

THE USE OF FINGERPRINTS IN IDENTIFYING SUSPECTS

by

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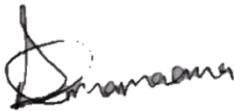
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ABSTRACT

In this research, the value of fingerprints lifted from a crime scene is evaluated as an investigative technique in identifying suspects. Identifying suspects through fingerprinting has proved to be one of the most effective methods of apprehending individuals who might otherwise go undetected and continue their criminal activities.

The problem was identified, as many housebreaking and theft cases were closed as undetected and withdrawn where suspects could not be identified and traced because the fingerprint investigators were not summoned to lift fingerprints at the crime scenes.

The results of the study showed that the use of fingerprints in identifying suspects is of great value because every fingerprint is unique, and a fingerprint is an individual characteristic; no two fingers have yet been observed to possess identical ridge characteristics. Fingerprints as physical evidence are more reliable than eyewitness evidence because eyewitnesses might change their testimony during the trial at court.

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- To my editor Marlette van der Merwe for her support, encouragement and great work;
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CERTIFICATE BY THE EDITOR

6 November 2019

I, Marlette van der Merwe, hereby certify that the text and list of references of the master's dissertation titled "The use of fingerprints in identifying suspects" by Tahulela Precious Mamaema, have been edited by me, according to the referencing method required by the School of Criminal Justice at the University of South Africa.

A handwritten signature in black ink that reads "Marlette van der Merwe". The signature is written in a cursive style with a large initial 'M'.

Marlette van der Merwe

BA (English) HDipLib (UCT)

ABBREVIATIONS AND ACRONYMS

AFIS	Automated Fingerprint Identification System
CJS	Criminal Justice System
CRC	Criminal Record Centre
CSM	Crime Scene Management
LCRC	Local Criminal Record Centre
SAFB	South African Fingerprints Bureau
SAPS	South African Police Service
UNISA	University of South Africa
VISPOL	Visible policing

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CHAPTER 1: GENERAL ORIENTATION

1.1 INTRODUCTION

Fingerprinting, according to Lyman (2013:57), has shown to be one of the most successful techniques for arresting persons that may go unnoticed and carry out their crimes. When a crime is committed, specialists in distinguishing marks leave inactive prints at the crime scene. These prints are classed as "unknown prints" because they were taken at the scene of crime.

Unknown prints are scanned into a fingerprint identification system called as the Automated Fingerprint Identification System in South Africa (AFIS). AFIS specialists can compare known and unknown prints from the system at the Local Criminal Record Centre (LCRC) and trace all the points of the prints until there is a match with the then unknown prints. These can be confirmed by the second AFIS expert, to be sure that the points identified by the first expert are correct. Each individual has unique fingerprints. There are fingerprint databases at the South African Fingerprints Bureau (SAFB) and at the Criminal Record Centre (CRC) (Researcher's work experience).

Since detectives do not use fingerprint investigators in such cases, many housebreaking and theft cases under the Krugersdorp cluster stations were closed as "undetected." Since the perpetrators' fingerprints are not lifted from the crime scenes, they cannot be identified, traced down, and apprehended for the crimes they have committed.

Criminal investigation is one of the most essential responsibilities of law enforcement authorities. Fingerprint investigators express this as well. Most important task in a criminal investigation is to identify the suspect. A significant number of cases assigned to investigators are of the 'unknown suspect' variety, meaning that the suspect committing the crime is unknown. Personal identification methods may be necessary to verify what victims or witnesses provide.

There are relatively few positive indicators of personal identity that are encountered at crime scenes or otherwise obtained. The researcher has discussed the importance of fingerprint investigators in lifting and analysing the suspect's fingerprints found at the crime scene, how to individualise and identify suspects, the role of the CRC in criminal investigation, the types of fingerprints, fingerprint patterns, and the value of fingerprints.

1.2 PROBLEM STATEMENT

The problem statement, according to Leedy and Ormrod (2010:44), is the pivot around which the entire research effort revolves. A problem, according to Creswell (2009:42), is an issue that exists in the literature and necessitates the research.

According to Gilbert (2010:455), the fundamental goal of criminal investigation is to find suspects linked in the incident under investigation. Many incidents reported to investigating officers entail unidentified suspects, where the suspects committing the crimes at the scene are unidentified and no personal identification has been made.

The researcher examined records for housebreaking and theft cases and discovered that the statistics for solved crimes at Krugersdorp Cluster stations of the South African Police Service (SAPS) are extremely low. Krugersdorp Cluster stations include Krugersdorp, Kagiso, Randfontein, Muldersdrift, Magaliesburg, and Hekpoort. The researcher checked the statistics for January to December 2019 and found that 900 housebreakings and theft cases were reported, out of which 150 cases reported positively, suspects were identified and arrested, 500 cases were withdrawn, and 250 cases were closed as undetected.

The researcher went to Krugersdorp SAPS cluster station's filing office, and randomly drew three undetected cases per station per quarter, for 2019, and analysed those cases. The researcher realised, from the cases analysed, that fingerprint investigators were not called to the crime scenes to develop and lift the prints; therefore, the perpetrators were not identified. The researcher also checked the investigation diary (SAPS 5) and could not find the entry by the detectives/investigating officers as to why fingerprint investigators were not called to attend the crime scenes, as it would have helped to identify suspects with the fingerprints found at the crime scenes and would also increase the conviction rate at the criminal proceedings in court.

According to the researcher's observation, throughout most cases, investigators focus solely on the evidence of the eyewitnesses, not concentrating on certain important sources, such as physical evidence, like fingerprints, due to lack of understanding that fingerprints could be used as crucial evidence, whereas other investigating officers do not subpoena fingerprint investigators to the crime scene.

1.3 RESEARCH AIM

According to Du Plooy-Cilliers, Davis, and Bezuidenhout (2014:73), the goal of research is to determine, to a great degree, the research method and outcome. Walker (2010:245) defines an aim as whatever one intends to accomplish through study. When conducting research, the researcher should be secure in answering the question, will the research add on current knowledge about the topic? (Denscombe, 2002:5). The research aim specifies the instruments that will be used to point to the goal that the research intends to attain (Denscombe, 2012:49). An aim may be defined as a broad description of what the researcher hopes to achieve (Wilson, 2014:43). The aim of this research is to determine how fingerprints could be used as an identification technique to identify suspects.

1.4 PURPOSE OF RESEARCH

According to Babbie and Mouton (2007:345), the purpose of research is to provide feedback to individuals who are attempting to enhance on something. Furthermore, just at conclusion of this study, the findings and recommendations would be revealed to such commanders of fingerprint investigators in addition to enhancing on lifting fingerprints from crime scenes, which will assist to identify suspects and increase conviction rates.

According to Locke, Spirduso, and Silverman (2013:22), the purpose for clarification explains why the specialist has to conduct the examination and what the analyst hopes to achieve. The usage of fingerprints in identifying suspects is the inspiration for this research. The reason for clarification indicates why the professional needs to do the assessment, and what the examiner hopes to accomplish. The inspiration driving this examination is the use of fingerprints in identifying suspects.

The developmental evaluation, according to Babbie and Mouton (2007:345), is performed to provide feedback to individuals who are striving to enhance something. As a result, the study's findings and recommendations will be shared with the Unit Commander/Head of LCRC in order to enhance the identification of suspects through fingerprints. This will increase the conviction rate during court procedures.

1.5 RESEARCH QUESTION

A research question should show the outcome of how one might anticipate at the end of the evaluation and explain why it is that the investigation was conducted (Dantzker & Hunter, 2012:40). To solve the research topic, the researcher created the following research question: “How could fingerprints be used in identifying suspects?”

1.6 KEY THEORETICAL CONCEPTS

According to Leedy and Ormrod (2010:56), each word should be explained practically; that is, definitions of important concepts must be provided in order for readers to understand the term as it is used in connection with the researcher's project. The definitions of important words provided by the researcher must be precise, specific, and relevant to the problem and topic of the research. A term will need to be defined to help the reader comprehend the research problem and questions or ideas throughout the study (Creswell, 2014:44).

The following definitions explain the key concepts of this research:

1.6.1 Fingerprints

According to Nath (2010:10), a unique mark is characterised also as multiplication of the edge territory of the first, or nail, joint of the finger in any way whatsoever, as well as the edge area of the remaining joint of the finger.

1.6.2 Suspect

A suspect, according to Van Rooyen (2008:14), is someone who law enforcement officers have reason to believe may have committed a crime.

1.6.3 Evidence

Evidence may be defined as facts provided through genuine examination to make a reality or suggestion less or more likely (Houck & Siegel 2011:49).

1.6.4 Criminal investigation

Criminal examination is the way towards finding, gathering, planning, distinguishing, and exhibiting proof, to figure out what occurred and who is capable (Orthmann & Hess, 2013:8).

1.6.5 Forensic investigation

Forensic investigation is when the accused individual is alleged to have committed a criminal activity (Gardner, 2005:2).

1.6.6 Crime scene

All crime scenes, according to Becker and Dutelle (2013:28), contain tangible proof, which is evidence which may be contacted, viewed, or generally seen through forensic procedures or legal tactics. According to National Instruction 1 (SAPS, 2015:2), a “crime scene” is defined as the location, along with the nearby area, where an alleged act was committed or where items of possible evidentiary value were obtained.

