

**EVALUATING THE MODUS OPERANDI OF PERPETRATORS OF
CREDIT CARD FRAUD**

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Yours faithfully|

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DEDICATIONS

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LIST OF ACRONYMS

ACU	Anti-Corruption Unit
CJS	Criminal Justice System
COE	Council of Europe
CPF	Community Police Forum
CRC	Convention on the Rights of the Child
CSF	Community Safety Forum
DHA	Department of Home Affairs
DNC	Deputy National Commissioner of Police
DoJ&CD	Department of Justice and Constitutional Development
DoL	Department of Labour
DSD	Department of Social Development
DPCI	Directorate of Priority Crime Investigation
JCPS	Justice Crime Prevention and Security
MO	Modus Operandi
NCPS	National Crime Prevention Strategy
NGO	Non-Governmental Organisation
NPA	National Prosecuting Authority
NPF	Nigeria Police Force
NPP	Neighbourhood Police Post
SADC	Southern African Development Community
SAPS	South African Police Service

ABSTRACT

Today utilization of Credit Card even in non-industrial nations has become a typical situation. Individuals use it to shop, cover tabs and for online exchanges. In any case, with increment in number of Credit Card clients, the instances of extortion in Credit Card have likewise been on ascent. Master-card related fakes cause all around the world a deficiency of billions of Rands. Visa misrepresentation should be possible from various perspectives. By lost or taken cards, by delivering phony or fake cards, by cloning the first site, by deleting or changing the attractive strip present at the card which contains the client's data, by phishing, by skimming or by taking information from a shipper's side. The growth in electronic transactions has resulted in a greater demand for fast and accurate user identification and authentication. Conventional method of identification based on possession of pin and password are not all together reliable. Higher acceptability and convenience of credit card for purchases has not only given personal comfort to customers but also attracted a large number of attackers.

This study followed qualitative research and the research design that was adopted in this study is of an empirical nature. The researcher decided on this research design, because he wanted to establish the reason for the lack of knowledge or the stumbling blocks concerning the investigation and prosecution of credit card fraud. The ideal population of this study consisted of three bank managers from Standard bank and First National Bank and Capitec bank, all of them were females in terms of gender, and three of them had between 22 and 36 years of experience in the banking sector. From the SAPS sampling, 22 participants in total were interviewed, comprised of Constables, Sergeants, Warrant officers, and Captains. Of these, 6 were females and 16 males. Their experiences ranged between 10 years to 27 years. In terms of members of the community, six members of community police forums (CPF) were interviewed, four were males and two females. They have been staying in Vanderbijlpark between twenty and thirty five years, while they have been involved in CPF for more than two years. Non-probability sampling was adopted, whereby a purposive sample was selected as the members of the population for focus group discussions (FGDs) and key informant interviews (KIIs) were chosen haphazardly

The study recommends that in order to decrease these frauds there is a need of a powerful fraud detection system which not only detects the fraud but also detects it before it takes place and in an accurate manner. The study also recommends that there is a need to also develop systems learns from the past committed frauds and makes them capable of adapting to future new methods of frauds. This study recommends that the CCTV cameras should be installed in the ATM, where cases of credit card are taking place. In addition, the police be visible in the areas which are most prevalent to credit card fraud. This study recommends that the SAPS members should be taken for regularly training in order for them to be able to properly investigate the cases of credit card fraud.

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CHAPTER ONE

GENERAL ORIENTATION

1. INTRODUCTION

The significance of money and credit need no exaggeration. Application of Technology has transformed very lifestyle of the people and the entire world is dependent on it. In service sectors like banking, education, health, retailing, etc. technology has become the main player. Integration of banking services with the technology has given rise for new ‘technology-driven’ services, apart from enhancing overall efficiency of the banking industry in serving customers. Credit card facility of banks combines technology with the flow of credit and serves the needs of customers (Hugar and Basavaraj, 2014:78). As civilization progressed, the support systems in the society got transformed with improved techniques and technology. Banking is one of such support systems. Today, the technology has transformed banking system from traditional, manual system to modern technology–driven industry. In this transformation, the role played by credit card is very significant (The Times of India, 2010:20).

The South African Banking risk information centre has released the latest research on trends in bank card fraud on South Africa issued cards, showing credit and debit card fraud losses amounted to about R779 million in 2017 (Business times, 2018:12). Card payments in South Africa keep on being a dominating piece of the National Payments System in an advancing installments environment (SABRIC report, 2017). Due to the growing volume of electronic payments, the monetary strain of credit-card fraud is turning into a substantial challenge for financial institutions and service providers, thus forcing them to continuously improve their fraud detection systems. As businesses continue to evolve and migrate to the internet and money is transacted electronically in an ever-growing cashless banking economy, accurate fraud detection remains a key concern for modern banking systems. It is not only to limit the direct losses incurred by fraudulent transactions, but also to ensure that legitimate customers are not adversely impacted by automated and manual reviews (Johannes, Granitzer, Konstantin, & Sylvie, 2018:2).

2. PROBLEM STATEMENT

Leedy and Ormrod (2005:47) explain that the core of any examination exists in the exploration issue and consequently it is absolutely critical that analysts consistently explain what they are

doing during the different stages, while leading exploration. These authors further express the significance of expressing research problems unmistakably and totally to guarantee that an examination issue says definitely what is implied. Welman, Kruger and Mitchell (2005:13) define a research problem as a process involving narrowing down the researcher's general interest in a research topic in order to focus on a particular research problem that is small enough to be investigated.

Kumar (2014:64), brings up that the detailing of an exploration issue is the first, and most significant step, of the research process. The research serves as the establishment of an exploration study, on the off chance that it is all around formed, the analyst can anticipate that a decent report should follow. The examination issue may take a few structures; from the easy to the complex. Bless and Higson-Smith (1995:21), support the author's assertions by stating that a well-chosen problem should satisfy as many as possible of the following criteria:

- Be timely;
- Relate to practical problems;
- Relate to a wide range of the population;
- Relate to an influential or critical population;
- Fill a research gap;
- Permit generalisations to broaden the principles of social interaction or general theory;
- Sharpen the definition of an important concept or relationship;
- Have many implications for a wide range of practical problems;
- Create or improve an instrument for observing and analysing data; and
- Provide possibilities for a fruitful exploration by means of known techniques.

Notwithstanding expanded media inclusion with respect to the pervasiveness of Visa misrepresentation and the methods and techniques utilized by coordinated criminal gatherings, the proof base remaining parts immature. The glaring information holes standing up to the strategy creators just as law requirement organizations, among others, are the absence of observational examinations and investigation into the degree of the test. Net misrepresentation misfortunes on SA-gave Visas expanded by 1.0%, from R434.0m in 2016 to R436.7m in 2017. In 2016, 50.6% of

all Visa net extortion misfortunes happened at dealers outside the lines of South Africa. This rate expanded to 53.4% in 2017. The excess 46.6% of exchanges happened at vendors in South Africa. CNP misrepresentation was the main supporter of the gross extortion misfortunes on SA-gave Visas in 2017, with 72.9% of the general Master-card net extortion deficit (R436.7m) credited to card not present (CNP) misrepresentation. CNP Master-card net misrepresentation misfortunes expanded by 7.4% from R296.4m in 2016 to R318.4m in 2017. A sum of R200.0m (85.8%) of the general gross misrepresentation misfortunes (R233.2m) happening outside South Africa can be ascribed to CNP Visa extortion. Lost or potentially taken cards are mostly utilized in South Africa with just 23.9% of the misfortunes identified with exchanges outside South Africa. Gauteng represents 57.2% of the Master-card net extortion misfortunes and is the most elevated among all the regions.

These days, ventures and public foundations need to confront a developing presence of extortion activities and need programmed frameworks to actualize misrepresentation discovery (Delamaire, Abdou, and Pointon, 2009). Since the quantity of deceitful exchanges is a lot more modest than the genuine ones, the information dispersion is lopsided, for example slanted towards non-fake perceptions. Another hazardous issue in charge card recognition is the shortage of accessible information because of classification gives that give minimal opportunity to the local area to share genuine datasets and survey existing strategies.

Charge card fraud detection is quite possibly the most investigated spaces of misrepresentation recognition (Chan, Fan, Prodromidis, and Stolfo, 1999; Bolton and Hand, 2001; Brause, Langsdorf, and Hepp, 1999) and depends on the programmed examination of recorded exchanges to recognize deceitful conduct. Each time a charge card is utilized, exchange information, made out of various credits (for example Master-card identifier, exchange date, beneficiary, and measure of the exchange), are put away in the information bases of the specialist organization. Nonetheless, a solitary exchange data is commonly not adequate to distinguish an extortion event (Bolton and Hand, 2001) and the examination needs to consider total estimates like complete spent every day, exchange number every week or normal measure of an exchange (Whitrow, Hand, Juszczak, Weston, and Adams, 2009).

3. RESEARCH AIM

Denscombe (2002:11) features the five principle points of logical exploration as: a comprehension of properties; a comprehension of connections; the creation of hypotheses; the forecast of results; and affirmation of the discoveries by different scientists. Denscombe (2012:20) likewise says that exploration ought to never guarantee results that can't be conveyed, however that the points ought to demonstrate the course where the examination will go and should offer bearing to the objective the specialist desires to hit (Denscombe, 2012:49).

- The aim of this study was to evaluate the modus operandi of perpetrators of credit card fraud in Vanderbijlpark.

4. RESEARCH OBJECTIVES

According to De Vos, Strydom, Fouché, and Delpont, (2011:108), the objectives of the study clarify the particular issues that the researcher plans to analyze and ought to likewise be plainly expressed and explicit in nature. The particular research objectives of this investigation to address the research aim are:

- To determine the modus operandi of perpetrators of credit card fraud.
- To identify the factors that hinders the SAPS to effectively investigate credit card fraud.
- To determine the extent and nature of credit card fraud.
- To identify the preventative strategies used by the SAPS and SABRIC to investigate credit card fraud.
- To determine the profile of perpetrators of credit card fraud.

5. RESEARCH QUESTIONS

The research question is the central controlling idea in a study that conveys the overall intention of a proposed study in a sentence or small paragraph. In other words, it is a specific question to be answered in research (Creswell, 2009:111). Jesson, Matheson and Lacey (2011:18) clarify that a research question gives the construction to the entire of the literature review of a research study and recommend that characterizing the exploration question is a vital advance that focuses the path for the research investigation.

Further to the abovementioned, Denscombe (2012:82), is of the perspective that research questions show how the exploration will be incorporated. Research questions ought to determine what factors and what connections will be examined to give information that will be helpful in tending to the points of the examination. Notwithstanding, Denscombe (2012:82), cautions that research questions ought not to be mistaken for "information assortment questions" or questions that show up on timetables. To give guidance and design to the investigation, to comprehend the exploration reasoning better, to empower the scientist to add to the arrangement thereof and to accomplish the destinations of this examination, the exploration inquiries for this investigation are:

- What is the modus operandi of perpetrators of credit card fraud?
- What are the factors that hinder the SAPS to effectively solve credit card fraud?
- What is the extent and nature of credit card fraud?
- What are the preventative strategies used by the SAPS and SABRIC to combat credit card fraud?
- What is the profile of perpetrators of credit card fraud?

6. RATIONALE OF THE STUDY

De Vos, Strydom, Fouche and Delport (2011:107), stated that research study can be useful in three broad categories. Firstly, the study must contribute to knowledge, either theoretically or methodologically secondly, the relevant practice or policy arenas should find usefulness and meaning in the study and lastly, the study should be useful for the intended target group.

Rational for the study illuminates not just the quick significance, weightiness or importance of the proposed research, yet additionally the more extended term benefits that the consequences of the investigation may bring to different objective gatherings of recipients. The commitment that the examination can make to the advancement of the hypothetical base of the applicable calling ought to likewise be expressed, just as any potential commitments to the improvement of exploration technique (De Vos, et al., 2011:108).

This study will contribute to a broader understanding of the scourge of credit card fraud in

South Africa and improve the citizens understanding of credit card fraud by exploring ways to generate much better data and indicators of the problem of credit card fraud in South Africa. This study will create awareness among the communities and the criminal justice system, non-governmental organisations by suggesting possible strategies and improving current strategies to investigate and prosecute credit card fraud in South Africa. This research will suggest approaches to improve the cooperation and relationship between the criminal justice system (CJS) role players, non-governmental organisations and other government departments to address the root causes of credit card fraud. Moreover, less attention has been given to the proactive procedures to investigate credit card fraud. With that said, this study focused on proactive procedures by using intelligence-led approach, other investigative methods and current police strategies to proactively deal with credit card fraud.

7. PURPOSE OF THE RESEARCH

Babbie (2010:92), reasons that three of the most valuable purposes for leading examination are investigation, depiction and clarification, and that most investigations will appropriately involve these components. The specialist has additionally noticed that extensive examination in criminal equity is directed to give information and comprehension of the marvel, to investigate, portray and clarify the nature or recurrence of an issue. In this investigation the specialist led an audit of appropriate writing, global, mainland, provincial and public, to acquire a comprehension of the issue being explored. Significant worldwide bits of enactment, which educates South African bits of enactment, was additionally viewed as to clarify the current legitimate system that shapes the establishment to address this issue. The motivation behind this examination is as per the following:

7.1 Evaluation

In the present study, the researcher investigated the extent and nature of the crime of credit card fraud. The specific intention was to evaluate the modus operandi of credit card fraud, to evaluate and identify the modus operandi used by perpetrators of credit card fraud. Furthermore, to evaluate the current strategies in place to combat and determine the barriers in combating credit card fraud.

7.2 Explanatory

Mouton and Babbie (2001:81), explain that another possible purpose of doing research is to explain things. Thus, it is not sufficient to explain how the phenomenon manifests, it further attempts to explain why the phenomenon manifests the way it does. The purpose of the study was to explain the possible reasons why credit card fraud manifests where it does and why it manifests in that manner and also to explain the modus operandi of perpetrators of credit card fraud in Vanderbijlpark. Further, the research considered the relevant international practices and explains how these practices along with national South African legislation (which addresses the prevention and investigation of credit card fraud) function within the South African context.

7.3 Applied research

The primary inspiration for this exploration was the longing to tackle the commonsense issues as depicted in the difficult explanation above and to make suggestions to improve systems and procedures utilized by pertinent partners associated with fighting charge card extortion in Vanderbijlpark. The analyst means to show up at proposals for good practice that will address the issues as distinguished in the difficult proclamation (Denscombe, 2002:27). Through a basic investigation of the distinguishing proof cycle of this wrongdoing, the motivation behind this exploration was to acquire a superior comprehension of this wrongdoing and to set up, create and give best practices and suggestions to law authorization organizations to proactively forestall this wrongdoing all the more effectively.

7.4 Exploration

Babbie and Mouton (2001:79), explain that much of what is done in social research is exploratory in nature; which is a typical approach when a new interest is being studied. Besides this they explain that exploratory research may be conducted in three ways, one of which is to survey the people who have experienced the phenomenon under study. With that said, the researcher has interviewed relevant stakeholders who deal with credit card fraud on their daily duties.

8. KEY THEORETICAL CONCEPTS

The motivation behind characterizing the key concepts utilized in a research study is twofold. First and foremost, introducing a particular working definition permits perusers to see precisely what is

implied by each key idea. Besides, the meaning of ideas centers the analyst's observational methodology (Maxfield and Babbie, 2005:120). Berg (2007:36) upholds this assertion and underscores the benefit of conceptualizing a term to guarantee that perusers comprehend what is implied by specific ideas and to additionally empower perusers to evaluate how viably recognized key ideas are applied in an examination. The accompanying key hypothetical ideas of the examination are as needs be characterized:

8.1 Modus operandi

Modus operandi can be characterized as a combination of criminal habits, procedures and odd standards of conduct, which they are slanted to follow and from which they only occasionally digress (Van Rooyen, 2007:15). Then again, modus operandi may portray the examples of conduct that serial violators of crime will proceed from crime scene to crime scene (Fish and Fish, 2014:62).

8.2 Credit card

A credit card is a convenient tool that allows a person to buy items now and pay for them later (Latino Community Credit Union, 2013:3).

8.3 Perpetrator

Perpetrator is someone who has committed a crime or a violent or harmful act (Oxford English Dictionary, 2004:45).

