AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY THE SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST

by

THEMBA SIMON SIMANGO

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FEBRUARY 2025

DECLARATION

I, Themba Simon Simango, with student number: 37116614, declare that the dissertation titled “AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY THE **SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE”** is submitted in accordance with the requirements for the degree of Master of Arts.

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

I further declare that I submitted the dissertation to an originality-checking software and that it meets the accepted requirements for originality.

I further declare that I have not previously submitted this work, or part of it, for examination at the University of South Africa (UNISA) for another qualification or at any higher education institution.

Signed DATE: 10/10/2024

T.S SIMANGO

DEDICATION

Without a doubt, this dissertation should be dedicated to my mother, Mphephu Elina Makhubele (Simango), also known as Mhani Blue Pen. The fact that she worked her socks off to raise me and my sisters after the demise of our dad cannot be overlooked. For many reasons that could have led us to despair, my sisters and I were inspired by her dedication, focus, and perseverance.

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Many people were involved in making this dissertation a success. With sincere gratitude, I would like to appreciate the exceptional contribution of my supervisor, Professor D.Q. Mabunda. It is during our interaction that I came to understand the duty and importance of the supervisor. You made me understand that it is not only about attaining the qualification; our reputation should remain intact, and that is achieved only by delivering quality work.

I would also like to express my sincere gratitude to the following for opening doors for me:

- Border Management Authority (BMA)
- The South African Police Services (Visible policing, and Explosives Section)
- Department of Correctional Services

Through their involvement, I collected data successfully using scheduled interviews. My SAPS colleagues, both at the Explosives Section and at Beit Bridge, were willing to partake in the study. The CIE Brigadier Maswanganyi facilitated the granting of permission to conduct the study. The librarians at UNISA Polokwane were always willing to assist.

To my wife, Tintswalo: you always made me believe it was possible, and now I can say you were right. My kids, Nsumo, Muhluri and Khanimambo, here is something to benchmark with. Finally, I thank all the people who supported me with words of encouragement.

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Besides being inspired by all graduates, the quote "*it's never crowded along the extra mile*" by Wayne Dyer keeps me taking one step forward.

ABSTRACT

In recent years, explosives have become a tool of choice used by perpetrators who seek to access cash safes and for use at illegal mining sites. The Explosives Section attends to bombings for cash and the recovery of explosives found in possession of suspects at illegal mining sites. The illegal influx of explosives through the Beit Bridge border post is continuous, and measures should be taken to address it.

Although the influx has become an enormous challenge, the researcher observed no attempts by law enforcement, comprising SAPS and other role players, to address it. With the scourge becoming out of control, SAPS needs research solutions to curb and reduce the number of explosives coming from neighbouring countries. The researcher aims to evaluate management and control measures for explosives, determine the prevalence of illegal explosives, identify the challenges encountered by the South African Police (SAPS) in policing them at the Beit Bridge border post, and propose effective measures to address these challenges.

The researcher included various role players who work at Beit Bridge to determine how they can be effective in dealing with the influx. Suspects who are arrested in possession of smuggled explosives are mostly from Zimbabwe. When convicted, they serve time in South African prisons. The researcher included convicted explosives smugglers to help provide answers on the accessibility of explosives, possible smuggling methods, transportation routes, and preferred destinations in South Africa. The qualitative method was best suited for this study as it encourages interviews.

The Explosives Section in the SAPS has been identified as the custodian of the Explosives Act, but a lack of capacity and resources continues to hamper investigative efficiency. Other role players at Beit Bridge knowledge or the training to identify explosives. Explosives are known to be dangerous and considered weapons of mass destruction.

Keywords: Explosives, Inspector of explosives, Criminal Investigation, Crime scene, Robbery, Cash-in-transit, Identification, Bombing, Smuggling, Illegal mining.