1.7 RESEARCH DESIGN AND APPROACH

According to Bhattacharjee (2012:35), research design is a thorough plan for collecting data on an empirical research endeavor. It is a plan for empirical research that aims to answer particular research questions or test specific hypotheses, and it must define at least three processes: data collection, instrument creation, and sampling. This study has followed a pragmatic worldview, where a research problem has been recognised from the real world and contextualised, concentrating on the research problem and utilising all methodologies accessible to comprehend the problem.

This assessment has sought a practical viewpoint, where an investigation issue has been perceived from this present reality, and contextualised, focusing on the investigation issue and using all systems open to understanding the issue (Creswell, 2009:10). According to Creswell (2012:15), research design is a software that assists investigators in the collecting, breaking down, translating, and perception processes.

According to Babbie and Mouton (2007:76-78), an empirical research design employs primary data, which is material gathered directly by the researcher through interviews and monitoring meetings. Because she understood that gathering data from the literature alone would not be adequate to completely address the research question, the researcher conducted empirical research, which included conducting interviews. In this study, an empirical design was chosen because the focus was on human action, as recommended by (Mouton ,2001:55). Empirical research as getting out of the chair, getting out of the office, and actively seeking the facts "out there" (Denscombe, 2014:18). It's critical in empirical research to acquire information straight from the source and to do so in a way that fosters the creation of desired data (Kraska & Neuman, 2012:21). The empirical

research approach for this study involves a detailed literature review and face-to-face interviews with Krugersdorp LCRC unit members (fingerprint investigators) in the SAPS to explore the research topic described by (Leedy & Ormrod, 2010:44).

The research followed a qualitative approach. Qualitative research is described by Dantzker and Hunter (2012:56) as a non-numerical description of one's analysis and perception of observation with the aim of identifying meanings and patterns of relationships. Since qualitative research is exploratory, the researcher chose a qualitative approach and listened to the participants to compile an image based on their opinions and personal experiences.

According to Babbie and Mouton (2007:270), qualitative researchers continuously endeavor to contemplate human action from the perspective of the social on-screen actors themselves. As a result, the researcher used a qualitative research approach, which is the most appropriate methodology for thinking about human activities. Babbie and Mouton (2007:270) go on to say that the primary purpose of studies that use this approach is to represent and see human behavior rather than to explain it.

1.8 TARGET POPULATION AND SAMPLING

The term 'population' refers to the analysis of an item, which includes persons, groups, institutions, human products, and events, as well as the conditions to which they are subjected (Welman, Kruger & Mitchell, 2005:52). According to Suter (2006:211), a population is the whole group about which researchers seek to make generalised statements. A population is a well-defined group that generates a sample (typically at random), and data from the sample is used to draw conclusions about the broader population (Suter, 2006:471). According to Sekaran and Bougie (2009:262), a research population refers to the entire collection of persons, events, or high-value items that the researcher intends to investigate.

All SAPS investigators would have been a perfect population for this study. Nonetheless, due to commonsense reality, it would be beyond the realm of imagination to expect to talk to all specialists in South Africa. As a result, the researcher's sample was limited to Krugersdorp LCRC fingerprint investigators; as a result, Krugersdorp LCRC was the study's target population. According to Welman et al (2005:126), a target population is the group to whom the researcher

intends to apply their findings The researcher chose fingerprint investigators from the Krugersdorp LCRC as her target population because it is where the issue was discovered and because it was closer to the researcher, as using fingerprint investigators from different workplaces would increase travel costs.

1.9 SAMPLING

According to De Vos, Strydom, Fouché, and Delport (2011:223-223), a sample is a subset of the population or target population selected for actual inclusion in the analysis, or a subset of measures obtained from a population in which one is interested. Any subject of the elements of the population that is collected for the purpose of being studied is referred to as a sample. Sampling refers to the method of selecting elements from a sample or target population (Fox & Bayat, 2007:54). Sampling, according to Leedy & Ormrod (2010:196), is the process of choosing items from a population.

Kumar (2011:193) defines sampling as the act of picking a few (a sample) from a larger group (the sampling population) to serve as the foundation for estimating or forecasting the prevalence of an unknown piece of information, circumstance, or result pertaining to the larger group. Seven (7) fingerprint investigators made up the target population. Through a simple random sample, these investigators were chosen from a pool of 24 fingerprint investigators.

The researcher wrote the names of all 24 fingerprint investigators on a sheet of paper and sliced it into distinct pieces. The researcher placed all of the pieces of paper in a plastic bowl dish and picked seven (7) pieces at random and blindly. The study's qualitative character led to the selection of seven (7) fingerprint investigators from a total of 24. The sample was the third of the Krugersdorp LCRC's total number of fingerprints inquiry participants. There is enough evidence to base the research conclusions on according to the content analysis of the interviews.

1.10 DATA COLLECTION

"Data" is defined by Beri (2010:11) as evidence and statistics put with each other for comparative or analysis. According to Creswell (2012:140), data is more than just gathering information. One chooses which participants to study. After that, one obtains their permission to be considered. One

recognises the types of instruments that will answer to one's exploratory question, and one finds instruments to use. After that, data collection will begin (Creswell 2012:140). Unstructured interviewing is used in qualitative studies, according to Bhattacharjee (2012:74), who agrees with Welman et al (2006:134). Unstructured questions require participants to respond in their own words.

1.10.1 Literature

According to Flick (2011:32-33), once one begins investigating the topic selected, one may look for and uncover various forms of literature and proof. National sources in the fields of police, criminology, and law, such as SAPS training materials, as well as books and articles on the subject, were reviewed in order to get relevant information on what has been published on the subject. Most effective way to review existing literature is to establish keywords and search terms that are clearly associated with, and represent, the research problem, research questions, and motivation for the study (Creswell, 2009:29).

The researcher searched through literature sources with comparative points after failing to locate literature on the specific topic of the study. In either case, the researcher divided the research topic into the following ideas in order to obtain a large number of sources, such as “fingerprints”, “identification”, “suspects” and “criminal investigation”, and using these ideas, the researcher searched for information that would cover the research questions and provide responses to them. As a result, the researcher was able to find literature that was important to her research.

1.10.2 Interviews

Interviews may be done one-on-one or in a focus group environment. Interviewing is described by Fox and Bayat (2013:72) as any individual-to-individual connection, whether face-to-face or otherwise, between at least two people for a specific reason, and it involves posing questions and recording answers. According to Maree (2012:87), an interview is a two-way discussion where the researcher asks questions to the participant so to collect data and understand well about participant's feelings, opinions, views, assumptions, suppositions, comprehension, and conduct of the participant. The researcher performed semi-structured interviews. A semi-structured interview allows a researcher to get detailed and informative responses from participants (Creswell,

2012:220-221). "According to Creswell (2012:220-221), there are several general measures involved in conducting interviews":

- Determine the type of interview you will use –
 - ❖ The researcher conducted semi-structured interviews.
- When interviewing the participants, take brief notes–
 - ❖ The researcher took notes on the responses of the participants.
- Find a calm, acceptable location for the interview –
 - ❖ Participants were questioned in a distraction-free environment.
- Get the interviewee's permission to take part in the research –
 - ❖ The interviewees completed an informed consent form, which the researcher used to gain consent.
- When the interview is done, be polite and professional –
 - ❖ When the interview was wrapped off, participants were thanked and assured by the researcher that their replies would be kept private; the researcher also asked whether the participants would like a review of the study.

The interviewer obtained permission from the SAPS (filed as Annexure "B"), and a copy of the consent form (filed as Annexure "A").

1.10.3 Pilot study

An interview schedule is used to collect information in order to respond to research questions. Furthermore, Kumar (2011:389) defines interviewing as any one-on-one conversation, or otherwise, between two or more people for a specific purpose, which includes asking questions and recording responses. Prior to the interviews, a pilot study was conducted to understand more about the research in respect to both the subject and the interviewees. Doing a pilot research with people who are not from the survey makes the investigation more powerful and justifiable.

Bernard (2013:165) believes that a pilot study should be conducted before a larger sample, and that it is best to select a tiny group of participants who are representative of the population from which the full study will be drawn: "Pre-testing research tools, such as interview schedules, with a limited subset of the target population is known as piloting, in order to discover flaws in the data collection process" (David & Sutton, 2011:628). The goal of the pilot study is to identify any potential challenges so that they may be addressed before main research begins. According to Fox

and Bayat (2013:102-103), a pilot analysis, is a small-scale investigation to determine if the research design and methods are relative and strong; they went on to say that a pre-test is the best way to determine if the research instrument is well-planned. The researcher conducted a pilot study to check for any problems and, as a result, made it simple to correct any misunderstandings before wasting time and money. The researcher made arrangements with the commander of Krugersdorp LCRC Unit in order to conduct the interviews with the investigators, and appointments were secured with them.

The investigators agreed to be questioned and were interviewed in a safe and private place with no interruptions; their identities were not released. Three investigators from the Krugersdorp LCRC Unit were included in the pilot because they perform the same duties as those who were chosen for the main study. The researcher's supervisor went over the interview schedule after the semi-structured interview. The researcher presented the investigators with questions and conducted an interview with them. There were no misunderstandings during the pilot analysis, and nothing was discovered that could disrupt the main sample of seven investigators.

