detected on CCTV cameras?

.....  
.....  
.....

Question 12: On which type of activity/incident is a response team sent out for?

.....  
.....

Question 13: Where does the response team normally stay? Patrol, standby, home, etc

.....  
.....

Question 14: Does your organization/company cooperates with Nampol in response to incidents?

Yes		NO	
-----	--	----	--

Question 15: If yes to the question above, explain, in which way the cooperation is done?

.....

.....  
.....

Question 16: If not to the above question (21), explain why not?

.....  
.....

Question 17: who are your other incidences response stakeholders if any (ex. Security Companies, neighborhoodwatch, etc)?

.....  
.....

Question 18 Are all cameras working?

.....

Question 19 How many cameras are you monitoring?

.....

Question 20 How many cameras are there in total?

.....

Question 21: In your opinion, explain what role does CCTV surveillance play into crime prevention issues?

.....  
.....

Question 22: How does CCTV surveillance cameras help in regulating traffic flow in Windhoek?

.....  
.....

.....

Question 23: How best do you think CCTV surveillance system can help in solving crime?

.....  
.....

Question 24: Are you aware of any CCTV footage from this control room that was used to Solve a crime? Arrest, prosecution etc

Yes		No	
-----	--	----	--

Question 25: If your answer is yes, give examples of those crimes? (list all crimes)

.....  
.....  
.....

Question 26: For cases listed above were there any suspect arrested?

Yes		No	
-----	--	----	--

Question 27: Which action mostly depends on CCTV footage? Identification purpose; Evidence in court; rapid response, arrest or investigation (mention as many)

.....  
.....  
.....

Question 28: Do you think, there is a need for more cameras?

.....  
.....  
.....

Question 29: For how long are the video recordings kept before deleted?

.....



Question 30: How do you keep/store old CCTV records/ footages?

.....  
.....

Question 31: In your own opinion, does the use of CCTV surveillance cameras have any Impact on crime prevention initiatives?

Yes		No	
-----	--	----	--

Question 32: Please explain

.....  
.....

Question 33: What impact does CCTV surveillance has in combating the spread of COVID-19?

.....  
.....

Question 34: What challenges do you experience at your work as a control room operators?

.....  
.....

Question 35: In your own opinion, how can the use of CCTV system be improved for better effective crime prevention?

.....  
.....

Question 36: Any relevant information that you would like to share regarding the effectiveness of CCTV in reducing/preventing crime?

.....  
.....

THANK YOU VERY MUCH FOR YOUR TIME IN PARTICIPATING IN THIS STUDY

**ANNEXURE H: QUESTIONNAIRE: POLICE/SECURITY OFFICERS**

SCHEDULE OF INTERVIEW QUESTIONS

VARIOUS PLACES IN WINDHOEK: CCTV SURVEILLANCE OPERATIONS

---

RESEARCH PROJECT TITLE:

*An evaluation of Closed Circuit Television surveillance as a crime prevention measure in Windhoek, Namibia*

---

This questionnaire seeks to solicit your understanding and opinions on the operations of CCTV surveillance cameras in your area.

INSTRUCTIONS:

Kindly answer all questions in this questionnaire by providing your true reflection of things. Please help me answer the following questions as honestly as possible. Your identity will be kept confidential and no respondent will be identified or linked to any company or organization in any way in research findings by name or otherwise. The answers provided will only be used for this research study.

Please do not spend too much time on one question

Remember: There are no wrong answers.

SECTION A: PERSONAL INFORMATION

Question 1: Gender

Gender	(X)
Male	
female	

Question 2: Age

Age	(X)	Age	(X)
20-24		25-29	
30-34		35-39	
40-44		45-49	
50-54		55-59	
60+			

Question 3: Highest educational qualification?

Highest Educational Qualification	(X)
Grade 10/ Standard 8	
Grade 12/ Standard 10	
Certificate NQF Level 4	
Certificate NQF Level 5	
1 Year Diploma	
3 Years Diploma	
Bachelor Degree	
BTech	
Advanced Diploma	
Honours Degree/Postgraduate Diploma	
Masters	
Doctoral	
Others (specify)	

SECTION B: CCTV SURVEILLANCE OPERATIONS

Question 4: Which part of Windhoek is your workplace?

.....

Question 5: What is your current position (rank) in the police/private security company?

.....

Question 6: How many years of work experience do you have in the police/private Security industry?

.....

Question 7: Do you have any other specialized training applicable to your current work?  
Please state:

.....

.....

Question 8: Are you aware of any open-street CCTV surveillance cameras in Windhoek?