8.4 Fraud

According to Smith (2001:2) fraud is a generic category of criminal conduct that involves the use of dishonest or deceitful means in order to obtain some unjust advantage or gain over another.

8.5 Forensic investigation

According to Pollex (2001:93), forensic investigation is an investigation aimed at instituting court proceedings (criminal as well as civil).

9. RESEARCH PARADIGM

According to De Vos et al., (2011:40), explained that the term worldview started in phonetics, where it implies the different structures that a word can take in certain dialects, as indicated by the declension (when a thing) or combination (when an action word) of that word, particularly as a model for other comparable things or action words. In technical studies, the term has its root in Thomas Kuhn's *The Structure of Scientific Revolutions* (1970), where the creator utilizes this idea regarding the nature, development and advancement of technical disciplines. A paradigm is “the set of common beliefs and agreements shared between scientists about how problems should be understood and addressed” (Kuhn, 1962). The researcher is of the view that a paradigm is simply a belief system (or theory) that guides the way we do things, or more formally establishes a set of practices.

All scientific research is conducted within a specific paradigm, or way of viewing one’s research material. Researchers must, therefore, decide within what paradigm they are working, know the nature of their selected paradigm very well (De Vos et al., 2011:41). Therefore, this study is based on constructivist paradigm. Constructivists believe that there is no single reality or truth, and therefore reality needs to be interpreted, and therefore they are more likely to use qualitative methods to get those multiple realities. According to Creswell (2009:8), constructivists hold assumptions that individuals seek understanding of the world in which they live and work. Individuals develop subjective meanings of their experiences, meanings directed toward certain objects or things. The constructivist researchers often address the process of interaction among individuals. They also focus specific contexts in which people live and work, in order to understand the historical and cultural settings of the participants, and they position themselves in the research to acknowledge how their interpretations flows from their personal, cultural, and historical experiences. In discussing constructivism, Crotty (1998) cited by Creswell (2014:8) identifies several assumptions:

1. Meanings are constructed by human beings as they engage with the world they are interpreting. Qualitative researchers tend to use open-ended questions so that the participants can share their views.

2. Humans engage with their world and make sense of it based on their historical and social perspectives. Thus, qualitative researchers seek to understand the context or setting of the participants through visiting this context and gathering information personally. They also interpret what they find, an interpretation shaped by the researchers own experiences, and background.
3. The basic generation of meaning is always social, arising in and out of interaction with a human community. The process of qualitative research is largely inductive, with the inquirer generating meaning from the data collected in the field (Creswell, 2014:9).

The researcher position himself as a constructivist and as far as the exploration being referred to. The researcher sees credit card fraud as a significant issue in the general public, with this scourge mainly victimising on young people and old people. The researcher submits that we live in the conditions of normlessness, disorder and where individuals never again have ethics, and have rejected the guidelines of the general public. Credit card fraud mainly caused by young people with knowledge of advanced technologies, and perpetrators of credit card fraud targets youth and old people as potential victims.

10. RESEARCH METHODOLOGY

Qualitative research starts with assumptions, a worldview, the possible use of a theoretical lens, and the study of research problems enquiring into the meaning that individuals or groups ascribe to a social or human problem, while emphasising the use of a qualitative research approach. Creswell (2007:37) states that “to study this problem, a qualitative research approach is used to inquire, the natural setting comprising human subjects and places that inform the collection of data, and inductive data analysis establishes the study themes. As per McRoy (1995: 2009), the subjective worldview originates from an enemy of positivistic, interpretative methodology, is idiographic and in this way comprehensive in nature, and points basically to comprehend public activity and the importance individuals join to regular day to day existence. The subjective exploration worldview in its broadest sense alludes to investigate that evokes member records of significance, experience or discernments. As per Babbie and Mouton (2001: 53) the subjective specialist is worried about portraying and seeing instead of clarifying or anticipating human conduct; naturalistic perception as opposed to controlled estimation; and the emotional

investigation of reality from the viewpoint of an insider, rather than the untouchable point of view that is overwhelming in the quantitative worldview.

For the purpose of this research, a qualitative research approach will be used in order to properly research the modus operandi of perpetrators of credit card fraud in Vanderbijlpark. The researcher decided on a qualitative approach because he wished to obtain practical answers to the problem, as well as the explanations provided by participants who are practitioners in the field.

As per Fortune and Reid (1999), as referred to in De Vos, et al. (2005:73) the contrasts between a subjective examination approach and a quantitative and blended technique approach are as per the following:

- The subjective methodology has its epistemological roots in phenomenology;
- Its object is developing nitty gritty depictions of social reality;
- Methods used include inductive rationale;
- The subjective methodology is reasonable for an investigation of a generally obscure landscape, as it looks to comprehend different wonders;
- The members' normal language is utilized to go to a real comprehension of their reality;
- The research configuration is adaptable and interesting and advances all through the examination cycle. There are no fixed advances that ought to be followed, and a plan can't be actually repeated.
- Data sources are controlled by data wealth of settings; sorts of perception are adjusted to enhance understanding;
- The unit of examination is comprehensive, focusing on the connections between settings, and so forth
- The specialist endeavors to acquire a direct, comprehensive perspective on the marvels of revenue by methods for an adaptable procedure of issue plan and information assortment, molded as the examination continues;
- Methods, for example, member perception and unstructured meeting are utilized to obtain top to bottom information on how the people included develop their social world (the insider job);

- The scientist continually investigations information, utilizing formal sensible systems, albeit the last examination is finished after the early, drenching period of the investigation; and
- The subjective technique depends on the suspicion that legitimate arrangement is acquired through amassed information procured direct by a solitary analyst

Punch (1998:149) referring to Miles and Huberman (1994) give a synopsis of the intermittent components in subjective exploration, which are duplicated as follows:

- Qualitative examination is led through an exceptional and delayed contact with a 'field' or life circumstance. These circumstances are ordinarily 'trite' or ordinary ones, intelligent of the regular daily existence of people, gatherings, social orders and associations;
- The scientist's job is to acquire an all-encompassing outline of the setting under examination, its rationale, plans, and its unequivocal and understood principles;
- The specialist endeavors to catch information on the view of neighborhood entertainers 'from within', through a cycle of profound mindfulness, of compassionate arrangement, and of suspending or organizing previously established inclinations about the subjects being talked about;
- Reading through these materials, the analyst may separate certain subjects and articulations that can be checked on with witnesses, however that ought to be kept up in their unique structures all through the examination;
- A fundamental assignment is to elucidate the manners in which individuals specifically settings come to comprehend, represent, make a move and in any case deal with their day by day circumstances;
- Many translations of these materials are conceivable, yet some are all the more convincing for hypothetical reasons or on grounds of inward consistency;
- Relatively minimal normalized instrumentation is utilized at the start. The analyst is basically the principle 'estimating gadget' in the examination; and
- Most examination is finished with words. The words can be amassed, sub-grouped or broken into semiotic portions. They can be coordinated to allow the specialist to differentiate, think about, examine and offer examples to them.

10.1 Advantages of qualitative research approach

Atieno (2009:16) is of the view that the qualitative research method can be used to simplify and manage data without destroying complexity and context. Lynch (2014:01) adds that this method can assist researchers who want to cover a vast array of dimensions from participants sharing common traits to the research study. Qualitative research is a proper reaction to a few, yet not all, research requires. Qualitative research is more humanistic, moral/moral, commendable, women's activist, extremist, or splendid. Great subjective examination requires reason, expertise, and focus, and except if you perceive this and your motivation is clear and submitted, the assignment will immediately get grave (Creswell, 2009:45). (De Vos, 1998) in (Montesh, 2007:32). In theory, it seems that qualitative research is the best route to take in every research situation, because it provides people with an understanding that takes into account the fact that each person is an individual with a different perspective on the world.

10.2 Disadvantages of qualitative research approach

Choy (2014:101) stated that one of the disadvantages of the qualitative research method is the fact that it is neutral, which makes it difficult to verify the result. Another disadvantage of a qualitative approach is that it is very laborious and time-consuming, involving the researcher full-time for at least a matter of months (Pheiffer, 2009:8). As indicated by Kumar (2014:68) clarified that the point of subjective investigation is a finished, itemized portrayal. No endeavor is made to dole out frequencies to the etymological highlights which are recognized in the information, and uncommon marvels gets (or ought to get) similar measure of consideration as more continuous wonders. Subjective investigation considers fine qualifications to be drawn in light of the fact that it isn't important to shoehorn the information into a limited number of arrangements. The fundamental inconvenience of subjective ways to deal with corpus examination is that their discoveries can't be stretched out to more extensive populaces with the very level of assurance that quantitative investigations can. This is on the grounds that the discoveries of the exploration are not tried to find whether they are measurably critical or because of possibility (Atieno, 2009:85).

11. CRITICISM OF QUALITATIVE RESEARCH APPROACH

Research indicates that a qualitative research requires a huge amount of time from the researcher before it can be completed, it needs stronger objectives and cannot be statistically analysed

(Dantzker and Hunter, 2012: 56). Furthermore, it is also noted that transcribing the conducted interviews that have been recorded with a voice recorder or noted (written) down can be expensive and time-consuming. Montesh (2007:33) advises that owing to the fact that the researcher is human, like the participants, it is likely that the researcher has personal prejudices to overcome or consider when carrying out deductive reasoning processes, thus the accuracy of the researcher's interpretations is questionable.

Bryman, Bell, Hirschsohn, Dos Santos, Du Toit, Masenge, Van Aardt and Wagner (2014:5051), confirm that this research approach is sometimes criticised for being too impressionistic and subjective, and relying too much on the researcher's often unsystematic views about what is significant and important. In addition, as a result of the personal relationship that researchers frequently strike up with the people studied (and for various reasons), it is difficult-not to say impossible- to replicate qualitative findings, owing to the unstructured nature of the approach that relies upon the researcher's ingenuity and decisions about what to concentrate on, having only limited standard procedures to follow. Qualitative studies often have a narrow scope, and critics argue that it is impossible to know how the findings can be generalised to other settings. It often lack transparency about how the research was conducted in terms of how participants were chosen for observation and interviews, how the data was actually analysed, and how the researcher arrived at the study's conclusion.

In light of the above, the researcher maintains that the use of the qualitative research approach brought an understanding of the research topic and solved the research problem by drawing from the participants' responses, to bring about a complex and detailed understanding of the use of perpetrators modus operandi of credit card fraud. Based on this, the researcher adopted the qualitative research approach for this study. The sole intention for opting for this approach was to attempt to grasp an imperative understanding of the complexity of the problem under investigation and to gain valuable participants' insight and experience regarding the underlying dynamics concerning the use of perpetrators modus operandi of credit card fraud. In supporting this argument, McRoy (1995), as cited in De Vos et al., (2005:74), indicates that the qualitative research paradigm in its broadest sense elicits participants' accounts of meaning, experience or perceptions. It further involves identifying the participants' beliefs and values that underlie the

phenomena. In essence, the researcher is more concerned with understanding rather than explanation, and with naturalistic observation rather controlled measurement.

On the side of the specialist's attestations, Frankel and Devers (2000:253 and 254), further propose that there are three key contrasts that recognize a subjective exploration come closer from quantitative and blended techniques research draws near. Right off the bat, the rationale educating subjective examination plans is regularly inductive, which influences how explicit and complete the exploration plan and cycle will be. For this situation, the subjective specialist's errand frequently comprises of portraying and getting individuals and gatherings' specific circumstances, encounters and implications, prior to creating and testing more broad speculations and clarifications.

Besides, qualitative research design are regularly new and adaptable. As opposed to thinking about a qualitative research design as an outline containing definite particulars or a "highest quality level," a more fitting picture is of an unpleasant sketch. Since inductive thinking is related, scientists learn in prior phases of the exploration significantly influences resulting phases of the examination cycle. Regularly, subjective exploration is likewise peaceful dynamic. Creswell and Clark (2007:23) proposes that the specialist and examination subjects, their relationship and the exploration setting are generally dependent upon advancement and change. Not all parts of the plan can be overseen or constrained by the scientist. At last, the subjective examination measure is regularly nonlinear and non-consecutive. Information assortment and investigation frequently continue at the same time. Considering early discoveries, ensuing information assortment and examination methods might be adjusted to accumulate more explicit data, or investigate new and unexpected areas of interest.

In uncommon cases, early discoveries may recommend that the first examination question itself ought to be changed on the grounds that the basic reason isn't upheld or the underlying inquiry was not remarkable in the setting considered (Paterniti, 2007:np). While changing the underlying inquiry is fundamental, analysts must reanalyse the information considering the new inquiry and utilize different strategies to address worries about the likelihood that the information and exploration question may have been modified to fit a prior hypothesis or speculation. This is

specific genuine when the investigation includes analyzing a few cases, now and again alluded to as "different contextual analysis". Moreover, Peterniti (2007:np), diagrams that "doing" subjective examination includes the accompanying rules:

- Inductive logic;
- Non-probability sampling;
- Understanding perspectives of participants;
- Using open-ended questions and observations;
- Exploring types and meanings, structures, and processes;
- Obtaining feedback from participants;
- Theory building and hypothesis development; and
- Assessing the researcher or participant's relationship.

The overall picture of the participants' perceptions was analysed by the researcher. For more emphasis, a qualitative research approach for this study may entail classification of data; for example, this may consist of data represented by words, pictures or icons to be analysed, using thematic exploration, whereas a quantitative method entails the measurement of data represented by numbers and analysed, using statistics, O'Leary (2004), as cited in Mofokeng (2010:27). Bezuidenhout (2011:45), further states that qualitative research researchers try to get an in-depth understanding of human behaviour and the factors that control or influence behaviour. In essence, the researcher is of the opinion that this can be accomplished by contextualising human behaviour in its natural setting, to contribute to the knowledge and experience surrounding the use of perpetrators modus operandi of credit card fraud, while bringing depth and richness of data from the selected stakeholders dealing with credit card fraud and detailing every aspect of the study participants' responses.

12. Research Design

According to Kumar (2014:122) a research design is the road map that a researcher decides to follow during the research journey to find answers to questions as validly, objectively, accurately and economically possible. Bezuidenhout (2011:48) concurs that a research design is a blueprint, procedure, or plan of action. In support of this statement, Mouton (2001:55) mentioned that a research design is a plan of how one intends to conduct research, by focusing on the end product.

It therefore acts as the framework or guideline for the study. The reason for a research design is that it provides the overall structure for the procedures that a researcher follows; the data that the researcher collects; and the data analysis that the researcher conducts (Leedy & Ormrod, 2005:85, Leedy & Ormrod, 2013:2). It is further argued that in planning a research design, the researcher, in the quest for new knowledge and understanding, cannot be shackled by discipline-specific methodological restraints (Leedy & Ormrod, 2005:86).

The reason for a research design is that it provides the overall structure for the procedures that a researcher follows; the data that the researcher collects; and the data analysis that the researcher conducts (Leedy & Ormrod, 2005:85; Leedy and Ormrod, 2013:2). It is further argued that in planning a research design, the researcher, in the quest for new knowledge and understanding, cannot be shackled by discipline-specific methodological restraints (Leedy and Ormrod, 2005:86). Welman and Kruger (2001:46), maintain that a research design is a plan according to which we obtain research participants (objects) and collect information from them. These definitions are accepted as a point of departure for the purpose of this discussion.

The research design that was adopted in this study is of an empirical nature. The researcher decided on this research design, because he wanted to establish the reason for the lack of knowledge or the stumbling blocks concerning the investigation and prosecution of credit card fraud. The researcher therefore wanted to consider and produce new knowledge by using the experience of investigators in gathering information from practice as well as international literature (Denscombe, 2002:6).

The researcher is of the opinion that an empirical design has to be employed in order to get information from participants because of their experience. Maxfield and Babbie (2012:5), explain empirical design to be the production of knowledge based on experience and observation. The research design was adopted because it provides in-depth insights and allows the researcher to establish rapport with the research participants. In addition, it provides for high construct validity (Mouton, 2001:150).

The research design that was adopted in this study is of an empirical nature. The researcher decided on this research design, because he wanted to establish the modus operandi of perpetrators of credit card fraud.

