

UNIVERSITY OF NAIROBI

DEPARTMENT OF SOCIOLOGY & SOCIAL WORK

**CHALLENGES ENCOUNTERED BY SCENE OF CRIME INVESTIGATORS:
THE CASE OF THE DIRECTORATE OF CRIMINAL INVESTIGATIONS
HEADQUARTERS, NAIROBI**

BY

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DECLARATION

I the undersigned do declare that this research project to be my original work and that has not been presented for a degree thesis in any other college or University.

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This research project has been submitted for examination with my approval as University Supervisor.

Signed..... Date.....

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DEDICATION

I dedicate this research project work to my family for all the support and love they have shown me all through.

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I wish to thank the Almighty God for his protection, guidance, strength, favour and direction throughout the course of my education.

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ACRONYMS AND ABBREVIATIONS

ATPU:	Anti-Terrorism Police Unit
CBD:	Central Business District
CID:	Criminal Investigation Department
DCI:	Directorate of Criminal Investigations
DCIO:	Divisional Criminal Investigation Office
DNA:	Deoxyribonucleic Acid
DPP:	Director of Public Prosecution
ICT:	Information Communication Technology
IEBC:	Independent Electoral and Boundaries Commission
IGP:	Inspector General of Police
IPOA:	Independent Police Oversight Authority
IRDU:	Institutional Research and Development Unit
KIPPRA:	Kenya Institute for Public Policy Research and Analysis
KNBS:	Kenya National Bureau of Statistics
NACOSTI:	National Commission for Science, Technology and Innovation
OB:	Occurrence Book
PC:	Personal Computer
PCR:	Polymerase Chain Reaction
RoK:	Republic of Kenya
SCU:	Serious Crime Unit

ABSTRACT

Reports from Kenyan Courts show an increasing number of acquittals due to poor and/or lack of evidence from Scene of Crime Investigators. The acquittals are attributed to tampering of Scene of Crime evidence, failed prosecutions, unpunished offenders and wrongful convictions, among other reasons. This present study therefore seeks to establish challenges encountered by crime scene investigators in the course of their investigations. More specifically, it seeks to establish the methods used in retrieving and storing evidence, mode of transportation of evidence, storage of evidence and the relationship between an investigator's level of training and his/her level of success in Criminal investigations. A descriptive study design was adopted to analyze scene of Crime Investigators and to observe challenges encountered by them. A population of 153 investigating officers were targeted, from whom 111 of them were randomly selected for purposes of this study. From the study results, 51% of the respondents identified "scene of crime mapping", 32% "bloodstain pattern analysis", 65% "scene of crime management", 60% "digital photography", and 33% "latent print processing" as the main evidence collection methods used by the DCI officers. Further, 72% of the respondents cited "inadequate motor vehicles", 50% "inadequate drivers", 40% "inadequate security", 46% "bad roads", 18% "unfavorable weather conditions", 33% "inadequate fuel" and 56% "inappropriate mode of transport for certain types of evidence" as some of the transportation related challenges faced by the DCI officers in their work. The most common evidence storage methods were identified as "use of refrigeration" at 72%, "Use of safe lockers" at 83%, "Use of paper bags" at 45% while "Use of envelopes" was identified by 62% of the respondents. 31% of the respondents indicated that they had undergone training on crime scene investigations to a moderate extent. However, the officers lacked crucial training on how to handle scene of crime and the evidence collected from it. It was established that 50% of the respondents identified "the distance between the scenes of crime and where the evidence was to be stored", 39% "bulkiness of evidence" 52% "sensitivity of evidence", 33% "cost implications of transportation" and 51% "availability of ideal mode of transport" as the important factors that DCI officers needed to consider before choosing the mode of transportation to use. It is further concluded that 23% of the respondents identified "lack of a secure storage", 39% destruction of collected evidence by excess heat", 78% "prolonged court cases resulting in the contamination of evidence", 18% "use of the same lockers leading to contamination of evidence" 65% "unequipped storage facilities" and 21% "shortage of storage packaging materials", as the main challenges faced by scene of crime investigators. It was therefore recommended that DCI investigators require more specialized training on handling, packaging, transportation and storage of scene of crime materials. They should also adopt proper transportation strategies so as to minimize damage, loss, contamination and/or exposure of evidence.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study.

In the modern world, reports of serious crimes are on the increase (Treves, 2013). Besides, criminal activities have become more sophisticated with new trends in crime patterns coming up almost every day. In the process of investigating these crimes, the crime scene is visited so as to protect physical evidence. (Farrall & Calverley, 2015). Information is then collected from the site by technicians so as to enable the police identify correctly both the suspects and victims involved. This requires a high degree of accuracy. Therefore, processing a scene of crime is considered a crucial aspect of an effective criminal investigation (Herbig & Warchol, 2011).

Crime scene investigation dates back to the year 1750 when Henry Fielding created a small group of volunteers in the city of London (Owen, 2010). In the 1970s, many court decisions severely put limits on investigators in the use of traditional interrogation methods and techniques which relied mainly on evidence obtained through infliction of physical torture so as to source for the truth. This was a challenge to the investigators and still is since sometimes the torture method may result to death which may halt the investigation process. These new developments forced investigators to realize that a scene of crime if well sealed and investigated it contains a tremendous amount of information that can lead to the arrest of the perpetrators. Since then the crime scene investigation procedure has evolved as technology has been embraced across the globe and Africa has not been left behind (Benson et al., 2010).

Thus, criminal investigation is viewed as the objective, logical and legal inquiries involving possible criminal activities (KIPRA, 2016). Nyakundi (2015) asserts that such an enquiry if properly conducted should be able to establish if a criminal offence occurred, the time, date and the place of occurrence. It also gives the identity of the

individual(s) involved in committing the offence. Besides, an enquiry should determine; evidence of the crime and whether there are witnesses to the crime. It should also establish the innocence or guilt of the parties concerned so as to assist in the prosecution of crime (Lee & Harris, 2011). Thus, scenes of crime will usually draw lots of attention from various quarters which include the police investigation departments and the media fraternity (Farrall & Calverley, 2015).

Just like crime itself, a scene of crime is dynamic (Julian, Kelty & Robertson, 2012). Much as police officers will try and control scenes of crime, there are often unseen alterations to evidence which authorities can do little to prevent. It is therefore important to note that unless it is preserved and investigated promptly, all crime scenes are likely to be disturbed or damaged by the public, onlookers and/or environmental factors (Hess, Orthmann & Cho, 2016). Besides, there are other unwilling interference examples like victims and bloodstained objects (Aitken, 2014). Thus, despite the best efforts by the police, scenes of crime usually change and continue being changed. Lack of preparation in approaching and entering the crime scene and proper handling of evidence and a robust chain of custody have been cited as some of the challenges experienced at the crime scene (Farrall & Calverley, 2015).

Globally, investigators' such as; Federal Bureau of Investigation, New Scotland Yard, Mossad are mainly tasked with analyzing the crime scene to determine; who, how, why and what motivated the crime to take place for profiling (Ault & Reese, 2016). To have a successful report, investigators must therefore realize that the outcome of their investigation depends on their insight in analyzing the suspected human behavior. This includes the speech patterns, verbal and non-verbal gestures, writing styles and any other traits and patterns that may show human behavior. This individualistic behavior will usually remain consistent irrespective of the activity being performed. In link cases therefore, the modus operandi is vital and should be adopted by the investigator in charge (Hormant & Kennedy, 2014).

An important step in the scene of crime analysis is the correlation between cases due to similarities in modus operandi (Turvey, 2015). Investigative agencies are therefore faced with common challenges in securing a crime scene due to; contamination, disturbance and/or loss of evidence during the recovery phase of criminal investigation (Ressler, Burgess, Hartman & D'Agostino, 2015). Besides, the standardization of procedures and processes for gathering evidence, the handling of evidence, the transportation and access to evidence, the documentation of evidence gathered pose real challenges for crime scene investigators at the crime scene (Peterson, 2015).

Crime scene investigators in Kenya face numerous challenges not unique to the country since other law enforcement agencies worldwide are faced with similar predicaments. Omeje & Githigaro (2012) argue that common challenges include; wrong methods used in the collection of evidence, poor mode of transportation, poor storage facilities and limited or lack of the relevant training of personnel handling the crime scene as well as those collecting, transporting and storing evidence thus compromising the quality of prosecution evidence, and by extension, the ability of the courts to convict and sentence offenders.

1.2 Problem Statement

Instructively, crime statistics on the DCI website for the year 2015/2016, suggests a significant increase in commercial crime from 24, 931 in 2014/2015 to 37,114 at the end of 2016 (KNBS, 2016). This reflects a 48.9% increase in crime rate within a span of 3 years. However, reports from Kenya National Crime Centre, the Director of Public Prosecution (DPP) and the Judiciary Reviews show an increase in the number of acquittals due to lack of evidence from Scenes of Crimes investigators since 1998 (IRDU, 2016). A case in point is the increase in the cases of cold blooded murders of prominent politicians and individuals, in which evidence was collected but was not of much assistance in solving the cases, thus resulting in suspects being set scot-free. Recent cases to note include; the murder of Hon. George Muchai, Jacob Juma and Independent

Electoral and Boundaries Commission (IEBC) Information Communication Technology (ICT) Director Chris Musando.

On the other hand, the Kenya National Disaster Response Plan report of 2016 points out that the rate of crime increase is attributed to tampering of evidence at the crime scene resulting in unresolved crimes, unsuccessful prosecution, non-punishment of offenders and wrongful conviction(s) (RoK, 2016). This may also be attributed to insufficient evidence and/or contamination of evidence, during transportation and/or storage phases of crime investigation. This is a major challenge for scene of crime investigators. Besides, the crime scene department is hampered by lack of funds and expert personnel for conducting investigations (Nyakundi, 2015).

However, few empirical studies have been done on the phenomenon of crime scene investigations in Kenya. Studies by Ndinda & Kariuki (2016) evaluated the influence of budget control on crime investigation. Likewise, Okwiri's (2016) study reviewed the influence of culture on regulating crime investigation in Nairobi. Nyakundi (2015) analyzed the influence of corruption on forensic findings. However, none of the identified studies focused on challenges encountered by scene of crime investigators in the course of their work. The specific challenges include: successful identification, transport, collection and the analysis of evidentiary materials, all of which are key to their ability to close investigation successfully (Turvey, 2015). There is need therefore to investigate challenges encountered by scene of crime investigators at the DCI Headquarters in Nairobi, with a view to filling the identified information gaps.

1.2.1 Research Questions

The following are the research questions:

- i. Which methods do investigators use to collect evidence?
- ii. Does transportation of the evidence influence the outcome of crime scene investigations?
- iii. Does the nature of storage of evidence influence the outcome of crime scene investigations?
- iv. To what extent does the investigator's level of training in crime scene investigation influence the outcome of criminal investigations?

1.3 General Objective

The main objective of this research is to establish challenges encountered by scene of crime investigators at the Directorate of Criminal Investigations Headquarters, Nairobi.

1.3.1 Specific Objectives

This study aims to specifically:

- i. Establish the methods used in collecting evidence.
- ii. Identify modes of transporting evidence.
- iii. Explore the nature of storage of evidence.
- iv. Assess the relationship between an investigator's level of training and his/her level of success in criminal investigations.