Yes		No	
-----	--	----	--

Question 9: Which parts of Windhoek you are aware that are being monitored by CCTV Surveillance cameras? (list)

.....

.....

.....

Question 10: Who installed these CCTV surveillance cameras you have mentioned?

.....

Question 11: How do these cameras influence your work as a police/security officer?

.....

.....

Question 12: Have you attended an incidents / crime scenes reported to you with the aid of CCTV cameras?

.....

.....

Question 13: Which crimes have you attended to which were reported to you as a result of CCTV detection? (list)

.....

.....

.....

Question 14: How did the message passed on to you before you respond?

.....  
.....  
.....

Question 15: Did any suspect arrested as result of your response to these scenes of crime?

.....  
.....  
.....

Question 16: Which types crime are commonly reported to you with the aid of CCTV cameras?

.....  
.....  
.....

Question 17: How does CCTV assist in regulating traffic in Windhoek?

.....  
.....

Question 18 How useful was CCTV during lockdown as an effort by government to reduce the spread of Covid 19?

.....  
.....

Question 19: Do you think public surveillance (CCTV) violates the right to privacy of citizens of Windhoek?

.....  
.....

Question 20: What do you think must be done to improve the operations of CCTV surveillance in Windhoek?

.....  
.....  
.....

Question 21: Who are your partners (stakeholders) in crime prevention?  
(Police, neighbourhood watch, private security, etc)

.....  
.....  
.....

Question 22: Have you noticed any reduction in crime since the installation of CCTV?

.....  
.....  
.....

Question 23: What crime prevention benefits do you think CCTV surveillance cameras brings to police/private security work?

.....  
.....  
.....

Question 26: Do you have any suggestions on how to better improve the use of CCTV surveillance to prevent crime?

.....  
.....

.....  
.....  
.....  
.....

Question 26: Is there additional information relevant to the use of CCTV surveillance you would like to share with me?

.....  
.....  
.....  
.....

THANK YOU FOR YOUR TIME

## ANNEXURE I: QUESTIONNAIRE: PUBLIC MEMBERS

### RESEARCH PROJECT TITLE:

*An evaluation of Closed Circuit Television surveillance as a crime prevention measure in Windhoek, Namibia*

---

This interview survey questionnaire seeks to solicit your understanding and opinion on the operations of CCTV surveillance cameras in your area.

### INSTRUCTIONS:

Kindly answer all questions in this questionnaire by providing your true reflection of things. Please help me answer the following questions as honestly as possible. Your identity will be kept confidential and no respondent will be identified or linked to any company or organization in any way in the research findings by name or otherwise. The answers provided will only be used for this research study.

Please do not spend too much time on one question.

Remember: There are no wrong answers.

### SECTION A: PERSONAL INFORMATION

Question 1: Gender

Gender	(X)
Male	
female	

Question 2: Age

Age	(X)	Age	(X)
20-24		25-29	
30-34		35-39	
40-44		45-49	
50-54		55-59	
60+			

Question 3: What is your occupation?



Security Sector (X)	
Non security sector (X)	

Question 4: Highest educational qualification?

Highest Educational Qualification	(X)
Grade 10/ Standard 8	
Grade 12/ Standard 10	
Certificate NQF Level 4	
Certificate NQF Level 5	
1 Year Diploma	
3 Years Diploma	
Bachelor Degree	
BTech	
Advanced Diploma	
Honours Degree/Postgraduate Diploma	
Masters	
Doctoral	
Others (specify)	

Question 5: Which part of Windhoek do you live?

.....

SECTION B: CCTV SURVEILLANCE OPERATIONS

Question 6: Are you aware of any open-street CCTV surveillance cameras in your neighbourhood?

Yes		No	
-----	--	----	--

Question 7: When were the CCTV cameras installed in your neighbourhood?

.....

Question 8: By mentioning all sites, where are the CCTV cameras installed in your neighbourhood?

.....  
.....

Question 9: Was there any reason provided to residents for the installation of CCTV cameras in public space?

.....  
.....

Question 10: Were you involved in deciding on the installation of cameras in your neighbourhood?

.....  
.....

Question 11: Do you have any concern regarding the “invasion of privacy” by CCTV surveillance cameras in your area?

Yes		No	
-----	--	----	--

Question 12: If yes, what are those concerns?

.....  
.....  
.....

Question 13: Who installed cameras in the public space (open-street) in your area? (police, Municipality, neighbourhood watch, private security company etc.)

.....