1.11 DATA ANALYSIS

During data analysis, the researcher used Creswell's (cited in Leedy & Ormrod, 2013:158-159) measures, and a data analysis spiral was used to ensure that all data was gathered accurately, and that general trends and patterns were recognised. The following was the strategy:

- Researcher organised data obtained from books, interviews, and a pilot study, and she broke large volumes of text into smaller components such as sentences and individual words. Researcher went through all of the data to decide which was pertinent to this study.
- She went over the full data collection many occasions to obtain an idea of what was in it. During the process, she scribbled a few notes that suggested different ways to view the categories. In order to determine both relevancy and irrelevancy, the researcher critically analysed the entire collection of data.
- She explained and debated about broad themes and sub-themes until she was able to categorise each piece of data. As a consequence, she was able to gain a general understanding of trends – a sense of what the data meant.

- She ultimately combined and summarised the information for her readers. This step included presenting theories that explained connections between the themes. She divided particular data into themes in order to meet the research issues presented in each chapter.

1.12 METHODS TO ENSURE VALIDITY

The term "validity" means "truthful," and qualitative researchers are more concerned with validity than with a single version of the truth (Neuman, 2006:196). Bless, Higson-Smith & Sithole (2013:157) mentioned that, external validity requires the study to represent the population's experiences. The researcher ensured all seven fingerprint experts in this study were well-experienced in crime scene investigation field, – this ensures that the findings are accurate and that they can be used by other researchers doing similar research in the future.

In this study, the researcher used a variety of data sources, including literature and interviews. The researcher ensured that the participants replied based on their own experiences as well as the experiences of other investigators; moreover, the researcher posed questions that were unique to the study subject and working title. The questions were focused on fingerprint recognition as a means of identifying the suspects. The researcher created an interview schedule, and the questions on the schedule were designed to answer the research topic, the aim of the study and research questions.

To determine the accuracy of the research being investigated questions were created. Since they were all concentrating on the research question, the researcher ensured that the data collected was accurate. Each participant answered the questions based on their own personal context and experience, and the answers were written down by the researcher. The researcher considers the questions accurate and valid because they are relevant to the topic, to the research aim and to the research question.

The research question and the separation of the theme into concepts were used to generate the questions that were asked of the interviewees. As a result, the questions were important to the topic and thus significant. The interviews were honest assessments of what the respondents wanted to contribute to the research. The literature study led on from the research question and the topic that was separated into concepts.

Creswell and Clark (2011:211) mentioned that, in qualitative research, the researcher is concerned with validity on two levels: the accuracy of the scores from the instruments used and the quality of the conclusions that can be drawn from quantitative studies. The term quantitative validity refers to the fact that the scores assigned to participants are meaningful indicators of the construct being measured. Testing for qualitative validity entails determining if the information collected through qualitative data collection is correct (Creswell & Clark, 2011:211). Lincoln and Guba (2009) (as cited in Creswell, 2013:246) use interesting words like integrity, authenticity, transferability, dependability, and confirmability as the "naturalist's equivalents" for inside validity, outer validation, reliability, and objectivity to establish "trustworthiness" in a qualitative sample.

❖ Credibility

Credibility is an alternative to inside authenticity, according to De Vos et al (2011:419), supported by (Bless et al ,2013:236-237). The objective of credibility is to show that the study was carried out in such a way that the participants were accurately identified and depicted. Dahlberg and McCraig (2010:34-35), validity is defined as the accuracy or reliability of an account, as well as the clarity or understanding that the researcher achieves, and that sound sampling techniques greatly contribute to validity. According to Dahlberg and McCraig (2010:34-35), study results must be testable, allowing others to achieve similar results using similar methods with similar research participants.

❖ Transferability

In order for the data to be transferable, the researcher should provide clear explanations of the sense in which data was collected, the researcher as a person, and their relationship with the participants, among other things (Bless et al, 2013:237). Data for the study was gathered through interviews and a literature review.

1.13 METHODS TO ENSURE RELIABILITY

The term "reliability" refers to whether a technique produces consistent results when applied repeatedly to the same specimen (Babbie & Benaquisto, 2010:139). These authors go on to say that the accuracy of the measurement method would imply that the same data would have been obtained each time the same phenomenon was observed. According to Babbie and Mouton (2007:119), reliability is a question of whether a certain procedure generates comparable findings

when used again to a similar item, and therefore it is consequently critical to ask questions about what the participants are likely to know.

The researcher asked all of the participants the same questions, which resulted in similar results from the interviews to ensure reliability. The data was gathered by the researcher herself. The researcher was satisfied that reliable measures had been used in the study and that it had been completed to the best of her ability. This guarantees that when several researchers perform the same study using the same interview schedules as evaluation instruments, the findings will be identical.

The researcher gained input from associates in a similar field of study, in deciding whether they concurred that the researcher had made suitable translations and had reached substantial inferences from the data collected. The participants would be asked to accept or disapprove of the findings, as well as to determine whether the outcomes tended to be satisfactory in light of their own experiences.

To have a proper record for review, the interviews were written down. To maintain confidentiality and privacy, the interviews were done in private, and the respondents were given complete freedom to express themselves. The researcher did not direct the respondents to answer in a particular way, so they were not led in any particular direction. To ensure a reliable record of the interviews, the answers to the questions were carefully recorded. By personally reviewing all of the findings and conducting all of the interviews, the researcher ensured that they were all conducted in the same manner.

These methods are also useful for ensuring validity, according to Creswell (2014:251). “Trustworthiness in a qualitative study is dictated by four markers: authenticity, transferability, dependability, and conformability,” according to Guba and Lincoln (2009) (as cited in Kumar, 2011:184). In qualitative research, these four markers represent both validity and reliability.”

❖ Dependability

In qualitative research, the construct of dependability is used to define consistency. According to Trochim and Donnelley (2008) (as cited in Kumar, 2011:185), dependability refers to whether the same findings would be obtained if the same thing was found, or the same study was performed twice. According to Suter (2012:363), the qualitative researcher in this case gathers evidence to

support the argument that similar results would be obtained if the analysis were replicated. The explanations in this analysis were derived from the various perspectives of Krugersdorp LCRC fingerprint investigators.

❖ Conformability

This applies to the extent to which the results can be confirmed or verified by others (Trochim & Donnelley (2008) (as cited in Kumar, 2011:185)). Kumar (2011:185) also warns that conformability can only be achieved if both researchers follow the protocol in an indistinguishable manner in order to compare the findings. According to Bless et al (2013:237), in order to determine conformability, other researchers must be able to achieve similar results using a similar research method in a similar environment. The results of this study were based on the literature as well as the replies of the participants. The researcher-maintained objectivity throughout the research, and if another researcher conducted the study in the same way as this one, the researcher is certain that the results will be consistent with the present study.

1.14 ETHICAL CONSIDERATIONS

The researcher told the participants that their responses would be kept private and that their opinions would not be questioned in the future. The participants were kept anonymous, and the researcher urged them to answer the questions honestly.

As mentioned by Leedy and Ormrod (2013:104-109), the researcher maintained the highest ethical standards throughout the report. When leading exploration, ethics in research refers to doing what is ethically and legitimately right (Grix, 2010:143), as follows:

❖ Obtain informed consent; deliberate cooperation is essential

All participants were provided with sufficient information about the research so that they could make an informed decision. The participants signed a consent form that the researcher received in writing.

❖ Right to privacy

The researcher considered everyone's right to privacy. The interviews took place in a secure and private environment, and the participants were made to feel at ease. The results of each

participant were kept a secret from the others, and no one was embarrassed during the study.

❖ Honesty with professional colleagues

The entire number of discoveries was calculated and appropriately accounted for. The researcher did not make up data to support any particular finding. The researcher ensured that all other authors' sources were properly noted with full references.

❖ Protection from harm

The researcher conducted her interviews in a comfortable environment where the participants were not subjected to any discomfort or humiliation. By not exposing the participants to undue physical or psychological suffering, the researcher protected them all from harm. There was no sensitive information about any victim of crime released. The participants were not called with their names by the researcher.

She assigned each participant a number and used certain numbers to call them, ensuring that no one would recognise what they said during the interviews. In addition, the researcher followed the ethical guidelines for research involving human participants outlined in Unisa's research ethics policy (University of South Africa, 2007:7-10). By including them in the list of references, all sources that were included in the study were acknowledged.

1.15 CHAPTER LAYOUT

The researcher structured her topics and arguments into chapters to ensure that the research question was answered. The study was divided into the following chapters by the researcher:

CHAPTER 1: General orientation

This chapter gives a basic introduction to the research topic, the aim, purpose of the research, the research question, key theoretical concepts, design and approach, target population and sampling, data collection, methods taken to ensure validity, reliability, and ethical considerations.

CHAPTER 2: Using fingerprints as identification technique

The researcher analyses the use of fingerprints to identify suspects in this chapter. Using fingerprints will also assist in linking suspects to different crime scenes that were committed even in different provinces of South Africa.

CHAPTER 3: Findings, recommendations, and conclusions

This chapter summarises the research project's findings, recommendations for implementing the findings, and proposals for further research.

1.16 SUMMARY

The primary goal of this chapter was to provide the study's background, problem statement, research question, aim and objectives of the study, importance of the study, and dissertation layout. The researcher explained the type of research approach and design used in this study, as well as how data was gathered and analysed. The researcher aimed to provide recommendations based on the findings and thereby solve the identified problem.

In this chapter, the researcher defined the theoretical key concepts, such as Fingerprints, Suspect, Evidence and Criminal Investigation. In the next chapter, the researcher discusses the use of fingerprints as identification technique.

CHAPTER 2: USING FINGERPRINTS AS IDENTIFICATION TECHNIQUE

2.1 INTRODUCTION

Criminality is widespread and poses a global challenge. In order to link suspects and successfully prosecute suspects for the crimes committed, crime investigators must treat crime appropriately and act reasonably by collecting forensic evidence found at crime scenes. One of the most common types of forensic evidence is fingerprinting.