1.4 Significance of the study

This research can be used by law enforcers and more specifically, those attached to crime scene investigation department by enhancing their knowledge and skills in the collection, transportation and storage of crime scene evidence.

Second, the study is likely to benefit policy makers, since it focuses on gaps that investigators face in their line of duty, and as such, make recommendations that can be adopted in order to improve the forensic investigation policies, especially with regards to crime scene investigation.

Lastly, the study may contribute to the knowledge regarding the challenges encountered by scene of crime investigators. This knowledge will be available at the University of Nairobi and to the wider academic community. As such, the knowledge may inform the development of the teaching curriculum besides serving as a reference material for criminologists, policy makers and implementers.

1.5 The Scope and Limitations of the Study

Descriptive research design method was used to assess the challenges encountered by scene of crime investigators. The institutional scope of study was limited within the Directorate of Criminal Investigations Headquarters in Nairobi which is located 10km from the CBD on Kiambu road. It targeted 153 investigators at the DCI Headquarters, out of whom 111 crime scene investigators were randomly sampled from the Economic and Commercial Crime Unit, The Flying Squad, Special Crime Prevention Unit, Serious Crime Unit (SCU), Anti-Banking Fraud Unit, Anti-Terrorism Police Unit (ATPU), Anti-Narcotics Unit, Bomb Squad, Cyber Forensics, Forensic Department, Capital Market Authority Investigation Unit (CMAIU) and Financial Investigations Unit. The specific issues included; the collection, transport and the storage of evidence and the training of criminal investigators in relation to crime scene investigation.

This study experienced a derailed data collection process, this was as a result of participants giving biased responses probably due to job protection, protecting institution name and image, the unnecessary fear of legal implications or just personal reluctance. However, the researcher was determined to make the research most reliable and valid.

1.6 Definition of Key Terms

Collection of evidence:	Is a process whereby all the objects which can help to ascertain if a crime has been committed or the link between crime, victims and perpetrators are collected and stored for use during criminal investigations.
Corpus delicti evidence:	This is evidence that substantiates the elements whose omission or commission must have occurred for there to be a case.
Crime scene investigations:	This is the purposeful behavior intended to reconstruct whatever happened, determine the sequence of events as they happened, the amount of properties stolen and reveal the motive behind the criminal activity.
Crime scene investigator:	Is someone gathering, documenting and evaluating evidence and information in a scene of crime.
Crime scene:	It refers to the actual site where the incident occurred
Crime:	It is act or omission punishable by the state.
Evidence:	Exhibits of identifiable biological material or of any other state which are collected for purposes of investigation for the alleged crime committed.
Forensic science:	Is a scientific method which analyses materials collected from both the scene of crime and the suspect(s). It helps show when crime was committed, how and by who.
Physical evidence:	These are the articles and materials used as evidence in the investigation.
The Locard's principle:	A principle developed by Edmond Locard. It is based on the presumption that all contacts will leave traces.
Crime Scene Training:	Skills imparted by a skilled trainer to investigators so as to raise general knowledge and understanding of the crime investigation techniques.

CHAPTER TWO

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This commences with a review of the Crime Scene Investigation in Kenya, and thereafter followed by a thematic review of challenges encountered by scene of crime investigators, which include; methods used in the collection of evidence from scenes of crime, transportation and storage of the evidence once collected from crime scene as well as training of crime scene investigators. The chapter will conclude by reviewing all theories underpinning the study and a conceptual framework showing how the key study variables are related.

2.2 Crime Scene Investigation in Kenya

According to Nyakundi (2015), one of the main duties of the DCI in Kenya is to investigate and prevent criminal activities. In order to do effective investigations, the DCI should work according to the laws which govern the investigation of crime and criminal activities. These laws include; international best practice and human rights compliant. The investigators are supposed to have set line procedures which include; having common methodologies in order to deliver the best methods to complete the various stages of an investigation, adopting standardized investigative process that enable a consistent approach to investigations, the development of best practices for improving working conditions and discouraging bad practices and adoption of professional standards which are supposed to deliver, recognized processes and procedures used in crime scene investigation (KNBS, 2016).

Investigators in Kenya have adopted six main stages in the investigation process (IRDU, 2016). These are; planning the investigation, examining crime scenes, doing the searching, dealing with initial complaints / reports, interviewing of both victims and witnesses, the investigation and arrest of suspects and compiling a report to be handed to

the prosecutor in a majority of cases. Each investigation starts with stage one and depending on the nature of crime being investigated, will continue to stage six. Some investigations may be concluded before reaching stage six. For instance when investigations reveal the initial complaint either to be false or misleading or when the evidence available is insufficient to secure a prosecution (Okwiri, 2016).

In the line of their duty, crime scene investigators in Kenya are involved and guided by procedures that differentiate between serious crime (that is crime which requires urgent and special response) and lesser crime which can be investigated in a routine way. The serious crimes include; all acts of terrorism, rape and sexual offences, arson, serious assault, robbery, drugs, murder and any other crime whose punishment is imprisonment for three or more years as stipulated in the Penal Code (RoK, 2016).

Once the crime investigators are involved in a crime scene, they are supposed to gather information as follows; The date and time when investigations started which should contain details of the incident or crime, the initial action taken by police, the summary of evidence/complaint and police decision on how to start investigations (Ndinda & Kariuki, 2016). Every investigator should ensure that they carry a personal notebook in their pocket. This is useful when recording the chronology of events at every stage of investigation. It should be kept in safe custody and be availed as exhibit in a court of law (Nyakundi, 2015).

To help in the above investigative processes, the Kenyan Government is at an advanced stage in building and equipping a modern National Criminal Forensics Laboratory with an estimated cost of 5.7 Billion shillings (\$67 million). This Forensic Laboratory project puts impetus to the modernization of the Kenya DCI Forensic Department (KIPRA, 2016). The new lab is housed at the DCI headquarters along Kiambu Road in Nairobi.

The National Police Service nationwide relies on an old crime lab situated at the DCI headquarters. Above all, this forensic lab can perform 3-D facial recognitions. This will thus boost and ease the challenges faced by the crime scene investigators in Kenya (Omeje & Githigaro, 2012).

2.3 Police Investigation Function

According to Herbig & Warchol (2011), the purpose of investigation is to identify and retrieve all the evidence from scenes of crime. Similarly Owen (2010) describes the purpose of crime scene investigation as to collect physical evidence present at the scene. This is meant to assist in reconstructing the crime scene and establish the motive by involving crime scene investigators and experts to identify and arrest suspects involved in the crime. It also involves the recovery of any stolen property if any and to charge the suspect(s) before court after the investigations are complete and evidence point to the suspect(s).

Crime scene investigators should apply expert knowledge from scientific training, research and experience in various fields such as engineering, anthropology, odontology, criminalists, biology, pathology, psychology and psychiatry (Pyrek, 2014). The investigator should be knowledgeable on what type of material that may yield valuable evidence when submitted to a particular expert for examination. He/She should also know how such material should be identified, collected and packaged (Farrall & Calverley, 2015).

Both collection of forensic evidence and application of crime scene investigations have become essential for prosecutions (Treves, 2013). Crime scene investigations fulfills several roles in criminal investigation which includes: - proving that a crime has been committed and establishing key elements of the crime, establishing the identity of the person(s) involved in the crime and corroborating testimony from victims. Thus investigators will devote much of their time collecting and analyzing evidence, starting

with the scene of crime and throughout the entire investigation process (Farrall & Calverley, 2015).

Farrall & Calverley (2015) point that in many instances, crime scenes are not properly examined and as a result valuable evidence which may link a suspect to crime or provide support for other evidence during a trial may not be collected or if collected may be mishandled and eventually be of no evidential value to the investigator or court. This may occur as a result of negligence, inexperience or ignorance. Many investigators do not seek the assistance of expert and at times the assistance is sought when it is too late to recover any biological evidence.

There is therefore need for proper management of staff at a crime scene if an investigation is to be successful. A report by World Bank (2016) shows that the maintenance of integrity at a scene of crime is achieved by managing personnel available at the scene. Although crime scenes present challenges which may lead to conflicts and misunderstanding between various crime investigation teams, a well-coordinated approach to investigation is essential and must be agreed by all the experts doing the investigation.

2.3.1 Classification of Crime Scenes

Inman & Rudin (2011) assert that there are many ways of classifying crime scene and the size of the crime scene. Moriarty & Saks (2015) points out that the classification may appear to be simplistic. Once a scene of crime is defined, it should then be secured and the necessary action(s) taken to process it (Gianelli, 2013).

According to Bowen & Schnieder (2014), any actions undertaken at a scene of crime should adhere to set standards both legal and scientific. These may be transfer, medical, electronic, transient, associative, condition and pattern evidence (Lee & Palmbach, 2016).

2.3.2 Physical Evidence

According to Gaensslen et al., (2011), physical evidence can be any solid, semi-solid or liquid material however microscopic which can be useful in determining the truth during investigation(s). According to Gaensslen, Harris & Lee (2011), transient evidence is evidence which is temporary by nature for example the drying of fresh blood. This type of evidence must be recorded the moment it is observed (Miller, 2013).

The other crime scene variety is pattern evidence. Truman & Planty (2012) assert that imprints, indentations, situations are the patterns that are used to deposition. Transfer evidence is also known as the trace evidence which is evidence generated by the physical contacting of both people and objects. These include blood, fingerprints, hair, fibre, body fluids, soil, drugs and chemicals (Pyrek, 2014).

Inman & Rudin (2011) assert that there are three main types of evidence where investigators usually have keen interest on. These are; the corpus delicti, associate and tracing. Corpus delicti evidence must be shown to have occurred so as to prove a case (Farrall & Calverley, 2015). Associate evidence is bi-directional since it can connect the perpetrator to both the crime and victim. According to Fisher & Fisher (2012), medical evidence will usually consist of injuries either to the victim, suspect or witness. (Aitken, 2014). During investigations, evidence at a scene of crime should be handled and preserved well for analysis which must meet all the requirements both legal and scientific (National Medicolegal Review Panel, 2011).

2.4 Types of Investigations

There are four main types of investigations which include interviews, evidence gathering, interrogation process and evidence management and control.

2.4.1 Types of Interviews

There are many types of interview which investigator can conduct. The type to be used will depend on both the situation and person interviewed according to both (Truman &

Planty, 2012) and (Pyrek, 2014). Interview types consist of canvass, victim, witness, and suspect.

Canvass interviews are conducted in areas surrounding the location of the crime and nobody is a target of the interview. The interviews are most effective if conducted within 24 hours of the incident being investigated. Victim interview is the second type of interview. The victim in a crime should be interviewed as soon as the crime is committed (Farrall & Calverley, 2015).

Witness interview is the third type of interview. There are several types of witnesses who include eyewitnesses, expert witnesses and significant parties. Suspect interview is the last one. There are major differences between an interview and interrogation. An interview usually takes place in many locations for instance the workplace, at residences or in police station (Lee et al., 2011). While interrogation is the process of asking someone pressing and sometimes annoying questions which will provoke the respondent so as to get the desired information (Gaensslen et al., 2011).

2.4.2 Gathering of Evidence

The art of investigation relies on the gathering and evaluation of evidence which can be both physical and testimonial according to (Peterson, 2015) and (Lee & Harris, 2011).

