

**THE IMPORTANCE OF FINGERPRINTS IN THE INVESTIGATION OF  
HOUSEBREAKING CASES**

**BY**

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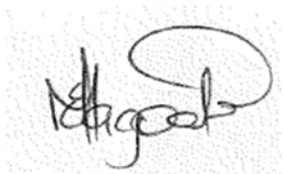
**04 March 2021**

## DECLARATION

I, Mmatlokwa Esther Rakgoale, student number 42320461, declare that “The importance of Fingerprints in the Investigation of Housebreaking Cases” is my own work and that all the sources that I have used have been indicated and acknowledged by means of complete references.

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

**Signature:**

A handwritten signature in black ink, appearing to read 'Mmatlokwa', written over a light grey dotted background.

**Date:** 2021-02-19

## PROOF OF EDITING

18 February 2021

### CERTIFICATE BY EDITOR

I, Susan Hall, MA Linguistics, hereby declare that I have conducted an English proofreading and grammar edit on the draft dissertation entitled “The Importance of Fingerprints in the Investigation of Housebreaking Cases” by Mmatlokwa Esther Rakgoale. Ms Rakgoale is responsible for the quality and accuracy of the final submission.

A rectangular box containing a handwritten signature in blue ink that reads "Hall".

Susan Hall

Member of:

PEG & SENSE

## **DEDICATION**

This thesis is dedicated to my beloved family and friends.

It is also dedicated to all members of the Forensic Science Laboratory and to the West Rand cluster detectives.

With much love and appreciation, I dedicate the thesis to my three sweet sons, Hubi, Kamano and Realeboga. You allowed me to use the time that we were supposed to be spending together to study. During hectic days I used to spend lengthy hours studying and you understood. A high five to you, guys!

My final dedication is to my husband, Mabakane. Thank you for your resolute support. You calmed me, encouraged me and cherished me. Much love.

It was not easy, but it was a worthy task.

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All who assisted me in completing this study, including those that I have not mentioned by name.

## SUMMARY

This research focused on the importance of fingerprints as a tool in the investigation of housebreaking cases and the causes of fingerprint mishandling in these investigations. The problem was identified from the large number of struck-off-the-roll cases of housebreakings. The study aimed to explore the value of fingerprints in the investigation of housebreaking cases, with the aim of providing new knowledge for fingerprint experts and investigators of housebreaking cases to apply in the execution of their duties. The study collected data from current relevant literature and interviews with fingerprint experts and detective commanders of the West Rand cluster.

The study found that fingerprints are largely considered one of the most valuable sources of evidence in the investigation of housebreaking cases because they are undisputed and persist with age. Fingerprints taken accurately save the court time. However, investigators and fingerprint experts often lack an appreciation of the importance of fingerprints in housebreaking investigations. The study identified the main cause of fingerprint mishandling as actions taken by the first responders to the crime scene, who showed a lack of knowledge regarding securing the crime scene, leading to fingerprint contamination.

On the basis of these findings, the study recommends training for both fingerprint experts and detectives regarding the importance of fingerprints, and awareness and training for first responders and community members about the importance of fingerprints as evidence in a crime scene. The South African Police Service (SAPS) database should also be linked to that of the Department of Home Affairs and border control tightened as fingerprints belonging to illegal immigrants are not on the SAPS database and this makes it difficult for investigators and experts to trace them.

**Key Terms:** Crime, Housebreaking, Fingerprints, Forensic investigation, Criminal investigation, Suspect

## **LIST OF ABBREVIATIONS AND ACRONYMS**

AFIS	Automated Fingerprint Identification System
CAS	Case Administration System
CCTV	Closed-Circuit Television
CPF	Community Policing Forum
CRC	Criminal Record Centre
CSC	Community Service Centre
DNA	Deoxyribonucleic Acid
DLP	Detective Learning Programme
LCRC	Local Criminal Record Centre
ROC	Resolving of Crime
SAPS	South African Police Service
Unisa	University of South Africa

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## **CHAPTER ONE: GENERAL ORIENTATION**

### **1.1 INTRODUCTION**

Identifying fingerprints is an important method used to link a perpetrator with the crime committed. Dutelle (2014:169) points out that all human beings have particular physical marks that do not change in character over the course of their lifespan and that can be used to identify them. Fingerprints, which according to Nath (2010:14) “are a reproduction of friction skin ridges present on the palm side of the hand and soles of the feet”, can be considered among these physical marks. Baxter (2015:153) elaborates that fingerprints do not change over an individual’s lifetime, with only the size of the pattern changing as the individual grows older. From the above authors it can be accepted that fingerprints are reliable and undisputable.

### **1.2 PROBLEM STATEMENT**

“There is no shortage of problems throughout the world, but for a problem to be researchable, it needs to have several crucial features” (Walliman, 2018:31). These features include that it must be clear, have some importance and not be a repetition of previous work. The problem needs to be of a limited scope so that it can be investigated practically. The information required to explore the problem must be accessible, and it must be possible to draw conclusions related to the problem as the point of research is to find some answers or solutions to the problem (Walliman, 2018:31). Welman, Kruger and Mitchell (2005:13) suggest that the problem statement of any potential research “involves narrowing down our general interest in a research topic in order to focus on a particular research problem which is small enough to be investigated”. A problem statement also provides direction for the researcher. As Merriam (2009:119) points out, “rarely would anyone start out on a trip and simply walk out of the door with no thought of where to go or how to get there”.

The researcher began this study while working at the Honeydew SAPS detective services. The researcher was attached to the detective services and performed duties within the economic crimes section, investigating housebreaking cases. During the investigations, it was evident that many cases were being withdrawn from Roodepoort court owing to insufficient evidence and this raised a concern in the researcher as one

of the members dealing with such cases. Initial research by the researcher into the West Rand cluster performance charts from 2012 and 2016 supported this observation. Most of housebreaking cases from Roodepoort court came back as struck off the. During the investigation of housebreaking crime scenes, the researcher also realised during interviews with the complainants or victims of housebreaking that fingerprint mishandling and crime scene contamination were felt to have occurred. In most cases when the researcher asked if the fingerprint experts had come to lift the fingerprints from the scene, the answer was that “nobody informed us about fingerprints”. This prompted the researcher to pursue this study.

The research problem investigated in this study is the cause of fingerprint mishandling by the members of the SAPS West Rand cluster and to establish the importance of fingerprints in the investigation of housebreaking cases.

### **1.2.1 Contextualising the Problem from the Researcher’s Vantage Point**

DeMatteo, Festinger and Maczyk (2005:28) state that researchers choose the topics that they study in different ways, with their decisions motivated by several factors, such as their field of study, training and experience. The researcher’s personal experience relevant to this research contributed to her interest in and choice of the problem to be studied. The researcher has worked as a crime information analyst with the duties of managing, collecting, analysing and interpreting crime information at the station level; providing crime-related information; identifying crime threats and registering these on the information system; profiling suspects; and identifying hot spots for crime areas, which were submitted to crime prevention members for disruptive operations. In addition, she compiled monthly reports to the province and attended meetings for business against crime forums with different stakeholders.

The researcher was assigned to investigate housebreaking cases for eight years and during that time she interviewed complainants or victims of housebreaking and gathered information related to the crime scene. She also arrested suspects after they had been positively identified by the Local Criminal Record Centre (LCRC) experts, caught red handed by closed-circuit television (CCTV) footage or identified by some other means. Her duties also involved charging suspects both on the SAP 76 form (the form used to obtain suspect’s fingerprints) and on the Case Administration System (CAS), and recruiting and managing informers.

The researcher subpoenaed witnesses to attend court and gave testimony in court regarding housebreaking cases when requested to do so.

Currently the researcher is assigned to the Forensic Science Laboratory of the South African Police Service (SAPS) as a forensic analyst. As part of her work, the researcher performs analyses of physical evidence submitted by the investigating officers on ballistic-related matters. This means that the researcher has experience and interest in both criminal and forensic investigation.

### **1.3 RESEARCH PURPOSES**

According to Urban and Van Eeden-Moorefield (2018:20), “there are three types of research purposes, exploratory, descriptive and causal”. Denscombe (2002:25) and Mitchel (2008:22) state that the general purpose of research is to explain why things are the way they are, and that it may be so because one thing has caused another one to change. Researchers are also interested in the difference between scientific and non-scientific observation and experience curiosity and enjoyment in finding out about behaviour that underlines particular phenomena (Beins, 2013:11).

Deploy and Gitlin (2016:53) state that research is a purposive, “intentional goal directed” activity that is conducted for a specific question or query, to solve a problem, or to examine a particular controversy or issue. Blaikie (2001:90) states that research must make a reasonable or useful contribution while Denscombe (2002:22) and Mouton (2001:114) point out that research must also contribute to new knowledge.

The research purposes of the current study are to:

- Establish the importance of fingerprints in the investigation of housebreaking cases
- Remind investigating officers that mishandling of fingerprints could result in cases being thrown out of court or no convictions
- Ascertain what causes fingerprint mishandling in the investigation of housebreaking cases

### **1.3.1 Research aim**

In order to establish the facts, there must be an aim. Denscombe (2002:1) states that the aim of the research is to combine the power of rational thought and step by step investigation to produce new knowledge. The underlying aim of this research is to determine the importance of fingerprints in the investigation of housebreaking cases within the Westrand cluster.

### **1.3.2 Research objectives**

The objectives of a study should be stated clearly, be specific in nature and each portray only one issue (Kumar, 2014:262).

The objectives of this research are:

- To explore the fingerprints importance in the investigation of housebreaking cases.
- To determine the cause of fingerprints mishandling in the investigation of housebreaking cases within Westrand cluster.
- To determine the best practices of using fingerprints in the investigation of housebreaking cases.

## **1.4 RESEARCH QUESTIONS**

According to Denscombe (2002:31), Maree (2007:3) and Dantzker and Hunter (2012:40), research questions narrow down the topic to the focus area that the study will address.

The following research questions were formulated for this study:

- What is the importance of fingerprints in the investigation of housebreaking cases?
- What are the best practices of using fingerprints and what causes fingerprints mishandling in the investigation of housebreaking cases.

## **1.5 KEY THEORETICAL CONCEPTS**

### **1.5.1 Crime**

Becker and Dutelle (2019:3) state that “crime is an act or omission of an act that is punishable by public law and that makes the offender liable to punishment”.

### **1.5.2 Housebreaking**

Woods (2013:588) refers to housebreaking as the unlawful entering of the building of another with the intention of committing a crime inside it.

### **1.5.3 Fingerprints**

According to Neuman (2012:3), “fingerprints is the record that is taken, at the police station or somewhere similar, from a known individual under controlled conditions and protocols and a mark on the other hand is the impression that is found at the crime scene”.

### **1.5.4 Forensic Investigation**

Becker and Dutelle (2019:7) state that forensic investigation is “the application of science to civil and criminal law coupled with the fields of policing and forensic science” to establish facts or evidence which is to be used for crime-based trial or proceedings.

### **1.5.5 Criminal Investigation**

Hess and Orthmann (2013:8) point out that criminal investigation is the process of discovering, collecting, preparing, identifying and presenting evidence to determine what transpired, the person responsible for the crime, apprehend the perpetrator and provide evidence to support a conviction in court.

### **1.5.6 Suspect**

Woods (2013:593) states that “a suspect is a person whose guilt of an offence is practically possible”.

## **1.6 RESEARCH DESIGN AND APPROACH**

The researcher’s intention is to add value and knowledge to various areas such as the field of criminal justice and the academic community. Research design has to take into account what the researcher expects and the circumstances that form the setting (Thomas, 2013:103). Kumar (2011:93) points out that a research design is a plan, structure and strategy of investigation designed to obtain answers to research questions or problems. The research methodology, which refers to a set of guiding principles for the development of specific methods, is connected to the research design (Molenaar, Newell & Lerner, 2014:19). According to Welman *et al.* (2005:78), all types of experimental research involve some form of investigation, which means



that other researchers are exposed to something that they would not have been subjected to otherwise. Thomas (2009:101) indicates that “design is about plan and structure, the whole programme of your research from the purpose to execution, constitutes the design”.

Dunn (2013:36) states that there are two broad categories of research: qualitative research and quantitative research. The researcher opted for a qualitative research approach as this is more geared towards participants’ lived experiences and their insider perspectives, rather than the counting or measuring of variables, which is the focus of quantitative research (Du Plooy, 2002:82). The qualitative research approach is discussed in the next section.

### **1.6.1 Qualitative Research Approach**

According to Bless, Sithole and Smith (2013:16), a qualitative research approach focuses on the participants’ point of view and what they know about an issue. The researcher chose fingerprints experts and detective commanders because of the knowledge and experience they poses regarding the study. Delport, De Vos, Fouche and Strydom (2002:364) state that “qualitative methodology is based on the assumption that a valid understanding can be gained through accumulated knowledge acquired first-hand by a single researcher”.

The researcher pursued this study using a qualitative approach. The reason the qualitative approach was considered suitable was that the researcher aimed to obtain information or responses from the study participants. Adopting a qualitative approach allowed the researcher to gain first-hand information by using open-ended questions so that participants could share their views. This enabled the researcher to rely on primary and secondary sources.

## **1.7 POPULATION AND SAMPLING**

The entire population relevant to a study covers the whole collection of units from which the researcher wishes to draw conclusions (Welman & Kruger, 2001:18). As it is generally not possible to study the entire relevant population, the researcher usually focuses on the target population, which is the population that the researcher intends to use to generalise their results from (Welman & Kruger, 2001:119).

Walliman (2018:106) explains that sampling is the process used by the researcher to select just a small group of cases out of a large group. Flick (2018:281) states that “sampling decisions always fluctuate between the aims of covering as wide a field as possible and of doing analyses which are as deep as possible”. Urban and Van Eeden-Moorefield (2018:62) also contend that, “for qualitative study, the object is not typically to obtain a sample that is representative of the population, but the object is to obtain a sample that can most appropriately address your research question”. In line with these contentions, for this study a non-probability sampling method was used for choosing the research sample.

Cohen, Manion and Morrison (2013:155) point out that non-probability samples are not complicated to set up, are considered not expensive and can be sufficient where the researchers do not intend to generalise their findings beyond the sample in question. Berg and Lune (2012:50) point out that in “non-probability sampling, the investigator does not base his or her sample selection on probability theory, rather efforts are undertaken to create a kind of quasi-random sample and to have a clear idea about what larger group or groups the sample may reflect”. Terre Blanche, Durrheim and Painter (2014:139) state that “nonprobability sampling refers to any kind of sampling where the selection of elements is not determined by the statistical principle of randomness”.