13. STUDY POPULATION AND SAMPLING

13.1 Study population

The target population is defined according Vonk (2015:1) as chosen participants on which the researcher wants to base the results of the research study. Study population alludes to the individuals who are the focal point of the investigation. In a subjective report, there might be a recent report, the investigation populace are constantly picked according to the examination theme. The target population is the population to which the specialist in a perfect world might want to sum up their outcomes (Welman, et al. 2005:122). White (2005:113) characterizes population as "all potential components that can be remembered for the exploration. The population can be individuals or television programmes, or educational plans or anything that is explored as focal point of the exploration project.

The ideal population of this study consisted of three bank managers from Standard bank and First National Bank and Capitec bank, all of them were females in terms of gender, and three of them had between 22 and 36 years of experience in the banking sector. From the SAPS sampling, 22 participants in total were interviewed, comprised of Constables, Sergeants, Warrant officers, and Captains. Of these, 6 were females and 16 males. Their experiences ranged between 10 years to 27 years. In terms of members of the community, six members of community police forums (CPF) were interviewed, four were males and two females. They have been staying in Vanderbijlpark between twenty and thirty five years, while they have been involved in CPF for more than two years.

13.2 Sampling strategy

13.2.1 Sampling technique and sample size

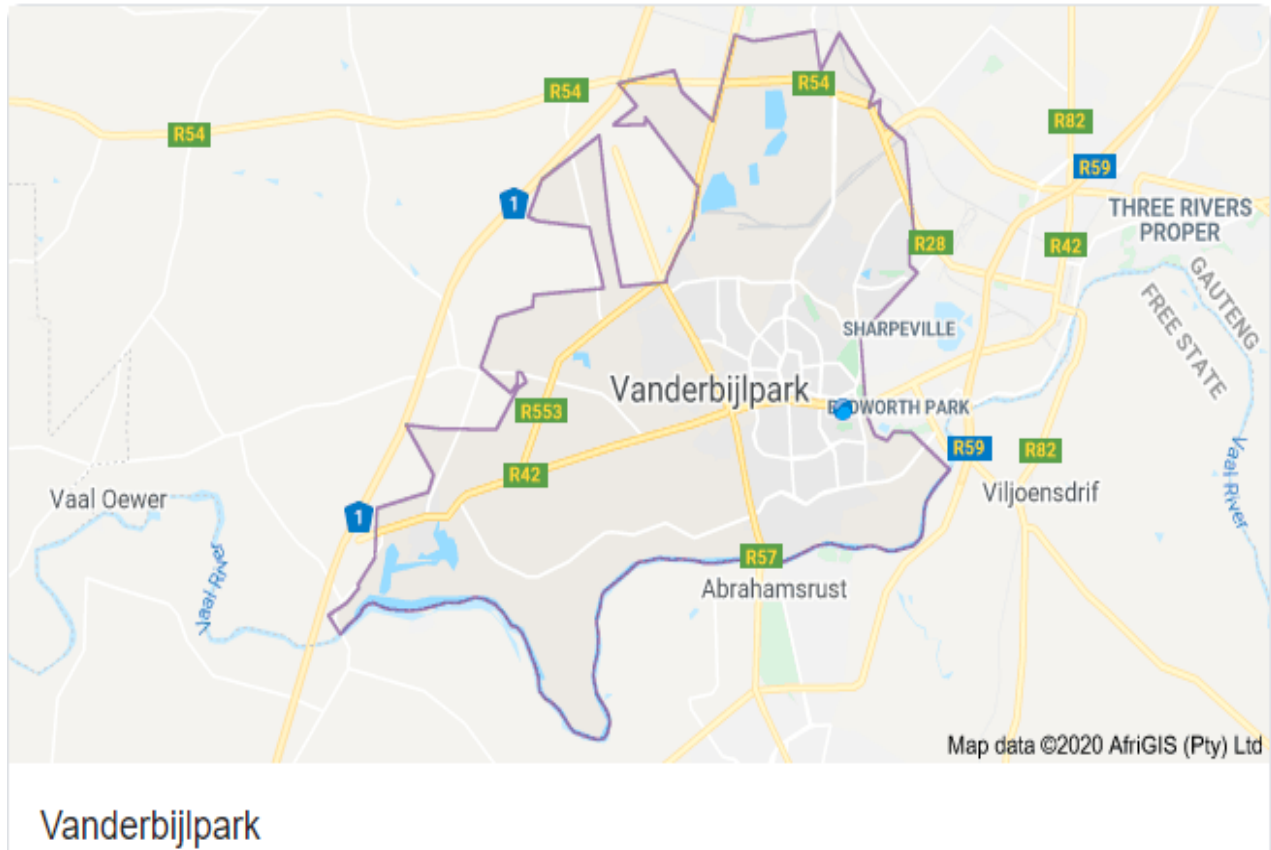
Kumar (2014:229) an example is the way toward choosing a couple from a greater gathering as the reason for assessing or foreseeing the predominance of an obscure snippet of data, circumstance or result with respect to the greater gathering. The researcher followed purposive

sampling. The reasoning behind the decision of the purposive examining is that started on the way that the analyst knows about chosen territory of the examination and certain people from the organisations, and institutions.

Kumar (2014:229) features that an example is the way toward choosing a couple from a greater gathering as the reason for assessing or foreseeing the pervasiveness of an obscure snippet of data, circumstance or result with respect to the greater gathering. This study followed a purposive suspecting. The reasoning behind the decision of a purposive sampling started on the way that the authors know about chosen zones of this examination including certain people from the associations who participated in this investigation. Non-probability sampling was embraced, whereby a purposive example was chosen as the individuals from the population for focus group discussions (FGDs) and key informant interviews (KIIs) were picked indiscriminately. The model utilized for selection of the sample depended on the number of participant's years of service, which mean insight and information on the topic. Members were White, Indians, and Africans communicating in various dialects; some were familiar with isiZulu, English and Sesotho, to be exact. The author is of the opinion that this study presents a significant contribution to the identification of modus operandi of perpetrators of credit card fraud incidents in South Africa presents pragmatic proposals radiated from the discoveries, which could be utilized during the distinguishing proof of this wonder in South Africa.

13.3 Study location

The location of the study was Vanderbijlpark, the reason for choosing Vanderbijlpark as the location of the study was rational behind the high cases report of credit card fraud within the area.



Source (<https://www.google.com/search?q=map+of+vanderbijlpark&rlz>)

14. DATA COLLECTION

The researcher is interested in using qualitative research techniques such as surveys, interviews and literature to collect data for this proposed research study.

14.1 Interviews

The researcher utilized the interviews to gather information. The interviews are gathered from more than one individual, on the grounds that the objective is to distinguish contrasts and likenesses across respondents in an example. Inside and out interviews were utilized by the researcher, and the explanation being that top to bottom meetings are directed with exceptional people or few individuals.

14.1.1 Advantages of interviews

Firstly, considerable input from each participant and an independent view is obtained on a situation. Secondly, participants are able to discuss intimate and confidential issues without fear, and there is no peer group pressure that creates bias. Additionally, allows rapport to build between participants and interviewer and can accommodate widely scattered participants.

Thirdly, better for heterogeneous participants who may not gel in a group and allows the interviewer to see the surrounding home or office of the respondent (Berg, 2007:25).

14.1.2 Disadvantages of interviews

Firstly, no brainstorming and therefore, less creativity in responses and more expensive than focus groups which are very time-consuming to carry out all the interviews. Secondly, expensive analysis (lots of tape transcripts to type up and analyse) and responses may be over rationalised and not mirror the true emotions and motivations. Additionally, this leads to the temptation at the analysis stage of counting how many said one thing and how many the other (strays into quantitative territory). Thirdly, research sponsors cannot watch as easily as at groups (though sometimes depths are held in viewing centres) and takes longer to set up and organize than focus groups (Berg, 2007:25).

14.2 Documentary study

A documentary study, which provides an overview of existing publications on the subject of perpetrators modus operandi in investigating and prosecuting credit card fraud in South Africa was analysed in this study. The researcher also conducted literature study on previous researches as done across Southern Africa, and some parts of the globe. The perspectives on various authors which identify with the issue was explored and flow research project inside an applied and hypothetical setting. Data sources contained extra, ongoing scholastic books, scholarly diary articles, and bits of enactment, strategy records, public directions, and data accessible on the Internet, identifying with the investigation subject. Data got through the writing research was gathered, and furthermore coordinated with the information got during interviews. The narrative sources were contrasted and information previously accumulated by different scientists, and, at that point, added as new data to the current investigation, any place pertinent.

For the orientation of the study subject, the researcher read whatever published that appeared relevant to the study topic. In light of this, herewith the selection of primary and secondary sources that were consulted by the researcher:

- The Constitution of the Republic of South Africa, 1996;
- The Criminal Procedure Act [CPA] Act (Act No. 51 of 1977);
- United Nations [UN] 2000 Convention against Transnational Organised Crime (the Palermo Convention).

Relevant publications on credit card fraud (i.e. SAPS journals –Servamus – Community-based Safety and Security Magazine; SAPS Information Brochure on credit card fraud; proposed legislation on credit card fraud in South Africa; SAPS Strategic Plan; SAPS Annual Reports; SAPS official crime statistics; Gauteng and Liaison documentations and, Integrated Development Plans (IDP) of Gauteng).

Also, consulted were:

- Text Books on the research subject;
- Journals articles on perpetrators modus operandi of credit card fraud;
- Internet sources on perpetrators modus operandi of credit card fraud ;
- Dissertations and theses on crime investigation, criminal justice and forensic investigation; and
- Other local and international statutes.

14.3 Focus Group Discussions (FGD)

Dantzker and Hunter (2012:60), mention that the best way to define FGDs lies on the interviewing of several individuals in one setting. This method is not made to replace individual interviews but to gather information that can perhaps not be collected easily by means individual interviews. This refers to an information gathering method where the researcher–interviewer directs the interaction and inquiry. The advantages of using FGDs include; limited expenses, flexibility and stimulation. This method can be a useful qualitative method for gathering information and can be particularly interesting.

In addition to this argument, Welman, Kruger and Mitchell (2005:201-202), states that this process consist of a small number of individuals that are drawn together for the purpose of expressing their opinions on specific set of open questions. These participants should be knowledgeable or experienced with regards to the topic of the investigation that will be discussed. For this study, FGDs were used in conjunction with other method of data collection in KIIs. The selected FGDs involved discussions guided the designed interview schedule developed by the researcher to explore the understandings and experiences of the participants on the research topic.

14.3.1 Advantages of Focus groups

Firstly, the brain storm effect generates ideas as one person's view sparks off ideas in others as they clarify questions that are to be incorporated. Secondly, participants feel safety in numbers and so relax and talk, they are good for resolving differences of opinion between participants. Spontaneous comments are encouraged; thirdly, they generate a quick understanding of the issues so that in just 1 to 2 hours everyone has moved far up the learning curve. It is easy for clients to participate in. Fourthly, groups always give a real understanding of the issues even if there is no measurements of how many thinks what.

14.3.2 Disadvantages of Focus groups

Firstly, when the subject is highly sensitive, participants may be inhibited in exchanging beliefs, the minority view can be lost. Secondly, Costly – one group isn't enough and four groups cost, depending on the difficulty of recruitment. Thirdly, the success of the groups depends very much on the moderator skills and these can be variable, it is not possible to organize groups if participants are thin on the ground, they are subject to bias from dominating respondents. Fourthly, in a similar way to the above point, they are subject to the herd instinct (everyone agreeing), it is difficult to know to what extent there has been contamination of views from the debate, and they can be difficult to control (Atieno, 2009:65).

14.4 Key Informant Interviews

The interview in the qualitative research seeks to describe and the meanings of central themes in the life world of the subjects. The main task in interviewing is to understand the meaning of what the interviewees say. Furthermore, an interview seeks to cover both a factual and a meaning level,

though it is usually more difficult to interview on a meaning level, continues (Kvale, 1996) McNamara (1999) went on to say that interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around the topic in this regard. Interviews may be further useful as follow-up to investigate certain participant's responses to the posed questions.

For the purpose of this study Key Informant Interviews (KIIs) were adopted by the researcher, this concept is defined as “qualitative in-depth interviews with the participants who know what is going on in the community setting. The purpose of key informant interviews is to collect information from a wide range of people including community leaders, professionals, or residents – who have first-hand knowledge about the community. These community experts, with their particular knowledge and understanding, can provide insight on the nature of problems and give recommendations for solutions, – [UCLA] Centre for Health Policy Research, 2015), semi-structured interviewing were initiated by the researcher.

Gordon (2015:314), indicated that during the application of this method; the researcher usually has a list of questions or fairly specific topics to be covered, often referred to as an interview guide, but the interviewee exercises a great deal of leeway in how to reply. Questions may not follow on exactly in the way outlined on the schedule. Questions that are not included in the guide may be asked as they pick up on things said by interviewers. But, by and large, all of the questions will be asked and a similar wording will be used from interviewee to interviewee. This interview process is flexible. Also, the emphasis is placed on how the interviewee frames and understands issues and events, that is, what the interviewee views as important in explaining and understanding events, patterns, and forms of behaviour. This interview type, allows the interviewer to follow a script to a certain extent.

In connection to this argument, Dantzker and Hunter (2012:59), further elaborate that during this type of an interview, the researcher can go beyond the responses for a broader understanding of the answers. They view this as “probing for more detail”. Probing may consist of asking for more explanation of an answer that has given or following-up with an additional question or questions depending on the answers given.

14.5 Tape recording of interviews

In this study tape record, was used as one of the methods of data collection. De Vos (2011:358), said if possible, and if permission is obtained from the participants, the researcher should record interviews on tape or video. Tape record allows a much fuller record than notes taken during the interview. It also means that the researcher can concentrate on how the interview is proceeding and where to go next. Tape recording does have its disadvantages, however. The participants may not feel happy being taped, and may even withdraw. Tape recorders should therefore be placed inconspicuously so as not to unnerve the participants or novice researcher. Recording research interviews is a great way to capture qualitative data in thesis or dissertation research and ensures descriptive validity. While taking notes, writing down observations is also important, it's rare that a researcher can miss out on some details. An audio recording of an interview also allows the researcher to refer back to the interview and take a fresh look at the interview data, these are some of the advantages of recording interviews in qualitative research (De Vos, 2011:358).

The advantages of tape recording include the following:

1. The researcher can concentrate and listen and respond better.
2. The discussion flows better when there are no distractions.
3. In note-taking there is an increased risk of the researcher being more subjective.
4. The entire interview/observation is recorded, which gives a better, more holistic picture of what is going on.
5. The participants may feel less observed if the tape recorded is used in a discreet way.
6. During analysis, the researcher has the opportunity to go back over material. (Creswell, 2014:193).

15. Data analysis

De Vos, et al. (2005:333) proposes that data analysis includes diminishing the volume of raw information, filtering importance from random data, distinguishing huge examples, and developing a structure for imparting the pith of what the information uncover. Along these lines, the gathered information would be dissected, so that organized, dependable, and substantial ends are reached. As indicated by Pitout (2005:9), the investigation of data accumulated by methods for

unstructured interviews depends on the interviewer's record. During this record-taking cycle, the interviewer took notes, with the end goal of composing a more definite, and complete, report a while later. Voice recorder was utilized when interviews were led, with the view to deciphering the data accumulated at a later stage. The researcher at that point coordinated the information by arranging it based on topics, ideas, or comparable highlights. This is additionally contended by Leedy, et al. (2005:150) who expressed that information examination happens at whatever point hypothesis and information are thought about.

15.1 The data utilisation process

Matlala (2012:113-114), citing White and Marsh (2006); Srnka and Koeszegi (2007); Kahl and Bingham (2010), points out that in this initial stage of data analysis, the qualitative researcher will utilise all the data collected from interviews. Data utilisation refers to the selection of the units of analysis and the isolation of material into coding units for the sole purpose of forming categories and connecting relations in such a way that they are recalled as units, as opposed to individual entities.

During the utilisation process, the voice recorder will be used when interviews are conducted, with a view to transcribing the information gathered at a later stage. The researcher then will organise the data by categorising it on the basis of themes, concepts, or similar features. Leedy and Ormrod (2005:150) argue that data analysis takes place whenever theory and data are compared. These indications further align with the procedures used to analyse the data, according to Strydom, Fouché and Poggenpoel (1998:100). As a result, data analysis helps to achieve the following objectives:

- To describe the data clearly;
- To bring to light the differences, relationships and other patterns;
- To answer the research questions; and
- To test the hypotheses.