2.4.3 Interrogation Process

If an investigator is able to separate crime committed from the suspect, the suspect will most likely trust and respect him thus making it easier for the suspect to confess to his/her involvement in the crime (Benson et al., 2010).

2.4.4 Evidence Management and Control

In order to admit lawfully seized objects as evidence at any trial, they must be authenticated by well-documented chain of custody (Pyrek, 2014). Security personnel

will usually safeguard evidence until they give it either to an investigator or custodian of the evidence (Truman & Planty, 2012).

2.5 Challenges Associated with Scene of Crime Investigation

Investigators are faced with a number of challenges and key among them include: the collection, transportation, storage of evidence and training the crime scene investigators.

2.5.1 Collection of Evidence

Inman & Rudin (2011) states that when looking for evidence at a scene of crime, one should not alter the present position of an item, touch or pick items/objects before they are recorded in official notes and photographs taken thereof. No alteration(s) should be made to any item/object which may be a source of evidence. Blood, rust, grease and dirt should not be removed from the objects available at a crime scene. The investigator(s) should not add their fingerprints to the collected evidence. They should not try to smear or wipe off any clues which could help in investigations (Moriarty & Saks, 2015).

The Locard Principle by French Scientist Edmond Locard states that every contact leaves a trace (Bowen & Schnieder, 2014). Physical evidence discovered during crime scene investigations may serve a number of purpose; it may be part of the body corpus delict of the crime, it may place the suspect at the crime scene, it may establish the identity of the offender or it may enable the investigator to track the suspect. According to Lee, Palmbach & Miller (2011) and Hawthorne (2014) an investigator can master both the concept and techniques of effective investigations.

A study by Houlden & Stevenson (2016) and Farrall & Calverley (2015) show that, evidence should be collected in a manner which does not compromise its nature and quality. Houlden & Stevenson (2016) point that service providers must ensure that the evidence presented for proof is a true reflection of evidence collected.

According to Herbig & Warchol (2011), some materials designed for the preservation of particular pathogens may negatively affect the analytical assay. Most commercial

Polymerase Chain Reaction (PCR) or antigen detection kits do provide transport means necessary for stabilizing the analyze in question (Hawthorne, 2014).

2.5.2 Transportation of Evidence

According to Lee et al., (2011) obtaining analytical results can be affected by the manner of transporting the specimens. The evidence is taken to the laboratory after it is recovered. An early involvement of laboratory personnel will facilitate the decision (Owen, 2010).

A study by Peterson (2015) shows that adequate condition, for example cool or dry storage and secured/controlled access both require secure conditions of transportation and storage facilities. (Lee & Harris, 2011). Aitken (2014) is of the view that commercial products are available for the transport of clinical specimens (Benson et al., 2010). According to Fisher & Fisher (2012) and (Nyakundi, 2015) crime scene investigators should consult with experts where possible prior to packaging. Some specimens may be transported at room temperatures while others can only be transported on ice.

2.5.3 Storage of Evidence

According to Farrall & Calverley (2015), government has the sole duty of preserving the evidence collected. This duty exists to protect the right of a defendant to fair trial and due process. This duty requires the government to disclose all material evidence it will use in court against a certain defendant.

According to Pyrek (2014), the physical evidence at a scene of crime plays a crucial role in the investigations. It can place the suspect in contact with the crime scene, exonerate an innocent person or corroborate the victim's testimony. It is also more reliable than any eye witness account(s).

Truman & Planty (2012) states that finding evidence which was taken from crime scenes might be a bit difficult for investigators, especially when years have passed and it has become a cold case. This may be due to lack of proper storage facilities for the storing of

physical evidence. Evidence such as a hammers or a knives or even a blood-stained clothes are stored at police stations across the country as opposed to having one facility to store all of them (Miller, 2013).

Bowen & Schnieder (2014) asserts that while some practices may generally apply to the collection of a forensic samples, many are the times when samples will be gathered around a crime scene. According to Gianelli (2013), a zip-lock bag is usually used as a container since evidence can come into contamination in the process of collecting samples. The external surface of the sample containers must therefore not be contaminated in any way.

2.5.4 Training of Scene of Crime Investigators

According to Moriarty & Saks (2015), crime scene training involves the careful processing, documentation and collection of physical evidence gathered from crime scene. A proper scene of crime investigation is the first step in finding out what, when, where and how the crime occurred and who was involved (Julian et al., 2012).

. Hess et al., (2016) state that crime scene investigation is a process that is logic, involves a system and is organized. These new developments forced investigators to realize that a scene of crime if well sealed and investigated it contains a tremendous amount of information that can lead to the arrest of the perpetrators. Since then the crime scene investigation procedure has evolved as technology has been embraced across the globe and Africa has not been left behind and establishment of professional standards.

Training of the investigators is vital for evidence accountability (Hormant & Kennedy, 2014). The accountability depends upon a number of key elements; the competency and compliance of those who harvest, package, record, transport, hand over, store, examine, or in any other way impact on the progress of evidence through from the scene of crime to court. The use of forensically compliant evidence involves packaging containers that facilitate ease of accounting and track-ability (Turvey, 2015). Use of suitable and safe evidence storage facilities that will ensure the validity and quality of the evidence and its

retrieval for examination or court purposes. The development of the post of Evidence Manager who will ensure compliance of packaging, storage, transport and in the final case the disposal or return of the evidence in an accountable and appropriate manner.

The Directorate of Criminal Investigations Headquarters in Nairobi has been experiencing challenges in the evidence collection that begins at the scene of crime. This challenge could be as a result of lack of credibility and proficiency of the technicians gathering the evidence (KIPPRRA, 2016). Investigators are also faced with challenges of transportation as they are poorly equipped with skills of handling the collected evidence and packaging for transportation. This is further escalated by poor storage capacity as they lack mechanisms that can preserve the collected evidence as separate entity. It is also faced with the challenges of inadequate training of investigators who can interpret the evidence correctly, put the relative association on record and submit them to appropriate experts for further examination (Nyakundi, 2015).

It is therefore important to ensure that all crime scene investigators are properly trained on the needs to adopt modern forensic methods while processing crime scenes. Such training usually includes use of cutting-edge technology such as DNA testing. (Gianelli, 2013).

2.6 Theoretical Review of Literature

This study is be anchored on three theories which are; Mindset and Problem Theory, Structural Functionalist Theory and Prospect Theory.

2.6.1 Mindset and Problem Theory

This is a criminology theory which explains the effect of urban disorder and vandalism as contributors to both anti-social behavior and crime. It states that by maintaining and monitoring the urban environment in a condition of good order may stop vandalism and the further escalation into crime. The theory was first articulated by Wilson & Kelling

(1982) and later expounded by Omeje & Githigaro (2012). It assumes that improper investigation of crime scenes will result most likely report in increased cases of crime.

Miller (2013) is of the view that the “fixed” mindset creates an urgency to prove oneself and that any failure encountered may be perceived as a direct measure of incompetence and self-worth.

Inman & Rudin (2011) believes that those with “fixed” mindset are not only likely to make a negative judgment about their intelligence levels, but are also more likely to exhibit “negative effects and debilitation” after failure.

This theory is relevant to crime scene studies and investigations since it involves different actors both humans and non-humans, but with a common goal to find out what happened on the basis of the evidence left by the criminal. The fear of giving wrong judgment in front of both colleagues and judges when stakes are high may favor a mindset that seeks out self-improvement and feedback. However, evidence may not have an obvious connections to a crime scene investigation case.

2.6.2 Structural Functionalist Theory

The theory attributes problems of awaiting trials and delays in the application of criminal justice procedures to the lack of system units. This is attributed to bureaucracy with the expectation of society as a result of investigation done at the crime scene (Lee & Harris, 2011). Thus, different sectors of society for instance the family, schools, the church, the government and economy do perform various duties aimed at the stability, maintenance and survival of social order (Aitken, 2014). Value consensus therefore does provide the basis for social order, stability, unity and solidarity (Fisher & Fisher, 2012).

In analyzing the theory Pyrek (2014) states that there should exist a value consensus system among the units of the sub-system. This theory fits this study as it shows how the set structure can either complicate or simplify evidence handling through the set

structures and procedures that are set to be followed from collection, transportation and storage of evidence collected from a crime scene.

2.6.3 Prospect Theory

The Prospect theory states that people will select alternative choices by assessing risks whereas the probability is known (Truman & Planty, 2012). According to the prospect theory, the ability of people to comprehend extreme probabilities is limited which means that highly unlikely events will either be undervalued or ignored (Miller, 2013; Herbig & Warchol, 2011).

According to Gaensslen Harris & Lee (2011), the theory portrays that a crime scene investigator chooses the option to pursue by assessing the probability of each possible outcome. He then pursues the option with the highest combination of both probability and utility (Bowen & Schnieder, 2014).

Thus, crime investigators and judges are always faced with alternative choices during interpretation of data that was improperly handled either from collection, transportation or during storage. To solve the problem, the information seeker tries to consider possible actions to manage the problem. This theory is thus extended to criminal investigative decision making by examining evidence collection, transportation and storage process to alternative choices as risk given to courts to convict and sentence offenders.