Davies and Francis (2018:53), Kumar (2019:230), and Leedy and Ormrod (2013:97) state that in non-probability sampling there is no rule that dictates the appropriate sample size because the objective in using such a technique is to find study participants who can provide rich information to address the study aim and research questions.

The researcher used purposeful sampling, which is a non-probability sampling technique, because from the researcher’s personal experience the participants in the study were considered to possess sufficient experience and knowledge to assist in addressing the research questions and the purpose of the research.

The entire population relevant to this study included fingerprint experts (referred to as “Sample A”) and detective commanders (referred to as “Sample B”) within the West Rand cluster. As it was not practically feasible for the researcher to study the entire

population owing to the large geographical area and large number of members of the population, the researcher limited the study to the target population as outlined below.

### **1.7.1 Sample A**

The population for Sample A was drawn from the West Rand LCRC, which comprises two offices situated at Diepsloot and Krugersdorp. Interviews were conducted with members who were qualified fingerprint experts with five or more years of experience and only those who had attended a fingerprint course along with basic police training, because experts with five and more years were considered to have sufficient and potentially richer information that would be of value in addressing the research problem. Ultimately interviews were conducted as follows: Diepsloot – nine participants and Krugersdorp – six participants. The total number of fingerprint experts interviewed was 15 members.

### **1.7.2 Sample B**

The population for Sample B was derived from the ten stations that form the West Rand cluster. From the ten stations only the top five stations in terms of the highest number of housebreaking cases according to the West Rand cluster performance chart were targeted. Detective commanders with ten or more years of service and those that had attended the Detective Learning Programme (DLP) course currently known as Resolving of Crime (ROC) with the basic police training course were interviewed because they were considered to have experience and knowledge that could add value to the study. Two detective commanders from each of the top five stations were interviewed as follows: Honeydew, Randburg, Douglasdale, Linden and Roodepoort. The total number of detective commanders interviewed was ten members. This brought the total number of study participants to 25.

A total sample size of 25 was considered acceptable as Huysamen (1993:183) states that “a sample of 25 participants is considered sufficient in conducting qualitative research”. In addition, Urban and Van Eeden-Moorefield (2018:62) contend that, “for qualitative study, the object is not typically to obtain a sample that is representative of the population, but the object is to obtain a sample that can most appropriately address your research question”.

## **1.8 DATA COLLECTION**

Dantzker and Hunter (2012:16) point out that data collection is a key component of the research process and consists of a variety of methods, whilst Creswell and Poth (2018:148) refer to data collection as a series of interrelated activities aimed at gathering enough information to answer research questions. It is therefore necessary that the links between concepts and data must be tight, logical and consistent (Punch, 2016:52). The researcher asked sufficient questions regarding fingerprints and housebreaking that were aimed at addressing research questions. Maree (2007:34) highlights that, once the researcher has decided on a research strategy and tactics, the researcher will need to describe how the data will be gathered to answer the research questions. For this study, the following data-collection methods were used.

### **1.8.1 Literature**

Welman *et al.* (2005:38) explain that a review of relevant literature is useful in that it “can provide the researcher with important facts and background information about the study and such a review also enables the researcher to avoid duplicating research”. According to Oates (2006:71), “research students explore literature to look for a suitable research idea and discover relevant material about any possible research topics”. Once a research topic is chosen, Braun and Clark (2003:312) suggest that key aspects of the research are firstly to review literature and then locate the research results in relation to relevant literature. Park and Wang (2016:136) further suggest that “the quality of literature review will depend on whether one has spent sufficient time completing a comprehensive literature search and thorough review of the literature, and whether one is able to synthesize, rather than simply list the literature”.

To identify literature related to the topic under investigation, the researcher obtained recently published journal articles, textbooks and scholarly books related to the study in answering the research questions. Data obtained from the literature was compared and combined with the participants’ experience so as to validate the study.

### **1.8.2 Interviews**

Interviews formed a major part of the study. Gardner, Haeffele and Vogt (2012:31) and Thomas (2013:194) describe an interview as a discussion or conversation in which the interviewer intends to learn what the other person thinks. Gill, Stewart, Treasure and

Chadwick (2008:93) point out that the research interview is used to explore “the views, experience, beliefs and motivations of individuals on specific matters”. The nature of the data collected was biographical data and the educational and lived experience and technical knowledge of the participants.

Hammond and Wellington (2013:91) state that the purpose of the interview in a research study is to allow the researcher to investigate the participant’s thoughts, feelings, values and perspectives regarding the study. Leedy and Ormrod (2005:146) believe that interviews can provide a great deal of useful information if the interviewer asks questions related to fact along with people’s beliefs, feelings and motives.

The researcher conducted semi-structured face-to-face interviews with the purpose of obtaining rich and sufficient information related to the study to help in addressing the research problem. Bless *et al.* (2013:197) point out that “unstructured and semi-structured interviews assist in exploratory research”, with Braun and Clarke (2013:78) stating that the semi-structured interview is the dominant form used for qualitative interviews. In line with the semi-structured nature of the interview, in the current study open-ended questions were posed to the participants with the aim of gathering more information related to the topic of the study and understanding what were their views.

The researcher designed an interview schedule with structured questions that were aimed at addressing the study problem. The researcher started by asking demographic questions to validate the study. The interviews were conducted at a private location such as an office or boardroom as suggested by the participants. Data was collected from the participants at a time deemed appropriate by them. The participants’ responses to the questions were recorded on a voice recorder and written down by the researcher in an exercise book. Obtaining information was not a problem as the researcher worked within the policing precinct and was familiar with the area where the study was conducted, and the researcher used potential sources of data that were publicly available.

## **1.9 DATA ANALYSIS**

The data obtained from the interviews was then analysed following accepted data-analysis methods. For Anderson (2014:235), “data analysis entails more than describing what people said or what you saw”, while Mouton (2001:108) states that

the analysis of data involves breaking up the data into manageable themes, patterns, trends and relationships.

Bless *et al.* (2013:347) state that qualitative data analysis involves shortening and simplifying highly structured data generated in in-depth interviews. In line with this, the researcher collected data from the two samples as mentioned in Section 1.7: Population and Sampling above using two exercise books, one assigned to experts and the other to detective commanders. During each interview, the participant's responses were written down in the assigned book and at the same time recorded on a voice recorder. Later the same day in the researcher's own time the researcher played back the voice recorder while going through what she had written in the book to make sure that no word had been misinterpreted. Data was analysed from its raw state to final report by taking the following steps:

- Collection: raw data was collected and secured.
- Perusal: the researcher went through the data several times.
- Classification: the data was identified, described and grouped into categories (as suggested by Mouton (2001:108)).
- Final Report: the data was integrated and irrelevant data was eliminated, then relevant data was integrated into the final report.
- The study was conducted using pre-existing data, documents and records that were publicly available.

The researcher followed Tesch's (1990:142–145) suggested eight-step data-analysis process. As such, the researcher:

- Obtained a sense of the whole;
- Picked one document from an interview, read through it carefully and identified its meaning;
- Made lists of the topics that emerged and clustered similar topics together;
- Coded the same information to see whether new categories and codes emerged;
- Found descriptive words and categories by grouping them together;
- Made a final decision and alphabetised these codes;

- Assembled the data material belonging to each category in one place and performed a preliminary analysis;
- Recorded existing data.

### **1.9.1 Data Reduction**

The researcher narrowed down the amount of information collected by using the research questions as a guide. The researcher selected the information according to what was relevant to the study and what was not. The researcher did not use everything that participants answered because some answers were not seen as relevant. The researcher went through each question with all the participants' responses and summed up how many provided the same information. Irrelevant information was eliminated in this way. Berg (2004:39) states that "the data reduction and transformation process occurs throughout the span of the research". At this stage the responses from the recorder and the notes taken by the researcher were compared as Braun and Clark (2013:204) state that in qualitative research, it is not essential to have all the data collected to start the analysis. The authors further explain that there is no separation between data collection and analysis and the researcher began a preliminary analysis process after each interview.

### **1.9.2 Synthesis and Generalisation**

Here the researcher combined all separate data to formulate one complete set of data for the study from which valid conclusions could be drawn.

### **1.9.3 Conclusion and Verification**

After the data-reduction and synthesis and generalisation process had been followed, the analysis began to gain direction and the researcher was able to provide conclusions. Verification was carried out later when the researcher retraced the steps used to reach the conclusions. The researcher noted all the procedures followed to arrive at the conclusions so that should there be a need for replication of the study they could be produced as proof. Berg (2004:40) states that verification consists of confirming conclusions to ensure that they are real and not just wishful thinking on the part of the researcher.

The researcher took steps to ensure the trustworthiness of the study results as outlined below.

## **1.10 METHODS TO ENSURE TRUSTWORTHINESS**

Du Plooy-Cilliers, Davis and Bezuidenhout (2014:254) point out that trustworthiness is the comprehensive term that is used for validity and reliability in qualitative studies. Dantzker and Hunter (2012:188) and Kumar (2014:213) state that validity is a term describing whether the measure used accurately represents the concept it is meant to measure. Creswell (2013:249) contends that validation in qualitative research is an attempt to assess the accuracy of the findings as best described by the researcher and the participants. The researcher went through each participant's responses several times in order to make sure that only what the participants said and meant was noted. To ensure authenticity of the study, the researcher recorded the interview using the voice recorder and at the same time took down notes in a book so that later after the interview, when the researcher was alone, she could play the audio again to verify that no word from the participant had been missed or misinterpreted. As reliability translates as dependability and credibility is used alongside validity in qualitative research, the study was also assessed for these concepts. It was also assessed for transferability and conformability, as elaborated on below.

### **1.10.1 Credibility**

According to Creswell (2014:201), credibility is one of the strengths of qualitative research and is based on determining whether the findings of a research study are accurate from the standpoint of the research, participants or the reader. Leedy and Ormrod (2013:104) contend that terms that deal with validity and credibility assist qualitative research to flow easily. Terms dealing with validity and credibility refers to believability, honesty, it produces results that correspond to real characteristics and probability. The researcher used multiple methods of data collection derived from the interviews and literature review coupled with the researcher's experience to increase the credibility of the study. The researcher also ensured that the data collected addressed the research problem to ensure credibility.

### **1.10.2 Transferability**

According to Du Plooy-Cilliers *et al.* (2014:258), transferability is the ability of the findings to be applied to the same situation and deliver the same results. Gray (2014:182–183) points out that “transferability/generalisability in qualitative research is equivalent to external validity”. Schurink, Fouche and De Vos (in De Vos, Strydom,



Schulze & Patel, 2011:420) state that the researcher must question whether the findings that the research produced can be transferred from one specific situation to another. The researcher also collected data from experts who explained challenges specific to particular locations. Should a study be conducted in a specific area with the same challenges, this should result in the same findings.

### **1.10.3 Dependability**

According to Trochim and Donnelley in Kumar (2011:185), dependability is concerned with whether one would obtain the same results if one observed the same thing twice. Du Plooy-Cilliers *et al.* (2014:259) state that “dependability” refers to the quality of the process of integration that took place between data collection, data analysis and the theory or conclusions generated from the data. Punch (2016:252) contends that in qualitative research, the concept of reliability translates as dependability. The researcher ensured dependability by using interviews as a tool to gather information from experts in line with the study topic. An interview schedule was derived before the commencement of the interviews, the questions on the interview schedule addressed the research questions and before the interview participants signed an informed consent form to show their willingness to participate in the study. The study was also reviewed by the researcher’s academic supervisor at each stage of the process to ensure dependability.

### **1.10.4 Conformability**

Lichtman (2014:387) contends that conformability is the degree to which results can be confirmed or corroborated by others. Glensne (2011:49), Liamputtong (2013:28–34) and Creswell (2014:201–202) point out that to achieve conformability the researcher should employ the technique of member checking. The member checking technique is used to assist in improving the accuracy of the study. Deploy and Gitlin (2016:8) state that conformability means that the researcher clearly and logically identifies the evidence and strategies used in the study so that others can reasonably follow the path of analysis and arrive at similar outcomes and conclusions. For the current study, the researcher kept all the records of all the literature consulted and all the interviews conducted in order to prove that findings were not derived from imagination but linked to data collected.

The sources and literature used are still available as originals and nothing has been altered, reduced or added.

### **1.11 ETHICAL CONSIDERATIONS**

Walliman (2018:43) argues that working with human participants in research always raises ethical issues about how they are treated and further states that apart from human subjects, there is also the question of honesty in the way data is collected, analysed and interpreted. According to Deploy and Gitlin (2016:24), ethics usually applies to rules for the correct behaviour during the thinking and action process of research and particularly to the protection of human subjects. The data collected and the explanation offered generally relate to the data and the analysis used in the research. Brynard and Hanekom (2006:85) indicate that research ethics relate to what is right and wrong when conducting research. The researcher studied the UNISA policy on research ethics (UNISA, 2016:1) and complied with the aims as follows:

- Ensure that an ethical and scientific intellectual culture prevails among the University's, employees and students and is followed in research practice.
- The rights and interests of human participants, institutions, communities, animals and the environment are protected for in case where the information that has been gathered has the potential to invade the privacy and dignity of the participants and third parties, and where participants and third parties are vulnerable owing to their growth, disability, gender, age, poverty, disease, ignorance or powerless.
- All research activities are conducted with scholarly integrity, excellence, social responsibility and ethical behaviour.
- The ethical and scientific soundness of research is not compromised.

SAPS policy on research ethics was also studied (SAPS, 2016-2020) with the aims as follows:

- Ensuring institutionalization and maintenance of research in the SAPS.
- Commission of high quality, independent, and relevant evidence-based research.
- Directing and integrating research by, for and about the SAPS.
- Supporting knowledge exchange between researchers and practitioners.

- Improving the research evidence-base for policing policy and practice.
- Expanding the research capacity in the SAPS with other research fraternities.

In this study, the researcher considered the Singapore Statement on Research Integrity (World Conference on Research Integrity, 2010) and considered its four principles of honesty, accountability, professionalism and stewardship. Also considered in this research were the Belmont principles concerning research ethics, which rest on the following three fundamentals (US Department of Health and Human Services, 1978):

- Respect for persons
- Beneficence
- Justice

The researcher obtained ethical clearance for this study from the University of South Africa (Unisa) College of Law, with reference number ST 143 of 2019. She also asked permission from the Unisa Ethical Committee to conduct interviews and received permission to do this. Leedy and Ormrod (2005:101) explain that most ethical codes in research fall into four categories. These are briefly discussed below and complemented with an explanation of how they were considered by the researcher. The researcher asked permission from the SAPS and Unisa to conduct the interviews and permission was granted by both.