Evidence collection and preservation are critical for any successful criminal investigation. If all of the information and evidence surrounding the crime are not properly collected, kept, and analysed, the entire investigation may be compromised (Girard, 2011:6). The study discovered that in many situations, the first responders to arrive at crime scenes are Visible Police (VISPOL) personnel, followed by detectives. Fingerprint investigators come at crime scenes after everyone else who has been called to the scene has completed their duties. They find that most of the work has already been done, such as collection and packaging of the forensic evidence.

According to the SAPS annual report for 2013/14 (SAPS, 2014:226), the mandate of Forensic Services is to assist in the investigation of crime by contributing to the effective and efficient operation of South Africa's Criminal Justice System (CJS). Latent fingerprints, according to Nath (2010:38), are the most crucial evidence acquired at a crime scene. These are the latent prints that have been left at the crime scene and can be found on a weapon or any other object at the crime scene.

This chapter will attempt to address the single research question in this study: "How can fingerprints be used as an identification technique?"

2.2 CRIMINAL INVESTIGATION

Criminal investigation will never again be seen as a restricted law enforcement instrument for combating violent crime. Criminal investigation, on the other hand, has grown into a procedure for attaining justice that is open to all members of society (Van Rooyen, 2008:3). As a result, very few cases are opened in society with the intent of punishing the criminal. Complainants open a case for their own reasons or advantage; for instance, victims in criminal cases are only available for court

while their recovered properties are still with the police, but, once they receive their properties back, they are no longer interested in the case and court proceedings.

Stelfox (2013:1) mentions that in order for criminal investigators to bring offenders to justice, they need to locate, gather, and use information. Criminal investigation will no longer be seen as a limited law enforcement tool for combatting violent crime. Criminal investigation, on the other hand, has evolved into a method of obtaining justice that is accessible to all members of society (Van Rooyen, 2008:3). A criminal investigation is defined as the process of discovering, gathering, preparing, identifying, and presenting evidence in order to ascertain what happened and who is responsible. According to Crowder (2010:366), criminal investigations are inquiries conducted when there is a legal violation; this is an objective, systematic legal investigation into possible illegal activity. Crowder (2010:368) goes on to say that criminal investigation is reactive, and that it is based on the complaint or occurrence that occurred.

Criminal inquiry, according to Palmiotto (2013:4), is a method of reasoning and thinking. Palmiotto (2013:4) further stated that, during the course of an investigation, investigators gather documents and evidence, assess the facts, thoroughly and systematically evaluate all details of the crime scene.

Criminal investigation entails locating those who have committed crimes, as well as the identification of perpetrators, the gathering of evidence, and the safeguarding and evaluation of information and evidence (Dutelle, 2011:4 & 17).

2.3 OBJECTIVES OF CRIMINAL INVESTIGATION

Primary aims of a criminal investigation are to gather evidence that may be used as evidence in a court of law to show an accuser's involvement in the commission of a crime in strict conformity with the laws governing the procedure (SAPS, 2013:1). Hess and Hess (2013:8), stated that criminal investigation, includes identifying evidence, gathering information, and presenting evidence to a court of law in order to determine what happened and identify the perpetrator, as well as reconstructing prior crimes. According to Hess and Hess (2013:11), the goals of criminal investigations can be summarised as follows:

- ❖ To establish if a crime has been committed
- ❖ To locate persons
- ❖ To locate leads to additional firearm evidence
- ❖ To arrest suspects
- ❖ To locate and recover stolen property
- ❖ To determine if there is enough evidence and facts to support or defeat the cause of action
- ❖ To obtain information and evidence to identify the responsible person
- ❖ To assist the state in prosecuting the party charged with the offence and to present the best case to the prosecutor.

Similarly, Benson, Jones, and Horne (2015:13) state that the goals of criminal investigations are to recognize a crime, conduct an organised and systematic search for the truth, identify and locate suspects, gather objective and subjective evidence about an alleged crime, discover facts, and discover the presence of such facts; confirming and assisting in the presentation of lawfully obtained evidence and documents in order to convict the defendant. According to Ferraro (2012:77), if criminal investigation objectives are not effectively defined, investigators are prone to become ineffective and lack focus.

The goal of the investigation is to discover and trace the suspect in any manner possible, therefore if evidence is not seen, other instruments must be utilised to find it; this entails creating a solid structure around the investigation's goals (Ferraro, 2012:77). As a result, in cases where the suspects were not witnessed committing the crime, fingerprints discovered at the scene of the crime must be utilized as the other instruments and will therefore enable suspects to be identified.

Stelfox (2009:2) believes that bringing criminals to justice, identifying suspects, and obtaining evidence to support charges are not the only goals of criminal investigations. Furthermore, according to Stelfox (2009:2), caring for victims, disrupting a criminal network, gathering intelligence, reassuring the public, and controlling a wide range of crime risks are all key goals of criminal investigation. The goal of a criminal investigation is to determine whether the complaint is true or false by conducting thorough and unbiased investigations from which conclusions can be derived (Pena, 2001:1).

2.3.1 Purpose of Criminal Investigation

The purpose of an investigation is to conduct a scientific investigation into evidence and determine how that evidence can be used to prosecute an offender, or, to put it another way, to identify, collect, and present all relevant evidence to enable a court of law or other presiding authority to determine the truth in the case of an alleged crime or a disputed issue (Benson et al, 2015:11-13).

The primary goal of a criminal investigation, according to Fahsing (2016:4-5), is to determine whether, how, where, when, why, and by whom a crime was or will be committed. To do so, investigators must find out, collect, verify, and consider information from a variety of sources in order to compile an educated account of the incident. This is a bit direct at points, but the text is excellent at other times. This is due to three major factors:

- In different criminal offenses, the volume, kind, and dispersion of case-relevant material will vary substantially. Because of the large number of data profiles from case to case, the task is uncertain. For example, the material produced by a fender bender will be significantly different from that produced by child sexual abuse or a well-intentioned Internet scam. Even within a single crime type, these differences can be significant, and investigators must be able to make informed decisions about what type of crime they are dealing with, what information may have been generated, and how to best locate it.
- Investigators' difficulties in discovering and obtaining case-related information is dependent on their understanding of important information sources and the type of potential traces. This information will range from extremely specialized (for example, fingerprints and DNA) to psychological (interviews with offenders, victims, and witnesses. Skilled criminals, for example, may be able to control information availability by clearing crime scenes, disposing of damning evidence, or threatening potential witnesses. In the instance of being interviewed as a suspect, they can also exercise control over information by making decisions. Victims and witnesses who are not compelled to submit information may avoid contact with the authorities entirely or give partial or misleading testimony. As a result, information is not always readily available to investigators, and they must be skilled in a variety of tactics to search out, locate, and recover it.

- During the early stages of an investigation, investigative open doors are at their most noticeable and effective. Physical materials can deteriorate quickly due to environmental factors, while memories can deteriorate due to psychological factors. Furthermore, recorded data, such as financial information, might be wiped or destroyed. As a result, it's critical that such material be collected as soon as possible. Other considerations are important, but the investigator's ability to make effective judgements regarding the type of crime he or she is investigating, what kind of case-relevant material has been created, and how to effectively identify and verify it while it is still accessible to the intruder is crucial.

2.4 IDENTIFICATION

The objective of analyzing physical evidence, according to Girard (2015:40), is to identify and compare it. According to Van Rooyen (2012:20), identification is the process of identifying an object as belonging to a given group of objects. This is the technique of grouping objects with similar characteristics into one category. Identification, according to Van Rooyen (2012:21), relates to uniqueness and emphasises the fact that anything or person (individual) can only be identical to itself, himself, or herself. A person or an object is placed in a preset class and shares similar qualities or characteristics during the classification process of an entity; this is known as identification (Osterburg & Ward, 2010:36; Fisher, 2004:5; Champod, 2015:95). According to Saferstein, the goal of identification is to determine the physical or chemical identity of a material with as much total confidence as possible (2011:61). Osterburg and Ward (2010:36) describe identification as a categorisation method in which an object is allocated to a pre-defined, constrained, limited class without showing that the physical evidence comes from a single source. Identification, according to Saferstein (2011:102), “means determining the physical or chemical identity of a substance with the greatest assurance that existing analytical procedures will allow.

To ensure the integrity of the investigation, the investigator must stay impartial and control any biases or preconceptions. Crime is investigated in order to perform the following, according to Palmiotto (2013:5):

- Establish a case of a reported incident as an instance of a specific crime or as otherwise warranting investigation
- Identify a suspect
- Locate a suspect
- Learn that a suspect can show irrefutable evidence of innocence, in which case the detective will have to start all over again trying to identify a more likely culprit.

2.5 INDIVIDUALISATION

According to Van Rooyen (2012:21), identification and individualisation are two unchanging principles in research. He further mentioned that, to suggest that identification is useless in an investigation since the investigator will identify an object without knowing where it came from. In addition, Van Rooyen (2012:21) says the following:

- Identification is only meaningful if the individuality of the object is determined.
- When a sequence of identifications has been performed, identification is feasible.
- Individualisation is based on comparison and proof that a specific sample is unique— even among members of the same class, and also that the object found at the crime scene and the standard of comparison are of the same origin; and
- Is meant to favorably individualise the contested items while also indicating the participation of the objects or people who offer the standard of comparison.