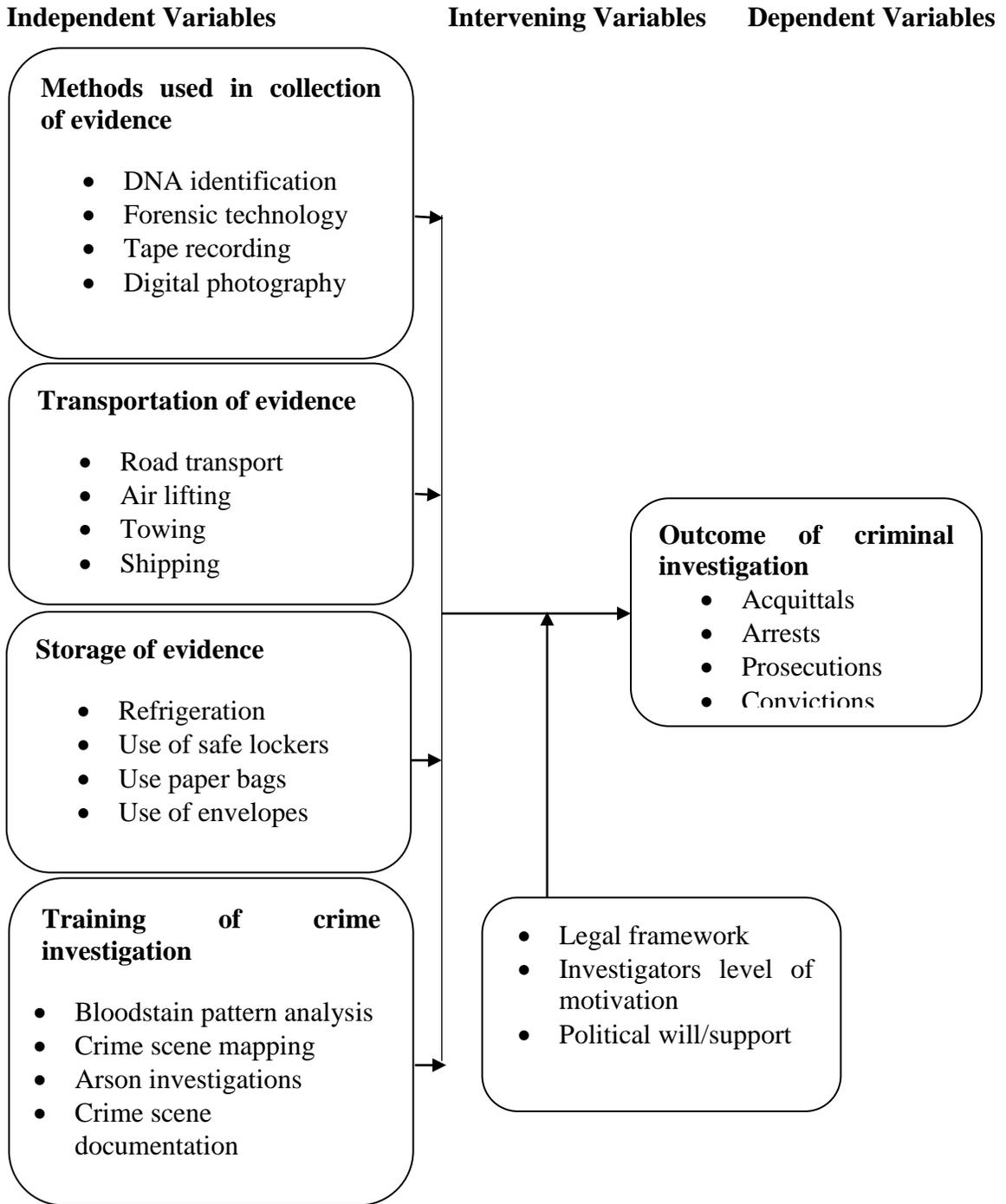
2.7 Conceptual Framework

Figure 2.1 shows relations between the variables. The framework examines and explains factors that affect crime scene investigation at the DCI Headquarters, Nairobi. These factors are derived from challenges and include improper methods used in the collection of evidence, improper transportation, poor storage of the evidence and inadequate training of crime scene investigators. All these will influence the outcome of investigations by the DCI's operations and services. Implicitly, identified tasks need a person with the appropriate skills and knowledge of managing the evidence until the

investigation is complete. As such, manipulation of any of the independent variables is likely to affect the investigation results in a positive or negative way.

During an investigation, there are other factors besides the collection, transportation and storage of evidence that can influence the outcome of criminal investigation. These includes; legal framework in place, investigators level of motivation and political will/ support. Legal framework may interfere with the outcomes of an investigation as there are laid down procedures that have to be followed and independent reasoning is not given space. Investigators level of motivation may influence the outcome of criminal investigation if he or she sticks with the principle accepted/ declined or prompted by additional monetary value like being corrupted. Further political will/ support may influence the outcome of the investigator if pressured by political elites to give a certain favor.

Figure 2.1: Conceptual framework



CHAPTER THREE

THE RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the study site used to carry out the research study. Those procedures consist of the site description, research design, the unit of analysis and observation, sampling procedure, target population, source of data, data analysis and ethical consideration.

3.2 Site Description

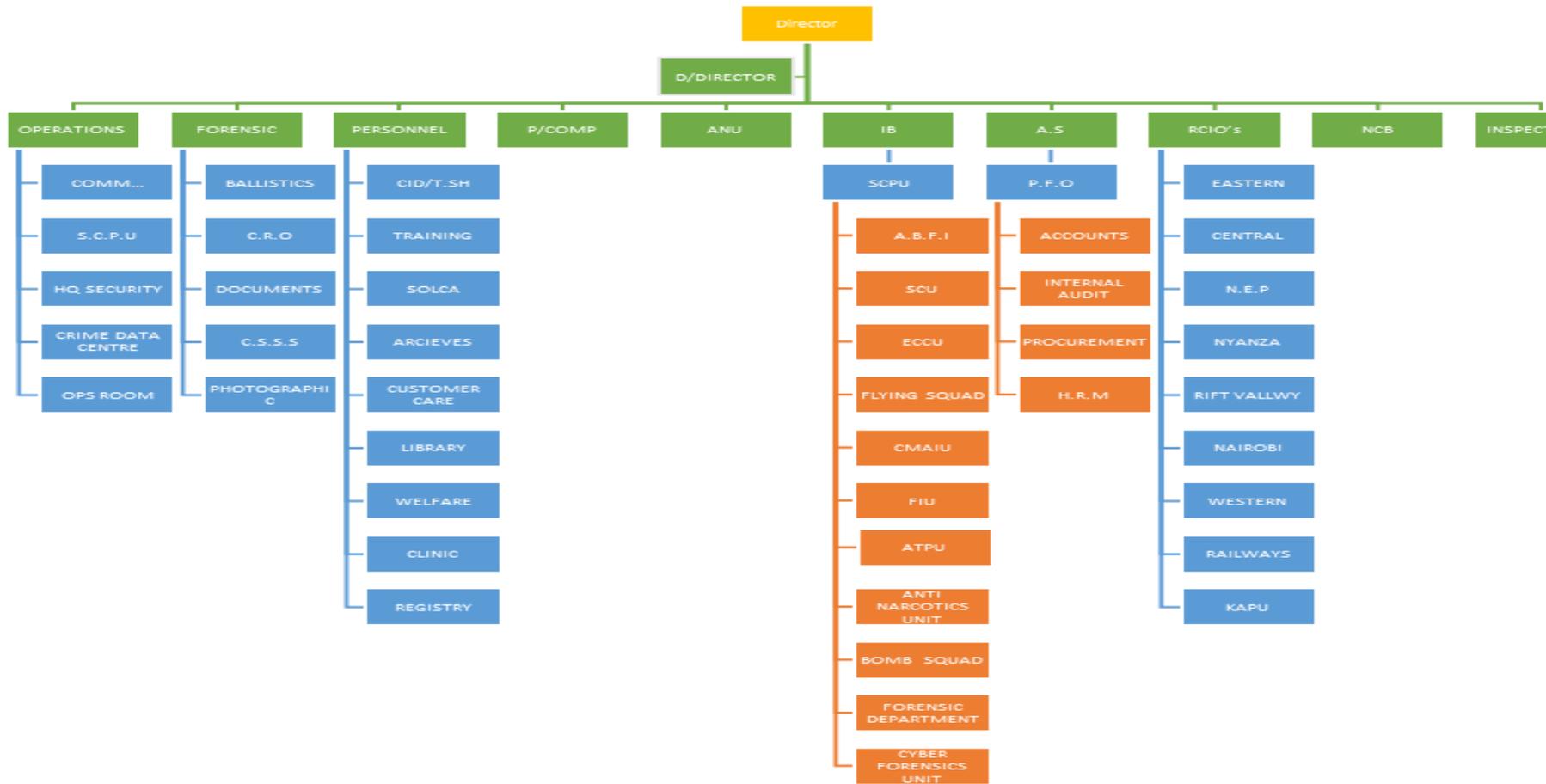
The Directorate of Criminal Investigations (DCI) commonly known as Criminal Investigation Department (CID) is a very crucial department of the Kenya Police Service (RoK, 2016). The department has the sole responsibility of collecting, tabulating and recording the history and data on criminals. (Kangethe, 2011). The DCI has on board the Crime Intelligence Unit, Investigation Branch, Fingerprints and Forensic Unit. The Department is charged with the investigation of complex and high profile cases that require high end technical expertise. The DCI has twelve units which are under the Investigations Branch (IB) namely; The Flying Squad Unit, Financial Investigation Unit (FIU), Special Crime Prevention Unit (SCPU), Anti-Terrorism Police Unit (ATPU), Serious Crime Unit (SCU), Economic and Commercial Crimes Unit (ECCU), Capital Market Authority Investigation Unit (CMAIU), Anti-Banking Fraud Unit (ABFU), Anti-Narcotics Unit (ANU), Bomb Squad, Cyber forensics Unit and Forensic Department (RoK, 2016). According to Nyakundi (2015), the scene of crime management at DCI has evolved to match the challenging needs of today's crime scene experts. The unit has branches across all the counties and sub-counties in the Republic with their Headquarters situated in Nairobi along Kiambu Road (see figure 3.1).

The mandate of the DCI as derived from the National Police Service Act 2011 is to Conduct Criminal Investigations and all other aspects incidental thereto (KIPRA, 2016). As such, its functions includes; collection and provision of criminal intelligence, the

investigation of serious crime including homicide, narcotic crimes, human trafficking, money laundering, terrorism, economic crimes, piracy, organized crime and cybercrime among others. In addition, it also helps in the maintainers of law and order, the detection and prevention of crime, apprehension of offenders, maintenance of criminal records and analyzing of forensic evidence. In addition it executes the directives of the Director of Public Prosecutions (DPP) and Inspector General of Police (IGP) as per article 157(4) of the Kenya Constitution (2010). It also coordinates International police affairs in the country as well as carrying out investigations on any matters which are referred to it.

Empirical evidence from Ndinda & Kariuki (2016) and Okwiri's (2016) shows that out of the 34,218 criminal cases reported between 2013 and 2016, only 16,200 cases were successfully investigated, 1,685 aborted and 4,049 prosecuted and accused's convicted (IRDU, 2016). This clearly shows that there are challenge facing criminal investigations by and large being shortcomings from crime investigators training in collecting, transportation and storage of evidence.

Figure 3.1: Organogram of the Directorate of Criminal Investigations



Source: DCI Registry (2017)

3.3 Research Design

The study adopts the descriptive study design. Cooper & Schindler (2008) assert that descriptive design aims to describe the phenomena, for instance, the views of the sampled respondents regarding the themes of the study. As explained by Martin & Field (2005), it helps in collecting data concerning behavior, attitude, values and characteristics. Thus, this design is essential since it captures the socio-economic characteristics of the study groups. These include the demographic data, questions on collection, transportation, storage of evidence and investigator level of training in criminal investigations.

3.4 Unit of Analysis and Units of Observation

In this study, the unit of analysis are 111 investigation officers who are drawn from the 12 units of the DCI. The unit of observation are the challenges encountered by scene of crime investigators who are based at the DCI Headquarters, Nairobi.

3.5 Target Population

Population is the entire group of people or items which the researcher wishes to carry out a study on (Denscombe, 1998). The target population here comprises of 153 officers attached to the Investigations Branch at the DCI Headquarters.

3.6 Sampling Procedure

Kothari (2009) defines sampling as a process by which a small number of people, items or events is selected so as to find some information about the larger population from which it was selected. Accordingly, an optimum sample meets the requirements of representativeness, reliability, efficiency and flexibility.

To get a representative sample, Cooper & Schindler's (2008) formula was adopted. A 95% level of confidence and $P = 0.05$ was chosen in view of social science nature of the study.

$$n = \frac{N}{1 + N(e)^2}$$

Where n = Sample size

N = Population

e = Level of significance

$$\frac{153}{1 + 153(0.05)^2} = 111$$

The researcher used simple random sampling to pick 111 out of 153 investigating officers. The researcher used small pieces of papers that were written number 1 to 111 and the other 42 were blanks. All the pieces of papers were put in a bucket where respondents were requested to pick one piece of paper. Those who picked papers with the written numbers were considered for the study. The choice for this sampling technique was preferred as it gave each item of population equal chances of selection. Thus, the interview sample was 9 out of the 12 Flying Squad personnel, 10 out of the 14 Anti-Banking Fraud Investigation Unit personnel, 6 out of the 8 Special Crime Prevention Unit personnel, 7 out of the 9 Anti-Terrorism Police Unit (ATPU) personnel, 23 out of the 32 Serious Crime Unit (SCU) personnel, 7 out of the 9 Economic and Commercial Crime Unit (ECCU) personnel, 20 out of the 27 Anti-Narcotics Unit personnel, 6 out of the 8 Cyber forensics personnel, 8 out of the 11 Forensic Department personnel, 4 out of the 6 Financial Investigation Unit personnel and 5 out of the 7 Capital Market Authority Investigation Unit personnel thus bringing the interview sample to 111 respondents. The distribution of the target and interview sample is shown below in Table 3.1.