#### **1.11.1 Protection from Harm**

Gardner *et al.* (2012:257) state that the chances of actually harming someone in the process of conducting interview research are fairly remote. The researcher's study made sure that it placed participants in no harm at all, both criminal and civil liability. Anyone who participated in the study was securely safe and not exposed to any harm.

#### **1.11.2 Informed Consent**

Harding (2013:25) contends that participants are placed in an unfamiliar position when taking part in research, so the consequences should be explained to them as clearly as possible. Flick (2018:140) explains that the term "informed consent" implies that the participants know and understand the risks and benefits of participation in a particular research study. The researcher explained which questions she was going to ask before the interviews so that the participants did not feel pressurised. The researcher designed an informed consent form which she explained to the participants and they

all acknowledged that they had read it and agreed to give their informed consent by signing it before the commencement of their interviews.

### **1.11.3 Right to Privacy**

Mertens (2009:221) states that ensuring privacy in a research study means that the privacy of individuals is protected in that the data they provide is handled and reported in such a way that it cannot be associated with them personally. The researcher made sure that no unique information was attached to the data provided by participants so that no one could track the data to the person who had provided it.

### **1.11.4 Honesty**

Honesty applies to all aspects of the study as the Singapore Statement on Research Integrity states (World Conference on Research Integrity, 2010). The researcher acknowledged all sources consulted in the reference list of this research report and the sources are readily available if needed. The researcher would like to give assurance that there is no plagiarism or manipulation of sources in the study. Turnitin software was also used to ensure that sources were not accidentally omitted from the text. All facts used in this study were honestly reported and sources used were acknowledged.

## **1.12 CHAPTER LAYOUT**

The research report is divided into the following chapters.

Chapter 1: General Orientation

In this chapter the research methodology of the research project is addressed.

Chapter 2: Forensic Investigation and Criminal Investigation

The chapter discusses the concepts “forensic investigation” and “criminal investigation”. The purpose of investigation, the definition of criminal investigation, the difference between forensic investigation and criminal investigation, identification, individualisation, the difference between identification and individualisation, and housebreaking are all dealt with.

Chapter 3: The Importance of Fingerprints in the Investigation of Housebreaking

This chapter focuses on the meaning of fingerprints, the types of fingerprints, the categories of fingerprints, classification of fingerprints, principles of fingerprints, acts pertaining to the taking of fingerprints, duties of the SAPS regarding taking fingerprints, duties of the LCRC, basic methods of taking fingerprints and the importance of fingerprints particularly in the investigation of housebreaking.

#### Chapter 4: Research Findings and Recommendations

The chapter provides the conclusions and makes recommendations based on the findings of the study.

## **CHAPTER TWO: FORENSIC INVESTIGATION AND CRIMINAL INVESTIGATION**

### **2.1 INTRODUCTION**

This chapter provides an overview of forensic investigation and its key tenets that are important for forensic investigators and detectives. Forensic investigation can be described as a tool that can be used while conducting criminal investigation. The chapter begins by exploring the meaning of forensic investigation, criminal investigation, and the difference between forensic and criminal investigation so as to provide a broad understanding of forensic investigation. This chapter then looks at the processes of identification and individualisation of evidence as part of a forensic investigation, particularly in the context of the crime of housebreaking. All members of Samples A and B were asked the same questions related to the concepts discussed in the chapter. Their answers are summarised as themes and the interview data is interwoven in the discussion of the concepts throughout the chapter.

### **2.2 FORENSIC INVESTIGATION**

The American academy of Forensic Science defines forensic science as “the act of utilizing science to establish facts or evidence which is to be used for crime-based trials or proceedings”, whilst Pollex (2001:93) cites that “Forensic investigation is aimed at instituting court proceedings”. Beginning with the term “forensic”, Newton (2008:3) points out that the term refers to the use of scientific knowledge and techniques in legal issues. Siegel (2011:1) explains that the root of the term “forensic” comes from the Latin word *forum*, which means “a place for a public discussion” and suggests that a good definition of forensic science is the method and techniques of science applied to matters involving the public. Today forensic science has come to mean the application of methods and techniques of science to matters involving court proceedings.

Forensic investigation can be considered “the application of science to civil and criminal law coupled with the fields of policing and forensic science” (Becker & Dutelle, 2019:7). Van Rooyen (2011:11) points out that the field of forensic investigation is advancing in South Africa as well as globally, with both the challenges and the forensic tools for dealing with them becoming more sophisticated. Forensic investigation

involves the application of science to matters of law within the working environment, such as where a gun that was used to commit a crime is sent to a forensic science laboratory for further analysis.

In response to the question “What is forensic investigation?” the fingerprint experts from Sample A answered as follows:

- It is the in-depth searching for the truth normally by skilful people using scientific knowledge (eight participants)
- It is the application of science to matters relating to law (five participants)
- It has to do with investigating criminal investigation and civil (one participant)
- It involves crimes that are not associated with cybercrimes or computer crimes (one participant)

From the above responses from experts, it can be noted that all participants understood the exact meaning of forensic investigation as their answers agreed with what the literature states about forensic investigation.

In response to the same question, the detective commanders from Sample B answered as follows:

- It is the application of scientific methods in the investigation of crime (eight participants)
- It is the gathering and analysis of all crime-related physical evidence in order to reach a conclusion about suspects (one participant)
- It is a specialised investigation into a subject, whether civil or criminal, that includes forensic evidence and normal evidence (one participant)

Of the 15 members of this sample, from their responses, it is apparent that they all understand what forensic investigation is.

From the responses of all the participants from Sample A and Sample B, it can be accepted that all participants did understand the meaning of forensic investigation. With their responses fully agreeing with the definition of forensic investigation as the application of science to civil and criminal law coupled with the fields of policing and forensic science (see Becker & Dutelle, 2019:7).

## 2.3 CRIMINAL INVESTIGATION

According to Becker and Dutelle (2019:3), the word “criminal” derives from “crime”, which means an act or the committing of an act that is punishable by a public law and that makes the offender liable to punishment by that law. The word “investigation” means to make a systematic examination or to conduct an official inquiry. According to Palmiotti (2012:4), criminal investigation is a process of thinking and reasoning. This author further states that in a criminal investigation “the investigators’ objective is to gather facts about a criminal situation and the objective is accompanied by collecting all accurate information pertaining to the crime”. Criminal investigation can therefore be considered the process of collecting evidence legally regarding a crime that has been or is being committed (Brown, 2001:3).

Hess and Orthmann (2013:8) point out that criminal investigation involves the actions of discovering, collecting, preparing, identifying and presenting evidence so that investigators can establish what took place and the person or people responsible for this. Brown (2001:3) agrees with Becker and Dutelle (2019:3) that criminal investigation is a systematic search for the truth.

From the above definitions and in the researcher’s experience, criminal investigation can be seen as a lawful search for the people and things that are useful in reconstructing the circumstances surrounding a crime.

In response to the question “What is criminal investigation?” the participants from Sample A answered as follows:

- It is the investigation of all types of unlawful acts by gathering information and evidence, which is guided by the Criminal Procedure Act (twelve participants)
- It is the investigation of questionable activities (one participant)
- Criminal investigation is carried out by investigating the crime scene (one participant)
- It involves criminal and civil matters (one participant)

Of the above responses, all participant’s responses reveal the understanding of what criminal investigation entails because their responses are supported by the literature.

In response to the same question, the participants from Sample B answered as follows:



- It is a systematic search for the truth, with the primary purpose of finding a positive solution to the crime with the help of objective and subjective clues (nine participants)
- It is the process of collecting information about a crime (one participant)

Both samples do have a clear understanding of criminal investigation. Criminal investigation is a process of discovering, collecting, preparing, identifying and presenting evidence to determine what happened and, who are the responsible participants (Hess & Orthmann, 2013:8). From the participants' answers one could add that criminal investigation is an intense step-by-step search for the exact truth.

## **2.4 THE DIFFERENCE BETWEEN FORENSIC AND CRIMINAL INVESTIGATION**

From the literature, it is clear that there is an overlap between the concepts of forensic investigation and criminal investigation. Criminal investigation is described by Bennet and Hess (2004:4) as “a patient, step-by-step inquiry or observation, a careful examination, a recording of evidence or a legal inquiry”. These authors list the goals of a criminal investigation as being to determine whether a crime has been committed, to arrest the suspect, to recover stolen property and to present the best possible case to a court of law.

According to Becker and Dutelle (2019:7), forensic investigation is the use of forensic science in the process of investigating a criminal event. Jackson and Jackson (2004:1) state that forensic science plays a crucial role in most criminal prosecutions, particularly serious ones. Carrier and Spafford (2004:3) state that forensic investigation is a process that applies science and technology to develop and test theories that could be used in a court of law to answer questions about what has occurred.

In response to the question “What is the difference between forensic investigation and criminal investigation?” the members of Sample A answered as follows:

- Forensic investigation deals with scientific techniques whereas criminal investigation deals with the gathering of information through people and mute objects (fourteen participants)

- Forensic investigation is the process or application of science to criminal and civil law, collecting of physical evidence in a scientific manner, while criminal investigation is described as the study of facts that involves a full and complete criminal investigation (one participant)

All the participants of Sample A showed a clear understanding of the difference between forensic investigation and criminal investigation, with their answers corresponding to the literature consulted. Criminal investigation is described by Bennet and Hess (2004:4) as “a patient, step-by-step inquiry or observation, a careful examination, a recording of evidence or a legal inquiry” whereas according to Becker and Dutelle (2019:7), forensic investigation is the use of forensic science in the process of investigating a criminal event.

In response to the above question, the Sample B detectives answered as follows:

- In forensic investigation, scientific methods are applied to prove the facts or case; the proof of facts is indisputable. Criminal investigation involves physical or oral evidence and can prove the case without application of any scientific methods. In criminal investigation some evidence is disputable (nine participants)
- Forensic investigation deals with civil aspects and criminal investigation only deals with criminal aspects (one participant)

The response of one of the participants from Sample B is not correct because forensic investigation deals with both criminal and civil matters.

The researcher established that all participants from Sample A clearly understood the difference between forensic investigation and criminal investigation because all their responses are supported by the literature reviewed. As mentioned above, one response from the Sample B detectives indicated that the difference between forensic investigation and criminal investigation is that forensic investigation deals with civil matters while criminal investigation concerns criminal matters. This definition is incorrect, and the participant clearly did not understand the difference between these concepts.

## **2.5 IDENTIFICATION, THE PURPOSE OF IDENTIFICATION AND INDIVIDUALISATION**

Identification of evidence is considered important for the current study because fingerprints need to be identified first and then meet the requirements of the chain of custody to be accepted by a court of law. Ogle and Plotkin (2018:395) explain that “identification is the process of identifying the type or class of an object; sometimes used as a synonym for individualisation”. Identification is the process of making a close connection between one person or thing and others.

According to the SAPS Module 1–10 (2008:335):

Identification starts when the facts relating to the crime are being evaluated in terms of the required elements of crime to determine its unlawfulness and further that identity is based on the theory that everything in the universe is unique in the sense that it has distinctive individual and class characteristics. An object can be identical only with itself. This means that we not only identify an object for what it is, but compare it with other samples of known origin to determine individuality.

Clark, Salvage and Tilstone (2006:189) state that everything that a forensic scientist does can be categorised as comparison or identification, with comparisons based on testing that results in identification. The most common instances of identity testing are associated with personal identity and those used to identify the nature of a material. Hawthorne (2009:97), for example, describes fingerprint identification as “the process of determining that the same finger made two or more fingerprint impressions based on the friction ridge details of both impressions”. Osterburg and Ward (2014:34) indicate that identification is an important process after a crime has been committed, as it is the process that is used to give an entity a classification that is pre-defined, limited or restricted. In line with the above definitions and in the researcher’s experience, identification can be summarised as the process of showing, proving or recognising who or what something is.

An example of the process of identification can be given as when investigators are called to a scene of crime. The first thing that investigators do on their arrival at the crime scene is to inspect the scene intensely with the purpose of identifying evidence and data regarding what transpired. Everything that is found on the scene must be

identified, including blood, clothes and fingerprints. Everything that is found must be seized and packed in accordance with specified requirements and sent to the relevant units for classification and analysis. Newburn, Williamson and Wright (2007:309) point out that “identification is used if a person’s identity is determined by comparing his or her fingerprints (test sample) with the reference (fingerprints) samples of all people in the database”.

In response to the question “What is identification?” the participants from Sample A answered as follows:

- It is when you identify a person or a suspect (two participants)
- It is the classification of objects involved in a crime (one participant)
- It is a process where you compare certain characteristics from a known object to those which are found on a crime scene that are unknown (twelve participants)

In response to the same question, the participants from Sample B answered as follows:

- It is identifying possible evidence in order to trace something or somebody: it can be fingerprints, handwriting, tracks, perpetrators, photos. It is the system of identifying what is evidence and what is not (twelve participants)
- It is a connection that you make to an individual (one participant)
- It is when you analyse and compare something and place it next to its original form or put to it the same characteristics (two participants)

From the responses of all the participants from Sample A (fingerprint experts) it can be accepted that they were all familiar with the concept of identification, because their everyday duties involved identifying fingerprints. Their responses concur with Newburn *et al.* (2007:309) that identification is used if a person’s identity is determined by comparing his or her fingerprints (test sample) with the reference (fingerprints) samples of all people in a database. One response from the Sample B detectives’ responses does not fall within the generally accepted definition of the concept (“It is a connection that you made to an individual”). This definition is not correct because identification comes before making an individualisation that is before connecting the evidence with the suspect.

### **2.5.1 The Purpose of Identification**

Saferstein (2010:104) states that the purpose of identification is to find out the physical or chemical identity of a substance with the most certainty that current analytical techniques will permit. The process of identification first requires applying testing procedures that give characteristic results for specific standard materials. According to Clark *et al.* (2006:190), everything that experts do can be categorised as comparison or identification. Comparisons are increasingly being based on testing that results in identification, with conclusions based on data that shows that items have (or do not have) the same identity.

According to Van Rooyen (2007:100), views concerning the concept of identification differ across the various sciences, but generally identification is used to place objects in specific groups and in specific classes of objects.

In line with the above discussion, it is clear that the purpose of identification is to pinpoint an object as belonging to a specific class of object. From her experience, the researcher believes that the purpose of identification in a forensic investigation is to connect the identified evidence or objects with any person who was in the vicinity of the scene.

### **2.5.2 Individualisation**

Individualisation is considered important to the current study in the sense that the fingerprints found at a scene of crime need to be collected, analysed and lastly be given ownership (individualised) for them to be useful sources of evidence. Ogle and Plotkin (2018:395) write that “individualisation is the identification of the individual source of an evidence item (example the identification of the finger that formed a latent impression, the firearm that fired a particular bullet, the individual who executed a particular signature)”. The SAPS Module 1–10 (2008:336) states that individualisation is based on comparison. It involves comparing the identified disputed object connected with the crime and objects with other samples of known origin to determine individuality.