Individualisation happens when disputed objects found at a crime scene must be linked to those of known origin, according to Ogle (2012:9). Individualisation, according to Greene (2007:563) and Chisum and Turvey (2011:107), is confirmation that a single sample is unique, even among members of the same class.

2.6 FINGERPRINTS

Police have long sought a technique to identify criminal suspects; the first personal identification approach was created by a French police specialist, Alphonse Bertillon and introduced in Girard (2011:134). Girard (2011:135) states that there were two males who were identical twins from the U.S., namely William and Will West. The twins William West and Will West were brought to

Bertillon to be measured and photographed, and they were found to be identical. The United States penitentiary at Leavenworth discovered that they had two prisoners who were nearly identical. After fingerprinting the two inmates, it was determined that, despite the fact that they appeared to be identical twins, their fingerprints were completely different. Will West's fingerprints were not the same as William West's. No one knows how Mark Twain learned that fingerprints were powerful forensic evidence, but he utilised them in his book to spectacularly solve a case in which identical twins were wrongly accused of murder Bertino (2012:134). Using fingerprints to identify people was a huge advance in forensic science, both in real life and in fiction, and it provided law enforcement with a tool to solve crimes all around the world, allowing them to clear the innocent and punish the guilty.

2.6.1 What is a fingerprint?

“A print is a mark formed by an impression, a line, character, figure, or depression, made by the pressure of one thing on another,” says Fieldhouse (2008:1). A chance fingerprint, according to Nath (2010:38), is the most important evidence obtained at a crime scene.

Chance fingerprints are latent prints left at the crime scene, on a weapon or on other objects at the location of crime, since fingerprints provide an impenetrable way of personal identification (Gilbert, 2010:454; Nath, 2010:1; Saferstein, 2011:534).

Fingerprints are an impression or reproduction left on any substance by the friction skin of the fingers, according to Hawthorne (2009:19); most typically, we witness the impression left by the fingerprints or the bulb of the fingers. The friction skin, on the other hand, covers the entire inner hand (palm) and fingers. Fingerprints are the best and most conclusive sort of physical evidence that links persons to a crime scene or objects (James & Nordby, 2009:37).

Houck and Siegel (2011:52) state that, the impression of the friction ridge on the skin of each finger's end joint, taken from cuticle to cuticle forms a fingerprint. A fingerprint is described as any reproduction of the ridge area of the first or nail joint of the finger, as well as the ridge area of the remaining joint of the finger (James & Nordby, 2009:356; Saferstein, 2011:539).

2.6.2 Role of Criminal Record Centre (CRC) in criminal investigation

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

- To assist the SAPS in its investigation of crime.
- To assist the detectives with information of the accused if they have previous convictions or pending cases, especially for bail application purposes before the case is held.
- To increase crime scene investigators' ability to collect evidence at crime scenes.
- To be able to link the suspects to crimes within all provinces.
- To remove past convictions of offenders from the system when the legal time limit has passed.

2.7 WHAT ARE THE TYPES OF FINGERPRINTS?

According to Bertino (2012:138), investigators found three types of prints at a crime scene:

- Patent fingerprints or visible prints:

They are left on the smooth surface when blood, ink, or some other liquid comes in contact with the hands and is then transferred to that surface.

- Plastic fingerprints:

Are actual identities left in some soft material such as clay, putty, or wax.

- Latent fingerprints or hidden prints:

The transfer of oils and other bodily secretions onto a surface cause these. They can be made visible by dusting with powders or employing a chemical reaction to make the fingerprints more visible in some way (Bertino, 2012:138).

Girard (2011:155) defines three types of fingerprints:

- Latent fingerprint – a friction ridge impression that is not readily visible to the naked eye.
- Patent fingerprint – a fingerprint that is readily visible to the eye.

- Plastic fingerprint – a fingerprint indentation left by pressing a finger into a soft surface.

Bertino (2012:138) is in agreement with Girard (2011:155), by stating that there are three types of fingerprints:

- Firstly, latent prints, hidden or invisible, those are visible only through electronic, chemical and physical preparing techniques.
- Secondly, patent prints that are obvious to the human eye and are stored in a material that holds the state of the edge detail.
- Thirdly, plastic prints, which are friction ridge impressions from a finger or palm (or toe/foot) stored in a material that holds the state of the edge detail.

2.8 FINGERPRINT PATTERNS

Fingerprint patterns take the form of arches, loops and whorls, with arches consisting of plain arches and tented arches (Lyman, 2013:59; Nath, 2010:25-26).

2.8.1 Arch

Hawthorne (2009:22) informs that arch patterns account for approximately 5 to 15 percent of fingerprint patterns. They can be further categorised as plain arches and tented arches. Girard (2011:139) states that a fingerprint that lacks any deltas is considered to be an arch.

According to Nath (2010:26), an arch pattern consists of the parallel flow of ridges from one side of the finger to the other without any turning back/re-curve. The arch pattern may take the form of the plain/flat or tented-shape arches. In arch patterns, there are no cores or deltas (see Figure 2.1)



Figure 2.1: A diagrammatic representation of an Arch, (Nath, 2010:26)

2.8.2 Loop

According to Nath (2010:28-29) and Pepper (2010:945), loop patterns account for 60 to 65 percent of fingerprint patterns. They are the most prevalent pattern type (Hawthorne, 2009:22). At least one of the ridges in a loop pattern should perform an autonomous in reverse turn; there should be one delta and one core, with at least one count between them. Loops can be either ulnar or radial (see Figure 2.2).



Figure 2.2. A diagrammatic representation of a Loop pattern, (Pepper, 2010:945)

2.8.3 Whorl

Whorl patterns account for 30 to 35 percent of fingerprint patterns (Hawthorne (2009:22). At least one ridge spins in whorl patterns until one full cycle is accomplished. James & Nordby (2009:356) mentioned that each whorl pattern has two or more deltas and one or more cores (see Figure 2.3).



Figure 2.3. A diagrammatic representation of a whorl pattern, (Hawthorne, 2009:22).

2.9 SUSPECT

A suspect, according to Van Rooyen (2008:14), is someone who is suspected of committing a crime by law enforcement personnel. Every criminal case, according to Van Rooyen (2008:14), has a suspect. Furthermore, according to Van Rooyen (2008:14), a suspect is someone who is detained in police custody but has not yet been charged and against whom police officers are still investigating allegations. This involves, if possible, reading the suspect's rights to an apprehended person and recovering exhibits.

A suspect, according to Joubert (2013:240), is someone about whom there is some suspicion that they may be involved in the crime under investigation, and whose account of events is mistrusted or disbelieved.

2.10 LOCARD PRINCIPLE

Edmond Locard is credited with recognising the theory of exchange Fish, Miller, and Braswell (2011:110). Pepper (2010:7) explains that Locard's exchange principle is a basic forensic theory which states that objects that come into contact with each other always transfer material to each other. The Locard exchange principle asserts that whenever two items come into contact with each other, there is always a transfer or exchange of material and knowledge between them Orthman and Hess (2013:123), Saferstein (2011:8), Stelfox (2009:136), and Turvey and Petherick (2010:28). When a person comes into contact with an object or another person, a cross-transfer of material occurs.

Girard (2015:38-39) agrees with the aforementioned writers and adds that whenever two objects come into touch, a comprehensive search for trace evidence on every victim and suspect should be done. When two or more items or persons come into contact with one another, Van Rooyen (2012:20) claims that clues are frequently left behind. To put it another way, the Locard principle asserts that whenever a criminal commits a crime at a crime scene, they will bring something into the scene, leave something at the scene, and leave with something from the scene.

When considering the instance of housebreaking and theft, Lochner and Zinn (2015:40-41) and Van Graan and Budhram (2015:45) state that all the objects that the suspect will touch at the crime scene will have their fingerprints on them. When suspects break into a house, for example, they touch the doors, handles, windows, TV stand, refrigerator, or any other object in the house, leaving their fingerprints on these items, which can subsequently be used to trace them down.

2.11 THE USE OF FINGERPRINTS TO IDENTIFY SUSPECTS

Fingerprints, according to Fish et al. (2011:56-57), are unique. Fingerprint investigators utilise fingerprints in forensic science to identify people and, in particular, to locate, identify, and arrest suspects in criminal situations. Fingerprints can also be used to rule out someone who is not the perpetrator of the crime (Ogle, 2012:126). When suspects touch any objects at a crime scene, they leave their fingerprints on those objects, allowing fingerprint investigators to trace, find, identify, and individualise criminals using the fingerprints lifted from those objects at the crime scene.

According to Anderson (2013:174-175), the criminal may either bring something (evidence) to the crime scene or remove something away from it during the commission of the crime. This trace evidence can be analysed to assist identify or eliminate a suspect by establishing a link between the suspect and the crime scene.

According to Girard (2011:151), using fingerprints to solve a crime entails the identification procedure, i.e., who left the fingerprint behind? Was it the homeowner, a neighbor who had visited the house earlier in the week, or the robber who trashed the house in the instance of a burglary? Fingerprints collected at the crime scene can be compared to reference fingerprints stored in the CRC's massive criminal and civil fingerprint databases in the hopes of identifying the print's source and thereby individualising the evidence.