Table 3.1: Sample Size

Department	Target sample	Interview Sample	percentage
Flying Squad	12	9	8
Anti- Banking Fraud Investigation Unit	14	10	9
Special Crime Prevention Unit	8	6	5
Anti-Terrorism Police Unit (ATPU)	9	7	6
Serious Crime Unit (SCU)	32	23	21
Economic and Commercial Crime Unit (ECCU)	9	7	6
Anti-Narcotics Unit	27	20	18
Cyber forensics	8	6	5
Forensic Department	11	8	7
Financial Investigation Unit	6	4	4
Capital Market Authority Investigation Unit	7	5	5
Bomb Squad	10	7	7
Total	153	111	100

3.7 Data Collection Methods and Instruments

The study used both primary and secondary sources of data. Primary data is the data sourced from Investigations Branch personnel using a questionnaire. The questionnaire contained both structured and unstructured questions. Questionnaire was used given its ability to generate qualitative data which was easy to collect and also because of its economy in terms of time, energy and resources.

Secondary data was sourced from relevant literature i.e. books, journals, magazines and internet web sites. Police records are such as the Occurrence Book (OB), case files, crime

and incidents reports which usually contain time, location, situational context, collection of evidence as well as transportation and storage of the same.

The questionnaire contained open and closed ended questions. Closed ended questions allow specific types of response such as the five Likert scale questions while open ended questions enabled respondents to give detailed qualitative responses (Mugenda & Mugenda, 2003). Structured questions were used because they help conserve time.

The questionnaire was self-administered using drop and pick letter method. The researcher then ensured all questionnaires issued were received. This was achieved by maintaining a list of all the questionnaires released and received.

3.8 The Pilot Test

The pilot test is a small rehearsal and a replica of the main research exercise (Nachmias & Nachmias, 1996). It helps to determine the suitability and ease of using the instruments to be used in the research. In order to improve the internal relevance of questionnaires, the following procedures were applied; the questionnaires were administered in the same way as in this study. The respondents were allowed to indicate whether there were any ambiguous questions or those which required clarity and the determination of the time taken to answer the questions. The rehearsal was also to confirm whether all the questions were answered and establish if the responses addressed the questions in the questionnaire.

A reliability rate of 0.70 at $\alpha=0.05$ significance level of confidence is acceptable (Cronbach, 1951). The Likert scale items were used to gather information for the four objectives of the study. In order to ensure content validity, expert advice was sought in the preparation of the questionnaires.

3.9 Data Analysis

Data was analyzed by using the Statistical Package for Social Sciences (SPSS version 22). Both descriptive and inferential type of statistics was employed (Stevens, 1991) A univariate analysis was done to get means, frequency, tables, pie chart, bar chat and percentages.

3.10 Ethical Considerations

Silverman (2011) describes key ethical research considerations to be taken into consideration whenever dealing with people. They include the respect for both people and the justice system. All the participants for this questionnaire were informed about the aim and purpose of this study. This was done by an introductory and consent letter which required the respondent to append their signature thus expressing their willingness to take part in the exercise. Respondent's confidentiality was ensured by omitting their names, contacts and any other personal details that could reveal their identity. A letter of authorization to conduct research was sourced from the University of Nairobi.

CHAPTER FOUR
DATA ANALYSIS, PRESENTATION AND INTERPRETATION

4.1 Introduction

This is a summary of the challenges encountered by scene of crime investigators at the Directorate of Criminal Investigations Headquarters, Nairobi.

4.1.1 Response Rate

Results show 82 out of 111 targeted investigators responded to the questionnaire which contributed to a response rate of 74%. Such a response rate is sufficient and representative and does conform to the assertion by Mugenda & Mugenda (2003) that 50% response rate is adequate for purposes of both analysis and reporting. 60% is considered good while 70% and above is considered as excellent.

Table 4.1 Response Rate

	Frequency	Percentage
Responded	82	74.0
Not Responded	29	26.0
Total	111	100

4.1.2 Reliability of the Research Instrument

This study conducted a pilot test on 10 randomly picked investigation officers with a view to determine the suitability and ease of using instruments of research. The reliability of a research instrument is estimated using the Cronbach Alpha Coefficient which measures the internal coefficient.

The formula for Cronbach's Alpha Coefficient was;

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N - 1) \cdot \bar{c}}$$

Source: Korb (2014)

Where: N = the number of items; \bar{c} = average covariance between item-pairs and \bar{v} = average variance.

The results are shown in Table 4.2.

Table 4.2 Cronbach's Alpha Coefficient

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N
0.828	0.838	10

The Cronbach's Alpha Coefficient value of 0.828 at $\alpha=0.05$ significance level indicates that the research tool had a high level of internal consistency.

4.2 Background Information

Respondents' demographic profile was assessed. The demographic attributes considered included; the respondents' gender, age, duration of service, highest level of education, length of service at the DCI and respondents' working Unit/Section. The results are as presented in the subsequent sub-sections.

4.2.1 Gender of Respondents

The participants were requested to indicate their gender. The results are as shown in Figure 4.1.

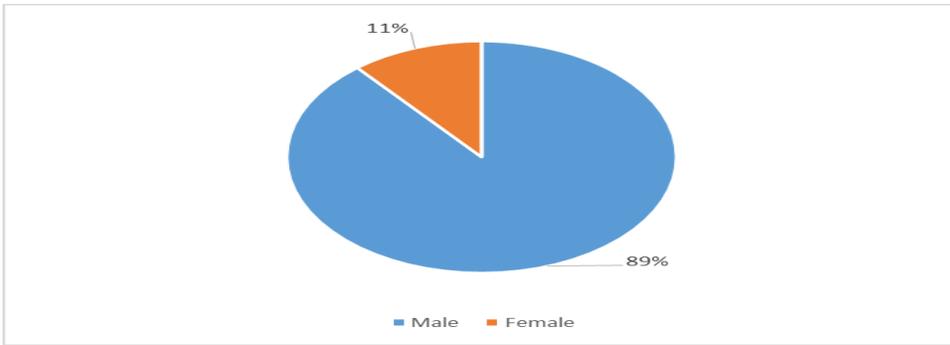


Figure 4.1 Composition of Respondents by Gender

According to Figure 4.1, 89% of the respondents who were the majority were males whereas 11% were females. The police department in Kenya is predominated by male as compared to female.

4.2.2 The Age of Respondents

The respondents were requested to indicate their age. The results are as shown in Figure 4.2.

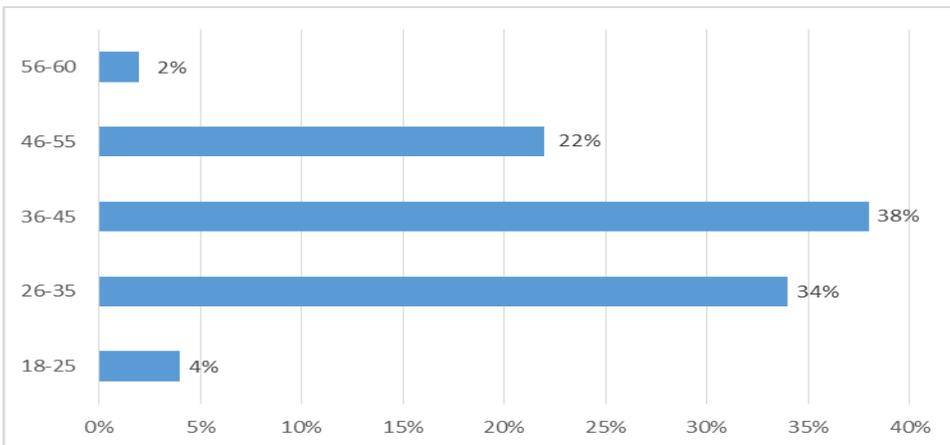


Figure 4.2: Distribution of respondents by their Ages

In Figure 4.2, 38% of respondents were between 36 to 45 years, 34% were between 26 to 35 years, 22% were between 46 to 55 years, 4% were between 18 to 25 years, while 2% were between 56 and 60 years. This indicated that majority of officers at the DCI were at their youthful age.

4.2.3 Respondents' highest academic qualifications

The study participants were requested to indicate their highest academic qualification. The findings are as shown in Figure 4.3.

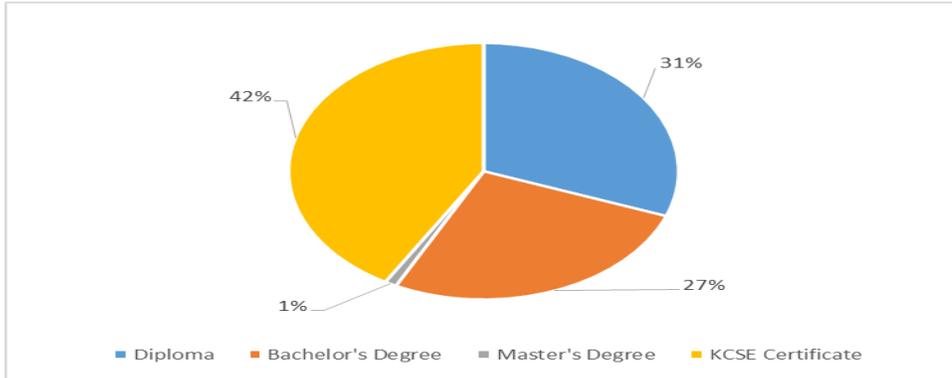


Figure 4.3: Distribution of respondents by their highest academic qualification

Figure 4.3 illustrates that 42% held KCSE certificates, 31% had diploma certificates, 27% had bachelor's degree, while 1% had master's degree. Therefore, majority of the DCI officers possessed basic literacy but lacked advanced education required in light of the professional nature of their job assignments as scene of crime investigators.

4.2.4 Respondents' Length of Service Work at the DCI

The participants were requested to indicate the length of service at the DCI. The findings are as shown in Figure 4.4.