In order to individualise, investigators must make various identifications before being in a position to individualise. Individuality is the quality that makes something different from others (Van Rooyen, 2008:105). According to Clark *et al.* (2006:190),

Evidence that can be associated with a common source has a very high probability to be considered to have individual characteristics, examples of such association are matching ridge characteristics of two fingerprints, matching random marking on bullets and tool marks, matching irregular or random striation markings on bullets.

Horsewell (2004:6) indicates that individuality or uniqueness is made up of those qualities that make one thing different from all others that are similar to it.

Individualisation is a process that starts with identification, continues to classification and leads, if possible, to assigning a unique source to a given piece of evidence (Dintwe & Zinn, 2015:64). The above authors agree on the element of comparison from the obtained evidence in order to individualise. The researcher supports these views and from her own experience confirms that individualisation means that the evidence found on the scene can positively link the suspect with the scene even after a lengthy period. The researcher has seen this several times in her working environment, where suspects were arrested even after five or more years with the help of fingerprint individualisation.

In response to the question “What is individualisation?” the participants from Sample A answered as follows:

- In individualisation we look at the flow or pattern of a print, but it is all about taking specific prints out of a number of different prints (eleven participants)
- It is the finding of the origin or ownership of the fingerprints (three participants)
- It involves the identification and comparison of a fingerprint found at the scene in order to link it to a specific person (one participant)

In response to the same question, the members of Sample B answered as follows:

- Individualisation comes just after identification. Individualisation is to single out a particular sample, proving that it is unique even amongst the same characteristics (nine participants)
- It is a process used to link a particular object with a place or object, a crime scene or evidence found at a crime scene (one participant)

All the participants from the samples defined individualisation according to their field and their answers are deemed correct and concur with the definition of

individualisation in terms of the literature. Individualisation can be thought of as the identification of the individual source of an evidence item (such as the identification of the finger that formed a latent impression, the firearm that fired a particular bullet, or the individual who executed a particular signature) (see Ogle & Plotkin, 2018:395).

## **2.6 THE DIFFERENCE BETWEEN IDENTIFICATION AND INDIVIDUALISATION**

It is important to discuss the difference between the concepts of identification and individualisation because they describe the two processes that need to be followed for fingerprints to be admissible in a court of law. Both detectives and experts have to understand and differentiate the two concepts correctly. According to Van Rooyen (2007:101), individualisation is only possible if it is followed by a series of identifications. According to Siegel (2011:19), “identification is always made in the process of analysis”.

This author further states that in those cases where an object from a known source is to be linked to a sample of evidence, such as a bullet test-fired from a weapon and a bullet taken from the victim, a comparison test will be performed and analysed at the end. Van Rooyen (2007:100) concludes that identification can thus be seen as a classification scheme in which objects with the same characteristics are placed in one category and the category is given a name. According to the SAPS Module (2008:336), the cumulative nature of identification is needed to individualise the guilty or the innocent. This makes identification a requirement for individualisation.

Saferstein (2011:86) elaborates that “both identification and individualisation are means of comparison in fingerprint science”. According to Zinn and Dintwe (2015:65):

Identification is merely concerned with identification of something or somebody belonging to a specific category whilst individualisation deals with comparison of the disputed object found at the crime scene with an object of known origin obtained from the suspected person.

The authors state further that there are five requirements that will ensure that evidence collected at the scene do link the suspected person positive with the crime scene, namely: uniqueness, individuality, invariability, reproducibility and classification.

The researcher agrees with the above authors that individualisation is only possible if it is preceded by a series of identifications. From her experience, the researcher can state that the difference between the two is that an object or evidence must first be identified and later be given ownership. This can be illustrated in a housebreaking case: after a housebreaking is reported a fingerprints expert is summoned to identify the fingerprints where possible and lift them. These are stored in the database of the Criminal Record Centre (CRC).

When the person who left them is arrested and charged on the system, it will indicate that the person that is charged has committed a crime before and his current fingerprints will be compared with the previous prints in the database to guarantee the individualisation. This means that the fingerprints will first be identified from the crime scene and after that they must be individualised. The researcher fully agrees with the statement that individualisation is possible if it is preceded by a series of identifications.

In response to the question “What is the difference between identification and individualisation?” the members of Sample A gave the following answers:

- Identification is about class evidence while individualisation is about unique characteristics (fourteen participants)
- With identification you compare similar prints which are found and when you individualise you have to compare the ridge features and get seven points then you know that they are of a specific person (one participant)

In response to the same question, the participants from Sample B answered as follows:

- Identification is when you identify the evidence at a crime scene and individualisation is when the evidence is linked to a specific individual (nine participants)
- Identification involves the identification of the person’s involvement in the commission of a crime whereas individualisation involves or concerns describing the unlawful class of each person involved in the commission of crime (one participant)

The responses from both samples differ according to their different areas of operation, but all responses are deemed correct as they relate to Van Rooyen’s (2007:101)



suggestion that individualisation is only possible if it is preceded by a series of identifications.

## **2.7 SUMMARY**

The literature reviewed for this chapter suggests that forensic investigation and criminal investigation work hand in hand and are both regarded as techniques for investigation. In order for investigators to win cases of housebreakings in court they must know that fingerprints must be identified first, then analysed and lastly individualised. The most important evidence found at the scene of crime is fingerprints, because they are undisputable and they give better evidence of personal identification. They are undisputable because everyone has unique fingerprints not identical to anyone else. The goals and objectives of criminal investigation are to search for the truth using objective and subjective clues to prove a fact. The next chapter looks at the meaning of fingerprints, their origin and the advantages and importance of fingerprints. The cause of fingerprint mishandling is also discussed.

## **CHAPTER THREE: THE IMPORTANCE OF FINGERPRINTS IN THE INVESTIGATION OF HOUSEBREAKING**

### **3.1 INTRODUCTION**

One of the most important purposes of physical evidence in the investigation of a housebreaking case is to establish the identity of the suspect. The identification is mostly possible through a variety of methods, with fingerprinting considered the most common, reliable and admissible in court. For these reasons, fingerprints are regarded as conclusive evidence. This chapter considers the background of the use of fingerprints and the legislative framework that guides their use. It also discusses the meaning of fingerprints, the classification and types of fingerprints, and certain principles associated with fingerprints along with how fingerprints are taken. Case law is used to indicate the importance and advantages of fingerprints in the investigation of housebreaking and housebreaking is also discussed as the crime considered in the current study.

### **3.2 THE ORIGIN AND IMPORTANCE OF FINGERPRINTS**

The first systematic attempt at personal identification was devised and introduced by a French police expert named Alphonse Bertillon in 1883.

Saferstein (2011:534) states that Bertillon's system

relied on a detailed description of the subject, combined with full-length and profile photographs and a system of precise body measurements known as anthropometry and the use of anthropometry as a method of identification rested on the premise that the dimensions of the human bone system remained fixed from the age of 20 until death.

The modern study and understanding of fingerprints as a means of identification began before this, as early as 1684 (Dutelle, 2011:157). Thompson (2019:3) states that the probability of fingerprints existing was discovered by Faulds and other students, who scraped off their fingertip ridges and discovered that they grew back in exactly the same pattern and stayed the same way. These students suggested that fingerprints could be used by police to reach conclusions about the identity of people.

Rani and Sharma (2014:58) find that fingerprints are one of the most mature and researched fields of biometric authentication as they continue with age and cannot be easily changed, unlike face and voice patterns. They consider fingerprints to be incomparable “as they are the most sure and unchanging form of all other forms of signature”.

Nath (2010:1) and Van den Berg (2008:1) state that the science of fingerprint identification is noticeable among all other forensic sciences for the following reasons:

- It has allowed governments across the world to identify criminals accurately over the last 100 or more years. Among billions of human and computer comparisons, no two fingerprints have ever been found to be the same.
- It is the most commonly used forensic evidence worldwide, with fingerprint examination cases outnumbering all other forensic examination casework combined in most areas.
- It is expanding as the main method of personal identification, with large numbers of fingerprints added to databases daily.

The importance of fingerprints is illustrated in the case of *S v Mbatha* (170/2018), where the suspect was charged with housebreaking with intent to steal and theft when he broke into a house by removing louvres and stole a TV, sewing machine, two guitars and CD players. He was arrested by local Community Policing Forum (CPF) members in a field, having left the goods with his co-accused. The evidence brought before court was the video footage, the testimony of the CPF members who arrested the suspect and his fingerprints obtained from the crime scene.

Regarding the video footage evidence, his defence argued that it was not convincing that the person on the video footage resembled the suspect owing to the poor image of the pictures. Regarding the testimony given by the CPF members who had arrested him, the suspect also argued that he had been arrested in the field while coming back from the nearby tavern to his place of residence and that he had nothing in his possession to prove that he had broken into the said house. But in terms of the fingerprint evidence, the suspect mentioned that although he had worked in various houses, he had never been employed at the address mentioned in the charges and he did not know how his fingerprints had ended up at the address.

The defence succeeded on the other evidence brought before the court but not on the fingerprint evidence, because the criminal standard of proof regarding fingerprints is considered proof beyond reasonable doubt. The court articulated its meaning in a number of different ways and cited *S v Sithole* 1999(1) SACR 585(W), where:

Nugent J and Schwartzman J stated that there is only one test in a criminal case, and that is whether the evidence establishes the guilt of the accused beyond a reasonable doubt. The corollary is that the accused is entitled to be acquitted if there is a reasonable possibility that an innocent explanation which he has proffered might be true....

In this case the prosecution succeeded on the basis of the fingerprint evidence because the accused failed to give a reasonable justification of the existence of his fingerprints at the scene of crime. Evidence that fingerprints were found at a crime scene or on a particular object is often of significant value in linking the accused person with the commission of a crime.

### **3.3 HOUSEBREAKING**

#### **3.3.1 Introduction**

The crime of housebreaking is considered important as the focus of this study, with the study exploring whether successful investigation of housebreaking cases is influenced by the accurate lifting of fingerprints. From a forensic perspective, the crime of housebreaking is linked with fingerprints as investigation usually includes the involvement of fingerprint experts. For this reason, fingerprint experts and detectives working directly with the crime were chosen as participants of the study.

#### **3.3.2 The Meaning of Housebreaking**

Woods (2013:588) defines housebreaking as “the unlawful entering of the building of another with intent to commit a crime therein”. Guskos, Lasley and Seymour (2014:378) add to the definition the notion of the breaking or opening of the building of another without the owner’s permission with the intent to commit a crime. According to Osterburg and Ward (2014:486), the Model Penal Code of the American Law Institute defines housebreaking as follows:

A person is guilty of housebreaking if he enters a building or occupied structure, or separately secured or occupied portion thereof, with the

purpose to commit a crime therein, unless the premises are at the time open to the public or the actor is licensed or privileged to enter. It is an affirmative defence to prosecution for burglary that the building or structure was abandoned.

Snyman, (2017:52–54) defines housebreaking as the unlawful entering of a structure to commit a felony (serious crime) or theft and states that although housebreaking is generally considered a property crime, it is important for the investigator to recognise that a theft need not be committed to establish a housebreaking charge.

O'Hara and O'Hara (2003:443) state that the definition of housebreaking differs according to the category of housebreaking and in some jurisdictions degrees of housebreaking are defined in the law to take care of the distinction between housebreaking of a dwelling house at night, which is considered a serious crime, and housebreaking during the day. The authors further explain housebreaking as the breaking and entering in the night-time of the dwelling house of another, with the intent to commit a crime inside, while burglary is the unlawful entering of the building of another with the intent to commit a crime inside. To prove the offence of housebreaking, the following elements must be established:

- Breaking and entering
- Dwelling house of another
- Night-time
- Intent to commit a crime within the house

From her experience, the researcher differs from O'Hara and O'Hara (2003) on night-time as an element that must be present for an offence to be defined as a housebreaking. In the researcher's experience as an investigator, housebreakings can take place at any time of the day or night.

The question was only posed to Sample B because they fully investigate the crime and only ten participants answered. In response to the question "What is housebreaking?" the members of Sample B gave the following answers:

- It is the unlawful and intentional breaking into and entering of a building or structure with the intention of committing a crime (eight participants)
- It is the unlawful and intentional breaking of a structure or items used for human habitation and gaining entrance (one participant)

- It is the unlawful and intentional entering of any premises by removing or moving an obstacle or structure in order to gain entry to the premises and to commit a crime defined by the action, for example housebreaking and theft, housebreaking and murder, housebreaking and rape and so forth (one participant)

From the above responses it is clear that the detectives did not understand the whole meaning of housebreaking because they all omitted certain important aspects of housebreaking from their definitions. The first eight participants omitted that the building or structure must belong to someone; the second response listed above missed that there must be an intention to steal; and the third response listed mentioned “any premises”, although breaking into a business property does not amount to housebreaking.

### **3.4 THE MEANING OF FINGERPRINTS**

Ogle and Plotkin (2018:394) define fingerprints as “a class of physical evidence consisting of impressions left by the friction ridges of the fingers, palms, or soles of the feet, sometimes referred to as friction ridge evidence”. Fisher, Tilstone and Woytowicz (2009:57) contend that fingerprints can be regarded as a mark of evidence; the main difference between fingerprints and other marks such as tool marks, tyre marks or shoe marks is that the fingerprint marks are created in skin and therefore offer a means of personal identification.

Osterburg and Ward (2014:44) indicate that fingerprints are the friction ridges on the hands (fingers and palms) that make it easy to grip an object and provide a sense of touch. They further highlight that “the prints of either the hands or feet can be a means of identifying an individual, but only the fingers are used routinely”. Siegel (2011:52) states that a fingerprint consists of the imprint of the friction ridge skin of the end joint of each finger, taken from one cuticle to the next.

Saferstein (2011:539) points out that “fingerprints are defined as the reproduction of the ridge area of the first or nail joint of the finger in any manner whatever and it also includes the ridge area of the remaining joint of the finger”. According to Baxter (2015:153), fingerprints are the actual ridges formed in the dermis layer of the skin and do not change throughout an individual’s lifetime. As the individual ages from birth to adulthood, the only change in the fingerprint patterns is the size of the pattern.

Dutelle (2011:160) contends that the term “fingerprints” actually refers to oil, perspiration and other residue left behind by the friction ridge skin after it makes contact with something. For Fisher and Fisher (2012:103),

the term fingerprints include all types of prints of friction ridge skin and further that prints of the palms or soles of the foot that are made under the same conditions as fingerprints are preserved in the same manner because it is difficult to decide whether a print has been left by a finger, palm, or the sole of a foot and for this reason, in ordinary speech, the term fingerprint has come to also include prints of the palm or feet.