In light of these objectives, the researcher will organise the data obtained from the interview schedule, while ensuring that the elicited data answered the original research objectives, question and the problem statement. The researcher will read the data several times to grasp the perspective

of the participants and take down the notes as expressed. This will be done by making cryptic written notes of what the participants were saying during interviews.

15.2 The coding process

Coding is the classification of text according to some conceptual framework and is an indispensable operation in qualitative content analysis, according to Matlala (2012:114), quoting Creswell (1994), Babbie (1995), Miller and Brewer (1999). The codes in this study will be derived from the literature and some of the transcribed interview manuscripts; these are either imposed by the researcher or empirically generated from the participants' responses.

The actual words used by the participants will be written down verbatim (word for word) with the aid of the voice recorder to analyse at a later stage. In instances where the researcher did not grasp what the participants were attempting to say, the selected participants will be asked to explain what they mean with their provided answers in order to further transcribe the notes and elicit themes from the participants' responses. In addition, a voice recorder will be used to supplement the written notes by capturing what could be inadvertently left out while taking notes. The coding in this study will be generated by clustering particular phrases from the interviews conducted and conceptualising them into descriptive words.

The coding process will be conducted manually, with no involvement of any analytical software. In this regard, the codes generated in this study will never assign values, since the study will be empirical, with no requirement of quantification. In the light of this statement, the researcher further will follow Tesch's eight-venture cycle of information examination, which is summed up as follows:

- The analyst peruses cautiously through all the records and records the critical thoughts that ring a bell;

- The specialist picks the records individually and comprehends the basic focal storyline every record contains and records it;
- After finishing this errand for a few members, the scientist currently makes a rundown of the arising thoughts;
- The specialist re-visitations of the information and offers marks to each portion in the record;
- The specialist at that point bunches comparable names under similar subjects;
- The specialist affirms whether all the marks are gathered under the right topics;
- The specialist at that point begins with starter investigation by gathering information having a place with a similar class in one spot; and
- If essential, the scientist recodes the accessible information (Tesch, 1990, in Van As and Van Schalkwyk, 2000:62).

15.3 The categorisation process

Categorisation requires that the researcher fully comprehends the real-world constraints under which the data was produced. Categorisation refers to the assignment of texts to predefined categories, based on their content (Matlala, 2012:115, citing Creswell, 1994, Babbie, 1995, Lewis, Yang, Rose & Li, 2004). During this phase, the researcher will group the identified codes into categories, but not in order of importance. This process will be done manually, without the assistance of computerised or analytical software. The coding and categorisation in this study will be applied by the researcher to analyse and make sense of all collected data to identify possible themes emerging from the data. This will be done by means of continuous identification and comparison of the themes emerging from the data derived from the participants' responses and ascertaining relationships among the identified themes. The retrieved data will be examined by the researcher to identify the meaningful collaborations, patterns, relationships and structures involved.

15.4 The clustering of the research themes

Matlala (2012:115), citing Srnka and Koeszegi (2007), asserts that the categories, while a study is being conducted, can be constructed in a hierarchical form to contribute reliability in social research. Chapter Seven of this study discusses in detail the analysis and interpretation of codes, categories and themes that emerged from the fieldwork findings. Welman and Kruger (2001), as cited in Matlala (2012:115), are of the view that researchers are obliged to release their findings to the public domain for public scrutiny, so that the findings can be critically evaluated by the scientific community.

Thus, it is equally important for a study to outline the processes followed to ensure that the integrity of the collected data was sufficiently protected, and the selected participants were not subjected to any harmful environment or practices.

16. TRUSTWORTHINESS OF THE STUDY

16.1 RIGOUR IN QUALITATIVE RESEARCH APPROACH: TRUSTWORTHINESS

Gathering of raw data in an unstructured way confirms the data collection process in qualitative research. This study adopted semi-structured interviews with FGDs and KIIs as the preferred data collection technique. Examples of raw data are the voice recorder or transcripts of responses from the questions posed to the participants in this study. It should be noted that a true reflection of qualitative study findings is ensured by means of the maintenance of vast records of interviews and by documenting the data analysis in detail. The selected participants of this study were listened to attentively by the researcher during the interviews in an attempt to attain trustworthiness and validity of the study findings. The researcher used proper recording techniques to record data. The maintenance of accuracy of the findings of this study was attained by the researcher by reporting the exact participant responses, and seeking feedback from the participants when the need for clarity arose.

For the purpose of this study, qualitative processes to ensure that data collection methods meet the requirements of trustworthiness were followed and taken into account. Methodological and disciplinary conventions and principles were applied to ensure trustworthiness of this study.

Kumar (2013:218) refers to the ability of a research instrument to demonstrate that it is finding out what you designed it to and reliability refers to consistency in its findings when used repeatedly. In qualitative research, as answers to research questions are explored through multiple methods and procedures which are both flexible and evolving, to ensure standardisation of research tools as well as processes become difficult. The goodness or quality of an inquiry in this paradigm can be judged by its trustworthiness and authenticity. Kumar (2013:219), quoted Guba and Lincoln (1994), explain that trustworthiness in a qualitative study is determined by four indicators closely related to validity and reliability.

The trustworthiness of qualitative research generally is often questioned by positivists, as concepts of validity and reliability cannot be addressed in the same way in naturalistic work.

Nevertheless, several writers on research methods, notably Silverman (2001), have demonstrated how qualitative researchers can incorporate measures that deal with these issues, and investigators such as Pitts (1994), have also attempted to respond directly to the challenges of validity and reliability in their own qualitative studies. Many naturalistic investigators have, however, preferred to use different terminology to distance themselves from the positivist paradigm. One such author is Guba (1981), who proposes four criteria that he believes should be considered strategies for ensuring trustworthiness in qualitative research projects by qualitative researchers in pursuit of a trustworthy study. The criteria for establishing rigour in this study are outlined below, with adherence to Guba's criteria, as employed by the positivist investigators:

16.1.1 Trustworthiness

The trustworthiness of qualitative research generally is often questioned by positivists, as concepts of validity and reliability cannot be addressed in the same way in naturalistic work. Nevertheless, several writers on research methods, notably Silverman (2001), as cited in Shenton (2004:64), have demonstrated how qualitative researchers can incorporate measures that deal with these issues, and investigators such as Pitts (1994), as cited in Shenton (2004:64) have also attempted to respond directly to the challenges of validity and reliability in their own qualitative studies. Many naturalistic investigators have, however, preferred to use different terminology to distance themselves from the positivist paradigm. One such author is Guba (1981) as cited in Shenton (2004:64) who proposes four criteria that he believes should be considered strategies for ensuring

trustworthiness in qualitative research projects by qualitative researchers in pursuit of a trustworthy study. The criteria for establishing rigour in this study are outlined below, with adherence to Guba's criteria, as employed by the positivist investigators:

16.1.2 Dependability

It is concerned with whether one would obtain the same results if one could observe the same thing twice. As qualitative research advocates flexibility and freedom, it may be difficult to establish unless one keep an extensive and detailed record for others to replicate to ascertain the level of dependability (Kumar, 2013:219). (in preference to reliability): In addressing the issue of reliability, the positivist employs techniques to show that if the work were repeated, in the same context, using the same methods, and with the same participants, similar results would be obtained. However, the changing nature of the phenomena scrutinised by qualitative researchers renders such observation problematic in their work. The researcher's observations are tied to the situation of the study, arguing that the "published descriptions are static and frozen in the 'ethnographic' present".

16.1.3 Credibility

Credibility involves establishing that the results of qualitative research are credible or believable from the perspective of the participant in the research. As qualitative research studies explore people's perceptions, experiences, feelings and beliefs, it is believed that the respondents are the best judge of whether or not the research findings have been able to reflect their opinions and feeling accurately (Kumar, 2013:219), (in preference to internal validity, instances that researchers seek to ensure that their study measures or tests what is actually intended by determining the relation of the study findings with reality).

16.1.4 Conformability

This refers to the degree to which the results could be confirmed or corroborated by others. It is only possible if researchers follow the process in an identical manner for the results to be compared (Kumar, 2013:219). (in preference to objectivity. The concept of confirmability is the qualitative investigator's concern comparable to objectivity. Here steps must be taken to help ensure as far as possible that the work's findings are the result of the experiences and ideas of the informants,

rather than the characteristics and preferences of the researcher. The role of triangulation in promoting such confirmability must again be emphasised in this context to reduce the effect of investigator bias.

16.1.5 Transferability

This refers to the degree to which the results of qualitative research can be generalised or transferred to other contexts or settings. Though it is very difficult to establish transferability primarily because of the approach one adopt in qualitative research, to some extent this can be achieved if one extensively and thoroughly describe the process one adopted for others to follow and replicate (Kumar, 2013:219). (in preference to external validity and generalisability): This is concerned with the extent to which the findings of one study can be applied to other situations. In positivist work, the concern often lies in demonstrating that the results of the work at hand can be applied to a wider population. Since the findings of a qualitative project are specific to a small number of particular environments and individuals, it is impossible to demonstrate that the findings and conclusions are applicable to other situations and populations). Thus, the findings of this study can be transferred to other provinces experiencing high prevalence of credit card fraud across South Africa.

17. Ethical considerations

The researcher knows and understands the contents of the University of South Africa (UNISA) Policy on Research Ethics (2007) and will not commit plagiarism, piracy, falsification or the fabrication of results at any stage of the research. Researchers should adhere to the principles and guidelines that were established to articulate values and considerations in research communities (European Commission, 2010:18). The researcher obtained permission and approval from SAPS and UNISA to conduct the research, in order to successfully write this proposal. The researcher will not exploit participants, he will ensure that participants are firstly recognised according to their native diversity as human beings in terms of the Constitution of the Republic of South Africa, Act 108 of 1996, chapter two of Bill of Rights (South Africa, 1996: 1245-1267).

Keller and Casadevall-Keller (2010: 31) warns that human error is inevitable during research studies. Researchers should take note of unintentional negligence on the part of the participants

when providing information to the researcher when it comes to "*which information should be divulged and not*". The researcher is aware that human participants are not perfect human beings and bound to forget their right not to participate or use it as a platform for other personal issues not related to the research. Mills, Wiebe and Durepos (2009: 23-24) confirms that there is a risk of possible loss of anonymity where human beings are involved.

The researcher had taken all precautions not to disclose the identity of the participants. Further, is advised against knowingly compromising and exploiting participants during the life cycle of the research study at any given point (Mills, Wiebe & Durepos, 2009: 23-24). The researcher will therefore comply with the research ethics at the start of the research and during the writing stage of the research to ensure that omissions by participants during the research are addressed in accordance with research ethics to avoid exploitation. The researcher will adhere to the general guidelines as stipulated by the UNISA Policy on Research Ethics dated 21 September 2007.

CHAPTER OUTLINE

Chapter 1 serves as a general orientation and background to the study. It begins by discussing the problem that led to the embarkation of the study and then from this, rationale for the study and benefits are discussed. Research questions and objectives of the study are formulated that have to be achieved for the purpose of keeping the study in focus followed by research aim. The purpose of the study which provided the reasons for the study was explored followed. Key theoretical concepts that are used in the study are then defined so that the reader has the same meaning. The chapter also discusses ethical considerations which indicate that the researcher understands the ethical and legal responsibilities of conducting research.

Then the researcher discuss the research paradigm, which explains common beliefs and agreements on how problems should be understood and addressed, and further discuss the research design which is the road map that guides the researcher and explain the chosen research approach. Advantages of qualitative research approach, disadvantages of qualitative research approach and criticism of qualitative research approach are covered in this chapter. This chapter discusses the location of the study and highlights the map of Vanderbijlpark, the chapter proceeds to discuss the study population, sampling techniques/sample size, data collection methods which covered the

following: interviews, advantages of interviews, disadvantages of interviews, documentary study, advantages of focus groups, disadvantages of focus groups, key informant interviews, and tape recording of interviews. The chapter also covered rigour in qualitative research approach which covered the following: trustworthiness, credibility, transferability, dependability and confirmability. The chapter also discusses the data analysis which covered the following: qualitative documentary analysis, the data utilisation process, the coding process, the categorisation process and the clustering of the research themes. The chapter concludes by providing a summary of the major discussions that were mentioned above.

Chapter 2 begins by discussing the importance and significance of conducting literature review. Then the chapter explains the extent of credit card fraud in South Africa and discusses in details the types of credit card fraud. Various techniques of credit card fraud detection were also discussed in-depth and critically. Advantages of credit card disadvantages of credit card were discussed and it was important for the study highlight the shortcomings of credit card fraud. It was crucial to also highlight the measures to secure credit cards and the credit card risks. The chapter also discussed the preventative countermeasures and the nature and extent of credit card fraud in South Africa. The chapter also discussed international cooperation to investigate whether South Africa is aligned with international standards and protocols. International comparative study on credit card fraud was done between Germany, Canada and Nigeria in terms of the extent of credit card fraud and the statistics.

Chapter 3 explains criminal investigation, forensic investigation, difference between criminal investigation and forensic investigation, purpose of investigation, objectives of investigation, meaning of forensic investigation, and origins of modus operandi and explanation of modus operandi.

Chapter 4 This chapter focused on the research findings and conclusion and recommendations of the study. This study managed to achieve the objectives of the study, and also to achieve the aim of the study and to answer the research questions on chapter one.

CHAPTER TWO: LITERATURE REVIEW ON CREDIT CARD FRAUD

2.1 Introduction

A literature review helps to determine whether a topic is worth studying, and it provides insight into ways in which the researcher can limit the scope to a narrower area of inquiry (Creswell, 2014:25). According to Gilbert (2011), there are three fundamental reasons for conducting a literature review; namely to learn as much as one can about the research topic, to develop searching and analytical skills in a research project, and to demonstrate this knowledge through a coherent and systematic text that helps to link what has been learned from previous research to what the researcher is studying. According to Scott and Deirdre (2009:11) the literature reviews serves two purposes. It should convince the reader that the researcher is familiar with the literature and competent to conduct investigations. Second, it should convince the reader that the proposed study fits into the existing body of knowledge and explain how the proposed study is needed to fill a gap in the literature.

De Vos *et al.* (2011:109) elaborated by stating that there are four purposes of conducting a literature review:

- To assure the reviewers that the researcher understands the current issues related to his or her topic;
- To point out ways in which the researcher's study is similar to, or different from, other studies that have been conducted previously;
- To fit the researcher's study into jigsaw puzzle of present knowledge; and
- To introduce and conceptualise the variables (or constructs) that will be used throughout the study.

This chapter focused on explaining what credit card fraud entails, the methods and modus operandi used by perpetrators of credit card fraud, the challenges faced by the criminal justice system, types of credit card fraud, international perspectives on credit card fraud and lastly, the relevant legal frameworks.

2.2 Credit card fraud in South Africa

According to Budhram (2012:1) explained that the use of credit cards has become a way of life in many parts of the world. Today, credit cards are used like cash. All credit cards have one thing in common, namely that the bearer can obtain something of value simply by presenting the card. A credit card is a helpful technique for payment, yet it conveys chances. The researcher is of the view that the enormous growth in the utilization of credit card has brought about significant degrees of credit card misrepresentation. Innovative advances have permitted the culprits to deliver fake cards that take after the certified card so intently that it is hard for retailers, tellers, police and bank examiners to distinguish a deceitful card. identity theft and the remarkable development of the internet have additionally exacerbated the wrongdoing of credit card misrepresentation by considering on-line buying, bringing about tremendous monetary misfortunes to the card business and purchasers the same (Budhram, 2012:2).

Omarjee (2019:2) postulated that credit card fraud rose at an alarming rate in the first three months of the year 2020, data from the Ombudsman of Banking Services revealed. This fraud takes place when scammers obtain details from a credit card holder and then make unauthorised purchases using credit card funds, the ombudsman explained. To manage the risk, losses, and the reputation of the company, credit card companies operate a highly sophisticated fraud detection system (FDS) to monitor transactions and detect the fraud immediately. Detecting fraudulent transactions using manually designed rules is inefficient, subjective, and time-consuming; thus, card issuers have focused on data-driven methodologies to handle credit card fraud problem. If the model can separate the fraud from the legitimate transactions effectively, then the amount of loss will be significantly decreased (Kim and Lee, 2019:8).