LIST OF ABBREVIATIONS

ATMs	:	Automated Teller Machines
BDS	:	Bomb Data System
BMA	:	Border Management Authority
CIE	:	Chief Inspector of Explosives
CIT	:	Cash-In-Transit
CR & CSM	:	Criminal Record and Crime Scene Management
HMEs	:	Homemade explosives
IEDs	:	Improvised explosives device
IMS	:	Ion Mobility Spectrometer
PETN	:	Pentaerythritol tentranitrate
RDX	:	Cyclomethylenetrinitramine
SANDF	:	South African Defence Force
SAPS	:	South African Police Services
SARS	:	South African Revenue Services
SOPs	:	Standards Operating Procedures
TATP	:	Triacetone Triperoxide
TNT	:	Trinitrotoluene
UNISA	:	University of South Africa

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CHAPTER ONE: GENERAL ORIENTATION

1.1 INTRODUCTION

South Africa is faced with a new trend of robberies whereby perpetrators use explosives to bomb open cash safes, automated teller cash machines (ATMs), and cash-in-transit (CIT) vehicles to access cash and use it at illegal mining sites to break rocks. Robberies are growing rapidly in South Africa, making the country unsafe (Burger, 2018:01). Perpetrators use violence to threaten victims before explosives are charged and detonated. Recovered explosives are linked to the influx of explosives at the border of South Africa and Zimbabwe, known as the Beit Bridge. Members of the South African Police (SAPS), the South African Revenue Service (SARS), the South African National Defense Force (SANDF), and the newly established Border Management Authority (BMA) at the border occasionally arrest perpetrators for possession of explosives after searching their luggage.

1.2 BACKGROUND OF THE STUDY

Reports have identified many explosives originating from Zimbabwe, which are intercepted by authorities at the Beit Bridge border post (Chelin & Els, 2020:1). A truck was stopped for scanning purposes by SARS, and 750 blasting cartridges of explosives valued at R300 000 were found (Citizen, 2018:1). Despite the presence of different law enforcers at the Beit Bridge, which comprises the SAPS, the SANDF, SARS and BMA, smuggling of explosives through the border has become a growing problem in South Africa and southern Africa (Chelin & Els, 2020:1). Chelin and Els (2020:1) indicate that such explosives are used by illegal miners and organised criminals in attack of armoured vehicles, transporting large amounts of cash as well as bombing ATMs.

The SAPS has a section dedicated to the control and management of explosives in the country, under the Crime Scene and Criminal Record (CR & SCM) component, within the Detectives and Forensic Services division. The section is known as the Explosives or Bomb Disposal unit. In Musina town, approximately 10 kilometers from the Beit Bridge border, there is an Explosives Section office; members based in this office are undaunted by illegal explosives recovered after crossing the border into South Africa. The explosives Section of SAPS attends to all recoveries for its ability to handle and identify explosive materials. For the

same reason, smuggled explosives have become prevalent in almost every area of South Africa. This coincides with the sharp rise in the use of explosives in the country for illegal activities. In addition to illegal explosives used for the abovementioned crimes, illegal mining is also a beneficiary of illegally sourced explosives smuggled into South Africa through the Beit Bridge. This is proven by the large quantity of explosives recovered by the police in places where illegal mining activities take place all around South Africa. Inspectors of explosives, also known as bomb technicians, through their reconstruction of bombing incidents, mostly find remnants of explosives with the same identity as those recovered at the Beit Bridge. Some of the recovered explosives are manufactured. A panel van traveling from Zimbabwe to South Africa was found by customs officers transporting 300 units of explosives (SARS, 2018:1). The Explosive Section was called to identify and transport the recovered explosives to a storage facility.

1.3 PROBLEM STATEMENT

The first requirement in the research process is to see the problem with unwavering clarity and to state it in precise and unmistakable terms (Leedy & Ormrod, 2021:52). Machi and McEvoy (2016:6) explain that a successful topic is usually the offspring of an interest in a practical problem. Bless, Higson-Smith, and Sithole (2013:45) explicitly state that the first and fundamental constraint is that only problems that are empirically based, that is, those that deal with observable reality, can be investigated by means of the scientific method. Kumar (2019:29) reminds us that, in research, the researcher must have a problem to solve.