Every human being carries with them from birth to death certain physical marks, such as finger, hand and sole prints, that do not change their character, and by which the person can always be identified (Dutelle, 2011:157).

In her working environment, the researcher has seen fingerprints taken from suspects and has seen them being lifted from crime scenes by experts. The researcher has seen suspects arrested many years after a case has been reported because, once fingerprints are lifted, they don't expire. The undisputable nature of fingerprints means that once fingerprints experts produce a proof of matching fingerprints, this is usually considered definitive evidence.

In response to the question “What is the meaning of fingerprints?” the participants from Sample A answered as follows:

- They are ridge features that include the nail part of the finger, palm print and the soles of the feet (five participants)
- It is the reproduction of the ridge surface from the first nail of a finger and includes palm prints (ten participants)

In response to the same question, the members of Sample B answered as follows:

- Fingerprints are patterns of human fingers, which is unique among each other (six participants)
- It is an impression or mark made on a surface by a person's fingertips (four participants)

From the Sample A participants' responses, it can be accepted that they all understood the meaning of fingerprints as supported by the literature. The response that indicates

that a fingerprint is a reproduction of a ridge surface confirms Dutelle's (2011:160) statement that fingerprints actually refer to oil, perspiration and other residue left behind by the friction ridge skin after it has touched something.

The participants of Sample B did not give a clear statement of the meaning of fingerprints. The first six participants stated that fingerprints are patterns of human fingers, which indicates a misunderstanding of the term "fingerprints". Four participants stated that it is an impression or mark made on the surface by a person's fingertips, which shows limited understanding as fingerprints are not only made from the ridges at the fingertips. It can be clearly stated that all the participants of Sample B did not fully understand the meaning of fingerprints, which may be due to the nature of their work as they only summon the experts to deal with fingerprints rather than dealing with fingerprints themselves.

### **3.5 TYPES OF FINGERPRINTS**

During housebreaking investigations, where possible fingerprints are lifted from the scene for later comparison, it is very important to know the types of fingerprints so that the fingerprint expert can differentiate between them and classify them during individualisation.

Braswell, Fish, Miller and Wallace (2014:89) write that there are four common types of fingerprints:

- Visible fingerprints, which are prints made when the friction ridges are coated with a substance that is transferred to another surface such as fingerprint powder
- Plastic fingerprints, which are fingerprints left in a soft material, such as soap or wax
- Latent fingerprints, which are prints hidden or invisible to the naked eye
- Wet fingerprints, which are prints made in liquids such as blood

Dutelle (2011:162), Fisher and Fisher (2012:107), Baxter (2015:156), and Ogle and Plotkin (2018:102) categorise fingerprints into three types.

#### *Plastic fingerprints*

This type of fingerprint occurs when a finger touches or presses against plastic material and creates a negative impression of its friction ridge pattern. These



fingerprints are impressions made in soft material such as chocolate, wax, paint, putty or tar. They can also be found in thick layers of dust. They have a distinct three-dimensional appearance and often do not need further processing.

#### *Patent fingerprints*

Also called visible prints, these are prints made by blood, dirt or dust, ink or grease. A dust print, for example, occurs when a finger is pressed in a thin layer of dust and some of the dust sticks on the ridges. When the finger is placed on a clean surface, a fingerprint result. These prints do not need to be processed to be recognisable as fingerprints and can be compared.

#### *Latent fingerprints*

These are prints that need further processing to be made visible and suitable for comparison. Latent prints are called development, enhancement or visualisation prints. Siegel (2011:51) suggests that the perspiration residue, sweat, skin cells, proteins, fats and other materials that are deposited when a finger comes into contact with a surface are normally invisible, which makes the image a latent fingerprint. Skin on the hands and soles of the feet have no oil glands. Grease found on the fingers comes from other parts of the body that the hands have touched, and these fingerprints depend upon the angle of reflection of light by which they are viewed, time, temperature and other climatic factors.

Osterburg and Ward (2010:50) explain that whether latent fingerprints are left at a crime scene will depend on composition of the print and what substances are present on the finger, the nature of the surface touched and the manner in which it was touched, among other things.

Nath (2010:57) indicates that:

the main purpose in developing the latent fingerprints is to make them visible so as to preserve them and compare them with the fingerprints from suspects who are believed to be involved in that particular criminal act.

The researcher's experience confirms the fingerprint types outlined above. The researcher has seen fingerprint experts taking fingerprints on different surfaces during housebreaking investigations, such as from a steel door handle, wooden doors, windows, walls, glasses and any other place that a particular suspect seems to have

touched. The researcher has seen experts use powders where fingerprints were not clearly visible.

The question was only posed to the experts as they deal largely with fingerprints and they are expected to have more expert knowledge of the concept than detectives would. In response to the question “What are the types of fingerprints?” the participants from Sample A gave the following answers:

- Prints made in dust, made in blood, oily prints (seven participants)
- Visible prints and latent prints (three participants)
- Latent prints and patent prints (three participants)
- Latent prints, patent prints and plastic prints (two participants)

From the responses of the Sample A participants, it can be fully accepted that they understand the types of fingerprints as all the answers collaborate with the literature by all means.

### **3.6 CATEGORIES OF FINGERPRINT PATTERNS**

The categories of fingerprints patterns are very important to discuss in the study because fingerprints are matched or compared according to the direction of the patterns where they run to. During the lifting of fingerprints in housebreaking cases experts does consider the fingerprints patterns of the fingerprints while lifting them and photograph the patterns where the prints cannot be lifted accurately because of the condition in which they are found.

Becker and Dutelle (2019:132) explain that fingerprints are classified as three classes according to their general patterns as follows:

- Loop patterns: These have one or more ridges that enter from one side of the print, curve and exit from the same side. Loops consist of ulnar and radial loops.
- Whorl patterns: These ridge patterns are generally rounded or circular in shape and have two deltas. They are divided into the four groups of plain Whorl, central pocket loop whorl, double loop whorl and accidental whorl.
- Arch patterns: These are formed by friction ridge lines entering from one side of the print and exiting on the opposite side. Arches consist of the common arch and tented arch.

Composite loops consist of central pocket loops, lateral pocket loops, twinned loops and accidentals. These patterns are shown in Figure 3.1.



**Figure 3.1: The fingerprint patterns of loops, whorls and arches**

(Source: [www.forensicsciencesimplified.org](http://www.forensicsciencesimplified.org) prints (accessed on: 24 May 2019))

Saferstein (2011:537) states that all fingerprint types have many discernible characteristics in the ridge details, which are collectively called minutiae. Becker and Dutelle (2019:130) explain minutiae as the identifiable aspects of a fingerprint.

The researcher has identified the three categories (loops, whorls and arches) as fingerprints were lifted at the crime scene by fingerprint experts.

The question was posed to Sample A, only as these participants deal in detail with fingerprints as opposed to the Sample B members, who do not. In response to the question “What are the categories of fingerprint patterns?” the members of Sample A answered as follows:

- Whorl, loop, arch and tented arch (eleven participants)
- Fingerprints made of dust, blood and oil (three participants)
- Visible and latent fingerprints (one participant)

From the response of the Sample A participants, it is clear that they could all identify the types of fingerprints, with their answers concurring with the points made by scholars such as Becker and Dutelle (2019:132).

### **3.7 PRINCIPLES OF FINGERPRINTS**

The principles of fingerprints can be considered to be the true facts about fingerprints and provide useful knowledge for their use as evidence in the investigation of crime. Arulogun, Fakolujo, Olaniyi and Olatunbosun (2013:1–9) list the principles of fingerprints as:

- A fingerprint is an individual characteristic.
- People's fingerprints remain unchanged during their lifetime.
- Fingerprints have ridge patterns that allow them to be classified.

According to Saferstein (2011:537), Fisher *et al.* (2009:57) and Nath (2010:13), the principles of fingerprints can be summarised as:

- A fingerprint is an individual characteristic; no two fingers have yet been found to possess identical ridge characteristics.

The acceptance of fingerprint evidence by the courts has always been based on the assumption that no two individuals have identical fingerprints.

While this principle is supported by the theoretical calculations, it has also been confirmed by the millions of prints classified over the past 110 years: no two have ever been found to be the same.

In support of the above assertions, the researcher has seen and experienced one principle in most cases: the principle that no fingerprints have ever been found to be identical, even with twins. The researcher has charged twins within the working environment after they were arrested on a charge and it emerged that each of them had a different set of fingerprints.

In response to the question "What are the principles of fingerprints?" the participants from Sample A responded as follows:

- They are unique; no two persons have the same, even identical twins (twelve participants)
- Fingerprints remain unchanged and have unique patterns (three participants)

The answers of the participants from Sample A, indicated that they all knew the principles of fingerprints, with their answers confirming the statements of Saferstein (2011:537).

### **3.8 CLASSIFICATION OF FINGERPRINTS**

For fingerprints to be compared and individualised easily and quickly they need to be classified first. Nath (2010:38), Hawthorne (2009:56) and Saferstein (2011:543) suggest that fingerprint classification allows fingerprints to be arranged according to an organised order so that any specific print can be retrieved quickly from a large

quantity of fingerprints at the time of need for the purpose of comparison. Clark *et al.* (2006:148) write that fingerprints are classified in three ways:

- By the shapes and forms of ridges in individual patterns
- By noting the position of the finger pattern types
- By relative size, determined by counting the ridges in loops and by tracing the ridges in whorls.

Clark *et al.* (2006:148) state that “traditional classifications are based first on the general pattern of the print, which can be in the form of an arch, a loop, or a whorl”. Becker and Dutelle (2019:140) regard the classification of fingerprints as a formula given to a complete set of ten fingers as they appear on a fingerprint card and are generally based on pattern type, ridge count or ridge tracing.

In the researcher’s experience, fingerprint classification uses a system arranged or programmed to read fingerprints from the little finger to the thumb. This arrangement involves numbering, with each finger allocated or represented by a number.

In response to the question “What is the classification of fingerprints?” the members of Sample A answered as follows:

- We are now using Automated Fingerprint System (AFIS), classification system is an old thing. That’s when we use the odds and old methods of identification (ten participants)
- We can use fingerprint patterns to classify fingerprints (five participants)

From the participants’ responses, it is clear that they all knew what fingerprint classification is. However, classification of fingerprints is now carried out using the AFIS, rather than manually as before. The system classifies the fingerprints according to patterns. The AFIS, which has been in use since 1989, works by using “automatic scanning devices that convert the image of a fingerprint into digital that contains data at their points of termination and allowing the computer to store each fingerprint in the form of a digitally recorded geometric pattern” (Saferstein, 2011:397). The AFIS uses imaging to capture fingerprints which can then be compared to database fingerprint records to help determine the identity of an individual. It is able to scan a latent print from a crime scene and compare it with a ten-print latent inquiry.

### **3.9 THE DUTIES OF THE SOUTH AFRICAN POLICE SERVICE**

Hawthorne (2009:55) declares that “fingerprints are of great help to the law enforcement agencies and helps in the process of general identification by means of prints of large number of individuals and secondly it helps in specific identification by means of latent prints left at the scene of crime”. According to Joubert (1999:16), although the broad authorisation to police is contained in the Constitution of the Republic of South Africa, Act 108 of 1996, specific policing powers and duties are found in ordinary legislation, such as the Police Service Act 68 of 1995 and the Criminal Procedure Act 51 of 1977, as well as the various other institutes that make provision for specific policing powers and duties.

The Police Service Act 68 of 1995 states the duties of the police as being to:

- Ensure the safety and security of all persons in the national territory
- Uphold and safeguard the rights of every person as guaranteed by the Constitution
- Ensure co-operation with the communities it serves in combating crime
- Reflect respect for victims of crime and an understanding of the needs and functions under effective civilian supervision

According to section 205(3) of the Constitution of the Republic of South Africa, Act 108 of 1996 (South Africa, 1996) and the SAPS strategic plan of 2010 to 2014 (SAPS, 2010:3), the duties of the SAPS are to:

- Prevent, combat and investigate crime
- Maintain public order
- Protect and secure the inhabitants of the Republic and their property
- Uphold and enforce the law

In addition to this the researcher would like to add that along with the legislation, the SAPS perform its duties in accordance with standing orders.

### **3.10 THE ROLE AND FUNCTIONS OF THE CRIMINAL RECORD CENTRE**

According to the SAPS strategic plan (SAPS, 2010:16), the role of the Criminal record Centre (CRC) is to ensure that all arrested or convicted people’s fingerprints are taken and stored in the national database and that all SAPS personnel are checked via

fingerprint testing. The Criminal Procedure Act and Regulations of South Africa, Act 51 of 1977 (South Africa, 1977) add, that the CRC should expunge criminal records from the system after the specified time has lapsed.

According to the SAPS strategic plan of 2010 to 2014 (SAPS, 2010:15–16), the functions of the CRC are as follows:

- To improve the collection of evidence at crime scenes by crime scene experts
- To improve the procedure for updating records of offenders
- To ensure that bail-opposing reports are issued before bail hearings are held
- To share a database with the Department of Home Affairs to strengthen the capacity of the SAPS in identifying an individual's involvement in the commission of crime
- To ensure that all provinces are more effective in linking suspects to crimes

According to Zinn (2002:3), in carrying out the functions specified by the SAPS strategic plan (SAPS, 2010), the CRC is involved in the following activities:

- Collecting, processing and making available information about arrested people and convicted criminals for the purpose of further investigation and criminal justice
- Making information available from the different computer-based databases with regard to people, vehicles, firearms and stolen goods for the purpose of investigation and clearance
- Keeping a record of other information regarding previous convictions and the modus operandi of arrested suspects

The researcher's experience confirms the above functions of the CRC and she has witnessed the CRC's role in the working environment in most cases. The researcher would also like to add that the CRC helps by storing the fingerprints of offenders so that it becomes easy to establish whether they are first-time offenders or not, and it saves the court's time. The CRC also facilitates investigation by giving ownership to fingerprints located at a crime scene.