2.3 Types of credit card fraud

Various sorts of credit card misrepresentation exist, going from counterfeit card fraud extortion to lost and stolen card misrepresentation. 'Lost and taken card extortion is astute and can be constrained by prudent steps being embraced via cardholders, while fake card misrepresentation includes various technological misrepresentation types, for example, cloned cards, adjusting of data on the attractive stripe and the re-emblazoning of subtleties onto cards (Van der Bijl, sa:21). Credit card fraud misrepresentation doesn't exist in a vacuum. Regularly charge card extortion is

'connected with different violations, for example, thievery, mail robbery and coordinated wrongdoing (Burt, 2011:5). Credit card fraud misrepresentation may occur differently, which rely upon the sort of extortion concerned; it typifies insolvency misrepresentation, robbery extortion or fake extortion, application extortion and social misrepresentation. Every one of these sub-misrepresentation classifications has its own definition and particularity.

2.4 Types of credit card fraud

2.4.1 Fraud with stolen and lost credit cards

Misrepresentation with taken and lost credit cards is the most well-known kind of credit card fraud extortion and includes the theft of genuine card details that are used to make a purchase through a remote channel , for example, the telephone, fax, mail request or the Internet', or potentially by introducing the card at a till point. As per Jain, Tiwari, Dubey and Jian (2019:5) in situations when the first card holder loses their card, it can get to the hands of fraudsters and they would then be able to utilize it to make installments. It is difficult to do this through machine as a pin number is required be that as it may; online exchanges are simple enough for the fraudster.

2.4.2 Mail Non-Receipt Card Fraud

At the point when a client applies for a card, it takes some effort for all the procedural conventions. In the event that fraudster catches in the conveyance, they may enroll the card in their name and may utilize it to make buys. This extortion is otherwise called never received issue fraud.

2.4.3 Counterfeit card fraud

Counterfeit credit card fraud diminished by 23.2% when contrasted with 2018. The misfortunes related with counterfeit credit card diminished from R108.9 in 2016 to R83.6m in 2019. Albeit the gross misrepresentation misfortunes diminished, 19.1% of the absolute gross extortion misfortune can in any case be ascribed to fake card misrepresentation. Deceitful spend utilizing lost and additionally taken Master-cards expanded by 44.5% during 2017 and added up to R25.7m altogether. Lost and additionally taken cards are chiefly utilized in South Africa with just 23.9% of the misfortunes identified with exchange (SABRIC, 2017:11). Fake card extortion includes a card that has been unlawfully made from data taken from an attractive segment of a truly gave card.¹⁸ In different cases, lost and taken cards and old cards are encoded with data taken from a

certifiable card for the reasons for submitting fake card misrepresentation. The data required for fake card extortion is typically taken through 'skimming' a certifiable card. Van der Bijl states that 'skimming involves that the attractive strip on the rear of the card is duplicated utilizing a hand-held card peruser'. Skimming can likewise be executed by hiding a 'skimming gadget in the card opening of an ATM which brings about the chronicle of information of all cards getting to the particular ATM just as recording the mystery pin code of the card' (www.interac.ca/purchasers/security_fraud.php). As per the SAPS instructional booklet on Visa misrepresentation, 'skimming regularly happens at retail outlets, especially at No. 40 June 2012 6/19/12 9:51 AM Page 36 SA Crime Quarterly no 40 • June 2012 33 bars, cafés and gas stations where a bad worker skims a client's card prior to giving it back'.

2.4.4 Card not present fraud (CNP)

CNP misrepresentation was the main supporter of the gross extortion misfortunes on SA-gave Master-cards in 2017, with 72.9% of the general charge card net misrepresentation deficit (R436.7m) ascribed to CNP extortion. CNP charge card net misrepresentation misfortunes expanded by 7.4% from R296.4m in 2016 to R318.4m in 2017 (SABRIC, 2017:11). A sum of R200.0m (85.8%) of the general gross misrepresentation misfortunes (R233.2m) happening outside South Africa can be ascribed to CNP charge card extortion. Card not present extortion 'means a deceitful exchange that happens when the card, the card holder or the shipper delegate is absent at the hour of the exchange which is made on the web or through the phone' (SABRIC, 2008:30. This implies that:

- The vendors can't check the actual security highlights of the card to decide whether it's real
- Without a signature or a secret word, it is difficult to affirm that the client is the authentic card holder
- Card guarantors can't ensure that the data gave in a card not present climate identifies with the authentic card holder.

2.4.5 Bankruptcy fraud

Bankruptcy fraud is perhaps the most troublesome kinds of extortion to anticipate. Nonetheless, a few strategies or methods may help in its anticipation. Bankruptcy fraud implies utilizing a charge card while being bankrupt. All in all, buyers use credit cards realizing that they can't pay for their

purchases. The bank will send them a request to pay. Nonetheless, the clients will be perceived as being in a condition of individual liquidation and not ready to recuperate their obligations. The bank should cover the actual misfortunes. Generally, this sort of misrepresentation misfortune is excluded from the computation of the extortion misfortune arrangement as it is viewed as a charge-off misfortune. The best way to forestall this Bankruptcy fraud is by doing a pre-check with credit bureau to be educated.

2.4.6 Application Frauds

At the point when the fraudster oversees the application framework by getting to delicate client subtleties like secret phrase and username and open a phony record. It for the most part occurs comparable to the wholesale fraud. At the point when the fraudster applies for credit or another Master-card inside and out for the sake of the card holder. The fraudster takes the supporting reports to help or validate their false application.

2.4.7 Electronic or Manual Credit Card Imprints

At the point when the fraudster skims data that is set on the attractive piece of the card. This data is private and by getting to it the fraudster may utilize it for false exchanges in future. The researcher is of the view that recognizing a fraud is a complicated computational assignment. The quantity of boundaries to pick, group and order are enormous and arrangement of boundaries will choose the achievement of any fraud recognition strategy. Additionally an exchange can't be absolutely delegated a misrepresentation or a veritable one by the current frameworks; they simply discover the probability of an exchange being extortion dependent on the broad investigation of client's conduct, their ways of managing money and furthermore dissecting the recently dedicated cheats and noticing their examples. Subsequently two significant difficulties looked by any Visa extortion location framework are that, first and foremost they have an extremely restricted time-frame in which they need to settle on a choice to term the exchange as a misrepresentation or certifiable and Secondly, they need to deal with a gigantic measure of boundaries while preparing and keeping in mind that settling on a choice.

The properties of any great misrepresentation identification framework ought to be:

- a) It ought to have the option to recognize the cheats precisely that implies the quantity of wrong orders ought to be least.

- b) It ought to have the option to identify the misrepresentation while it is on the way.

- c) It ought not term any certifiable exchange as deceitful.

2.5 VARIOUS TECHNIQUES OF CREDIT CARD FRAUD DETECTION

2.5.1 Artificial Neural Network

It joins the considering power human brain with computational force of machine. It utilizes neurons as the choosing destinations and the edges between neurons to ascertain the commitment of every neuron in the past layer in the choice and result at the current neuron. It depends on example acknowledgment. Earlier year's information is taken care of into the organization and afterward dependent on that information it perceives another approaching exchange to be a misrepresentation or real one. Its preparation can either be managed for example the result is as of now known for a given exchange and the normal yield is contrasted with real with train the framework or it tends to be solo where we have no real outcomes to contrast it and consequently don't know about the outcomes.

2.5.2 Decision Tree

It is a computational device for grouping and expectation. A tree involves inward hubs which indicate a test on a quality, each branch signifies a result of that test and each leaf hub (terminal hub) holds a class mark. It recursively segments a dataset utilizing either profundity first covetous methodology or expansiveness first voracious methodology and stops when all the components have been allotted a specific class. For the segment rule to be proficient it should isolate the information into bunches where a solitary class prevails in each gathering. At the end of the day, the best segment will be the one where the subsets don't cover for example they are plainly disjoint to a most extreme sum.

2.5.3 Fuzzy Logic

It is utilized in the situations when we don't have discrete truth esteems i.e., they are ceaseless. It is a multivalued rationale. There are sure arrangement of rules dependent on which an exchange is delegated a certified or misrepresentation one. There are three significant parts in fluffy rationale that should be executed in the expressed request:

- Fuzzification
- Rule Based
- Defuzzification

In fuzzification we arrange an approaching exchange in the classes of high, low or medium dependent on the financial worth related with the exchange. Rule based arrangements with drafting the principles dependent on the client conduct. The exchange is permitted to happen in the event that it fulfills given arrangement of rules. In Defuzzification, if an exchange doesn't agree with the predefined set of rules it isn't permitted to happen. It is promptly halted and afterward cross checked with the client that whether it ought to be allowed the consent to proceed or be cut off.

2.5.4 Support Vector Machines (SVM)

It is an administered learning calculation where given a dataset it isolates them into various classes utilizing a hyperplane. The objective of SVM is to discover this hyperplane. There could be numerous hyperplanes yet we are resolved to locate an ideal hyperplane. The focuses nearest to the hyperplane in the various classes are known as help vectors and these help vectors are utilized to anticipate the classes of new information focuses. Another approaching point is put on the condition of the hyperplane and afterward is named to which class it has a place based on which side of hyperplane it falls on the vector space. To prepare our machine we feed administered information for example information with results definitely known. It learns the conduct of misrepresentation and real exchanges and afterward it can characterize new exchange with regards to which class it has a place.

2.5.5 Bayesian Network

It depends on the Bayes Theorem of restrictive likelihood; henceforth it is a probabilistic model that is utilized for mechanized recognition of different occasions. It comprises of hubs and edges, wherein the hubs address the arbitrary factors and the edges between the hubs address the connections between these irregular factors and their probabilistic appropriation. We compute predefined least and most extreme estimation of probabilities of an exchange being misrepresentation or lawful. At that point for another approaching exchange we see that whether it's likelihood of being legitimate is not exactly the base characterized an incentive for lawful exchange and is more prominent than the greatest characterized an incentive for an extortion exchange. In the event that valid, at that point the exchange is delegated a cheat.

2.5.6 K- Nearest Neighbour

It is perhaps the most utilized calculations for both grouping and relapse prescient issues. Its presentation relies upon three factors: the distance measurements, the distance rule and the estimation of K. Distance measurements gives the measure to find closest neighbors of any approaching information point. Distance rule causes us to characterize the new information point into a class by contrasting its highlights and that of information focuses in its area. Furthermore, the estimation of K chooses the quantity of neighbors with whom to look at. The significant inquiry is how would we pick the factor K? To acquire the ideal estimation of K, the preparation and approval is isolated from the underlying dataset. Presently a diagram dependent on the approval mistake bend is plotted to accomplish the estimation of K. This estimation of K ought to be utilized for all forecasts. We ascertain the predominant class in the region of any new exchange and arrange the exchange to have a place with that prevailing class.

2.5.7 Hidden Markov Model

There is a difference in state with time thus the name markov. The states are covered up henceforth can't be noticed straightforwardly. Yet, something corresponded to them can be noticed and dependent on that succession of perceptions we anticipate the request for state changes. We first train our model dependent on given arrangement of boundaries like way of managing money of cardholder. Beginning arrangement of probabilities are picked dependent on this profile. At that point any new approaching exchange is broke down by our model and named false on the off

chance that it shifts from the overall profile and conduct of a cardholder by in excess of an edge esteem and subsequently it can't be acknowledged by the states in concealed markov model.

2.5.8 Logistic Regression

To battle the abnormalities of direct relapse where it gave values more noteworthy than 1 and under 0, calculated relapse becomes possibly the most important factor. In spite of the name being relapse, LR is utilized for order issues for foreseeing binomial and multinomial results, having the objective of assessing the estimations of boundary's coefficients utilizing the sigmoid capacity. Strategic relapse is utilized for grouping and when an exchange is progressing it inspects the estimations of its ascribes and tells if the exchange ought to continue.

2.6 Advantages of credit card

- It's advantageous to use in a wide assortment of spots – in stores, on the telephone or on the web.
- You can more readily deal with your spending utilizing your month to month articulation with the subtleties of the entirety of your buys.
- It is more secure than conveying a great deal of money.
- You are not liable for charges if your card is taken as long as you report it right away.
- You can construct your record.
- You can acquire prizes like preferred customer credits, discounts or focuses.
- Often, you need a charge card to make vehicle, inn, plane or different reservations.

2.6.1 Disadvantages of credit card

- If you make a late installment, don't cover the equilibrium, or surpass your credit limit, you should pay extra in expenses and interest.

- Credit cards can prompt obligation and adversely influence your record of loan repayment in the event that it isn't overseen appropriately.
- If you don't follow your buys, it tends to be hard to tell the amount you go through in one month until your assertion shows up.
- The terms and conditions can be befuddling, and, sometimes, they are just accessible in English (Latino Community Credit Union, 2013:4).

2.7 Measures to secure credit cards

In the course of recent years there has been a consistent race between the Visa business growing new security highlights to dissuade duplicating, and crooks striving to bargain the innovation and assembling fake cards. The conversation that follows shows two kinds of VISA charge cards, demonstrating the distinctive security highlights and where they are found. The security highlights supported on the cards have been in actuality worldwide since May 2006 (Budhram, 2012:3).

2.7.1 Credit card risks

Credit card Fraud is perhaps the greatest danger to business establishments nowadays. Notwithstanding, to battle the fraud successfully, it is crucial to introductory see the systems of executing a cheat. Credit card fraudsters utilize an enormous assortment of usual way of doing things to submit misrepresentation. In straightforward terms, credit card Fraud is delineated as: When a private uses another people's Master-card for individual reasons while the proprietor of the card and furthermore the card backer don't know about the established truth that the card is getting utilized. Further, the individual abuse the card has no connection to the cardholder or foundation, and has no aim of either reaching the proprietor of the card or making reimbursements for the buys made.

2.7.2 Preventative countermeasures

The weakness of the attractive strip to skimming has brought about banks supplanting this innovation with chip-and-pin innovation. The chip-and-pin innovation has so far demonstrated effective in nations, for example, the United Kingdom, where absolute fake card misrepresentation

diminished by 32% in the previous two years. Budhram (2007:56) in South Africa not all cards will have the chip-and-pin include in light of the fact that not all dealers have the frameworks introduced to help chip-and-pin cards. This implies that attractive stripe innovation will stay being used for certain years to come.

The researcher is of the view that the Banks in South Africa have, notwithstanding, sent modern IT programs that help to distinguish, forestall and decrease bank card extortion. Models incorporate SMS affirmation of exchanges, the execution of authorisation boundaries and edges, and legal examinations. These measures are, notwithstanding, responsive and banks ought to consider an insight drove way to deal with battling card extortion. Notwithstanding, all together for this way to deal with be effective it requires co-activity among SAPS and the banks. This methodology requires a consolidated utilization of wrongdoing investigation and criminal insight to decide wrongdoing decrease strategies.

The dispatch of the on-line check framework, a joint activity between the Department of Home Affairs and SABRIC, on 8 November 2011 permits banks admittance to the Home Affairs National Identification System to confirm the personality of planned and current customers, utilizing their fingerprints. This apparatus gives an additional advantage to the bank customer in that it offers the banks 'a second layer of affirmation that the people introducing character reports are in reality who they imply to be' (Schulze, 2010:30).

2.8 THE NATURE AND EXTENT OF CREDIT CARD FRAUD IN SOUTH AFRICA

Credit card fraud has been submitted since credit cards were first presented; nonetheless, current innovation has expanded the manners by which it very well may be submitted. Criminals consider the to be industry as a rewarding business that can be misused by the utilization of innovation. To counter the issue, Master-card organizations continually audit security highlights and measures that are applied to cards and dedicate significant assets to the support of security frameworks and programming.

There are various difficulties to managing charge card fraud, especially since exchanges don't need the actual presence of vender and buyer. The foundation of a devoted joint working gathering

comprising of individuals from the Commercial Crimes branch in the SAPS, the Asset Forfeiture Unit, and banks, intending to card misrepresentation, may give the tonic in tending to card extortion in that it achieves the joining of unique abilities, mastery and assets. The low conviction rates for fake card extortion for the time frame 2017/2018 show the troubles the police face in researching violations of this nature.