The admission of fingerprint evidence by the court has always been premised on the idea that no two people have identical fingerprints Saferstein (2011:357). The use of fingerprints to identify suspects is thus successful, because no two people have identical fingerprints, and the fingerprints of the suspect taken from the crime scene will be a match. The following are the two most crucial characteristics of fingerprints for their use as a means of personal identification:

- ❖ Every fingerprint is unique. Nath (2010:13) state that a fingerprint is an individual characteristic: "No two fingers have yet been seen to exhibit identical ridge features."
- ❖ Fingerprints do not alter over the course of a person's life unless the dermis skin layer is damaged (James & Nordby, 2009:356).

2.12 HOW FINGERPRINTS COULD BE USED AS AN IDENTIFICATION TECHNIQUE TO IDENTIFY SUSPECTS?

The beginning of forensic science is at the crime scene. At the crime scene, evidence must be collected, conserved, and recorded in its original state, with as little tampering as possible. When detectives fail to secure the crime scene, physical evidence will be destroyed (Saferstein, 2013:34). According to Fisher and Fisher (2012:1), physical evidence may be more trustworthy than eyewitnesses to crimes since the value of evidence is directly influenced by what happens to it immediately after the crime is committed. Investigators must be informed about AFIS and the importance of dispatching fingerprint specialists to the crime scene to collect latent prints. A latent

print may not match a file print if the suspect's prints are not taken properly Pepper (2010:93). The importance of physical evidence is determined by its capacity to demonstrate that a crime was done, as well as how, when, and by whom it was committed (Orthman & Hess, 2013:128-129).

2.12.1 Fingerprint identification

According to Osterburg and Ward (2010:54), different characteristics of the friction ridge are crucial in the identification and individualisation of fingerprints. Ridge characteristics, ridge line patterns, line ridge deviation information, and unique fingerprint qualities are all used to identify fingerprints. According to Osterburg and Ward (2012:51-52) identifying a latent fingerprint requires studying it for any observable class characteristics in order to develop comparison prints that are not of the same pattern type. The next stage is to locate a cluster of individual ridge characteristics, which is made up of two or three points worth of ridge characteristics grouped together.

2.13 SUMMARY

The term "forensic science" refers to the science that is used to address legal issues. It is the use of science to enforce civil and criminal laws in the criminal justice system. The impression or reproduction left on any material by the friction skin of the fingers is known as a fingerprint. The impression made by fingerprints, or the bulb of the fingers is the most common; nonetheless, the friction skin spans the entire inner hand (palm) and the fingers.

Fingerprint experts in forensic science use fingerprints to locate, identify, and/or eliminate suspects in criminal cases. Fingerprint identification is based on the assumption that no two people's fingerprints are same, and that each fingerprint is distinct. The gathering of information, the identification of the correct suspect, and the use of scientific procedures to the study of a crime scene are all part of a criminal investigation. Loop, whorl, and arch are the three primary fingerprint patterns.

Unique mark specialists in criminology utilize fingerprints to discover, identify, and potentially dispose of suspects in criminal instances. The unique finger impression identifying proof is based on the notion that no two individuals have identical fingerprints and that each unique mark is one

of a kind. Criminal investigation involves the exchange of information, the identification of the appropriate suspect, and the application of logical methods to the examination of a crime scene. The circle, whorl, and curve are the three basic unique mark designs.

CHAPTER 3: PRESENTATION AND INTERPRETATION OF DATA

3.1 INTRODUCTION

In order to address the research problem and the research question. The following research question was asked in order to reach the study's objectives and the aim: "How could fingerprints be used in identifying suspects?"

3.2 INTERVIEWS WITH THE PARTICIPANTS DURING DATA COLLECTION

Gray (2009:320) stated that the gathering of data should be very comprehensive as the important understandings may appear only once the data have been analysed. This implied that the researcher had to use various data gathering tools, like semi-structured interviews, which is the one that the researcher used in this study. According to Creswell (2012:140), data is more than just gathering information. One chooses which participants to study. After that, one obtains their permission to be considered. The researcher conducted the interviews with (7) the participants who worked at Krugersdorp LCRC after their permission was granted to the researcher. During the interviews, the researcher followed the interview schedule, and unstructured questions were followed by the researcher as it requires participants to respond in their own words (Bhattacharjee, 2012:74).

3.2.1 Criminal Investigation

"What are the aims of criminal investigation?" participants were asked, by the researcher during the interviews.

The following were responses by the participants, quoted verbatim:

- ❖ According to two (2) participants, *a criminal investigation involves the collecting of information in order to determine the suspected criminal activity.*
- ❖ Criminal investigation, according to two (2) participants, *is the investigation of a criminal offence after or before it is committed.*
- ❖ Two (2) participants stated that *criminal investigation is the procedure through which the investigator collects and gathers evidence for court proceedings.*
- ❖ One (1) respondent stated that *a criminal investigation occurs after a crime has been committed, and that the crime should be an unlawful conduct that is punishable by the*

state, and that the crime must contain all four elements of crime, which are: the principle of legality, the conduct, the unlawfulness, and the culpability.

In the literature, criminal investigation is described as the process of identifying individuals and physical items implicated in a crime in proving or refute the case in court. The seven (7) participants' responses were identical to the facts presented in the literature review, and the participants' perspectives indicated that they comprehend what criminal investigation entails. In general, their understanding is consistent with that of the many authors in the literature studied. When the perpetrators of the crime are identified, they must be apprehended, and investigators must collect and compile evidence that would link the accused perpetrator to the crime. In order to secure a good conviction, investigators must then submit evidence in court.

The researcher believes that the opinions of the participants were comparable to those of the reviewed literature, particularly Osterburg and Ward (2012:5) and Brandl (2014:3), who state that in order to convict a perpetrator who committed a crime, Investigators must follow the procedure of collecting information and evidence in order to find, identify, and arrest such a perpetrator.

3.2.2 Objectives of Criminal Investigation

“What are the objectives of criminal investigation?” participants were asked, and they responded as follows quoted verbatim:

- ❖ *To discover the facts surrounding the criminal conduct, pursue possible leads, apprehend potential suspects, and get a court conviction (1 participant).*
- ❖ *To link and identify the criminals at the scene of the crime so that they can be prosecuted (2 participants).*
- ❖ *To prove that a crime was committed, as well as to identify and apprehend suspects (3 participants).*
- ❖ *To track down, identify and apprehend suspects (1 participant).*

All seven (7) participants were asked to name the investigation's objectives. They are all in accord with the reviewed literature, and the similarities in their answers are the same as the information found from the reviewed literature, particularly the studies by Hess and Hess (2013), Benson et al (2015) and Ferraro (2012).

3.2.3 Identification

“What is identification?”. The following are the participants' responses quoted verbatim:

- ❖ *To identify a person as the perpetrator of a crime* (1 participant)
- ❖ *The action or process of identifying someone or something* (2 participants)
- ❖ *Once a suspect has been identified, the investigator can link him or her to the crime* (1 participant)
- ❖ *It occurs when fingerprints are compared to determine who the culprit is* (1 participant)
- ❖ Two (2) participants did not respond to this question.

Seven (7) participants were asked to explain what they understand by the term "identity." Two of them did not respond, and the remaining five all agreed with the reviewed literature. The material revealed in the examined literature, particularly the investigations of Van Rooyen (2012) and Saferstein, is similar in their answers (2011).

3.2.4 Fingerprints

“What is a fingerprint?” participants were asked. They responded in the following manner, and it was quoted verbatim:

- ❖ *It is a reproduction of the ridge surface of the first nail joint, as well as the rest of the finger* (1 participant)
- ❖ *It is a reproduction of the first nail joint of the fingers' friction skin, but it also encompasses the other fingers* (1 participant)
- ❖ *It's an imprint or mark made on a surface by a person's fingertip that can be used to identify people* (1 participant)

- ❖ *It is the mark that is made on the object by a person's finger or the first nail joint of the finger surface, that can be collected and used to identify a person (2 participants)*
- ❖ *Reproduction of the first nail joint of the finger, but includes the other joints of the fingers, palm, and soles of the foot (2 participants).*

Participants agree with the reviewed literature; commonalities in their responses match information from the reviewed literature, particularly Houck and Siegel (2011) and Hawthorne (2011) research (2009).

3.2.5 The role of the Criminal Record Centre in the investigation of crime

“What is the role of the Criminal Record Centre in the investigation of crime?” participants were asked. Their answers were quoted verbatim in the following manner:

- ❖ *Previous convictions and offender profiling, as well as the ability to cancel previous convictions once the period has passed (2 participants)*
- ❖ *To help investigators in the collecting of scientific evidence (1 participant)*
- ❖ *To improve evidence collection from the crime scenes and to compare the evidence found at the crime scenes (fingerprints, DNA, etc.) with the record that they have in their database, to link the suspects (2 participants)*
- ❖ *To assist investigators with the suspect's criminal record link the suspects to crimes within the country (2 participants).*

The replies of the participants are compatible with the reviewed literature, particularly research from the SAPS strategic plan of 2010-2014 (SAPS, 2010:15-16).

3.2.6 Types of Fingerprints

Participants were asked, “What are the types of fingerprints?” The following were responses by the participants, quoted verbatim:

- ❖ *Latent fingerprint, the patent fingerprint, and plastic fingerprint (7 participants).*

Responses from the participants are the same as what the literature says, the study by Bertino (2012) and Girard (2011).

3.2.7 Fingerprint Patterns

Participants were asked, “What are the fingerprint patterns?” The following were responses by the participants, quoted verbatim:

- ❖ *Whorl, arch, and loop (7 participants)*

All of the participants' responses are consistent with the reviewed literature, as well as studies by (Lyman 2013) and (Nath 2010).