In response to the question "What role does the Local Criminal Record Centre play?" the Sample A, experts answered as follows:

- To collect fingerprints from the crime scene and link them with the suspects and keep their records (eight participants)
- To help with previous convictions of suspects if they are denied (six participants)
- To collect fingerprints from the crime scene and be the custodians until they are presented in court as evidence (one participant)

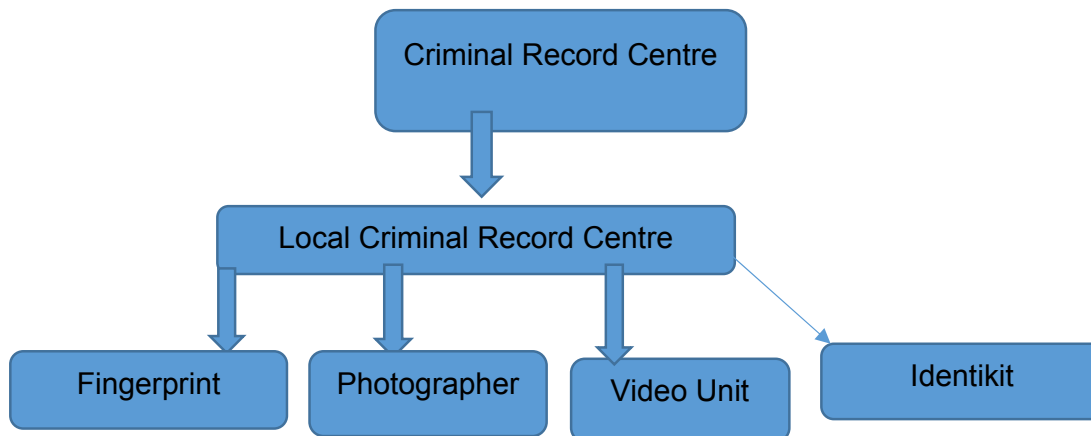
Sample B was asked the question “How would you describe your experience of the service provided by the Local Criminal Record Centre (LCRC) in your housebreaking investigations?” In response to this question, the participants from Sample B answered as follows:

- It is very good because they can link the fingerprints with the suspect (seven participants)
- It is not up to high standard because of lack of staff and resources (one participant)
- Service is very poor because they come late or don't come at all to take fingerprints (one participant)
- They are too quick to respond but take forever to get the report (one participant)

Three of the Sample B detectives were not happy with the service provided by the LCRCs and indicated their reasons for this. The three participants from Sample B evaluated the service of the CRC and did not answer the exact question posed to them. All 15 responses from Sample A and seven responses from Sample B are accepted as correct answers as they all correspond with the functions as identified in the Criminal Procedure Act and Regulations of South Africa, Act 51 of 1977.



### 3.11 THE STRUCTURE OF THE CRIMINAL RECORD CENTRE



**Figure 3.2: The structure of the Criminal Record Centre**

(Source: Structure by the researcher, based on experience)

The CRC is regarded as the heart or centre of fingerprint processing. After fingerprints are obtained for whatever reason, they are sent to the CRC to be processed and everything regarding the fingerprints is facilitated there. Within the CRC there are four different units as shown in Figure 3.2. Fingerprint experts in the fingerprint unit deal with fingerprints obtained from suspects or people asking for clearance certificates for different reasons and with fingerprints lifted from crime scenes. Clearance certificates are obtained after fingerprints are checked for criminal records and to establish whether the person is on the wanted list or not. They are used for instances where a person applied for a job at government's institutions and banks. Most companies nowadays have adopted the procedure of using clearance certificates before they offer jobs. In the photographic unit photographers deal with the capturing of crime scenes such as housebreaking, accidents and murders. The video unit captures images on electronic media regarding crime scenes and, lastly, the identikit compilers reconstruct suspects' images as explained by victims who saw them physically and the identikit is sent to the media for assistance in tracing them.

### 3.12 LEGISLATION PERTAINING TO FINGERPRINTS

Different Acts govern the taking of fingerprints from different people and for different reasons. These Acts are considered important because if they are not followed correctly the prosecution of cases will be hampered and the evidence will be deemed unconstitutional.

Section 37(1) (a) of the Criminal Procedure Act, 1977, and SAPS Criminal Procedure and Law of Evidence (2014:37) state that a police official must take the fingerprints or “must cause such prints to be taken of any-

- Person arrested upon any charge related to an offence referred to in Schedule 1;
- Person released on bail if such person’s fingerprints were not taken upon arrest;
- Person upon whom a summons has been served in respect of any offence referred to in Schedule 1;
- Person convicted by a court of law and sentenced to a term of imprisonment without the option of a fine, whether suspended or not, if the fingerprints were not taken upon arrest;
- Person convicted by a court in respect of any offence, which the minister has by notice in the Gazette declared to be an offence for the purpose of this subsection.”

As indicated above, the police are not authorised to take any person’s fingerprints but only those who are suspected of having committed a crime. As an example, on one occasion while the researcher was on duty, two community members arrived at the community service centre (CSC) and explained that they had had a break-in at their house and had seen that fingerprints had been left at the scene. They suspected a particular individual, whose name they mentioned. They requested that the fingerprints of this person be taken and compared with those found in their house because they were sure that they belonged to the person they suspected. Their request was denied in terms of Section 37(1) (a) of the Criminal Procedure Act.

Section 36B of the Criminal Procedure Act provides further guidance in respect of when fingerprints may be taken. Subsection (2) states that a police official may take or cause the fingerprints to be taken of any person arrested upon any charge or the fingerprints to be taken of a person deemed under section 57(6) to have been convicted in respect of any offence that the Minister has by notice in the Gazette declared to be an offence for the purpose of this subsection. Subsection (3) states that the fingerprints taken in terms of this section must be stored on the database maintained by the National Commissioner, as provided for in Chapter 5A of the South

African Police Act. Subsection (4) states that a police official may again take fingerprints of any person referred to in subsection (1) if the fingerprints taken on the previous occasion do not constitute a complete set of his or her fingerprints. The person referred to in subsection (1) is the person arrested on a charge, person released on bail, person upon whom summons has been served of any charge and a person convicted by the court of law.

Subsection (5) states that fingerprints taken under any power conferred by this section may be the subject of a comparison search, and subsection (6) states that any fingerprints taken under any power conferred by this section must upon the conviction of an adult person be retained on a database referred to in Chapter 5A of the South African Police Act.

Criminal Procedure Act 36B(6)(b) states that fingerprints retained in terms of this section may only be used for the purposes related to the detection of crime, the investigation of an offence, the identification of missing persons, the identification of unidentified human remains or the conducting of a prosecution.

The above sections are very important when linked with the crime of housebreaking because it is very difficult to solve the crime without proper consideration of fingerprints. During housebreaking investigations, fingerprints are obtained from the crime scene and stored within the database so that even after many years, when the owner of the fingerprints is arrested, the system can detect the old fingerprints and merge the newly obtained fingerprints with the old ones.

The sections of the Criminal Procedure Act outlined above provide guidelines and restrictions in terms of which the police are obliged to act. As an institution that operates under South African legislation, the SAPS may not operate outside this legislation.

Sample B was not included in this question as they only obtain fingerprints from suspects and rely on the experts for fingerprints results. Regarding Sample A's responses to the prompt "Describe the legislative framework/Act/legislation within which you do fingerprint investigation", the participants answered as follows:

- Through section 37 of the Criminal Procedure Act, it allows us to lift or take fingerprints from any place of crime scene or a place which is suspected of being linked to the crime scene or commission of a crime (nine participants)

- Through section 37(1) of the Criminal Procedure Act, it states that fingerprints, palm prints, footprints may be taken from any person arrested upon any charge or released on bail (five participants)
- Through section 37(1)(a) of the Criminal Procedure Act, it gives us the right to take fingerprints from a suspect if he is accused in a criminal case or there is a summons (one participant)

It can be accepted that all the participants were aware of the section that permits them to take fingerprints as all the answers provided are correct in terms of Section 37(1)(a) of the Criminal Procedure Act.

### **3.12.1 Chain of Custody**

It is important to discuss the chain of custody here because it plays an important role in the admissibility of evidence such as fingerprints in court proceedings. Schwikkard and Van der Merwe (2016:22) state that “the court weighs or evaluates evidence to determine whether the required standard of proof has been attained and it is only after the evidence has been admitted at the end of the trial that the court will then have to assess the final weight of the evidence”. The chain of custody refers to the order in which evidence is handled during the investigation of a case, from the time it is discovered at the crime scene until it is presented before court as evidence. It shows the location and condition under which it was kept from crime scene until it is needed at court. According to Lushbaugh and Weston (2012:46), “The chain of custody refers to the adherence to required standard and procedure of the collection and possession of physical evidence to an extent that it stand the court’s test of what happened to it from the time it is found at the crime scene to its presentation at court”.

The chain of custody can be considered both a process and the documentation that stipulates the transfer of evidence from the custody of one person to another, with everyone who handles the evidence affixing his or her signature and date, and explaining the condition in which it was received and what happened while it was in his or her custody (Houck & Siegel, 2011:586; Van Rooyen, 2012:173; Fisher & Fisher, 2012:9–10). Fisher and Fisher (2012:90) state that integrity in the chain of custody proves the honesty and accountability of a piece evidence and shows that evidence has been dealt with correctly, without interference, addition or loss of evidence either deliberately or accidentally. The chain of custody thus provides a chronological

timeline that accurately portrays the journey of the evidence during the life of the case (Braswell, Fish & Miller, 2011:22-23).

The researcher has seen the chain of custody in her working environment. For example, when fingerprints are identified at the crime scene the researcher is required to write a statement indicating the address of the crime scene and the exact place where the fingerprints were identified. She is also required to declare that there has been no contamination after identification. The expert who lifted the fingerprints will also explain how they were lifted and preserved until they were analysed and where they were kept after analysis. Should a person be arrested on the basis of the lifted fingerprints, the court will also request each person involved to testify about how the evidence was handled from the time when it was identified at the crime scene until when it is presented before court.

### **3.13 BASIC METHODS OF TAKING FINGERPRINTS FROM A PERSON**

Hess and Orthmann (2013:143) and Shaler (2012:256) state that to take fingerprints, the police official should start by rolling the right thumb and fingers of the person whose fingerprints are being taken in the ink pad, and this must be done in order as stated on the fingerprint card/form. The left thumb and fingers are then rolled in the same order. Each finger should be rolled completely; that is, from one side to the other so that they remain clear and visible. Then the fingers and then the thumb of each hand should be pressed onto the spaces provided on the card. The card also has spaces for information about the person and the classification made by the fingerprint examiner. O'Hara and O'Hara (2003:738) list the equipment necessary for taking fingerprints as follows:

- Ink- where the finger is dipped in
- Rubber roller – used to roll in the ink pad so that the ink does not stick together
- Slab – used to get the correct level of the surface
- Card/form holder – where the card or form are placed in.
- Fingerprint card/form – where the rolled ink finger/palm is deposited on
- Table – on which all the equipment is placed and the fingerprints obtained.

In detail, the procedure is as follows:

- The person taking fingerprints must control the rolling process completely. The fingerprint card must be placed in the holder and the subject must sign their name in full in the signature block of the card.
- The subject should relax their fingers, look away from the card, and permit the operator to do the work without the subject's help.
- Each finger of the right hand must be rolled separately on the glass, with the finger placed so that it is inked from below the first joint to a point as close as possible to the tip and from nail edge to nail edge. The thumb should be rolled first and in full.
- Beginning with the thumb, the finger must be rolled in the appropriate space in the card. The right hand of the operator should be used to grip the subject's finger between the first and second finger.
- At the bottom of the card, a space is provided for inking all four fingers simultaneously without rolling. This serves to indicate the sequence in which the rolled prints were taken. Each print should be checked carefully to see that it is clear and legible.
- A paper towel and detergent should be given to the subject for cleaning their hands. The operator should now fill out the front of the card with the data relating to the subject and sign the card. The descriptive data on the reverse of the card should be completed. The card should not be folded.

The procedure described above is generally used across the globe. In South Africa, the researcher has taken fingerprints from suspects within the working environment on many occasions. This has entailed rolling all the fingers of the person from whom the fingerprints were being taken, from the little finger to the thumb, including the palm of the hand, on an inked pad. The fingers were then pressed onto a fingerprint form called the SAP 76 for suspects or deposited onto the SAP 918A form for enquiry fingerprints. This method is also used by other fingerprint offices in stations as it is the easiest method and the equipment the most available.

In response to the question "What are the basic methods of taking fingerprints?" the participants from Sample A gave the following answers:

- By using powders and reagents to develop them (ten participants)

- By skin rolling or plain impression (four participants)
- By measuring, establishing where it was taken from, by lifting the fingerprint, by using either scotch tape, folic acid or camera (one participant)

In response to the same question, the Sample B members answered as follows:

- You need a fingerprint form, fingerprint ink pad, a roller table or desk. You fold your fingerprint form correctly and take the fingerprints in sequence, starting with your rolling impression, then coming to the plain impression applying light pressure to get clear fingerprints (nine participants)
- There are two ways of lifting fingerprints, firstly lifting fingerprints on the scene and taken from suspects for exclusion (one participant)

The answers from all participants are deemed correct and relate to their area of operation. Only one participant from Sample B did not answer correctly, instead discussing the two methods of lifting fingerprints, by lifting fingerprints on the scene and taking them from suspects for exclusion.

### **3.14 ADVANTAGES OF FINGERPRINTS**

Fingerprints have several advantages, both for criminal and non-criminal investigations. Hess and Orthmann (2013:145) list the advantages of fingerprints as follows:

- “Fingerprints are extremely valuable in criminal investigations.
- Fingerprints can be sent via communications systems across the country and around the globe and visually reproduced.
- Courts, parole and probation officers and prosecutors use fingerprints to positively identify people with multiple criminal records.
- Fingerprints also aid in noncriminal investigations by helping to identify victims and unconscious persons.
- Hospitals use fingerprints or footprints to identify new-born babies.
- Fingerprints are becoming widely used as identification for cashing checks and processing legal documents.”

Nath (2010:11) adds further uses of fingerprints as allowing more equitable sentences to be delivered by the courts and in aiding the identification of unknown deceased people.

Dutelle (2014:189) states that fingerprints do not lie and are only misleading if they are interpreted wrongly and Thompson (2019:3) finds that fingerprinting is now regarded as a core tool in criminal investigations. In South Africa fingerprints are used to ensure that new fingerprint information correlates with the correct individual on the CRC database and this helps to prevent errors and promotes integrity (Zinn, 2002:4).

Champod, Lennard, Margot and Stoilovic (2004:34) suggest that in an investigation, “fingerprints are used as corroborative evidence”, with Van den Berg (2008:1) confirming that fingerprints make up the most commonly used forensic evidence worldwide, and in most jurisdictions fingerprint examination cases match or outnumber all other forensic examination casework combined. Taking fingerprints is expanding as the primary method for identifying people, with substantial numbers of people added to fingerprint databases daily in America alone.