2.9 INTERNATIONAL COOPERATION

In most of the card-not-present fraud investigations Europol has supported, the primary source of illegal data is breaches within private industry, often facilitated by insiders, malicious software, or both. Europol has organised courses on the forensics of payment card fraud. Topics include the examination of skimming devices, ATM logical attacks and, especially, malware attacks, which are a developing threat. Europol's Joint Cybercrime Action Taskforce (J-CAT) has supported several high-profile cybercrime operations, such as in May 2017, when 27 individuals linked to ATM "black box" attacks were arrested across Europe. The operation also involved a number of European Union Member States and Norway, supported by Europol's European Cybercrime Centre. In addition, Europol's Analysis Project Terminal provides support for hundreds of investigations into international electronic and online payment fraud.

2.10 INTERNATIONAL PERSPECTIVES ON CREDIT CARD FRAUD

2.10.1 GERMANY

Extent of credit card

Credit card fraud expanded a year ago in Germany as indicated by FICO, which reports that an example of 7.5m dynamic cards gave in the nation showed misfortunes because of misrepresentation up by 17% over the time frame October 2015 to September 2018 from a year sooner. The examination programming organization added that development exceeded that of absolute card buys, which rose simply 5%. The quantity of fruitful deceitful endeavors rose by as much as 30%, while complete approved exchanges rose simply 8%. "With everything taken into account, misrepresentation in Germany is running at a low level," said Martin Warwick, FICO's extortion boss in Europe. "On the 270m exchanges we considered, misrepresentation represents only 0.07% of exchanges, and extortion misfortunes address only 0.1% of complete deals. Yet, the rate at which extortion is expanding is high, and warrants restored consideration from guarantors."

The twin patterns driving card misrepresentation higher were card-not-present (CNP) extortion, which incorporates online card buys, and cross-line card misrepresentation. CNP extortion represented around 70% of the card misrepresentation found in the FICO test, and cross-line extortion represented 80% – numerous occurrences were CNP and cross-line. While most German-gave cards have chips, chip exchanges –, for example, at a retailer's card peruser – represented just 10% of extortion. "These figures reflect two significant experiences," said Warwick. "Initially, the presentation of chip-based cards is a significant piece of battling extortion. In any case, it's insufficient – on the grounds that CNP exchanges don't depend on actual card safety efforts that are the place where the crooks are going.

"The business needs to embrace the most recent examination to distinguish misrepresentation in CNP exchanges, and be significantly more thorough around information security, as the present information burglary is the upcoming extortion. Lawbreakers supported travel-related buys in the example broke down. Travel services and visit administrators (16.1%), carriers as a rule (4.5%), and inns and other convenience (3.1%) all things considered report around one fourth of German misrepresentation misfortunes.

Statistics

The danger of card misrepresentation depends to an enormous degree on the circumstance where the card is utilized. In Germany, ATM withdrawals are the main kind of card exchange as far as worth (EUR 384 bn). Simultaneously, the extortion rate is most reduced for this sort of exchange. In principle, the harm from misrepresentation adds up to around 6 pennies for each EUR 1,000 removed in real money. Card installments at the retail location added up to a sum of EUR 220 bn, with the normal misrepresentation harm for each EUR 1,000 of deals coming to 11 pennies. Throughout the most recent couple of years, EMV chips have served to extensively lessen misrepresentation from card-present exchanges, as the chip innovation has delivered replicating the attractive stripe outdated. At this point, 84% of all cards in Europe convey an EMV chip and these are utilized for 98% of all card installments.

The card extortion hazard is greatest in virtual installment circumstances. Yet, and still, at the end of the day, the vast lion's share of exchanges didn't experience the ill effects of any misrepresentation. The greater part of the purported "card-not-present" (CNP) exchanges were online card installments, however the complete additionally remembers cases for which installment guidelines were given on the telephone or by letter. While paying on the web via card, German clients generally use Visas; charge cards assume just a minor part on the web. All things considered, EUR 2.27 per EUR 1,000 of deals. Much of the time, delicate card or cardholder information had been taken. Yet, misrepresentation likewise included occurrences where fraudsters guaranteed back the cost of products which they had for sure arranged on the web and paid for via card. Since the harm from CNP exchanges is generally high, banks, card organizations and retailers are endeavoring to forestall online misrepresentation. As per retailers and monetary administrations suppliers, 3D Secure Authentication (improved methodology to distinguish the two payers and payees) and tokenization (substitution of touchy card information by a number code during the installment cycle) have yielded great outcomes.

Furthermore, neuronal IT frameworks assisted with forestalling extortion by perceiving endeavors as expected. These and different techniques to improve security have been very fruitful, truth be told. CNP extortion rates dropped in contrast with 2013 (the year where the past study occurred), while all out online deals rose. Despite the fact that the extortion rates were low and, paying little mind to the circumstance in which the card was utilized, over 99.7% of all card exchanges by esteem were executed safely, the total harm of EUR 132 m is an impetus to proceed with endeavors to battle misrepresentation. This applies not exclusively to card installments, yet in addition to other installment techniques, for example, credit moves or online installments, for which no comparatively complete figures are accessible. Experience has demonstrated that fraudsters incline toward circumstances where the potential plunder is enormous or security is careless. Without a doubt, misrepresentation rates are impressively higher in nations, for example, France, where cards are utilized considerably more frequently than in Germany. Additionally, new advancements and installment strategies don't just improve the nature of administration or decrease costs, and yet they open up new shaky areas which lawbreakers can abuse. Along these lines, the race between monetary administrations suppliers and fraudsters will proceed.

2.10.2 Canada

Extent of credit card fraud

Credit card fraud is big business in Canada, and it's one that is all-too-familiar to many Canadians. For example, 86 per cent of those who responded to CPA Canada's 2019 fraud survey said they are aware of credit card fraud and almost 39 per cent refuse to use their credit card with some merchants and establishments. Fortunately, cardholders in Canada are generally protected against liability for credit card fraud. But you still need to be vigilant: there are cases where you could run into trouble if you aren't careful.

Banks and the major credit card companies have moved to chip technology for debit and credit cards. In addition to the magnetic stripe on the back, cards have a microchip – really a small computer – in the card. Canadians have become accustomed to inserting their card into the store payment terminal and punching in their personal identification number (PIN) when making purchases, rather than signing a receipt. Chip cards use a technology called “cryptography” that allows the card and the store terminal to communicate with each other during the transaction and carry out security checks to ensure the card is valid. The microchip is state-of-the-art in payment card technology and is extremely difficult for criminals to duplicate. In fact, chips cards have reduced counterfeiting fraud in Canada by 76% since they were introduced here in 2008

Statistics

Normal credit card obligation in Canada is \$2,627. 52% of Canadians take care of their card in full each month. There are 75 million credit card available for use in Canada. The normal Canadian conveys two Mastercards. 89% of Canadians have answered to have at any rate one Mastercard. 82% of individuals have revealed that they pick their cards dependent on remunerations advertised. Just 8% of Canadians overviewed guaranteed they knew nothing about the prizes programs their cards advertised. 15% of Canadians have a Visa spending limit under \$2,000. 44% have a charge card spending limit somewhere in the range of \$2,000 and \$10,000. 41% have a Mastercard spending limit more than \$10,000.

As per The Canadian Bankers Association, the absolute monetary misfortune from credit extortion is a faltering \$800 million. Throughout the most recent decade, the quantity of records who have

revealed at any rate one instance of Mastercard extortion has expanded by 71%. This number comprises 2x that of fraud. The middle sum taken by means of Visa obligation was \$300. Amazingly, just 19% of Canadians who were an objective of Visa misrepresentation knew that they were a casualty. Of the reviewed Canadians, 39% have admitted to not utilizing their Mastercard in specific cases since they were stressed over their record being undermined. Another fascinating finding was that 58% of individuals overviewed revealed they cover their pipad when entering their Visa pin at a vendor. 86% of individuals survey their exchanges each month

2.10.3 Nigeria

Extent of credit card fraud

Significant installment directs in Nigeria were hit with the high announced misrepresentation occurrences in 2018, information got by Nairametrics from Central Bank of Nigeria (CBN) uncovered. The pinnacle bank's Financial Stability Report uncovered that the installment channels hard-hit incorporate Automated Teller Machines (ATM). Subtleties gave show that ATM recorded the most noteworthy rates of misrepresentation in Nigeria with 34.87% Fraud Interest Index in the time frame under audit. Additionally, the Mobile installment channel positions the second with the most noteworthy extortion rates with 28.21% Fraud Interest Index, while POS recorded 19.55% Fraud Incidences in 2018.

Misrepresentation frequencies recorded across other installment channels incorporate "across the counter" (8.52%), Checks (1.87%), E-trade (0.14%) and Internet Banking (0.43%). Installment Channels' Fraud: Earlier report distributed on Nairametrics indicated that instances of misrepresentation and imitations recorded by Deposit Money Bank rose to 25,029 toward the finish of December 2018, from 20,774 cases toward the finish of June 2018. Regarding the sum in question, the amount of N18.94 billion was recorded as instances of misrepresentation and phonies in 2018 entire year, with genuine misfortunes assessed at N2.21 billion.

Likewise, as per a prior report delivered by the Nigerian Electronic Fraud Forum (NeFF), electronic bank extortion cases in the course of the most recent three years (2016 – 2018) rose to N5.571 billion. As per the NeFF report for 2018, while the estimation of extortion executed across counter has been on the decay in the course of the most recent three years, the ones done through

Automated Teller Machines and portable devices has been on the increment. Cloned ATM Card Alerts: The CBN 2018 report further shows that there is rising pattern in installment direct misrepresentation in the World. While giving subtleties on the worldwide pattern, CBN noticed that the U.S Bureau of Investigation had given an admonition to banks on another sort of extortion known as "the ATM Fraud or ATM Cloned Card misrepresentation". Essentially, the ATM cloned Card misrepresentation includes programmers getting to bank frameworks or installment card processors and modifying information to pull out huge amounts of money inside a brief period.

Statistics

Over the years, technology has played a vital role in the history of Nigeria's financial space. From initiating funds transfer right from the comfort of our rooms, to paying utility bills without having to visit the service providers and uniquely identifying bank customers with biometrics etc. Many cutting-edge products and services have been developed which in turn have changed the way we interact and transact. Gone are the days of long queues in banks. The ease, transparency and swiftness that technology brought to the financial ecosystem in Nigeria are noteworthy.

The Bad Guys are constantly finding ways to perpetrate their illicit intentions and take advantage of the system. However, —The Industry is always deliberating and implementing strategies and policies to negate the acts of these fraudsters. It has been a tough battle but surely, was winning. The directive by the Central Bank of Nigeria (CBN) for the establishment of industry fraud desks, sending of all electronic interbank transactions to the Central Anti-Fraud Solution (HEIMDALL), introduction of biometrics to the ecosystem, and most importantly, our collaboration, have contributed to reducing fraud menace in Nigeria's financial space. The Fig.1 shows that 19,531 fraud cases were reported for Deposit Money Banks in 2016 as against 10,743 in the Year 2015. Although, there was 82% increase in reported fraud cases as compared with 2015, one also witnessed marginal reduction in attempted fraud value and actual loss is 4,368,437,371.64 and 2, 196,509,038.78 respectively. Also, there was a decrease of 2.65% in actual loss due to fraud in 2018 when compared with 2016. Table 1 shows the summary of fraud report, the fraud volume in 2018 recorded higher than 2017.

Conclusion

This chapter covered the literature review which focused on South Africa, and international comparative study between Canada, Germany and Nigeria. The literature assisted the author to close the gap that assisting in the literature and to also not to repeat the information that was already existing.

CHAPTER THREE: CRIMINAL INVESTIGATION AND MODUS OPERANDI

3.1 Introduction

This chapter has discussed the importance of modus operandi, the definition of modus operandi. The chapter has also shown how modus operandi can be used to solve current cases using closed or previous cases by linking the suspects to the ongoing cases. It was indicated in this chapter how modus operandi is assisting the SAPS and all the role players in the criminal justice on how to deal with credit card fraud.

3.2 Criminal investigation

Criminal investigation is the deliberate quest for reality, and is focused on the positive clearing up of the wrongdoing circumstance on the strength of evenhanded and emotional follows (Gardner, 2005:2). All things considered, criminal investigation is additionally clarified as a cycle of finding, gathering, getting ready, distinguishing and introducing proof to figure out what occurred and who is answerable for the improper deeds (Bennett and Hess, 2004:6). Moreover, it is alluded to as a reconstructive cycle that utilizes deductive thinking dependent on displays and proof available to one, to set up if a suspect has, in fact, submitted a supposed offense (Bennett and Hess, 2004:4). Marais (1992:1) states that criminal investigation includes the legitimate following of individuals and instruments which may, straightforwardly or by implication, add to the recreation of a wrongdoing circumstance and supply data about the individuals associated with it. He proceeds by expressing that in actuality wrongdoing examination is a cycle of recognizable proof of individuals and actual articles from the time the wrongdoing is submitted until the blame of the culprit is either demonstrated or disproven in court. Stelfox (2009:1) gives a more intricate clarification and states that criminal investigation includes finding, assembling and utilizing data to deal with wrongdoers, or to accomplish the goals set for it by the police administration.

Gunter and Hertig (2005:1) express that the term 'investigation' alludes to a 'orderly actuality finding and detailing measure with a multi-disciplinary trademark covering, among others, the law, sciences and correspondences'. Investigation is characterized via Carrier and Spafford (2004:2) as a cycle that creates and tests theories to address inquiries concerning occasions that happened. The inquiries that an investigation endeavors to answer could incorporate 'What made the episode

happen?', 'When did the occurrence happen?', and 'Where did the episode happen?' Nowadays 'investigation' is partitioned into two ideas: criminal investigation and forensic investigation.

As per Bennett and Hess (2004:4-5), Marais (1992:3-6), Gardner (2005:23) and Prinsloo (1996:17), the importance of 'criminal examination' is all in all delineated as follows:

- Protection of actual proof and protection of proof with respect to a supposed offense.
- Systematically looking for reality with regards to the supposed wrongdoing.
- Discovering the taken things and recognizing the guilty parties.
- Proving the presumes honesty, and singling out the 'who', 'why', 'where', 'which' and 'what' questions.

The police have a legitimate commitment to recognize, individualize and secure hoodlums, as endorsed in segment 205 of the South African Constitution Act 108 of 1996, and sketched out further in area 13 of the South African Police Act 65 of 1995. Criminal investigation is a sensible, level headed and legitimate request including a potential crime (Gilbert, 2004:37). Then again, Bennett and Hess (2004:4) characterize criminal investigation as the way toward finding, gathering, getting ready, distinguishing and introducing proof to demonstrate reality or deception of an issue. There is no significant minor departure from the meaning of criminal investigation in writing.

3.3 Forensic Investigation

It is a rare occurrence one finds a definition simply devoted to the term 'forensic investigation', and those definitions accessible are frequently held restrictive to a specific field of study. An illustration of this is the definition given by Van Rooyen (2004:7), who expresses that forensic investigation is as a general rule related with the examination of computer related violations, just as wrongdoings, for example, fraud and corruption. Van Rooyen (2004:7) does, nonetheless,

concur that disarray exists inside the investigation fraternity as to the genuine significance of forensic investigation.

A lot more extensive definition is given by the 'Longmans Exams Dictionary' (2006:595), which expresses that the term 'forensic' is just utilized going before a thing and identifies with the logical techniques utilized for getting some answers concerning a wrongdoing. In simultaneousness with this definition, Du Preez (1996:9) clarifies that the term 'forensic' is regularly utilized going before the depiction of a specific occupation or capacity, for example, a criminological doctor, measurable technologist or legal physicist and alludes to a specific ability or action pointed toward serving equity with explicit logical information. These specific occupations, capacities and abilities referenced by Du Preez (1996:9) are alluded to by Stelfox (2009:131) as measurable orders that change according to the logical, mechanical or procedural information and cycles that support them. It is vital that these orders have similar goals: to find, assemble and decipher material for an examination.

As indicated by Ramsland (2007:xv), investigation and court convention are covered under the umbrella term of 'forensic science', which incorporates everything from the examination of noteworthy occasions that have no measurable importance to controls of expertise that include next to zero science.

Ramsland (2007: xv) further expresses that it is most in fact precise to say that forensic science is the utilization of logical information and strategies explicitly for the overall set of laws. Notwithstanding this thinking, Karagiozis and Sgaglio (2005:3) contend that forensic science is the utilization of the common sciences to issues of law and further express that the careful acknowledgment, ID and individualisation of actual proof structure the center on which each scientific examination is dependent.