Question 14: Who is funding/funded the installation of CCTV cameras in your neighbourhood? (example: municipality, community, police etc)

.....

Question 15: Who manages the operations of CCTV surveillance cameras?

.....

Question 16: Do you know how many cameras have been installed in the “public space” in your neighbourhood?

.....

Question 17: Are the cameras monitored and operated on a 24/7 basis?

.....

Question 18: Who responds to criminal activities observed on CCTV in your area? (Police, neighbourhood watch, private security, etc)

.....

Question 19: Have you noticed any reduction in crime after the installation of CCTV?

Yes		No	
-----	--	----	--

Question 20: If yes, which crimes have been reduced?

.....

.....

.....

Question 21: What crime prevention benefits do you think CCTV surveillance cameras Brings in your area?

.....

.....

.....

Question 22: Do you now feel safe and secure after the installation of CCTV cameras?

Yes		No	
-----	--	----	--

Question 23: If no, why do you feel so?

.....  
.....  
.....

Question 24: Do you know someone who was a victim of crime which was successfully solved with the involvement of CCTV surveillance?

Yes		No	
-----	--	----	--

Question 25: If yes, please explain those successes as a result of the detection of those crimes?

.....  
.....  
.....

Question 26: Do you have any suggests on how to better improve the use of CCTV surveillance to prevent crime?

.....  
.....  
.....  
.....

Question 26: Is there additional information relevant to the operations of CCTV surveillance and useful in improving the effectiveness of the system?

.....  
.....

THANK YOU FOR YOUR TIME

## ANNEXURE J: ON-LINE SURVEY A

# CCTV Surveillance Cameras in Windhoek

This questionnaire seeks to solicit your understanding and opinions on the use of CCTV surveillance open-street cameras in Windhoek. Please assist me in answering the following questions below. It will take you less than 12 minutes to complete this short survey.

generaltala@gmail.com (not shared) [Switch account](#)

\* Required

### 1. Gender \*

Male  
Female

### 2. Age \*

20-24  
25-29  
30-34  
35-39  
40-44  
45-49  
50-54  
55-59  
60+

### 3. Occupation

Security Sector  
Non-security Sector

### 4. Highest Educational Qualification \*

Grade 10 / Standard 8  
Grade 12 / Standard 10  
Certificate NQF Level 4  
Certificate NQF Level 5  
1 Year Diploma  
3 Years Diploma  
Bachelor Degree  
BTech  
Advanced Diploma  
Honours Degree / Postgraduate Diploma  
Masters  
Doctoral  
Others

5. Which part of Windhoek do you live? \*

Your answer

6. Are you aware of any open-street CCTV surveillance cameras in your neighbourhood?

Yes

No

7. When were the CCTV cameras installed in your neighbourhood

Your answer

8. Where are the CCTV cameras installed ( ex. walls or poles etc)

Your answer

9. Was there a reason(s) provided to the residents before the installation of CCTV cameras in public space?

Your answer

10. Were you involved in deciding on the installation of cameras in your area?

Your answer

11. Do you have any concern(s) regarding the "invasion of privacy" by CCTV cameras in your area?

Your answer

12. Who facilitated the installation of cameras in the public spaces in your area ( Nampol, City Police, Security company, Neighbourhood Watch etc)?

Your answer

13. Who is funding or funded the installation of those CCTV cameras?

Your answer

14. Who monitors the CCTV ?

Your answer

15. Do you know how many cameras are the in your neighbourhood?

Your answer

16. Who responds to criminal activities observed on CCTV in your areas ( Police, neighbourhood Watch, City police, Security Company)?

Your answer

17. Have you noticed any reduction in crime occurrence after the installation of CCTV in your area?

Yes  
No

18. If yes in Question 17, which crimes has been reduced

Your answer

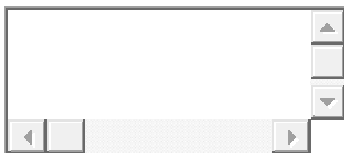
19. What crime prevention benefits do you think CCTV surveillance system brings to your areas?