In this study, the researcher observed a growing trend in the recovery of explosives destined for South Africa at the Beit Bridge border. According to the Bomb Data System (BDS), large quantities of commercial explosives manufactured by a foreign company are smuggled through the Beit Bridge to South Africa. The BDS indicates that seven recoveries of a large number of commercial explosives were made by border post employees in conjunction with Explosive Section members during the financial year 2021/2022. This number increased to 12 recoveries in the financial year 2022/2023. The BDS further indicates that 5 explosives offices in Limpopo Province recorded 30 recoveries of commercial explosives over the same period. The Beit Bridge border post

contributed 40% of all recoveries in the province for the financial year 2022/2023. Figure 1.1 shows the statistics of crimes perpetrated with the use of explosives from 2021/2022 to 2022/2023, and Figure 1.2 shows the frequency of explosive recoveries at Beit Bridge from 2018/2019 to 2022/2023, as recorded in the BDS.

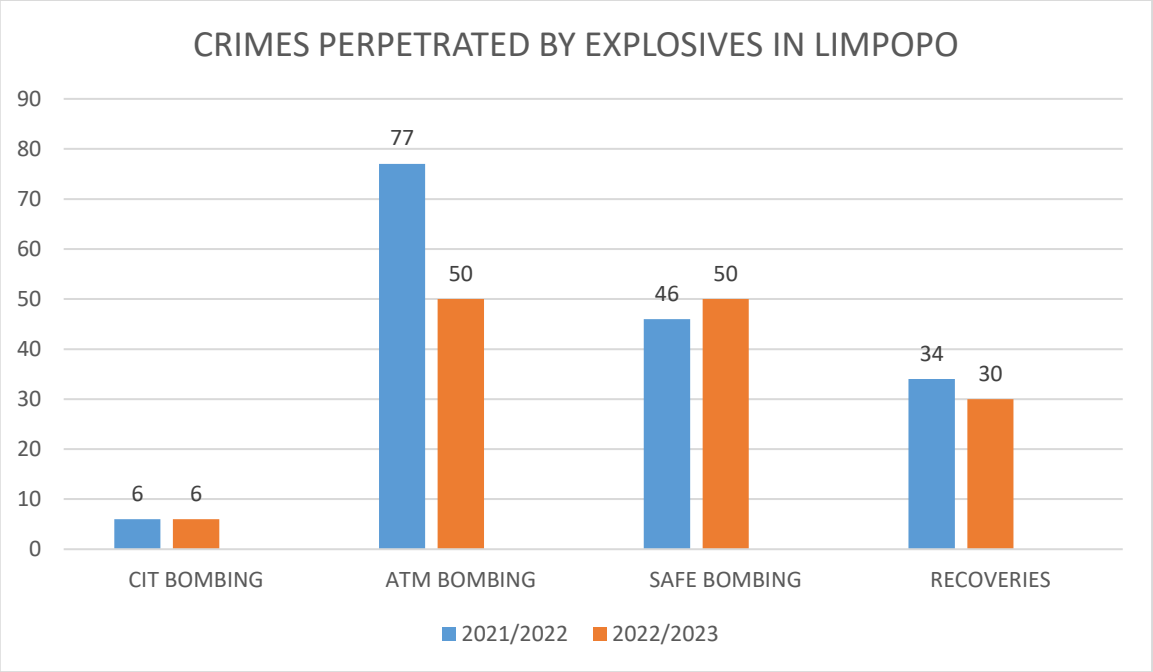

Figure 1.1: SAPS BDS Report (2021/2022 and 2022/2023)