'Forensic investigation' is characterized via Carrier and Spafford (2004:3) as a cycle that utilizes science and innovation to create and test speculations which could be utilized in a courtroom to address inquiries concerning occasions that happened. Karagiozis and Sgaglio (2005:vii) give a widely inclusive significance of forensic investigation and express that measurable examination

was at one time the sole domain of pathologists, yet with the logical headways of ongoing years the range of experts associated with scientific examination has widened drastically. Measurable examination as a cycle starts with the primary reaction faculty showing up at the location of an occurrence and finishes up when all applicable proof has been introduced untainted in an official courtroom.

Like Karagiozis and Sgaglio (2005:vii), who allude to the expanding range of experts engaged with criminological examination, Van Rooyen (in Botha, 2009:50) alludes to 'scientific agents', who currently introduce themselves (practically speaking) in the accompanying appearances:

- ✓ Law enforcement officials, e.g. police investigators;
- ✓ Investigators employed by the revenue service;
- ✓ Investigators employed by the prosecuting authority;
- ✓ Customs officials; and
- ✓ Private sector investigators

3.4 Difference between Criminal Investigation and Forensic Investigation

Lambrechts (2001:93) states that forensic investigation involves the utilization of both logical and insightful strategies and procedures to guarantee a sound investigation and to introduce proof in an official courtroom. In concordance with Lambrechts (2001:93), Palermo and Kocsis (2005:84) allude reciprocally to the ideas of forensic investigation and crime scene investigation, and express that a forensic investigator ought to have certain expert and character characteristics and ought to be exceptionally gifted in investigative strategies and interviewing techniques.

As indicated by Stelfox (2009:132), investigators need to distinguish the occasions to utilize forensic investigation in a specific case yet they additionally need information on which strategies are accessible and what they can contribute. Like Stelfox (2009:132) it is contended that the investigators will at last choose which forensic methods they will use to supplement the more customary strategies for criminal investigation. The specialist will be guided by the kind of wrongdoing being explored and what the potential purposes of contest may be.

From the literature it is seen by the researcher that forensic investigation is, it might be said, plagiaristic or gotten from criminal investigation. It is therefore the conclusion of the researcher that there is certainly not a critical contrast between forensic investigation and criminal investigation as both include the utilization of strategies and procedures to explore wrongdoing efficiently and to bring proof under the steady gaze of an official courtroom. The end by the researcher is upheld by Marais (1992:2), who expresses that strategic and specialized investigation techniques are not demonstrative of two separate ways to deal with the social occasion of data and proof, yet that the two territories are indivisible and supplement one another.

3.5 Purpose of Investigation

Carrier and Spafford (2004:2) allude to questions that an investigation endeavors to reply. These include: 'What made the occurrence happen?', 'When did the episode happen?', and 'Where did the episode happen?' The researcher contends that these inquiries opening in with the end goal of investigation, which involves get-together of unbiased and emotional proof about a supposed wrongdoing or occurrence (Van Rooyen, 2008:13) and consequently finding a positive answer for the wrongdoing (Du Preez, 1996:1). It is contended by Du Preez (1996:2) that a precise methodology will coordinate analytical systems, and ultimately help with demonstrating the blame of the culprit by methods for permissible proof which was accumulated in a legal way. Essentially it is expressed via Carrier and Spafford (2004:2) that the possibly confirmation that an occasion may have happened is if proof with that impact exists. On the off chance that an item that was affected by such an occasion actually exists, it tends to be inspected for data about the occasion and about different articles that were causes or impacts of the occasion.

3.6 Objectives of Investigation

Du Preez (1996:4) contextualizes his conversation on the destinations of criminal investigation by characterizing a level headed as a more exact responsibility which should be accomplished inside a decided time span and as indicated by a particular norm. Du Preez (1996:4-7) proceeds by alluding to the accompanying targets of criminal examination:

- Identification of the wrongdoing
- Gathering of proof

- Individualisation of the wrongdoing
- Arrest of the crook
- Recovery of taken property
- Involvement in the arraignment cycle

Stelfox (2009:2) suggests the expansion of criminal investigation as training and expresses that the goals of criminal investigation presently incorporate casualty care, local area consolation, intelligence gathering, interruption of criminal organizations and overseeing of a wide scope of wrongdoing hazards. The researcher contends that docket analysis is an insightful device that can be utilized to arrive at these targets referenced by Du Preez (1996:4-7), in particular assembling of proof, individualisation of the crime and arrest of the criminals, and by Stelfox (2009:2), specifically knowledge gathering, disturbance of criminal organizations and dealing with a wide scope of crime risks.

To explain the distinction between the reason and targets of criminal investigation, the researcher depicts the motivation behind investigation as the general point or umbrella idea while the destinations of investigation incorporate those unmistakable sub-exercises pointed toward achieving the reason.

3.7 Meaning of forensic investigation

The idea 'forensic investigation' involves the legal identification of items and individuals, the location of the genuine reflection about the occurrence submitted, and gives data about the strategies and procedures utilized by the suspects, with the goal of carrying them to court (Horswell, 2004:3-4). Pollex (2001:93) shows that forensic investigation is the investigation with the point of initiating court procedures (both lawbreaker, just as common), and Gilbert (2004:17) alludes to this idea as "criminalistics" – in contrast to forensic investigation, as in it applies various fields, for example, science, physical science, forensic auditing and mathematics.

Ultimately, Horswell (2004:4) and Weston and Wells (1990:46) layout the accompanying nuts and bolts in regards to the word 'scientific': It manages the use of science in the investigation for court purposes.

- It is the science which is worried about criminal investigation. The term 'legal' alludes to a science which includes criminal investigation for court purposes, in contrast to medication.
- It incorporates measurable science, which manages scientific research facility investigation, as shows are sent to a criminological lab for assessment
- Forensic investigation is the use of both logical and grid abilities to settle a lawful enquiry and criminal claims.
- This field is applied to law, to find the procedures and strategies hoodlums use to additional their crimes (usual methodology).
- These incorporate logical insightful strategies and methods to guarantee that an appropriate examination is directed, and to introduce logical proof under the watchful eye of a courtroom.
- It is the utilization of logical strategies and procedures needed for the reproduction of the wrongdoing scene.

Botha (2009:111) finds that 'measurable examination' alludes to an examination action related with 'monetary wrongdoing' and 'monetary examinations'. Botha additionally finds that the idea 'measurable examination' includes the accompanying:

- Forensic examination is attempted for court purposes or for the motivations behind law (juristic purposes).
- Forensic examination includes the utilization of logical strategies.
- The investigation action of 'assessment' or 'investigating' shows up in five of the subjects introduced in the appropriate responses given by the members.

- Forensic investigation is like a criminal investigation.

From the above unmistakably legal investigation halfway alludes to logical examination at the wrongdoing scene and the investigation of proof accumulated from the scene in research facilities. Still another component of legal examination alludes to a type of examination that accompanies criminal investigation and the alleged corporate investigation, with explicit reference to monetary examination. This is the reason three of the members alluded to corporate and private examination – which is really not off-base. Albeit three members related scientific examination with private and corporate examination, they need to recognize the way that the SAPS likewise use science, and have the order to direct examinations. Scientific science research center specialists perform field – just as lab work. The finger impression specialists direct both field and research center work to examine the work from the field. By and by, the overall investigators gather actual proof from the crime scene, and dispatch it to the legal research facility to be dissected logically.

From the above data and from different creators, 'forensic investigation' is an investigation focused on court procedures, and the utilization of cutting edge innovation to explore crime. This reaction is almost like the conversation of Horswell (2004) and Bennett and Hess (2004), above. At any rate, a portion of the members had an away from of the idea and importance of 'forensic investigation'. The members totally upheld the thoughts of Horswell (2004) and Pollex (2001), by saying that forensic investigation identifies with logical techniques which are regularly applied to investigation focuses on court. Moreover, they concurred that it is the expansion of science in investigation.

Table 1: The differences between forensic and criminal investigation

Forensic investigation	Criminal investigation
It is more in the form of auditing, and figures are used to solve the angles related to specific irregularities.	This is an art, originally, where the pieces of evidence were put together to arrive at an appropriate decision.
Mathematics and science have a maximum influence in forensic investigation.	It focuses mainly both on criminal and civil matters, but, more specifically, criminal activities are the domain

Gather information and evidence to build a chain of events and evidence that will prove or disprove the dispute.	It does apply modern methods of investigation, but relies mostly on traditional ways of investigation.
To discover the accountable individual by applying forensic analysis.	This is the custodian of state departments in most of the cases.
Analyse the physical evidence to identify and individualise the responsible perpetrator by using modern scientific methods.	Directed to commissions and departmental enquiries
Give clarity about uncertain matters before the court	Does not include more sophisticated techniques and methods of enquiry.
Provide the solution to the ‘how’, ‘who’, ‘why’, ‘which’ and ‘what’, by applying accurate, analytical, scientific approaches	Basically, it entails criminal-orientated investigation.
Forensic investigation is science naturally, which is applied in the criminal investigation	
Corporate services and private entities are the common beneficiaries of forensic investigation.	

(Sources: Gardner (2005:2)

3.8 Origin of modus operandi

Modus operandi (MO) is a Latin expression that implies strategy for working. It alludes to the way where a crime has been submitted. It is involved acts and choices that are important to carry out a crime, and any connected decisions made by a wrongdoer. Law enforcement has since quite a while ago held to the conviction that understanding the strategies and methods crooks use to perpetrate wrongdoing is the most ideal approach to research, distinguish, and at last secure them. The advanced turn of events and utility of MO as an analytical idea is based generally in arrangement frameworks that were initially gone ahead in Major Lewellyn W. Atcherley handbook Modus Operandi: Criminal Investigation and Detection, first distributed in 1913. A wrongdoer's MO practices are learned, and likewise they are dynamic and pliant.

This is on the grounds that MO is influenced by time and can change as the wrongdoer learns or decays. MO isn't reliably involved practices that are essentially unmistakable or even exceptional to a specific wrongdoer; their wrongdoings will regularly unfurl distinctively each time, in any event, when submitted with a similar rationale, expectation, and strategies. MO is best used to help manage agents to more certain proof and keep their endeavors on course. It ought to not by and large be confounded as definitive proof reminiscent of guilty party character when at least two cases are being thought about, and surely not in a lawful setting.

3.9 Explanation of modus operandi

According to Osterburg and Ward (2009:116) explained that an offender pattern of operation is called the modus operandi. When collected, stored, and classified, modus operandi information can assist in the identification and apprehension of a perpetrator. It also can be useful in devising strategies for deterring crime. Modus operandi' is a characteristic pattern of methods observed in a repeated criminal act which can be used to identify the culprit. According to van der Watt, van Graan, and Labuschagne (2014:63) 'modus operandi' is a Latin term that means 'method of operating'. It refers to the manner in which a crime has been committed and comprises choices and behaviours that are intended to assist in the completion of a crime. According to Lushaugh and Weston (2014:113) postulated that the choice of a particular crime to commit and the selection of a method of committing, it is the modus operandi of a criminal. The modus operandi of a criminal is his or her signature. For this reason, investigators compare the manner in which a crime was committed with relevant records stored in the modus operandi section of the police records systems. If any of these comparisons are successful, the detectives secure data on possible suspects.

The use of modus operandi by police agencies is both current and extensive. Its successful use in robbery, burglary, grand theft, sex offense, and fraudulent check cases amounts to a mandate to search the modus operandi files for basic leads in these crimes (Lushaugh and Weston, 2014:113). A modus operandi record contains data about strategies for activity of known hoodlums and the techniques utilized in unsolved violations. This record has three significant abilities:

- Identifying a culprit by naming presumes whose usual way of doing things in past violations fits current realities of the wrongdoing being researched.

Linking an obscure culprit with the usual methodology of past violations carried out by obscure culprits to structure the character of a suspect from the business as usual and leads from a few associated wrongdoings.

Storing information on unsolved violations as indicated by business as usual to permit correlation with the wrongdoing method of captured criminal and unsolved violations with an arrestee.

Law enforcement authorities have truly investigated wrongdoings by looking at the practices of the guilty parties that is alluded to as the business as usual. Customarily, all crime scene practices were assembled under the class of business as usual, in any case, with time those investigating guilty party conduct began to recognize 'signature' viewpoints. As indicated by Turvey (2008:310-311), the assortment, stockpiling, and assessment of a criminal's business as usual have generally been analytically significant for the accompanying reasons:

The linkage of unsolved cases by business as usual;

Offender ID by contrasting known criminal business as usual and the usual way of doing things apparent in unsolved cases;

Routine correlation of arrestee usual methodology with the usual way of doing things apparent in unsolved cases;

Development of analytical leads or wrongdoer character in unsolved cases by ethicalness of collecting business as usual data;

Offender prioritization or end; and

Clearance of unsolved cases.

Other than the connecting of cases, usual methodology likewise gives knowledge into the thought processes and internal attributes of the wrongdoer applicable to guilty party profiling or criminal analytical investigation. As indicated by the South African Police Service (2009:135) and Hazelwood and Warren (2003: 590), business as usual can incorporate any of the accompanying: the sort of wrongdoing; property taken; casualty type; time and spot of the offense; apparatuses utilized; strategy for acquiring section to a premises; technique for quelling the person in question; and having an accessory. As per Turvey (2008:311), business as usual is essential to consider in light of the fact that it can give a variety of data about the wrongdoer. This incorporates the inclusion of decisions, methodology, or strategies that can be trademark or intelligent of a specific control, exchange, ability, calling, or subject matter (criminal and non-criminal), information specific to the person in question, proposing contact, or an earlier relationship, and information specific to a crime scene, recommending changing degrees of commonality.

Conclusion

This chapter covered the important information of the study which is investigation, and forensic investigation. Different aspects under investigation were discussed and covered. In addition to that, modus operandi was also covered as it is the pillar of investigation.

CHAPTER FOUR: FINDINGS AND RECOMMENDATIONS

4.1 Introduction

This chapter explained the objectives and the research question of the study. Summary of all the chapters were given in this chapter. The recommendations based on the identified themes were also stated and the overall recommendations of the study were critically outlined. Lastly, the proposed future researches were given and stated. The objectives of this chapter were to report about the stated objectives, and discuss the outcome of the research, its stated research question as contained in the introductory chapter. Recommendations from the study were highlighted thereafter.

As contained in chapter one, the aim of this study was to critically examine credit card fraud in Vanderbijlpark, Gauteng Province. The objectives of this study as highlighted in chapter one was: to determine the modus operandi of perpetrators of credit card fraud, to identify the factors that hinders the SAPS to effectively investigate credit card fraud, to determine the extent and nature of credit card fraud, to identify the preventative strategies used by the SAPS to investigate credit card fraud, and to determine the profile of perpetrators of credit card fraud.

4.2 Findings relating to the significance of the study

This study demonstrated that it has become increasingly important for the selected stakeholders in this study to prioritise credit card fraud, and to proactively combat this crime. The study explored, described and analysed the perceptions of the police in Vanderbijlpark, managers of three different banks and community members. In support of the significance of this study, the police should work together with the banks to ensure that credit card is proactively investigated and prosecuted. All those involved in the CPF should ensure that awareness campaigns are done in conducted.

4.3 Findings relating to the study purpose, objectives and research question

The purpose and objectives, as well as the research question guided the primary aim of this study, which was to describe and explore the modus operandi of perpetrators of credit card fraud in Vanderbijlpark. It was found that it was difficult for the police to investigate the cases of credit card fraud successfully and police lacked advanced strategies to investigate and solve the crime of credit card fraud.

4.4 Findings relating to study methodology

A qualitative research approach was followed in this study, using FGDs, KIIs and a variety of documentary sources. This approach ensured that the participants' perceptions of the study subject were tested by using FGDs, KIIs and the documentary study. This methodology allowed the researcher to develop the aim, objectives and interview schedule guide in such a manner as to spark open debate and provoke future research among the selected stakeholders participating in this study, to solicit their perceptions regarding credit card fraud in Vanderbijlpark, to analyse and interpret the collected data to arrive at certain conclusions based on the solicited study findings, and to propose recommendations to conclude this study. At the very core of methods of data collection process, the quest to seek the participant's perceptions on modus operandi of perpetrators of credit card fraud in Vanderbijlpark.