3.2.8 Suspect

Participants were asked, “What is a suspect?”. Their answers were quoted verbatim in the following manner:

- ❖ *An arrested person who has not attended a court (2 participants)*
- ❖ *A person who has committed a crime, but not yet charged (1 participant)*
- ❖ *A person who is alleged to have committed an act or omission that contains all elements of crime (1 participant)*
- ❖ *Anyone that is suspected to be in the commission of a crime and has been charged (3 participants).*

The participants' perspectives are consistent with one another and with the literature by Van Rooyen (2008) and Joubert (2013), indicating that they understand the concept of suspect.

3.2.9 Locard Principle

“What is the meaning of the Locard Principle”, participants were asked, The following are the verbatim responses from the participants:

- ❖ *When the suspects leave or take evidence such as fingerprints when entering or leaving the crime scene (5 participants).*

- ❖ Because they were unfamiliar with the Locard principle, two (2) participants did not reply to this question.

Only two participants did not know what the Locard principle is, according to the researcher; these participants were extremely ignorant, given that all of the participants have more than five years of experience as fingerprint investigators, have all completed the basic Crime Scene Management (CSM) course, have had training on fingerprint comparisons, and some even hold the title of fingerprint experts. One of the subjects taught in the CSM course and in the research for becoming a fingerprint expert is the Locard principle.

3.2.10 Fingerprints Identification

Participants were asked, "How could fingerprints be used to identify suspects?". The following are the verbatim responses from the participants:

- ❖ *Fingerprints from the crime scene were compared to fingerprints from SAPS 76 and SAPS 92. (2 participants)*
- ❖ *Fingerprints are used to identify suspects who were implicated in the commission of a crime by matching fingerprints obtained from the crime scene with fingerprints of the suspect. If their characteristics are found to be similar, fingerprints will be used to identify the person (2 participants)*
- ❖ *The fingerprints found at the crime scene are compared to the fingerprints brought to CRC by investigators on SAPS 76; alternatively, the suspect's fingerprints can be searched and compared on AFIS (3 participants).*

The participants' comments are consistent with the literature reviewed, particularly Osterburg and Ward's study (2010).

3.3 SUMMARY

This chapter discussed the presentation of data and the interpretation of the findings of the main research of the study. The responses of the participants were quoted verbatim and presented to address the questions asked during the interview of the participants. The next chapter will present the recommendations of this study. The following chapter 4 focuses on the findings and recommendations.

CHAPTER 4: RESEARCH FINDINGS AND RECOMMENDATIONS

4.1 INTRODUCTION

The availability of irrefutable, important, and admissible evidence is frequently critical to the success of a criminal investigation. Even if a suspect acknowledges guilt, evidence is still required because the admission could later be proven to be false, rejected, or there could be accusations that it was forced or involuntary, rendering it inadmissible. A criminal investigation is one of the most important duties of law enforcement authorities. Criminal investigators and fingerprint investigators relay this information.

Physical evidence is crucial in criminal investigations, and fingerprints left at a crime scene contain crucial information. After a crime has been committed, a crime scene is considered to be the most crucial source of information, and investigators' responsibility is to ascertain the truth about what happened and link suspects to the crime.

The most important task in a criminal investigation is to identify the suspect. Many of the cases assigned to the investigators fall under the category of "unknown suspect," which means the suspect's activities are unknown. To verify information provided by victims or witnesses, personal identification processes may be required. There are few positive indicators of personal identity that can be found at crime scenes or gained in general. Fingerprints have long been thought to be the most accurate indicator of human identity.

According to Fisher, Tilstone, and Woytowicz (2009:72), fingerprint experts must scan the crime scene prints on AFIS for comparison reasons in all cases where fingerprints are found. The researcher summarised the study's findings and conclusions in this chapter, as well as making recommendations for practitioners in the field of fingerprint identification. The aim of the research was to determine how fingerprints could be used in identifying suspects. To address this aim, one research question was posed: "How could fingerprints be used in identifying suspects?"

4.2 FINDINGS

The findings are exhibited under primary and secondary findings. The primary findings will concentrate on responding to the research question: "How could fingerprints be used in identifying suspects?"

4.3 PRIMARY FINDINGS

Research Question: "How could fingerprints be used in identifying suspects?"

The following findings were reached based on the study literature and the researcher's own interviews. The following were the researcher's conclusions in response to the above research question:

- ❖ Fingerprinting has shown to be one of the most effective methods of apprehending criminals who would otherwise go undiscovered and continue their illegal activities.
- ❖ According to the study findings from interviews and the literature, fingerprint identification in forensic science entails identifying unknown fingerprints and matching them with the fingerprints of suspects who have already committed crimes and are being investigated.

4.4 SECONDARY FINDINGS

Research Question: "How could fingerprints be used in identifying suspects?"

4.4.1 Criminal investigation

Criminal investigation, according to the literature, is the process of discovering, collecting, preparing, identifying, and presenting evidence in order to ascertain what happened and who is responsible. The participants were aware of what a criminal investigation entailed.

4.4.2 Objectives of criminal investigation

From data gathered through interviews and literature it was found that the objectives of criminal investigation are the following:

- ❖ To determine whether or not a crime has been committed.
- ❖ To identify persons.
- ❖ To arrest suspects
- ❖ To track down and retrieve stolen property
- ❖ To assess whether there is sufficient evidence and facts to sustain or refute the cause of action.
- ❖ To obtain information and evidence to identify the responsible person.

- ❖ To help the state in prosecuting the party accused with the crime and to provide the best case to the prosecutor.

It was found that the participants in this research agreed with one another and with the literature, on the objectives of criminal investigation.

4.4.3 What is identification?

The researcher discovered that the objective of analyzing physical evidence is for identification and comparison based on the reviewed literature and participants. Identification is used to pinpoint an item as having a place with a particular classification of objects. It is also found that after the suspect has been identified, the investigator can link such suspect to the crime.

4.4.4 What is a fingerprint?

From the literature and the interviews, the researcher established that a fingerprint is the reproduction of the ridge area of the first or nail joint of the finger, in any way whatever, and it likewise incorporates the ridge area of the remaining joint of the finger.

Based on the detailed review, the literature and the participants were all in agreement on what a fingerprint is, and they have a reasonable understanding of what a fingerprint entail.

4.4.5 What is the role of the LCRC in criminal investigation?

The researcher established, from the literature and the participants, that the roles of the LCRC are the following:

- ❖ Management of criminal records
- ❖ Application of modern procedures to recover physical evidence from crime scenes
- ❖ Offender profiling and previous convictions, to help investigators in the gathering of physical evidence
- ❖ Searching for, collecting, packaging and protecting physical evidence found on crime scenes
- ❖ Linking of suspects to crime scenes by means of fingerprints

4.4.6 What are the types of fingerprints?

From the participants and the literature, the researcher was able to establish the three types of fingerprints: patent fingerprints or visible prints, plastic fingerprints, and latent fingerprints or hidden prints.

4.4.7 What are the fingerprints patterns?

The literature and the interviews revealed that fingerprint patterns take the form of arches, loops and whorls.

4.4.8 What is a suspect?

The participants' responses and the detailed literature review enabled the researcher to conclude that a suspect is a person considered to be directly or indirectly implicated with a crime, either by an overt act or by arranging or guiding it, or a person who is affirmed to have carried out an act or omission that contains all the elements of crime.

4.4.9 Locard principle

The researcher established that, according to the reviewed literature, Edmond Locard is credited with recognising the theory of exchange. Locard stated, very accurately, that every contact leaves a trace. In other words, the Locard principle states, authoritatively, that the culprit will bring something to the crime scene, leave something at the crime scene, and withdraw with something from the crime scene. Only two participants did not answer this question, researcher finds that to be very ignorant of such participants as the Locard Principle is one of the topics covered in the CSM course.

4.4.10 How is a fingerprint used to identify suspects?

The researcher established that, from the literature consulted and the answers from the participants, during the commission of a crime the culprit may either leave fingerprints (trace evidence) at the crime scene or take something from the crime scene. This trace evidence can be analysed to link the suspect and the scene and help identify or to remove suspect. The literature revealed that investigating officers need to be informed about the significance of AFIS, and the significance of summoning the fingerprint investigators to the crime scenes to gather the latent prints.

No two individuals have identical fingerprints; therefore, the use of fingerprints to identify suspects is fruitful, as there are no two individuals who have identical fingerprints, and the

fingerprints of a suspect, that were lifted from the crime scene, will always identify the suspect who committed such crime.

4.5 RECOMMENDATIONS

The following recommendations are made on the basis of the facts which unfolded during the research process. In chapter one, the researcher indicated that the aim of this research was to determine how fingerprints could be used as an identification technique to identify suspects.

The researcher covered the research question, aims and purpose. Some concepts were not covered satisfactorily in some of the literature, and the participants also did not have enough knowledge of such concepts.

The following recommendations revolve around areas wherein the participants were seen to be having little or no knowledge at all. In order to improve the skills and aware-ness of the participants, it is recommended that training intervention be conducted to address the following concepts:

- Criminal Investigation.
- Identification.
- To inform investigating officers about the significance of AFIS, and the significance of summoning fingerprint investigators to the crime scene to collect the latent prints.
- The Locard principle.

4.6 CONCLUSION

In this study, the researcher was able to address the research question, "How could fingerprints be used in identifying suspects?" The participants and the reviewed literature proved that suspects could be identified and linked to the crime scenes by means of fingerprints. Fingerprint identification is based on the presumption that no two people have identical fingerprints, and each unique fingerprint is exceptional.