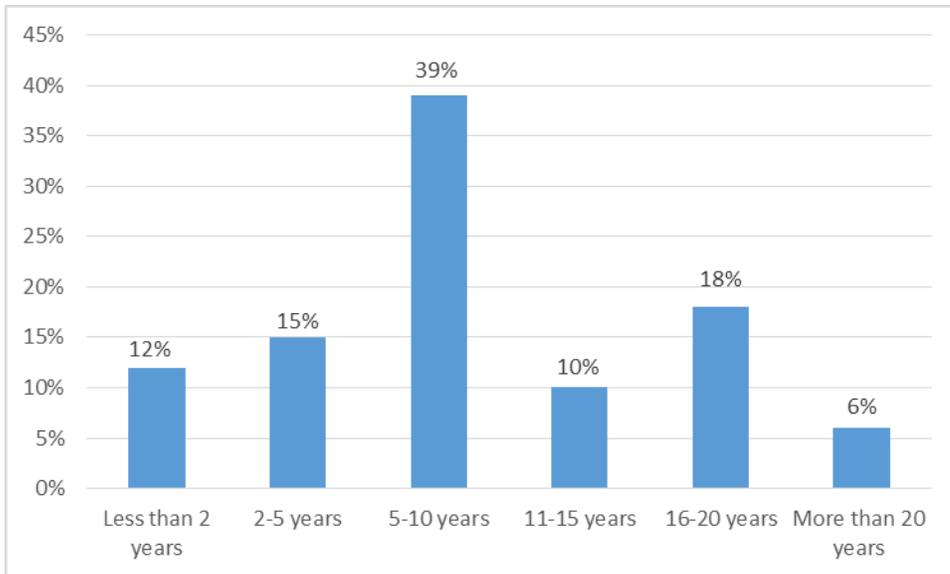


Figure 4.4: Distribution of respondents by the number of years worked at the DCI

According to Figure 4.4, 12% had worked at the DCI for less than 2 years, 15% had worked between 2 to 5 years, 39% had worked between 5 and 10 years, 10% had worked between 11 to 15 years, 18% had worked between 16 to 20 years while 6% had worked for more than 20 years. The results show that a significant number of the respondents had worked at the DCI for a considerable duration and had supposedly acquired enough expertise to competently respond to the questionnaire.

4.2.5 Respondents' parent Units/Sections

Participants were requested to indicate the department, unit or section that they worked in at the DCI. The findings are as shown in Table 4.3.

Table 4.3 Distribution of respondents by their work Units/Sections

DCI Units	Frequency	Percent
Flying squad	6	7
Anti-Banking Fraud Unit (ABFU)	8	10
Serious Crime Unit (SCU)	11	13
Financial Investigation Unit	4	5
Capital Market Authority Investigation Unit (CMAIU)	6	7
Bomb Squad	5	6
Forensic Department	8	10
Anti-Narcotic Unit	6	7
Cyber Forensics	6	7
Anti-terrorism police unit (ATPU)	7	9
Economic and Commercial Crimes Unit (ECCU)	9	11
Special Crime Prevention Unit	6	7
Total	82	100

According to Table 4.3, 13% of the respondents worked at Serious Crime Unit (SCU), 11% at the Economic and Commercial Crimes Unit (ECCU), 10% at the Anti-Banking Fraud Investigation Unit, 10% at the Forensic Department, 9% at the Anti-terrorism police unit (ATPU), 7% at the Flying Squad Unit the same percentage worked at the Capital Market Authority Investigation Unit (CMAIU), Anti-Narcotic Unit, Cyber Forensics and Special Crime Prevention Units, 6% at the Bomb Squad while 5% worked at the Financial Investigation Unit. This shows that although majority of DCI officers are concentrated in the Serious Crime and the Economic and Commercial Crimes Units. All the DCI Units were involved in the study and thus the responses generated in the study represented the experiences of different scene of crime investigators from diverse units of investigations.

4.3 Collection of Criminal Evidence

The first objective of the study sought to establish the methods used in collecting evidence by the scene of crime investigators at the DCI. The findings are as described in the subsequent subsections.

4.3.1 Methods used

The respondents were requested to indicate the different methods used by DCI investigators to collect criminal evidence. Some of respondents indicated that they used the media, electronic devices (e.g. phones, surveillance, crime scene management, mapping of the scene, photography, videotaping, sketch drawing, fingerprint lifting, human intelligence, interviewing, blood stain analysis, instrumentation and forensic to collect criminal evidence). These findings were in line with Aitken (2014) who argued that due to the recent development in the electronic devices sector; most people now own either a cell phone, IPod, I Pad or PC among other devices.

4.3.2 Evidence Collection Methods

The study sought to establish the respondents' level of application of various evidence collection methods. The results are as presented in Table 4.4.

Table 4.4 Level of application of evidence collection methods (N = 82)

Evidence Collection Tools	Not at all		Low extent		Moderate extent		Great extent		Very great extent		Mean	Total Freq.	Total %
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%			
Digital photography	6	7	8	10	19	23	26	32	23	28	3.63	82	100.0
Crime scene mapping	6	7	11	13	24	29	25	31	16	20	3.41	82	100.0
Crime scene management	12	15	2	2	15	18	22	27	31	38	3.70	82	100.0
Blood stain pattern analysis	24	29	13	16	19	23	13	16	13	16	2.73	82	100.0
Latent print processing	22	27	11	13	22	27	18	22	9	11	2.76	82	100.0

The study required the respondents to say the extent to which they had applied the various evidence collection methods/tools in their day to day investigations. According to Table 4.4, 32% of the respondents used digital photography as an evidence collection method to a great extent, 31% of the respondents used crime scene mapping to a greater extent while 38% used crime scene management to a great extent. As to the extent of application of blood stain pattern analysis as an evidence collection method, 16% had used it to very great extent. Lastly, 22% had applied latent print processing as an evidence collection method to very great extent.

Based on the mean values shown in Table 4.4, the findings indicate that evidence collection methods were applied in the following order; crime scene management (mean = 3.70); digital photography (mean = 3.63); crime scene mapping (mean = 3.41); latent print processing (mean = 2.76) and blood stain pattern analysis (mean = 2.73) respectively. These findings show that the respondents applied various evidence collection methods in their day to day investigations.

4.3.3 Challenges faced by DCI investigators while collecting criminal evidence

The respondents were requested to indicate the challenges that they faced while collecting criminal evidence. The results are as shown in Table 4.5.

Table 4.5 Challenges faced by DCI investigators while collecting criminal evidence (N = 82)

Statements	Frequency	Percent
Interference with the evidence	43	52.0
Inadequate packaging material	29	35.0
Inadequate crime scene kits & tools	66	80.0
Unclear division of labour	17	21.0
Poor packaging procedures	21	26.0
Lack of cooperation from witnesses	34	41.0
Lack of modern investigative equipment	78	95.0
Unfavorable weather conditions	4	5.0
Slow facilitation process	13	16.0
Conflicts with other departments	17	21.0
Inadequate storage facilities	30	37.0
Transportation challenges	26	32.0
Communication challenges	36	44.0

According to Table 4.5, the major challenges encountered by the DCI investigators while collecting criminal evidence were; lack of modern investigative equipment's at 95%, inadequate crime scene kits and tools at 80% and interference with evidence at 52%.

4.4 Transportation of evidence

The second objective of the study sought to identify the modes of transporting evidence used by the scene of crime investigators at the DCI. The findings are as described in the subsequent sub-sections.

4.4.1 Modes of transport

The study participants were requested to indicate the current modes of transport in use. The results are as shown in Table 4.6.

Table 4.6: Current modes of transport (N = 82)

Means of transport	Frequency	Percent
Motor vehicles	82	100.0
Aircrafts	31	38.0
Motor cycles	52	63.0
Bicycles	3	4.0
Ships	11	13.0

According to Table 4.6, majority (100%) of the respondents' ranked motor vehicle as their most preferred mode of transport, followed by motor cycles at (63%), aircrafts at (38%), while bicycles were ranked as the least preferred mode of transport at 4%. Motor vehicles were ranked as the most preferred mode of transport as they are fast, affordable and secure than the motor cycles and bicycles. Aircrafts were considered largely unaffordable by most of the respondents.

These findings conform to Owen (2010) who identified use of motor vehicles as the most common mode of transport used by police and other investigative agencies to transport evidence from the scene of crime to their investigation centers. The findings are also in concurrence with Lee & Palmbach (2016) who noted that though bicycles, airplanes and ships could be used as a means of transporting investigative evidence, their use is limited due to a variety of reasons including high transport costs in the case of airplanes and ships and slow speeds in the case of bicycles and hence motor vehicles become the most commonly used evidence transportation means.

4.4.2 Factors to consider in choosing the mode of transportation

Respondents were requested to indicate the extent to which they considered a number of identified factors while choosing the mode of transportation for evidence. The results are as shown in Table 4.7.

Table 4.7: Factors to consider while choosing the mode of transport

Statements	Not at all		Low extent		Moderate extent		Great extent		Very great extent		Mean	Total Freq.	Total %
	Freq.	%	Freq.	%	Freq.	%	Freq.	%	Freq.	%			
The distance between the crime scene and the storage site	10	12	3	4	18	22	10	12	41	50	3.84	82	100.0
Bulkiness of the evidence	6	7	6	7	21	26	17	21	32	39	3.76	82	100.0
Sensitivity of the evidence	6	7	4	5	12	15	17	21	43	52	4.06	82	100.0
Cost implications of its transportation	8	10	12	15	22	27	13	16	27	33	3.47	82	100.0
Availability of the ideal mode of transport	5	6	9	11	19	23	7	9	42	51	3.87	82	100.0

While choosing the mode of transport for evidence, the distance between the crime scene and the storage site was considered to a very great extent by 50% while the bulkiness of the evidence was considered to a very great extent by 39% of the respondents.

The sensitivity of the evidence was considered to a very great extent by 52% of the respondents, whilst the cost implications of its transportation was considered to a very great extent by 33%.

Lastly, the availability of the ideal mode of transport was considered to a very great extent by 51% of the respondents.

While choosing the mode of transport to use based on the mean values shown in Table 4.7, the factors considered were ranked as follows: sensitivity of evidence (mean = 4.06); availability of transport mode (mean = 3.87); the distance between the scene of crime and storage site (mean = 3.84); bulkiness of evidence (mean = 3.76) and cost implications of transportation (mean = 3.47). This implied that various factors relating to sensitivity of evidence, availability of transport mode, the distance between the scene of crime and the storage site, bulkiness of evidence and cost implications of transportation informed decisions relating to the choice of transport for evidence among the DCI investigators.

These findings are in agreement with Peterson (2015) and Lee & Harris (2011) who opined that adequate condition, for example cool or dry storage and secured/controlled access both require secure conditions of transportation and storage facilities. Commercial products are available for the transport of clinical specimens. Crime scene investigators should consult with experts where possible prior to packaging. Some specimens may be transported at room temperatures while others can only be transported on ice.

4.4.3 Transportation challenges

The respondent were asked to indicate the challenges they experienced while transporting evidence. The results are as shown in Table 4.8.

Table 4.8: Transportation challenges experienced by the DCI investigators (N = 82)

Transportation Challenges	Frequency	Percent
Inadequate motor vehicles	59	72.0
Inadequate drivers	41	50.0
Inadequate security	33	40.0
Bad roads	38	46.0
Unfavorable weather conditions	15	18.0
Inadequate fuel supplies	27	33.0
Inappropriate mode of transport for certain types of evidence	46	56.0

Based on the findings, the major transport challenges experienced by the DCI investigators were; inadequate motor vehicles at (72%), inappropriate mode of transport for certain types of evidence e.g. bombs, explosives at 56% and inadequate drivers at (50%). These findings are in support with Benson et al., (2010).

4.5 Storage of evidence

The third objective of the study sought to evaluate the nature of storage of evidence used by the scene of crime investigators at the DCI. The findings are as described in the subsequent sub-sections.

4.5.1 Storage of criminological evidence

The participants were requested to indicate the evidence storage methods in use and their preferences. The results are as shown in Table 4.9.