The attitudes, experiences, opinions and views of the selected participants regarding the study subject were tested. The researcher attempted to reach as many participants as possible to achieve the study aim and objectives. The participants remained anonymous during this study, which proved advantageous, since participant revealed rich data while responding to the question posed. An interview schedule guide was designed to address several key aspects relating to the topic of this study. The aim and objective of this study were fully understood by the participants, although there were a few who decided to snub the researcher by not taking part in this study. However, the participants who took part provided more detailed information than required, giving a clear description of the problem under investigation, considering the outcomes related in the preceding chapters. In summation, the researcher believes qualitative research approach in the case of this study was the most effective research procedure to adopt.

Furthermore, the data collected was presented around the identified themes relating to the study. Therefore, the study established the following four thematic issues, as guided by the interview schedule guide (refer to Attachment A), namely: Therefore, the following themes were identified during the fieldwork process: (a) Modus operandi of perpetrators of credit card fraud, (b) lack of knowledge and skills to investigate, (c) lack of awareness in the region around credit card fraud, (d) lack of resources to deal with credit card fraud. The findings from the participants of this study relate to the modus operandi of perpetrators of credit card fraud, extent and nature of human

trafficking, contributing factors to credit card whereby the relevant stakeholders' experiences were solicited by the researcher. The selected participant's views on the current strategies used in investigating credit card fraud, the barriers that hinders the stakeholders to successfully and effectively investigate credit card fraud in Vanderbijlpark.

4.5 Modus operandi of perpetrators of credit card fraud in the Vaal Region

It should be noted that findings such as those given below were similar among all the selected participants, regardless of the study location. Examples of some of the remarks regarding their experiences in terms of dealing with cases of credit card fraud were similar. The participants when asked about the MO of perpetrators of credit card fraud in Vanderbijlpark, explained that perpetrators use advanced technological tools to commit this crime and to confuse the victims as well as the role-players involved in dealing with this crime. They emphasised that the perpetrators use fake cards, technological tools at the ATM's, work with bank officials to get information of the potential targets. These are some of the responses from the participants (related verbatim):

“Copying a credit card and somehow getting hold of the secret pin of the user. Vendors charging more money from the user's credit card compared to what they have agreed to and without the latter being aware of the charged money” (FGDs-10:2:11). “The perpetrators in most instances try by all means to look for the pin of the user, it can be in the ATM, at the shopping malls when users pay, it can be in the garage when the user pay for the fuel of their car.

“I know a guy who works at one of the garages here in Sebokeng who works with the perpetrators of credit card fraud, he watches the pin of the users as they pay for the fuel of their cars and also the perpetrators use him to clone credit cards”. This is a serious network, it involves people who works in the bank, they help the perpetrators by identifying those clients with lot of money and the perpetrators monitor their lifestyle, what they do where do they buy and the bank officials also provide the perpetrators with the residential address of the potential victims.

“The perpetrators after stealing or cloning the credit card, for them to use money in those credit cards they work with the owners of the designer clothes or clubs to buy alcohol” (FGD-10:2:12).

“The perpetrators use the stolen or cloned credit cards in the designer clothes shops or clubs, they work with shop owners or club. They buy alcohol and spend on it. For example this is how they do it, they go to the night club swipe the stolen or cloned credit card, maybe they use R50 000 over a

weekend there and the owner of club will give them R30 000 back, they swipe R50 000 without taking any alcohol. That means the owner of the club is going to get R20 000. The perpetrators carry lot of credit cards with them wherever they are and we know this people who terrorise the communities but we can't talk because they work with the police, so we are scare that they victimise us or target us.

“The perpetrators put the chips in the ATM's which makes the credit card not to come out, then after the victim leave the ATM then perpetrators go to the ATM and get the credit card” (KII-22:1:3). I'm the victim of credit card fraud, I was at the ATM and there was a car parked next to the ATM, it was very early in the morning. After I went to the ATM to get money, the credit card did not come out, I thought it was swollen by the ATM then I thought I will go to work then during lunch time I would go the bank and report it. To my surprise after I leave the ATM, one man went to the ATM then few minutes they drove away and immediately I started getting notifications in my phone that money was transferred from my credit card, it showed that it was transferred from different locations. When I went to the police to report, they told me that I need to open the case and its difficult for them to investigate such cases, they advised me to go and report the incident at the bank, they said along as the bank can get pay me my back then everything will be fine.

Based on your experience, explain what are the strategies in place to deal with credit card fraud in your organisation

The participants from the SAPS in clearly indicated that they do not have a strategy to investigate credit card fraud as the perpetrators of this crime use advanced technological techniques and tools. They highlighted that they do not have skills, technological tools and they lack resources to investigate cases of credit card fraud. The following were some of their responses quoted verbatim, and no corrections of their language were made:

“The SAPS do not have the resources to deal or investigate the cases of credit card fraud. The suspects use technology to commit this crime and they have advanced skills which we don't have, we don't attend workshops or extra training with regards to deal or investigate this crime “(KII-22:1:4).

“I have fifteen years in the police, and I started investigating the cases of credit card fraud eight years ago, I don’t remember myself going to the training or workshop on how to investigate specifically credit card fraud. So there is no strategy that I can say SAPS have in place or we have a booklet that we use to or follow to investigate” (KII-22:1:5).

“Well, we don’t have a proper strategy that we are using or following, as the investigating officers in SAPS we just help each other when it comes to this crime but most of the time, we don’t solve the majority of credit card fraud cases because we really don’t have resources to trace the perpetrators, we also lack the skills to investigate the this crime” (KII-22:1:6).

“From the bank point of view, it seems like the police do not have the strategy because they just open the case and nothing happens with those cases”.

Based on your experience, who is the perpetrators of credit card fraud.

The participants stated that perpetrators of credit card fraud are many, but most of the participants highlighted that the Nigerians are mostly found to be committing credit card fraud and they teach the locals. Other participants highlighted that boys from the locations in Vaal are committing credit card fraud, and appear as the employees from the bank”.

“70% of perpetrators of credit card fraud perpetrators are Nigerians and 30% is people from here but mostly they are being taught by Nigerians.

“It can be everybody but most of the time, in Vaal this is done by the Nigerians because they are the ones who knows this advanced technologies. Also boys who are from the locations commit credit card fraud”.

“Mostly its boys from Sebokeng and they work with the business men to clean the money”.

MANAGEMENT AND IMPLICATIONS FOR POLICY

Expertise about techniques to detect credit card fraud, investigate and to prosecute perpetrators is yet to be realised in South Africa. Reports of the arrest and conviction of credit card fraud perpetrators are frequent yet not from the CJS. The implications based on the findings on credit card in South Africa are compelling and require concerted effort from all relevant stakeholders within the CJS. Though the SAPS due to competing priorities, has not yet developed the strategies and methods to investigate, identify and solve the cases of credit card fraud, it is essential that the

officers dealing with cases of credit card fraud be equipped and capacitated with necessary investigating skills and methods to successfully solve deal with this problem. It is crucial that the training of SAPS officials include technological tools, methods to detect and investigate cases of credit card fraud. Comparing the number of prosecutions with the number of identified victims would highlight the extent of the problem. The release of official statistics, though argued as unreliable, would nevertheless, provide as an awareness regarding the MO utilised by perpetrators, reported/detected cases in relation to conviction rate to the prospective victims and the public. This would assist all role-players, to develop minimum standards concerning the response of CJS to credit card fraud cases as well as improved services to the victims especially with regard to insurance claims. From the psychological and emotional trauma, to the economic and political implications of unabated crime, the impact on individuals and society is clearly destructive and unacceptable.

A lack of role clarity from the relevant role-players related to servicing victims, and uncertainty regarding what measures work and what do not have contributed to a lack of systematic and consistent implementation, and sustainable action. Each calls for different dynamics in policy and programme planning. An improved cohesion between relevant role-players, would go a long way to align the day-to-day tactics into a long term technological strategies and national responses, sharing from their own experiences and identifying elements that constitute best practices. A multi-disciplinary approach between all role-players will enhance the successful detection, investigation and prosecution of credit card fraud cases.

The MO involved during the credit card fraud can be difficult for third parties to understand, while victims can find it difficult to comprehend what has happened to them, or to discuss it with or explain it to others. Victims may appear to those around them, even support persons, to be stupid or irresponsible. The stigma attached to the victims has a significant and ongoing impact on their lives, including in the financial stress and constraints. The long-term consequences of credit card fraud for victims are complex and depend on many factors, with no guarantee of recovery. Re-victimisation is often a further consequence of the experience. The following emerging themes were identified in this study: (1) Modus operandi of perpetrators of credit card fraud, (2) lack of

knowledge and skills to investigate credit card fraud, (3) lack of awareness in the region around credit card fraud and (4) lack of resources to deal with credit card fraud.

4.6 EMERGING THEMES AND DISCUSSION

Theme 1: Modus operandi of perpetrators of credit card fraud

When asked about the modus operandi of credit card fraud, the majority of participants highlighted that perpetrators use different methods. The methods that were used by perpetrators among others was to put the chip at the ATM record the information of the victim and with that information perpetrators are able to withdraw money from the bank account of the victim.

Theme 2: lack of knowledge and skills to investigate

The participants highlighted that the SAPS do not have capacity and lack skills to investigate cases of this nature. Many victims of this crime highlighted that they have reported the cases to the SAPS, but the cases remained unsolved due to lack of skills. The majority of participants from the SAPS did not shy away that this crime require technology to investigate it and that they do not have technology on their disposal to investigate such cases.

Theme 3: lack of awareness in the region around credit card fraud

Majority of the participants from the community highlighted that they did not know that credit card fraud exists in Vaal until they become victims of it. they explained that majority of the members of the community do not know about this scourge and explained that believe that many people will still be victims of credit card fraud. The SAPS members explained that they do not conduct awareness campaigns as their budget is very limited.

Theme 4: lack of resources to deal with credit card fraud

The participants highlighted that the SAPS do not have resources to investigate credit card fraud even the population from the SAPS explained that they do not have resources. The SAPS open a case just for the purpose of insurance and they know exactly that they can't solve the cases of credit card fraud

4.7 RECOMMENDATIONS

Frauds caused by Credit Cards have costs consumers and banks billions of dollars globally. Even after numerous mechanisms to stop fraud, fraudsters are continuously trying to find new ways and tricks to commit fraud. The study recommends that in order to stop these frauds there is a need of

a powerful fraud detection system which not only detects the fraud but also detects it before it takes place and in an accurate manner. The study also recommends that there is a need to also develop systems learns from the past committed frauds and makes them capable of adapting to future new methods of frauds.

This study recommends that the CCTV cameras should be made available in the ATM, where cases of credit card are taking place. In addition, the police be visible in the areas which are most prevalent to credit card fraud. This study recommends that the SAPS members should be taken for regularly training in order for them to be able to properly investigate the cases of credit card fraud. They should be taken to advance training that will enable them to investigate sophisticated cases involving high technology on credit card fraud. The study also recommends that SAPS should conduct regular awareness campaigns to ensure that the communities around Vaal Region are aware of the scourge of credit card fraud. This study also recommends that the SAPS should be carpacited with resources and skills to enable them to be able to investigate credit card fraud.

4.8 The proposed future research studies

From this study, the researcher suggests further study be carried out on the following:

- The impact of corruption by relevant stakeholders involved in investigating credit card fraud in South Africa.
- Examine the effects of lacking resources, skills and training in investigating credit card fraud in South Africa.

4.9 CONCLUSION

This study has revealed that credit card fraud is very high in the selected areas of Vaal Region, the modus operandi of perpetrators of credit card is very different as the perpetrators try different tactics to deceive their victims and also to ensure that it is extremely difficult for the SAPS investigate. If the SAPS can join hands with the communities and other stakeholders, this scourge of credit card fraud can be reduced.

Although there are several fraud detection techniques available today but none is able to detect all frauds completely when they are actually happening, they usually detect it after the fraud has been

committed. This happens because a very minuscule number of transactions from the total transactions are actually fraudulent in nature. So there is a need of technology that can detect the fraudulent transaction when it is taking place so that it can be stopped then and there and that too in a minimum cost. So the major task of today is to build an accurate, precise and fast detecting fraud detection system for credit card frauds that can detect not only frauds happening over the internet like phishing and site cloning but also tampering with the credit card itself i.e. it signals an alarm when the tampered credit card is being used.

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ANNEXURE A

INTERVIEW SCHEDULE: EVALUATING THE MODUS OPERANDI OF PERPETRATORS OF CREDIT CARD FRAUD

INVESTIGATORS OR DETECTIVES INTERVIEW SCHEDULE

SECTION A BIOGRAPHY

Question	Responses
Gender	Male [] Female []
Rank	Constable [] Sergeant [] Warrant officer [] Lieutenant [] Captain [] Major [] Colonel []
Years of service	Under a year [] 1 – 2 years [] 2 – 5 years []

	5 – 10 years [] 10 years and more []
Highest level of education	Secondary level [] Tertiary level []

Research questions

- What is the modus operandi of perpetrators of credit card fraud?
- What are the factors that hinders the SAPS to effectively solve credit card fraud?
- What is the extent and nature of credit card fraud?
- What are the preventative strategies used by the SAPS and SABRIC to combat credit card fraud?
- What is the profile of perpetrators of credit card fraud?

Section B research question 1 questions

1. MODUS OPERANDI OF PERPETRATORS OF CREDIT CARD FRAUD

1.1 Based on your exprience, explain what are the strategies used by perpetrators of credit card fraud?

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1.2 Based on your exprience, is it difficult for law enforcement agencies to detect the modus operandi used by perpetrators of credit card fraud?

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Section D research question 3 questions

3. NATURE AND EXTENT OF CREDIT CARD FRAUD IN VANDERBIJLPARK

3.1 In your view, how widespread is credit card fraud in Vanderbijlpark. (Elaborate on your answer)

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3.2 Based on your experience, who are the perpetrators of credit card fraud (Elaborate on the profile of the perpetrators)

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3.3 Based on your experience, what is the profile of the victims (ages, nationality etc)?

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3.4 Based on your experience, explain how does perpetrators commit credit card fraud in Vanderbijlpark

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3.5 How many people do you know that have become victims of credit card fraud

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Section E research question 4 questions

4. TYPES OF CREDIT CARD FRAUD IN SEDIBENG REGION

4.1 Based on your experience; explain the types of credit card frauds in Vanderbijlpark

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4.2 Explain which type of credit card fraud is most found in Vanderbijlpark.

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2.3 How can the law enforcement agencies successfully investigate these emerging kinds of credit card fraud?

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Anything you wish to add

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Thanks for your participation

ANNEXURE B

Privaatsak	Pretoria	Faks No.	(012) 393 2128
Private Bag X34	0001	Fax No.	

Your reference/My verwysing:

My reference/My verwysing: 3/34/2

THE HEAD: RESEARCH
SOUTH AFRICAN POLICE SERVICE
PRETORIA
0001

Enquiries/Navrao: Lt Col Joubert
AC Thenga
Tel: (012) 393 3118
Email: JoubertG@saps.gov.za

Mr MM Motseki
UNIVERSITY OF SOUTH AFRICA

RE: PERMISSION TO CONDUCT RESEARCH IN SAPS: EVALUATING THE MODUS OPERANDI OF PERPETRATOR OF CREDIT CARD FRAUD: UNIVERSITY OF SOUTH AFRICA: MASTERS DEGREE: RESEARCHER: MM MOTSEKI

The above subject matter refers.

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

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

The Provincial Commissioner: Gauteng:

- Contact Person: Lt Col Etsebeth
- Contact Details: (011) 547 9129
- Email Address : etsebethJ@saps.gov.za

- Contact Person: Intern Nenzhelele
- Contact Details: (011) 547 9129
- Email Address : NenzheleleMR@saps.gov.za

Kindly adhere to paragraph 6 of our attached letter signed on the 2020-02-05 with the same above reference number.



THE HEAD: RESEARCH
DR PR VUMA

MAJOR GENERAL

ANNEXURE C



UNISA CLAW ETHICS REVIEW COMMITTEE

Date 20191122

Reference: ST 153 of 2019

Applicant: MM Motseki

Dear MM Motseki

Decision: ETHICS APPROVAL

FROM 01 November 2019

TO 01 November 2022

Researcher: Morero Moses Motseki

Supervisor: Mr. J Mokoena

EVALUATING THE MODUS OPERANDI OF PERPETRATORS OF CREDIT CARD FRAUD