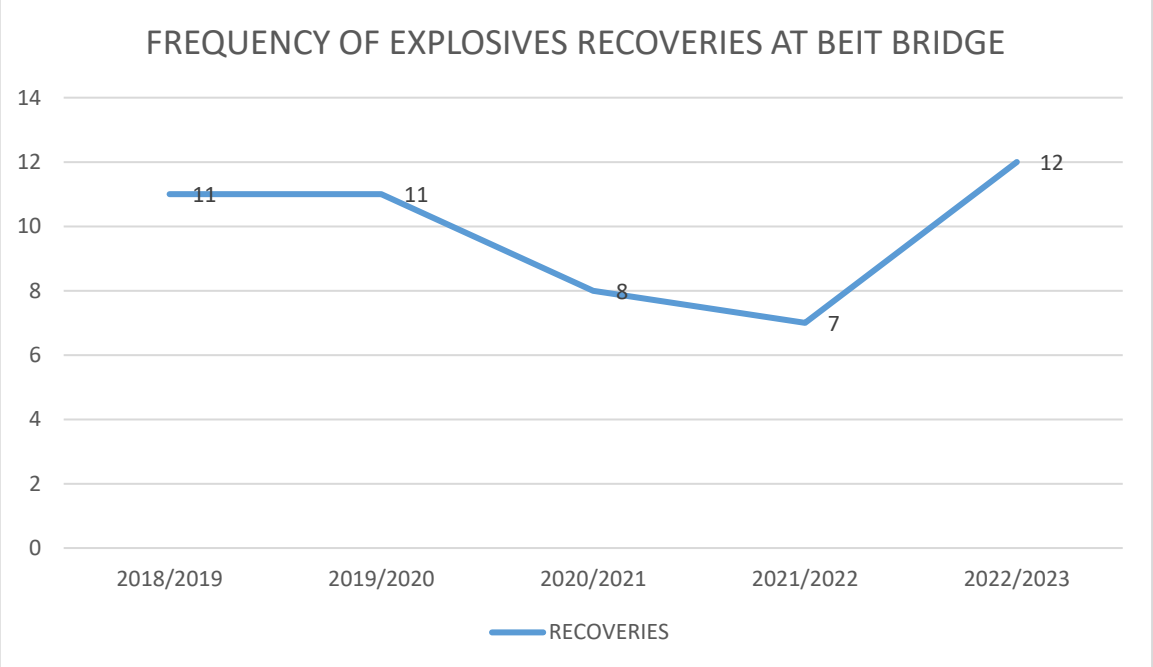

Figure 1.2 SAPS BDS Report (2018/2019 to 2022/2023)

Source: BDS of SAPS

The continued influx of illegal explosives and increasing statistics of crimes perpetrated through the use of explosives clearly indicate that SAPS, the Explosive Section to be precise, is failing to contain the problem at the border. According to the BDS, for the period from 1 May 2022 to 31 March 2023, 50 automated teller machines (ATMs), 6 CIT cars, and 46 safes were bombed through the use of explosives. The researcher believes that the control and management of explosives has weakened. The bulk of commercial explosives recovered during the investigation of bombing scenes and illegal mining are at times positively linked to a certain manufacturing company, whether foreign or local, but may not be traced to the end user. In South Africa, the SAPS is responsible for managing and controlling explosives, and the Explosive Section is tasked with regulating explosives from licensing, manufacturing, transportation, storage, and use. Recovered explosives are handled by the Explosives Section in Musina. Members in this section are responsible for the control, licensing, and management of explosive materials in the country.

On some occasions, explosives are found hidden among the luggage in public transport. All efforts by the Explosive Section personnel to control and manage the illegal movement of explosives into the country through the Beit Bridge border have not produced the desired result. The same explosives have been recovered in different parts of South Africa and continue to be used for criminal activities.

1.4 RESEARCH AIM AND OBJECTIVES

Denscombe (2014: 49) explains that the aim of research is to indicate the direction the research will take and point to the target the researcher hopes to hit. Furthermore, research aims specify and operationalize the research focus (Terre Blanche, Durrheim & Painter, 2014:84). Mills and Birks (2014:10) provide further clarity by defining the aim of research as a statement of the research purpose and the expected outcome. To that end, this study aims to evaluate the SAPS's management and control measures for explosives at Beit Bridge.