Your answer



20. Do you now feel safe and secured in you area after the installation of CCTV?

Your answer

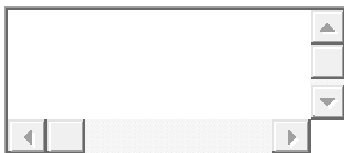


21. Do you know someone who was a victim of crime which was resolved with the involvement of CCTV?

- Yes
- No

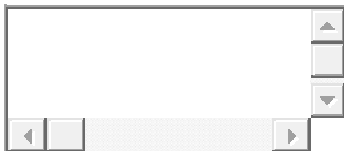
22. Pleas explain you answer in question 21

Your answer



23. Do you have any suggestion on how to improve the use of CCTV surveillance to prevent crime effectively?

Your answer



24. Any additional information relevant to CCTV in Windhoek that you would like to share wit me?

Your answer



THANK YOU

Your answer

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**ANNEXURE K: ON-LINE SURVEY B**

# CCTV SURVEILLANCE SURVEY

Please help me in answering the following questions regarding the effectiveness of CCTV as a crime prevention measure in Windhoek. Your participation in this survey is highly appreciated!

generaltala@gmail.com (not shared) [Switch account](#)

## 1. Gender

Male  
Female

## 2. Age

20-24  
25-29  
30-34  
35-39  
40-44  
45-49  
50-54  
55-59  
60+

## 3. Highest Educational Qualification

Grade 10 / Standard 8  
Grade 12 /Standard 12  
Certificate NQF Level 4  
Certificate NQF Level 5  
1 Year Diploma  
3 Years Diploma  
Bachelor Degree  
BTech  
Advanced Diploma  
Honours Degree / Postgraduate Diploma  
Masters  
Doctoral  
Others

## 4. Which part of Windhoek is your workplace?

Your answer

## 5. What is your current position (rank) in the police/private security company?

Your answer

6. How many years of work experience do you have in the police/security?

Your answer

7. Do you have other specialized training applicable to your current work? Please state:

Your answer

8. Are you aware of any open-street CCTV surveillance cameras in Windhoek?

Yes  
No

9. Which parts (locations) of Windhoek, you are sure that there are cameras in public spaces? (list)

Your answer

10. Who installed these CCTV surveillance cameras you have mentioned?

Your answer

11. How do cameras influence your work as a police/security officer?

Your answer

12. Have you ever attended an incident/crime scene reported to you as result of CCTV detection?

Your answer

13. Which crimes mainly have you attended to which was reported to you as a result of CCTV detection? (list)

Your answer

14. How was the message passed on to you before you respond?

Your answer

15. Did any suspect arrested as result of your response to these scenes of crime?

Your answer

16. Which crimes are commonly detected on cameras? (list)

Your answer

17. How does CCTV assist in regulating traffic flow in Windhoek?

Your answer

18. How useful was CCTV during lock-down as an effort by government to reduce the spread of Covid-19?

Your answer

19. Do you think, public surveillance (CCTV) violates the right to privacy of citizens of Windhoek?

Your answer

20. What do you think must be done to improve the operations of CCTV surveillance in Windhoek?

Your answer

21. Who are your response partners in crime prevention? (police, neighbourhood watch, private companies etc)

Your answer

22. Have you noticed any reduction in crime since the installation of CCTV?

Your answer

23. What crime prevention benefits do you think CCTV surveillance cameras brings to the police/security work?

Your answer

24. Do you have any suggestion on how to improve the use of CCTV surveillance cameras to prevent crime in Windhoek?

Your answer

25. Is there additional information relevant to the use of CCTV surveillance you would like to share with me?

Your answer

Thank you for taking time to participate!

Option 1

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## **ANNEXURE L: CCTV OPERATOR'S JOB DESCRIPTION**

CCTV Operator - Metro Namibia



## CCTV Operator

Metro Namibia

Windhoek

Company Details

---

Van der Bilj Street, Northern Industrial,  
Windhoek, Namibia

[084-000-2000](tel:084-000-2000)

Experience

Entry level

---

Job Type

---

Full-Time based on shift rotation

---

Introduction:

To add value and improve the organization's operations by monitoring live images, reviewing daily CCTV Footage, Identify control weakness, do daily soft audits and report on anomallies detected

#### Job Description:

- Operate CCTV systems in a professional manner
- Monitor CCTV and Security equipment
- Respond to emergency situations in a professional manner
- Liaise with Store Management and National Security services providers when required
- Produce written incident reports when required

#### Knowledge and Skills :

- Computer Literate – Word & Excel
- Good communication & Technical Skills
- Have integrity
- Self-driven & Enthusiastic
- Detail-orientated and well organised
- Motivated and Proactive
- Multi-tasking and flexible
- Be able to work shifts

#### Job Requirements:

- 1 Years experience in CCTV surveillance monitoring
- 1-3 months CCTV operator`s course Certificate
- Registered with SESORB
- Technical experience in CCTV networking would be an advantage
- No criminal or ICT record
- Namibian Citizen