Table 4.9: Evidence storage methods and their preferences

Evidence storage methods (N = 82)	Frequency	Percent
Use of safe lockers	68	83.0
Use paper bags	37	45.0
Use of envelopes	51	62.0
Refrigeration	59	72.0

According to Table 4.9, use of safe lockers, and refrigeration were identified as the most preferred methods used to store criminological evidence by 83% and 72% of the respondents respectively. These results are in agreement by a study done by Farrall & Calverley (2015) and Pyrek (2014) who contends that evidence should be collected the physical evidence at a scene of crime plays a crucial role in the investigations. It can place the suspect in contact with the crime scene, exonerate an innocent person or corroborate the victim's testimony. It is also more reliable than any eye witness account(s).

4.5.2 Storage constraints

The participants were asked to indicate the storage constraints that they experienced. The results are as shown in Table 4.10.

Table 4.10: Storage constraints experienced by DCI investigators

Storage Constraints	Frequency	Percent
Lack of storage facilities	61	74.0
Lack of refrigeration facilities	52	63.0
Congested stores	74	90.0
Contamination of evidence due to poor storage	44	54.0

Based on Table 4.10. The major storage constraint was identified as congested stores as pointed by 90%, lack of storage facilities by 74%, lack of refrigeration by 63%. This

implied that the DCI investigators faced a range of evidence storage constraints mainly due to congested stores and lack of storage facilities. These findings are in agreement with Bowen & Schneider (2014) who observed that inadequate and ill maintained storage facilities were a leading barrier in preservation of criminological evidence and particularly in developing countries. This has an effect on the integrity of the evidence which in turn affects the outcome of court cases usually to the disadvantage of the victims.

4.5.3 Challenges in relation to storage of evidence

Respondents were requested to highlight the challenges in relation to the storage of evidence which they experienced. The findings are as depicted in Table 4.11.

Table 4.11: Challenges in Relation to Storage of Evidence

Storage Challenges	Frequency	Percentage
Lack of a secure storage	19	23.0
Excess heat that destroys the collected evidence/Desiccation	32	39.0
Prolonged court cases resulting in the contamination of evidence	64	78.0
Use of the same locker leading to contamination of evidence	15	18.0
Unequipped storage facilities	53	65.0
Shortage of packaging materials	17	21.0

Findings in Table 4.11 show that respondents faced major challenges on prolonged court cases resulting in the contamination of evidence and unequipped storage facilities as indicated by 78% and 65% of the respondents. The results show that DCI investigators encountered a wide range of challenges relating to the storage of evidence which had a negative effect on their investigation. There is therefore a need to address the storage related challenges in order to safeguard the integrity of the evidence collected.

These findings correspond with Miller (2013) who argues that tracing evidence which was taken from crime scenes might be a bit difficult for investigators, especially when years have passed and it has become a cold case.

4.5.4 Recommended storage and packaging practices

Participants were requested to indicate the extent to which they applied various recommended evidence storage and packaging practices. The findings are as indicated in Table 4.12.

Table 4.12: Recommended storage and packaging practices

Recommended storage/packaging practices	Frequency	Percentage
Packaging of evidence and sealing of containers to protect it from cross transfer	59	72.0
Sealing packages in a manner that makes alteration of the container or its seal difficult.	31	38.0
Safe packaging of sharp items by use of boxes or breathable tubes.	23	28.0
Packaging of unloaded firearms in clean, unused boxes when submitting them for biological analysis.	35	43.0
Avoiding use of plastic packaging as an inner or outer package.	22	27.0
Not using pill tins due to possible rust.	29	35.0
Ensuring that all swabs and evidence are dry.	45	55.0
Marking each package with a detailed description that includes the item, location where it was collected, name of the person who collected it and date of collection.	56	68.0

According to Table 4.12, 72% of the respondents applied packaging of evidence and sealing of containers to protect it from cross transfer to a great extent while 68% of the respondents applied marking each package with detailed descriptions which included the

item, location where it was collected, name of the person who collected it and the date of collection to a great extent by the DCI investigators.

The findings are in line with Bowen & Schnieder (2014) and Gianelli (2013) who points that while some practices described above will generally apply to the a zip-lock bag is usually used as a container since evidence can come into contamination in the process of collecting samples. The external surface of the sample containers must therefore not be contaminated in any way.

4.6 Criminal Investigation Training

The last objective of the study sought to evaluate the scene of crime investigators’ level of training on criminal investigation. The findings are discussed in the subsequent sub-sections.

4.6.1 Specialized Criminal Investigation Training

On whether the respondents had undergone any specialized crime investigation training, the results are as presented in Table 4.13.

Table 4.13: Specialized Criminal Investigation Training

	Frequency	Percent
Have you undergone any specialized crime investigation training? (N = 82)		
Yes	70	85.0
No	12	15.0
Last date of training (N = 70)		
1-5 years ago	24	34.0
6-10 years ago	36	51.0
Over 10 years ago	10	14.0

Table 4.13 indicates that the majority (85%) of respondents had undergone specialized crime investigation training while 15% of the respondents had not. 51% of the

respondents indicated that they were last trained between 6-10 years ago, while 14% said they were trained over 10 years ago. This finding indicates that majority (65%) of the DCI investigators have 'rusty' investigative skills, since they are not subjected to regular refresher courses in view of the fast changing operational requirement skills and techniques.

These findings resonates with Julian et al., (2012) who are of the view that the success of criminal investigation will largely depend on the level of training and experience of scene of crime investigator(s).

4.6.2 Requisite Training

The participants were requested to indicate the extent to which they had gone through various crime investigations training. The results are as presented in Table 4.14.

Table 4.14: Type of Training

Type of Training	Not at all		Low extent		Moderate extent		Great extent		Very great extent		Total Freq.	Total %
	F	%	F	%	F	%	F	%	F	%		
	Alternate light source training.	29	35	17	21	18	22	10	12	8	10	82
Arson investigation.	21	26	26	32	12	15	9	11	14	17	82	100.0
Crime scene documentation.	10	12	6	7	30	37	22	27	14	17	82	100.0
Crime scene investigations.	10	12	6	7	25	31	20	24	21	26	82	100.0
Death investigations.	12	15	18	22	22	27	16	20	14	17	82	100.0
Evidence photography.	13	16	25	31	14	17	21	26	9	11	82	100.0
Footwear and tyre tread.	33	40	22	27	9	11	13	16	5	6	82	100.0
Forensic Anthropology.	32	39	25	31	8	10	9	11	8	10	82	100.0
Latent print detection/comparison.	20	24	13	16	14	17	21	26	14	17	82	100.0
Technical working group on crime scene investigation.	15	18	10	12	21	26	23	28	13	16	82	100.0
Intermediate crime scene investigation.	2	2	21	26	15	18	22	27	22	27	82	100.0
Essentials of crime scene investigation.	2	2	15	18	22	27	27	33	16	20	82	100.0
DNA biological screening for law enforcement.	28	34	21	26	14	17	12	15	7	9	82	100.0

According to Table 4.14, the respondents indicated that they were not trained at all or were trained to a low extent in the following requisite trainings: forensic anthropology (70%), footwear and tyre tread (67%), and DNA biological screening for law enforcement (60%). These findings showed that the DCI investigators lacked adequate requisite training in a considerable number of areas which could affect their performance in their scene of crime investigations.

This finding concurred with Benson et al. (2010) who points that crime investigators require adequate training on diverse aspects related to criminal investigations but this barely happens more so in resource constrained countries.

4.7 Respondents’ Ranking of Department Performance Outcome

Respondents were requested to rank the department’s performance on criminal investigation. The findings are as illustrated in Table 4.15.

Table 4.15: Perceived Outcomes of Criminal Investigation

Investigation Outcomes	Low		High	
	Frequency	Percent	Frequency	Percent
Successful investigations.	31	38.0	51	62.0
Number of arrests.	32	39.0	50	61.0
Prosecution rates.	42	51.0	40	49.0
Rate of convictions.	57	70.0	25	30.0

The study sought to investigate the respondents’ rating of the outcomes of criminal investigation at the DCI. According to Table 4.15, the respondents’ perceived criminal investigation outcome was high in the areas of successful investigations and number of arrests as shown by 62% and 61% respectively. However, the respondents’ perceived criminal investigation outcome was low in the areas of prosecution and conviction rates as shown by 51% and 70% respectively. This implied that there is a great need to boost the department’s investigative skills in order to enhance the rate of prosecution and convictions.

4.8 Inferential Statistics

A univariate analysis was performed with a view of ascertaining the influence of evidence collection methods, evidence transportation, evidence storage and investigator’s level of training on the outcome of crime investigation. The study performed t-test and ANOVA and the findings are as indicated below.

4.8.1 T-test

The t-test results are as shown in Table 4.16.

Table 4.16: T-test results

	Mean			Std. Error	
	Difference	Df	t	Difference	Sig.
equal variances assumed	14.795	81	2.612	1.831	.209

The study applied t-test statistic to test if significant difference existed between mean values of the study. Based on the results from Table 4.16, the p value is 0.209 which is bigger than 0.05, this meant there was no significant difference between the mean values of the different variables under study. The implications of the t-test statistic results is that there was consensus among the study respondents that they experienced challenges relating to evidence collection methods, evidence transportation, evidence storage and investigator's level of training which had an impact on their work as scene of crime investigators.

4.8.2 ANOVA [Analysis of Variance]

The ANOVA results are as shown in Table 4.17.

Table 4.17: ANOVA (Analysis of Variance)

Model	Sum Squares	of df	Mean Square	F	Sig.
Between groups	90.888	4	22.722	81.064	.3177
Within groups	21.863	78	.2803		
Total	112.751	82			

Analysis of Variance (ANOVA) consists of calculations that provide information about levels of variability within a model and forms a basis for tests of significance. The "F"

column provides a statistic for testing the hypothesis that all $\beta \neq 0$ against the null hypothesis that $\beta = 0$ (Weisberg, 2005). For the purpose of this study, the one-way ANOVA is used to compare the mean between groups the study was interested in and determine whether any of those means were statistically significantly different from each other. From Table 4.17 above, the significance value is 0.3177 which is greater than 0.05, implying that the group mean grades were not statistically and significantly different from one another. The F statistic is significant (= 81.064) and this shows the model to have a good fit. This affirms the findings of the study that there was consensus among the study respondents that they experienced challenges relating to evidence collection methods, transportation of evidence, storage of evidence and investigator's level of training which had an impact on their work as scene of crime investigators.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides the summary of findings regarding the challenges encountered by scene of crime investigators in the course of their duty. The findings are structured in line with the study objectives. The chapter also contains conclusions, recommendations and recommendations for further research.

5.2 Summary

5.2.1 Methods Used in Collection of Criminal Evidence

According to the study findings, the respondents identified “the media, electronic devices such as phones, surveillance, crime scene management, mapping of the crime scene, photography, videotaping, sketch drawing, fingerprint lifting, blood stain analysis, instrumentation and forensics” as some of the methods they used to collect criminal evidence. Regarding the level of application of various evidence collection methods, most of the respondents indicated that they applied to between moderate and great extent the following evidence collection methods; “digital photography, crime scene mapping and crime scene management”. However, most of the respondents indicated that they applied to a low extent the following evidence collection methods: “blood stain pattern analysis and latent print processing”.