The researcher confirms the views of the above authors and has seen the advantages of taking fingerprints in the working environment in several cases. Fingerprints link the crime scene with the suspect directly and, as they are not disputable, they also save the court time. A new use of fingerprints has recently been identified by the banking industry. Banks have adopted fingerprinting in order to prevent fraud where the identity of a person making a transaction can be verified before the transaction is processed. Nowadays before any transaction is processed within a bank, fingerprints are required biometrically first.

In response to the question “What are the advantages of fingerprints?” the participants from Sample A answered as follows:

- It is to link the suspects to a crime (ten participants)
- It is that no person or more than one person has the same fingerprints, one to a zillion (five participants)

Answering the same question, the participants from Sample B responded as follows:

- It is unique to every individual (five participants)
- To link the perpetrator or people involved by lifting the fingerprints to see who is the owner (five participants)

All the answers provided by both samples are fully accepted as they all correspond with the literature.



### **3.15 THE CAUSES OF FINGERPRINT MISHANDLING**

The first aspect to consider as the cause of fingerprint mishandling is the chain of custody. It authenticates physical evidence because it involves documentation of physical evidence, safekeeping and preservation of evidence from its collection to the resolution of a case. Chain of custody shows with reasonable certainty that physical evidence has not been changed, substituted or contaminated throughout until presented before court as evidence. The importance of following it properly is that it saves the court's time, and it is one of the requirements for admissibility of evidence by the court of law. Van den Berg (2008:1) argues that "fingerprints solve ten times more unknown suspects, cases than DNA in most jurisdictions" and Hawthorne (2009:24) states that fingerprints are useful for criminal matters to link suspects with a crime scene. However, Dutelle (2014:189) finds that fingerprints can mislead if they are interpreted wrongly. Fingerprints may be mishandled for a number of reasons, as outlined below.

Osterburg and Ward (2010:456) state that successful crime-scene processing starts with the initial officer on the scene and a strong cause of fingerprint mishandling is the state of the prints found on the scene. Neuman (2012:3) points out that, while fingerprints obtained at a police station from a known individual using the correct equipment and procedure will always be as clear as possible, a fingerprint mark found at a crime scene may be in blood, grease or powder and may be smudged or smeared. It may also be incomplete or distorted. These fingerprints are unlikely to correspond with the police station fingerprint and will require an experienced fingerprint expert to determine that they are from the same person. Moore (2005:130) in Julian, Kelty and Robertson (2012:31) adds that:

Unnecessary crime scenes traffic turn processing into a nightmare by all those feet trampling through the room or the field, obliterating clues, adding to the trace evidence at a scene and distracting officers who are working on it, add to the mishandling of fingerprints.

Walvisch (2017:2) states that because fingerprint analysis depends heavily on human judgement, an examiner's conclusions may be wrongly influenced by non-scientific factors, such as irrelevant circumstances that form the setting and information.

As a third cause of fingerprint mishandling, Tilley and Ford (1996:500) in Julian *et al.* (2012:34) state that the first officer responding to the scene needs sufficient understanding of forensic science matters to come to an informed judgement because they need to know what evidence needs to be preserved and how to preserve it. This takes us back to one of the main research questions: What is the cause of fingerprint mishandling?

As fingerprints hold so much importance in the investigation of housebreaking cases, the researcher was interested in establishing the cause of fingerprint mishandling within the SAPS West Rand jurisdiction, where some cases of housebreaking did not indicate the availability or lifting of fingerprints.

In response to the question “What is the cause of fingerprint mishandling?” the participants from Sample A answered as follows:

- First responders do not inform victims or complainants not to contaminate the scene until the fingerprint experts arrive and lift them, and they also lack skills in cordoning the crime scene (eight participants)
- Scenes are tampered with by either victims or complainants before experts can process the scene (four participants)
- Fingerprints are handled well (three participants)

In response to the same question, the participants from Sample B answered as follows:

- The first responders to the crime, in most cases uniform members, contaminate the scene by moving the items from the original state left by suspects and they don't inform victims or complainants not to contaminate the scene until experts arrive (seven participants)
- Contamination of the scene by other people that enter the scene before the police cordon it off (one participant)
- By the lack of systems, border control and the home affairs (one participant)
- Lack of experience or negligence from the experts (one participant)

The researcher would like to agree fully with the eight participants of Sample A and seven participants from Sample B that the main cause of fingerprint mishandling is negligence by the first responders to the scene. While investigating housebreaking cases, and visiting the crime scene for information gathering, the researcher often

found that the scene was already contaminated. In some instances, the complainants divulged that the uniform police that had arrived first after the crime was reported did not inform them not to touch anything that had been turned upside down by the suspects. This meant that in some cases the complainants had already replaced damaged windows or doors by the time the fingerprint experts arrived. The experts called the researcher in most cases to say that fingerprints had not been found on the scene because the place had been cleaned or there was no use in lifting them because everyone from the house had touched the area where the crime had taken place.

### **3.16 SUMMARY**

The importance of fingerprints in criminal investigations is undisputed. Komarinski (2005:24) states that fingerprints are a biometric that has been systematically used to make identifications for over 100 years. This biometric has been measured, copied, examined and analysed extensively and found not to change. In addition, it is relatively easy to capture. Fingerprints are of great importance in conducting an investigation of housebreaking and investigators must be aware that even though fingerprints are identified from the scene of crime, particular legislation and procedures need to be followed so that cases are not withdrawn at the court stage as a result of inadequate investigation from them. They must also bear in mind that not all potential evidence from them can be regarded as such without fulfilling some requirements for evidence by the court of law. Fingerprints must be identified, collected and analysed and the chain of custody must be observed to be able to interpret them in court.

Fingerprints involve technology that the experts and investigators need to familiarise themselves with and which they must up-date themselves with every now and then.

## **CHAPTER FOUR: RESEARCH FINDINGS, CONCLUSIONS AND RECOMMENDATIONS**

### **4.1 INTRODUCTION**

Merriam (2009:119) suggests that “in clarifying the research problem you move from general interest, curiosity or doubt about a situation to a specific statement of the research problem”. In this case the researcher wanted to find out how important fingerprints are in the investigation of housebreaking cases and to establish the root cause of the fingerprint mishandling that was resulting in matters being withdrawn from the court of law.

Depoy and Gitlin (2016:53) state that research is a purposive, “intentional goal directed” activity that is conducted for a specific question or query, to solve a problem, or to examine a particular controversy or issue. On this basis the researcher decided to conduct this study to establish the answers to specific questions using the existing knowledge and the experience of other SAPS members from relevant fields pertaining to the research. This chapter presents recommendations resulting from the conclusions made on the basis of the findings of the study. The purpose of the research was to evaluate the importance of fingerprints in the investigation of housebreaking cases. In order to address this purpose, three research questions were asked:

- What is the importance of fingerprints in the investigation of housebreaking cases?
- What are the best practices of fingerprints and what causes fingerprints mishandling in the investigation of housebreaking cases?

### **4.2 FINDINGS AND CONCLUSIONS**

This section summarises the findings from data collected from literature and the interviews conducted. The findings are structured in terms of whether they are primary or secondary findings according to how they relate to each research question.

#### **4.2.1 Primary Findings**

These findings are considered primary by the researcher as they address the research purpose and research questions.

#### 4.2.1.1 Research question 1: What is the importance of fingerprints in the investigation of housebreaking cases?

The researcher states that not all of the questions were posed to both samples; questions were asked based on the area of operation of each sample, and the experience and knowledge they were expected to possess regarding the research question. On the basis of the literature and the interviews conducted with participants, the researcher established that:

- While conducting an investigation into housebreaking cases, presenting fingerprints as evidence results in easily acquired convictions on cases. Ensuring the correct use of fingerprint evidence is an important skill that investigators need to equip themselves with.
- Participants from Sample A, the fingerprint experts, were found to have a good understanding of the importance of fingerprints in the investigation of housebreaking cases as their responses reflected the literature consulted. Most of the members of Sample B, the detectives, had an adequate understanding of this importance, with only a few not showing a clear understanding of the importance of fingerprints in the investigation of housebreaking cases. The lack of understanding of those few members did raise the concern, however, that detectives do not appreciate the importance of fingerprints in their investigation of housebreaking cases and their usefulness as evidence when they present cases in court.
- A few participants from Sample A did not have a clear understanding of the categories of fingerprints and fingerprint classifications. The question caused them some confusion and they did not answer it accordingly. This is a concern because as experts they cannot analyse fingerprints adequately if they do not know their categories.
- All the participants from Samples A and B showed a good understanding of what fingerprints are as their responses corresponded with the literature consulted. This was expected as they were all involved in the search for fingerprints once a housebreaking was reported.
- All the participants from Sample A were found to understand the principles of fingerprints as their responses were similar to the views expressed in the literature consulted. This was expected from them and it indicates the

importance of fingerprints in the investigation of housebreaking cases; it answered the research question.

- All the participants from Sample A did have a clear understanding of the basic methods of taking fingerprints. The same was true for participants from Sample B, where only one member did not give a clear explanation of how fingerprints are taken in their field. It was expected from detectives to be able to explain how they took fingerprints.
- All the participants from Sample A were aware of the advantages of fingerprints in the investigation of housebreaking cases and also knew where to search for fingerprints at a crime scene so that they did not miss them. A few participants from Sample B, however, did not clearly understand the advantages of fingerprints in the investigation of housebreaking cases. This indicates that fingerprint evidence is not taken seriously and not presented accordingly in court, resulting in cases being withdrawn or struck off the roll.
- All the participants from Sample A knew the legislative framework and particular Acts that permitted them to obtain fingerprints while conducting their investigation. This is a very good point as it means that they would also be able to argue or present their cases before court without doubts, based on the Acts.

The researcher established from interviews with investigators that they don't consider the importance of fingerprints in their investigation and this needs to be addressed because fingerprints play a vital role in housebreaking cases. It is very hard to argue a case of housebreaking without a clear presentation of fingerprints. The same is true of experts; it is a concern that experts did not understand the categories of fingerprints that enable them to analyse fingerprints. Before fingerprints can be analysed, they must first be categorised. As a result, the findings have helped in answering the research question. They indicate the importance of fingerprints in the investigation of housebreaking.

4.2.1.2 Research question 2: What are the best practices of using fingerprints and what causes fingerprint mishandling in the investigation of housebreaking cases?

This question arose from the curiosity that led to the study; the researcher was interested in finding out the root cause of fingerprints mishandling in the investigation of housebreaking cases.

More than half of the participants from Sample A responded that the responsibility for fingerprint mishandling rested with the first responders to the scene of crime (uniform members) as they did not inform victims or complainants that they should not touch or shift anything until the fingerprint experts had lifted the fingerprints, and they lacked the skill of cordoning off the crime scene. Three-quarters of the participants from Sample B gave a similar response to Sample A, saying that fingerprints mishandling was caused by the first responders to the crime scene, as they moved items from the original state in which they were left by suspects and they did not inform victims or complainants not to contaminate the scene until experts had lifted the fingerprints.

As a result, the researcher established that the first responders (uniform members) to the crime scene were generally considered the root cause of fingerprint mishandling within the West Rand SAPS as they lacked an appreciation of the importance of fingerprints. Other responses were as follows:

- Some of the participants from Sample A responded that fingerprints mishandling was caused by either victims or complainants, while some responded that in their experience fingerprints were handled well.
- Only three participants from Sample B responded differently, each as follows:
  - Fingerprint mishandling is caused by other people that enter the scene, the lack of systematic border control by the Department of Home Affairs, and a lack of experience or negligence by experts. The researcher has experienced such cases in the working environment, where a suspect is arrested and fingerprints are obtained and when verifications are made with the Department of Home Affairs it is discovered that they do not appear on the system, which suggests that they are from illegal immigrants.
- In answering the questions, it was noted that the detectives blamed the experts and the experts blamed the detectives regarding the mishandling of fingerprints. In order to have good results pertaining to the use of fingerprints in the investigation of housebreaking cases, the relationship between experts and detectives needs to be very good. The lack of a good relationship between

these units may contribute to the ongoing mishandling of fingerprints as they work closely with fingerprints, unless the issue is dealt with.

- The researcher also established that there is a lack of understanding regarding the use of fingerprints, particularly for Sample B, who, as detectives, depend on fingerprints for their investigation of cases. This will automatically result in cases without convictions.

The researcher established that the best practice of using fingerprints involves first appreciating them as a tool in the investigation of housebreaking cases; investigators must familiarise themselves with this tool in order for them to win the battle. From the literature consulted and responses from participants, it is evident that the evidence of fingerprints is admissible with certainty when it meets the admissibility requirements. The finding addressed the research question and indicated the importance of fingerprints in the investigation of housebreaking cases.

#### **4.2.2 Secondary Findings**

These are findings from questions asked originating from the research that were found useful in addressing the research questions. They were used to broaden the understanding of the research study and they helped to fulfil the purpose of the study.

4.2.2.1 What is forensic investigation? Most participants had a good understanding of the definition of forensic investigation. One participant from Sample B also gave a response that was not clearly supported by the literature, that forensic investigation is the gathering and analysis of all crimes related to physical evidence in order to reach a conclusion about suspects. It is clear that these participants did not have a clear knowledge of forensic investigation, yet they dealt with it nearly every day. This shows a lack of commitment in performing their duties.

4.2.2.2 What is criminal investigation? Three participants from Sample A did not give clear responses that were supported by the literature whereas all the participants from Sample B responded correctly, with their responses relating to the literature consulted. It was not expected from them not to have an understanding of such as they worked hand in hand with criminal investigators. Even though this was not their field, having this knowledge would also help in the performance of their duties.



4.2.2.3 What is the difference between forensic investigation and criminal investigation? All participants from both samples gave correct answers as they were all supported by the literature. The researcher realised that both samples could differentiate between the two types of investigation, which was important as it would enhance their performance.

4.2.2.4 What is the purpose of investigation? One participant from Sample A did not give the correct answer while all the participants from Sample B understood the purpose of investigation. Ignorance about this issue was not expected, as both sets of participants dealt with investigations every day.

4.2.2.5 What is identification? The researcher established that all the participants from both samples had a good understanding of what identification is.

4.2.2.6 What is individualisation? The responses given by both samples were correct, although the participants defined the concept according to their field of operation, but the answers did relate to the literature consulted.

4.2.2.7 What is the difference between identification and individualisation? All the participants from both samples differentiated between the two concepts in terms of their different fields of operation and their responses were deemed correct.

4.2.2.8 What is housebreaking? The responses given by the participants from Sample B were partially correct as they all missed one element to complete the definition. The element missed was that the building or structure that is broken into must belong to someone. The researcher established that detectives need to acquire knowledge about the link between housebreaking and fingerprints. For instance, when called before the court they must give a clear meaning of what housebreaking is.