Internationally, fingerprints are viewed as the most successful technique in the identification of suspects. It is significant that fingerprint investigators should approach crime scenes with alertness, and spend some time tracing, developing and lifting quality prints that are clear and visible. Investigators should adhere to the importance of taking the suspects' fingerprints correctly during

the arrest and charging of such suspects, as it will assist during the process of fingerprint scanning at AFIS, and fingerprint comparison; by so doing it will empower fingerprint investigators to identify suspects with the crime committed.

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ANNEXURE A: INTERVIEW SCHEDULE

TOPIC: THE USE OF FINGERPRINTS IN IDENTIFYING SUSPECTS

AIM: To determine how fingerprints could be used in identifying suspects.

RESEARCH QUESTION:

- How could fingerprints be used in identifying suspects?

You are kindly requested to answer the following questions in this interview schedule, for the researcher. The questions, responses and the results will be revealed.

Privacy will be maintained throughout the study, the researcher will ensure that participants are treated equally regardless of their socio-economic status. The information given will be treated with confidentiality and no other person will have access to interview data. The researcher will ensure that participants are treated equally regardless of their socio-economic status whether illiterate or learned and privacy will be maintained throughout the study. The participants to the research will remain unanimous. The information you provide will be used only in a research project for a Master of Arts degree registered with the Programme Group: Criminal Justice at the University of South Africa. The analysed and processed data will be published in a research report.

The interviewer herself, on paper, will note your answers. Should any question be unclear, please ask the researcher for clarification. Only one answer per question is required. When answering the questions, it is very important to give your own opinion.

Written permission has been obtained from the South African Police Service in advance, for the interview to be conducted.

PARTICIPANT

I hereby give permission to be interviewed and that information supplied by me can be used in this research.

YES /NO

SECTION A: BACKGROUND INFORMATION

- Where are you working?

- How long have you been in a place of employment?
 - 1 – 5 yrs. 5yrs – 10 yrs. 10yrs and above

- Do you currently investigate housebreaking cases or other cases that require fingerprints?
 - YES NO

- For how many years have you been involved in cases that required fingerprints?

- What is your highest qualification?

SECTION B: How could fingerprints be used to identify suspects?

1. What is criminal investigation?
2. What are the objectives of criminal investigation?
3. What is Identification?
4. Individualisation
5. Fingerprints
 - 5.1. What is a fingerprint?
6. Role of Local Criminal Record Centre (LCRC) in criminal investigation
7. What are the types of fingerprints?
 - 7.1. Fingerprint patterns

7.1.1. Arch

7.1.2. Loop

7.1.3. Whorl

10. What is a suspect?

11. What is the meaning of Locard Principle?

12. How could fingerprints be used to identify suspects?

12.1. Fingerprints as identification technique

12.1.1 Fingerprint identification

ANNEXURE B: SAPS PERMISSION TO CONDUCT RESEARCH

SUID-AFRIKAANSE POLISIEDIENS  SOUTH AFRICAN POLICE SERVICE

Privaatsak/Private Bag X 94

Verwysing/Reference:	3/34/2
Navrae/Enquiries:	Lt Col Joubert Intern Mahamba
Telefoon/Telephone:	(012) 393 3118 (012) 393 2423/4370

**DIVISION: RESEARCH
SOUTH AFRICAN POLICE SERVICE
PRETORIA
0001**

- A. The Provincial Commissioner
GAUTENG
- B. The Divisional Commissioner
FORENSIC SERVICES

**PERMISSION TO CONDUCT RESEARCH IN SAPS: THE USE OF FINGERPRINTS
IN IDENTIFYING THE SUSPECTS: MASTERS OF ARTS: UNIVERSITY OF SOUTH
AFRICA: RESEARCHER: TP NEMUDZIVHADI**

- A-B**
1. The above subject matter refers.
 2. The researcher, Mrs TP Nemudzivhadi, is conducting a research study with the aim to ***educate the detectives and the investigating officers in the SAPS and professionals in the law enforcement, on the use of fingerprints in identifying the suspects.***
 3. The researcher is hereby requesting permission to conduct semi-structured interviews with seventy-five forensic investigators at five Police Stations in the Krugersdorp Cluster.
 4. The proposal was perused according to National Instruction 1 of 2006. This office recommends that permission be granted for the research study, subject to the final approval and further arrangements by the offices of the Provincial Commissioner: Gauteng and the Divisional Commissioner: Forensic Services.
 5. We hereby request the final approval by your office if you concur with our recommendation. Your office is also at liberty to set terms and conditions to the researcher to ensure that compliance standards are adhered to during the research process and that research has impact to the organisation.

**PERMISSION TO CONDUCT RESEARCH IN SAPS: THE USE OF FINGERPRINTS
IN IDENTIFYING THE SUSPECTS. MASTERS OF ARTS: UNIVERSITY OF SOUTH
AFRICA: RESEARCHER: TP NEMUDZIVHADI**

6. If approval granted by your office, this office will obtain a signed undertaking from researcher prior to the commencement of the research which will include your terms and conditions if there are any and the following:
 - 6.1. The research will be conducted at his/her exclusive cost.
 - 6.2. The researcher will conduct the research without the disruption of the duties of members of the Service and where it is necessary for the research goals, research procedures or research instruments to disrupt the duties of a member, prior arrangements must be made with the commander of such member.
 - 6.3. The researcher should bear in mind that participation in the interviews must be on a voluntary basis.
 - 6.4. The information will at all times be treated as strictly confidential.
 - 6.5. The researcher will provide an annotated copy of the research work to the Service.

7. If approval granted by your office, for smooth coordination of research process between your office and the researcher, the following information is kindly requested to be forwarded to our office:
 - **Contact person:** Rank, Initials and Surname.
 - **Contact details:** Office telephone number and email address.

8. A copy of the approval (if granted) and signed undertaking as per paragraph 6 supra to be provided to this office within 21 days after receipt of this letter.

9. Your cooperation will be highly appreciated.


**LIEUTENANT GENERAL
DIVISIONAL COMMISSIONER: RESEARCH
DR BM ZULU**

DATE: 2017/01/17

ANNEXURE C: UNISA ETHICAL CLEARANCE



UNISA CLAW ETHICS REVIEW COMMITTEE

Date 20170915

Reference: ST48 OF 2017

Applicant: T P Nemudzivhadi

Staff: Dr. NJC Olivier

Dear T P Nemudzivhadi

**Decision: ETHICS APPROVAL
FROM 15 SEPTEMBER 2017 to
14 SEPTEMBER 2020**

Researcher: T P Nemudzivhadi
Supervisor: Dr. Dr. NJC Olivier

The use of fingerprints in identifying the suspects

Qualification: MA Criminal Justice

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 15 September 2017 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.



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Open Rubric

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 14 September 2020. Submission of a completed research ethics progress report will constitute an application for renewal of Ethics Research Committee approval.

Note:

The reference number ST48 of 2017 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Yours sincerely,



PROF D GOVENDER
Chair of CLAW ERC
E-mail: govend1@unisa .ac.za
Tel: (012) 429-9482



PROF OS SIBANDA
Acting Executive Dean : CLAW
E-mail: sibanos@unisa.ac.za
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 **DRERC 25.04.17 - Decision template (V2) - Approve**

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ANNEXURE D: TURN-IT-IN RECEIPT



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Submission author: Tp Nemudzivhadi
Assignment title: Revision 2
Submission title: the use of fingerprints in identifying suspects
File name: full_work_2nd_Pharaarsed_Oct_2021.docx
File size: 477.23K
Page count: 43
Word count: 12,330
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Submission date: 16-Oct-2021 01:39PM (UTC+0200)
Submission ID: 1675425787

GENERAL ORIENTATION

1.1 INTRODUCTION

Fingerprinting, according to Lyman (2013:57), has shown to be one of the most successful techniques for arresting persons that may go unnoticed and carry out their crimes. When a crime is committed, specialists in distinguishing marks leave inactive prints at the crime scene. These prints are classed as 'unknown prints' because they were taken at the scene of crime.

Unknown prints are scanned into a fingerprint identification system called as the Automated Fingerprint Identification System in South Africa (AFIS). AFIS specialists can compare known and unknown prints from the system at the Local Criminal Record Centre (LCRC) and trace all the points of the prints until there is a match with the then unknown prints. These can be confirmed by the second AFIS expert, to be sure that the points identified by the first expert are correct. Each individual has unique fingerprints. There are fingerprint databases at the South African Fingerprint Bureau (SAFB) and at the Criminal Record Centre (CRC) (Researcher's work experience).

Since detectives do not use fingerprint investigators in such cases, many footsneaking and theft cases under the Krugersdorp cluster stations were closed as 'undetected'. Since the perpetrator's fingerprints are not lifted from the crime scenes, they cannot be identified, traced down, and apprehended for the crimes they have committed.

Criminal investigation is one of the most essential responsibilities of law enforcement authorities. Fingerprint investigators express this as well. Most important task in a criminal investigation is to identify the suspect. A significant number of cases assigned to investigators are of the 'unknown suspect' variety, meaning that the suspect committing the crime is unknown. Personal identification methods may be necessary to verify what victims or witnesses provide.

There are relatively few positive indicators of personal identity that are encountered at crime scenes or otherwise obtained. The researcher has discussed the importance of fingerprint investigators in lifting and analysing the suspect's fingerprints found at the crime scene, how to