The findings showed that 95% the respondents cited “lack of modern investigation equipment,” 80% “inadequate crime scene kits and tools,” while 52% said “interference with the evidence” as the major challenges faced by the scene of crime investigators.

5.2.2 Transportation of Evidence

The study found that all the respondents (100%) ranked “motor vehicle as their most preferred mode of transport for transportation of criminal evidence”. This was due to the fact that it is fast, affordable and secure. This was followed by “motor cycles” at 63%, “aircrafts” at 38%, “ship at 13% and lastly “bicycle at 4% respectively.

Regarding the factors to consider while choosing the mode of transportation for evidence, the respondents indicated that they considered to a great extent the following factors: “The distance between the crime scene and the storage site” at 50%, “bulkiness of the evidence”, at 39% “Sensitivity of the evidence”, at 52% “cost implications of its transportation” at 33% and “availability of the ideal mode of transport” at 51% respectively.

72% of the respondents cited “inadequate number of motor vehicles, 50% inadequate number of drivers, 40% inadequate security, 46% bad roads, 18% unfavorable weather conditions, 33% inadequate fuel supplies and 56% inappropriate mode of transport for certain evidence types”, as the transportation challenges they experienced in their work.

5.2.3 Storage of Evidence

Regarding evidence storage methods in use, 83% of the respondents identified “use of safe lockers”, 72% “use of refrigeration”, 62% “use of envelopes” while 45% cited “use of paper bags” as their most preferred method of evidence storage at the DCI Headquarters. Regarding the storage constraints experienced by DCI investigators, the respondents identified the major constraints as “congested stores” at 90%, “lack of storage facilities”, at 74%, “lack of refrigeration facilities” at 63% and “contamination of evidence due to poor storage” at 54% respectively.

The results showed that the respondents applied the recommended evidence storage and packaging practices in the following order: “packaging of evidence and sealing of containers to protect it from cross transfer” at 72%, “marking each package with detailed descriptions which included the item, location where it was collected, name of the person who collected it and the date of collection” at 68%, “ensured that all swabs and evidence were dry” at 55%, “packaging of unloaded firearms in clean and unused boxes” at 43%. “sealing packages in a manner that makes alteration of the container or its seal difficult” at 38%, “not using pill tins due to possible rust” at 35%, “safe packaging of sharp items

by use of boxes or breathable tubes” at 28% and “avoiding use of plastic packaging as an inner or outer package” at 27% respectively.

5.2.4 Criminal Investigation Training

It was found that 85% of the respondents had “undergone specialized training in criminal investigation”. However, 51% indicated they were “last trained between 6-10 years ago” 34% between “6-10 years ago” while 14% “over 10 years ago”. These findings indicated that majority of the “DCI investigators have ‘rusty’ investigative skills, since they are not subjected to regular refresher courses in view of the fast changing operational requirement skills and techniques, hence their low productivity”.

5.2 Conclusion

The study concludes that the scene of crime investigators at the DCI Headquarters were faced with a number of challenges which included lack of modern investigation equipment which was cited by 95% of the respondents, inadequate transport by 72%, lack of storage facilities by 74% and lack of regular refresher courses by 51%. These challenges have greatly contributed to the increase in the crime rate and acquittals of accused persons due to poor or lack of evidence from scene of crime investigators.

5.3 Recommendations.

The DCI to:

1. Review its present policies on scene of crime investigations in order to address the gaps highlighted in this study which hinder the successful investigations of cases. This will ensure proper criminal investigations are carried out and justice is done to all.
2. Evaluate the current evidence collection methods with a view to adopting modern scientific methods that are efficient and effective. There is need to equip the investigators with motor vehicles for ease of movement as well as the safety and integrity of the evidence collected from crime scene(s). Further, he should ensure

there is adequate refrigeration and storage facilities available for safe storage of the retrieved evidence to avoid contamination.

3. Appraise its present day scene of crime investigations methods in order to improve on training and exposure of its scene of crime investigators. This will ensure they are well equipped with modern investigation skills to enable them effectively and efficiently perform their duties.

5.4 Recommendations for Further Studies

Given that the current study focused on challenges encountered by scene of crime investigators based at DCI Headquarters Nairobi, a wider study involving other DCI Regional and County offices is hereby recommended. This will facilitate a broader comparison and generalization of the study findings.

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APPENDICES

Appendix I: Introductory Letter to Respondents

Dear respondent,

The purpose of this letter is to request you to kindly assist me to carry out a research on; challenges encountered by scene of crime investigators at the Directorate of Criminal Investigations Headquarters, Nairobi.

Your responses will be kept confidential and will not be used for any other purpose. Please be honest while giving your responses. Attached to this letter, please find a copy of the questionnaire. Your cooperation will be highly appreciated.

Thanks in advance.

Yours faithfully,

Nyanzwii John Muthini

REG NO: C50/84293/2015

Respondent.

I willingly accept to participate in the interview.

Signature

Date

Appendix II: Respondents Questionnaire

Instructions: Answer the questions by ticking in the appropriate brackets.

Part A: BACKGROUND INFORMATION

1. Indicate your gender?

Male []

Female []

2. What is your age bracket?

18-25 []

26-35 []

36-45 []

46-55 []

56-60 []

3. How long have you worked as a police officer in (years).....

4. What is your highest academic qualification?

Diploma

[]

Bachelor's Degree

[]

Master's Degree

[]

Any other, Please specify.....

5. For how long have you worked with the DCI?

Less than 2 years

[]

2-5 years

[]

5-10 years

[]

11- 15 years

[]

16 – 20 years

[]

More than 20 years

[]

6. Indicate the department you work in?

Flying Squad [] Forensic Department []

Anti-Banking Fraud Unit [] Anti-Narcotics Unit []

Serious Crime Unit (SCU)[] Special Crime Prevention Unit []

Cyber forensics [] Anti-Terrorism Police Unit (ATPU) []

Economic and commercial crimes unit (ICCU) []

Capital markets authority investigation unit (CMAIU) []

Financial investigation unit (FIU) []

Bomb Squad []

Any other specify

This section contains questions relating to the challenges encountered by scene of crime investigators.

Part B: Methods used in the Collection of Evidence

7. What different methods are used by DCI to collect criminal evidence?

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

8. Indicate the extent to which you apply the following evidence collection methods in your day to day investigation assignments? Use a scale of 1 - 5 where [1- Not at all, 2- Low extent, 3- Moderate extent, 4- Great extent and 5- Very great extent]

	1	2	3	4	5
Digital photography.					
Crime scene mapping.					
Crime scene management.					
Bloodstain pattern analysis.					
Latent print processing.					

Any other specify

.....

9. Rank the specified modes of evidence collection (in question 8) in order of their importance:

- 1.
- 2.
- 3.
- 4.
- 5.

b) Give reasons for the rankings

.....

10. As an investigator, to what extent are you challenged in the following process of evidence collection? Use a scale of 1 - 5 where [1- Not at all, 2- Low extent, 3- Moderate extent, 4- Great extent and 5- Very great extent]

	1	2	3	4	5
Arriving at the scene: initial response/prioritization of efforts.					
Preliminary documentation and evaluation of the scene.					
Processing the scene.					
Completing and recording the crime scene investigation.					

Any other specify

.....

.....

11. What challenges are experienced by DCI investigators while collecting criminal evidence?

.....

.....

.....

12. Rank the challenges in order of their acuteness

.....

.....

.....

Part C: Transportation of Evidence

13. What does DCI use to transport criminal evidence?

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

14. Rank the evidence transportation modes in order of their importance?

Motor vehicle []

Motor cycle []

Aircraft []

Bicycle []

Other specify

b) Give reasons for the respective rankings

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

15. To what extent do you consider the following factors in deciding the mode of transportation to use? Use a scale of 1 - 5 where [1- Not at all, 2- Low extent, 3- Moderate extent, 4- Great extent and 5- Very great extent]

	1	2	3	4	5
The distance between the scene of crime and where to be stored.					
Bulkiness of evidence.					
Sensitivity of evidence.					
Cost implications of transportation.					
Availability of transport mode.					

Any other specify

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16. What transportation challenges are experienced by the DCI investigators?
(Specify)

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17. Cite the respective reasons for each identified challenge

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Part D: Storage of Evidence

How does DCI store criminological evidence?

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18. Which of the following storage methods is most preferable in as far as avoidance of evidence contamination is concerned? Use a scale of 1- 5 where **[1- most preferred and 5- least preferred]**

	Rank				
	1	2	3	4	5
Refrigeration.					
Use of safe lockers.					
Use paper bags.					
Use of envelopes.					

Any other, specify

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19. What storage constraints are experienced by DCI investigators?

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20. Rank the above mentioned constrains in order of their acuteness?

- i.
- ii.
- iii.
- iv.

21. To what extent are you faced with the following challenges in regard to storage of evidence? Use a scale of 1 - 5 where [1- Not at all, 2- Low extent, 3- Moderate extent, 4- Great extent and 5- Very great extent]

	1	2	3	4	5
Lack of a secured place.					
Excess heat that destroys the collected evidence.					
Prolonged court cases resulting in the contamination of evidence.					
Using of the same locker leading to contamination of evidence.					
Unequipped storage facilities.					
Shortage of storage packaging materials.					

22. To what extent do you apply the following best storage practices whenever packaging evidence? Use a scale of 1 - 5 where [1- Not at all, 2- Low extent, 3- Moderate extent, 4- Great extent and 5- Very great extent]

	1	2	3	4	5
Package evidence and sealing the container to protect it from cross transfer.					
Sealing the package in such a manner that opening it causes obvious damage or alteration to the container or its seal.					
Package evidence for safety by using boxes or breathable tubes for sharp items.					
Packaging unloaded firearms in clean, unused boxes when submitting them for biological analysis.					
Avoiding plastic packaging as an inner or outer package.					
Avoiding the use of pill tins due to possible rust.					
Ensuring that all swabs and evidence are dry.					
Marking each package with a detailed description that includes the item, location where it was collected, name of the person who collected it and date of collection.					

Part E: Crime Investigation Training

23. Have you undergone any specialized crime investigation training?

Yes [] No []

24. If yes what training and for how long?

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25. In your view, what specialized training should a crime investigation officer receive?

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26. In your view, to what extent have the officers you work with undergone the requisite training? Use the likert scale to show the same using a scale of 1 - 5 where [1- Not at all, 2- Low extent, 3- Moderate extent, 4- Great extent and 5- Very great extent]

	1	2	3	4	5
Alternate light source training.					
Arson investigation.					
Crime scene documentation.					
Crime scene investigations.					
Death investigations.					
Evidence photography.					
Footwear and tire tread.					
Forensic Anthropology.					
Latent print detection/comparison.					
Technical working group on crime scene investigation.					
Intermediate crime scene investigation.					
Essentials of crime scene investigation.					
DNA biological screening for law enforcement.					

27. List and prioritize training gaps that exist in the DCI's crime investigation

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28. Give reasons for your ranking

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Part E: Outcome of criminal investigation

29. Rank the department's performance in terms of the following outcomes of criminal investigation? Use a scale of 1-5 where [1- Don't know, 2- very low, 3- low, 4- high and 5 – very high]

	Rank				
	1	2	3	4	5
Successful investigations.					
Number of arrests.					
Prosecution rates.					
Rate of convictions.					