The researcher established that some of the concepts pertaining to the importance of fingerprints in the investigation of housebreaking cases is not fully understood by both experts and detectives and this is very important to address because when presenting a case before the court, one must have a very good understanding as the courts test credibility on any of the aspects pertaining to the crime.

### **4.3 RECOMMENDATIONS**

The researcher makes the following recommendations, based on the findings and conclusions drawn from the research:

- The investigators must submit suspect's fingerprints of good quality to the CRC so that they do not delay the process of linking the suspects to the fingerprints taken at the scene of crime. Sometimes by the time experts return fingerprints for retake, the suspects have been released and are nowhere to be found. This consumes the court's time in dealing with the matters and prosecution is hampered.
- Investigators must prioritise the importance of fingerprints in the investigation of housebreaking cases as this presents the possibility of providing undisputable evidence to the court.
- Detectives must absorb members that are dedicated and well trained in conducting investigations. The investigation of housebreaking cases requires members that have passion and are dedicated to their work.
- Fingerprint experts must respond urgently to any scene where a housebreaking has occurred to avoid contamination, because if they attend such a scene the following day only, they make it difficult for victims to sleep comfortably with damaged windows or doors.
- Investigators must ascertain from the complainants while doing a preliminary investigation whether the scene is as the suspects left it before they summon fingerprint experts. Sometimes experts arrive at the scene only to find that the scene has already been contaminated and further that no fingerprints can be lifted, which is time consuming.

#### **4.3.1 Suggested Training**

As part of the recommendations, the researcher suggests the following training be conducted:

- There must be special training for members that are investigating housebreaking cases in which all details involved in the investigation are provided.

- Training for experts regarding fingerprints categories must be provided as it is a crucial aspect for them while analysing the fingerprints. This is highly recommended so as to produce fair and correct results.
- A training course should be held for all first responder members regarding the cordoning off of crime scene and the importance of fingerprints so as to avoid contamination before the lifting of fingerprints by experts. The training must be provided at the basic training level so that when they report to their respective stations, they already have this knowledge. Fingerprints are vitally important in the investigation of housebreaking scenes, and investigators cannot afford to lose cases due to mishandling or absence of fingerprints. A programme to provide community members with an awareness of the importance of fingerprints in a housebreaking crime scene should also be set up.

#### **4.4 CONCLUSION**

Fingerprints are regarded as an investigative tool that all members of the detective branches and LCRCs need to familiarise themselves with. Fingerprint experts and detectives must make sure that fingerprints are taken into consideration at all times because they are sometimes called by the court to give evidence pertaining to how fingerprints were handled and so forth. With the necessary knowledge, they will stand firm and give convincing evidence without fear. When considering the use of fingerprints in the investigation of housebreaking, the required skill and knowledge will help in speeding up the prosecution of cases and in saving the court's time.

The researcher was delighted with the findings of the study and believes strongly that implementing the recommendations of this research will reduce the number of cases withdrawn owing to poor investigation from experts and investigators so that the prosecution of these cases will increase. Experts and investigators must always keep in mind while conducting their investigation that the Constitution of the Republic of South Africa Chapter 2 section 35(5) states that "evidence obtained in a manner that violates any right in the Bill of Rights must be excluded if the admission of that evidence would render the trial unfair or otherwise be detrimental to the administration of justice" (South Africa, 1996). In order for evidence to be useful it must be admissible, authentic, complete, reliable and believable. Community members, detectives and

fingerprint experts must all appreciate the importance of fingerprints for the successful investigation of housebreaking cases.

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## 6. ANNEXURES

### 6.1 ANNEXURE A: ETHICS APPROVAL

5



**PERMISSION TO CONDUCT RESEARCH IN THE SAPS**

**PERMISSION TO CONDUCT RESEARCH IN SAPS: THE IMPORTANCE OF FINGERPRINTS IN THE INVESTIGATION OF HOUSEBREAKING INCIDENTS: UNIVERSITY OF SOUTH AFRICA: MASTER DEGREE: RESEARCHER: ME MOHLABE (RAKGOALE)**

**RESEARCHER: ME MOHLABE (RAKGOALE)**

Permission is hereby granted to the researcher above to conduct research in the SAPS based on the conditions of National Instruction 1 of 2006 (as handed to the researcher) and within the limitations as set out below and in the approved research proposal.

This permission must be accompanied with the signed Indemnity, Undertaking & Declaration and presented to the commander present when the researcher is conducting research.

This permission is valid for a period of Twelve (12) months after signing.

Any enquiries with regard to this permission must be directed to Lt Col Etsebeth or Intern MR Nenzhelele at [NenzheleleMR@saps.gov.za](mailto:NenzheleleMR@saps.gov.za)/[etsebethj@saps.gov.za](mailto:etsebethj@saps.gov.za)

**RESEARCH LIMITATIONS / BOUNDARIES:**

**Research Instruments:** Interview

**Target audience/subjects:** 25 SAPS members

**Geographical target:**

Unit	Station
Diepsloot LCRC	Randburg / Roodepoort / Florida / Honeydew / Diepsloot / Douglasdale / Fairland / Linden / Muldersdrift

Access to official document: No

  
**LIEUTENANT GENERAL  
PROVINCIAL COMMISSIONER: GAUTENG  
E MAWELA (SOEG)**

DATE: 2020/02/13

UNISA CLAW ETHICS REVIEW COMMITTEE

Date 20191118

Reference: ST 143 of 2019

Applicant: ME Rakgoale

Dear ME Rakgoale

**Decision: ETHICS APPROVAL**

FROM 01 November 2019

TO 01 November 2022

**Researcher:** Mmatlokwa Esther Rakgoale

**Supervisor:** Dr M van der Watt

**The Importance of Fingerprints in the Investigation of Housebreaking incidents**

**Qualification:** M-Tech Forensic Investigation

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

*The CLAW Ethics Review Committee reviewed the **Low risk application** on 1 November 2019 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment. The decision was ratified by the committee.*

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.





2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the CLAW Committee.
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.
5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.
6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data require additional ethics clearance.
7. No research activities may continue after the expiry date **1 November 2022**. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

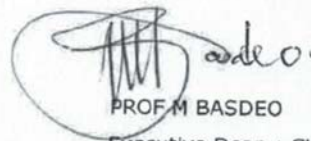
*Note:*

*The reference number ST 143 of 2019 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.*

Yours sincerely,



PROF T BUDHRAM  
Chair of CLAW ERC  
E-mail: [budhrt@unisa.ac.za](mailto:budhrt@unisa.ac.za)  
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PROF M BASDEO  
Executive Dean : CLAW  
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Tel: (012) 429-8603

## **6.2 ANNEXURE B: INTERVIEW SCHEDULES**

### **INTERVIEW SCHEDULE (SAMPLE A): FINGERPRINT EXPERTS (WESTRAND CLUSTER LCRC)**

**TOPIC:** The importance of fingerprints in the investigation of housebreaking incidents.

#### **RESEARCH PURPOSE**

The purpose of this study is to establish the importance of fingerprints in the investigation of housebreaking cases.

#### **RESEARCH QUESTIONS**

1. What is the importance of fingerprints in the investigation of housebreaking cases?
2. What are the best practices of using fingerprints and what causes fingerprint mishandling in the investigation of housebreaking cases?

My name is Mmatlokwa Esther Rakgoale, a Forensic Analyst in the South African Police Service stationed at the Forensic Science Laboratory (Silverton) attached to Ballistics Analysis. I am conducting research on the importance of fingerprints in the investigation of housebreaking cases.

You are kindly requested to answer the following questions in this interview schedule in order to determine the importance of fingerprints in the investigation of housebreaking cases. For the research I am bound by the ethics code of the University of South Africa, given as per ST 143 of 2019. The information you provide will be used in my research project for a Master of Technology in Forensic Investigation Degree only.

The findings of the research will be published in the dissertation. Your answers will be noted down by me in a book and at the same time recorded on a voice recorder so as to authenticate the information you provide. Please feel free to ask for clarity on any question should the need arise. There are no limitations to the number of questions you can ask. When answering the questions, it is very important that you give full, honest answers and your own opinion as an expert in this field. Do not deliberately mislead the researcher.

Do you give permission to be interviewed and that the information supplied to me be used in this study? YES/NO

RESPONDENT:

DATE OF INTERVIEW:

**SECTION A: HISTORICAL INFORMATION**

1. Are you a fingerprints expert?

YES/NO

2. How long have you been a fingerprints expert?

1-5yrs    5-10yrs    10yrs and above

3. Did you undergo a fingerprints course?

YES/NO

4. What are your tertiary qualifications?

5. In how many cases did you provide evidence regarding fingerprints?

**SECTION B: FORENSIC INVESTIGATION**

6. What is forensic investigation?

7. What is criminal investigation?

8. What is the difference between forensic investigation and criminal investigation?

9. Which one of the above is your field and why?

10. How do you explain the term investigation?

11. What is the purpose of investigation?

12. What are you investigating?

13. What is identification?

14. What is it that you have to identify?

15. What is individualisation?

16. What is the process of individualisation?

17. What is the difference between identification and individualisation?

18. How do you process a housebreaking crime scene?

**SECTION C: THE IMPORTANCE OF FINGERPRINTS**

19. What is the meaning of fingerprints?

20. Where are fingerprints usually located at a crime scene?

21. What are the types of fingerprints?

22. What are the categories of fingerprint patterns?

23. What are the basic methods of taking fingerprints?
24. What are the advantages of fingerprints?
25. What is the classification of fingerprints?
26. What is fingerprints identification?
27. How do you identify fingerprints?
28. How do you individualise fingerprints?
29. How long does it take for fingerprints to be individualised?
30. According to your experience, what are latent prints?
31. Why are latent prints important from all other types of prints?
32. What is fingerprint elimination?
33. How do you do fingerprints elimination?
34. What is the purpose of fingerprint elimination?
35. What are the principles of fingerprints?
36. Describe the legislative framework/Acts/legislation within which you do fingerprint investigation?
37. What role does the Local Criminal Record Centre play?
38. According to your experience, what is the importance of fingerprints in housebreaking incidents?
39. What are the problems that you encounter during the lifting of fingerprints?
40. What are the problems that you encounter from residents' houses during the lifting of fingerprints?
41. How would you describe your relationship with police investigators?
42. Why is this relationship important?
43. According to your experience, are fingerprints handled well in housebreaking cases?
44. If not, what is the cause of fingerprint mishandling?
45. This research is about the importance of fingerprints in the investigation of housebreaking cases. Is there anything that you want to add to the conversation that you believe has not been fully or properly addressed?

## **INTERVIEW SCHEDULE (SAMPLE B): INVESTIGATING OFFICERS (WESTRAND CLUSTER STATIONS)**

**TOPIC:** The importance of fingerprints in the investigation of housebreaking incidents.

### **RESEARCH PURPOSE**

The purpose of this study is to establish the importance of fingerprints in the investigation of housebreaking cases.

### **RESEARCH QUESTIONS**

1. What is the importance of fingerprints in the investigation of housebreaking cases?
2. What are the best practices of using fingerprints and what causes fingerprint mishandling in the investigation of housebreaking cases?

My name is Mmatlokwa Esther Rakgoale, a Forensic Analyst in the South African Police Service stationed at the Forensic Science Laboratory (Silverton) attached to Ballistics Analysis. I am conducting research on the importance of fingerprints in the investigation of housebreaking cases.

You are kindly requested to answer the following questions in this interview schedule in order to determine the importance of fingerprints in the investigation of housebreaking cases. For the research, I am bound by the ethics code of the University of South Africa, given as per ST 143 of 2019. The information you provide will be used in my research project for a Master of Technology in Forensic Investigation Degree only.

The findings of the research will be published in the dissertation. Your answers will be noted down by me in a book and at the same time recorded on a voice recorder so as to authenticate the information you provide. Please feel free to ask for clarity on any question should the need arise. There are no limitations on the number of questions you can ask. When answering the questions, it is very important that you give full, honest answers and your own opinion as an expert in this field. Do not deliberately mislead the researcher.

Do you give permission to be interviewed and that the information supplied to me be used in this study? YES/NO

RESPONDENT:

DATE OF INTERVIEW:

**SECTION A: HISTORICAL INFORMATION**

1. Are you an investigating official?

YES/NO

2. How long have you been an investigating officer?

1-5yrs    5-10yrs    10yrs and above

3. Did you undergo a Resolving of crime course?

YES/NO

4. What are your tertiary qualifications?

5. In how many cases did you provide evidence regarding housebreaking investigations?

**SECTION B: FORENSIC INVESTIGATION**

6. What is forensic investigation?

7. What is criminal investigation?

8. What is the difference between forensic investigation and criminal investigation?

9. Which one is your field?

10. How do you explain the term investigation?

11. What is the purpose of investigation?

12. When do you start investigating?

13. What is identification?

14. What is it that you identify?

15. What is the purpose of identification?

16. After identifying what you want, what then is the procedure?

17. What is individualisation?

18. What is the difference between identification and individualisation?

19. What is housebreaking?

20. What are the elements of housebreaking?

21. How do you investigate a case of housebreaking?

## **SECTION C: THE IMPORTANCE OF FINGERPRINTS**

22. What is the meaning of fingerprints?
23. What are the advantages of fingerprints?
24. What are the basic methods of taking fingerprints?
25. What is the value of fingerprints in housebreaking cases?
26. How do you consider fingerprints as evidence in housebreaking cases?
27. Can you solve a housebreaking case without the aid of fingerprints?
28. According to your experience, what is the importance of fingerprints in the investigation of housebreaking?
29. How would you describe your relationship with fingerprints experts?
30. How would you describe the role of fingerprint experts in housebreaking investigations?
31. According to your experience, are fingerprints handled well in housebreaking cases?
32. If not, what is the cause of fingerprint mishandling?
33. What are the challenges that you encounter while conducting investigations of housebreaking cases?
34. How would you describe your experience of the service provided by the Local Criminal Record Centre (LCRC) in your housebreaking investigations?
35. This research is about the importance of fingerprints in the investigation of housebreaking cases. Is there anything that you want to add to the conversation that you believe has not been fully or properly addressed?

## 6.3 ANNEXURE C: TURNITIN REPORT



### Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: Me Rakgoale  
Assignment title: Complete dissertation/thesis for exa...  
Submission title: The importance of fingerprints in the...  
File name: INGERPRINTS\_IN\_THE\_INVESTIG...  
File size: 141.53K  
Page count: 84  
Word count: 24,802  
Character count: 137,068  
Submission date: 16-Feb-2021 05:48PM (UTC+0200)  
Submission ID: 1510767072