Creswell (2014:123) refers to Locke, Spirduso, and Silverman (2013) by stating that the purpose statement indicates why you want to do the study and what you intend to accomplish. Kumar (2019:8) notes that the main purpose of the research is to answer the research questions using scientific procedures that lead to the findings. Similarly, Leavy (2017:267) suggests that purpose statements should

indicate the objective of the research. Furthermore, to formulate research objectives successfully, a researcher must always ask what is being done (Leedy & Ormrod, 2021:56-57).

The objectives of this study are as follows:

- To evaluate the current management and control measures for explosives
- To determine the prevalence of the illegal use of explosives
- To identify the challenges encountered by SAPS in dealing with or policing illegal explosives at the Beit Bridge border post.
- To identify effective measures to address illegal explosives

1.5 RESEARCH QUESTIONS

Dantzker and Hunter (2012:40) explain that once a topic has been chosen, the next step is to create the research question. Denscombe (2014:31) highlights that the research questions provide the point of departure for the study, in which aspects are to be perceived, quantified, and interrogated to clarify the topic. Bless *et al.* (2013:71) remind us of an important rule when formulating a research question: it should be specific rather than general. Guided by the explanations of the authors above, the researcher formulated the following research questions:

- What are the current control measures used by SAPS to address illegal explosives?
- What is the prevalence of illegal use of explosives entering South Africa through the Beit Bridge border post?
- What are the challenges encountered by SAPS in dealing with or policing illegal explosives at the Beit Bridge border post?
- What are the effective measures for dealing with illegal explosives?

1.6 LITERATURE REVIEW

Over the years, the bombing of ATMs (automated teller machines) in South Africa has become a major concern for both the banking industry and law enforcement (Sewpersad & Minnaar, 2010:1). The author continues to mention the primary motive for accessing cash. The high number of robberies, including cash in transit, is a struggle for South Africa to manage (Zondeka, 2012:1). The methods used to access cash consist of a dangerous combination of substantially organised, heavily armed gangs and commercial explosives (Sewpersad & Minnaar, 2010:1). Explosives Act 26 of 1956 indicate that a person causing an

explosion whereby life or property is endangered shall be guilty of an offence and liable to conviction or penalties (South Africa, 1956).

Act 108 of 1996, which is also known as the South African constitution, outlines the objective of SAPS as to prevent, combat, and investigate crime, to maintain public order, to protect and secure the inhabitants of the republic, and to uphold and enforce law (South Africa, 1996: 205). Smuggling explosives and using them for illegal purposes, particularly to damage property to access cash, is a crime in South Africa. The Act mandates SAPS to prevent and investigate such crimes. Any person who is found in possession of, or under control of, any explosives under circumstances giving rise to a reasonable suspicion that it is intended for illegal use will be guilty of an offense (South Africa, 1956). Beukman (2018:1) indicated that SAPS and security industry stakeholders had once briefed the minister on the measures introduced or under consideration to combat the recent spate of violent CIT.

Heists are perpetuated through the use of illegal explosives, and some of these explosives are entering through the Beit Bridge. Chelin and Els (2021:1) from the Institute of Security Studies mentioned that explosives had come from a neighbouring country with the intention of smuggling the cargo to South Africa. These actions endanger truck drivers, police officers, customs officials, and other road users. Similarly, the provincial police spokesperson, Lieutenant Colonel Malesela Ledwaba (as cited in Citizen, 2022:1), highlighted that the Beit Bridge Task Team recovered 247 blasting cartridges of explosives during the stop and search. The author indicates that many similar incidents have occurred. Furthermore, SAPS reported 2 suspects who were arrested in a truck crossing South Africa at Beit Bridge with 16 × 25 kg bags containing commercial explosives hidden in the trailer (Citizen, 2022:1). Aside from money, explosive smuggling is a viable option because of the lack of effective legislation governing the transport, storage and use of explosives in South Africa (Chelin & Els, 2021:1). Herald (2022:1) reported a 33-year-old Zimbabwean who was arrested at the Beit bridge border after a truck carrying 769 commercial explosives concealed inside four large bags. Members of the Explosives Section attended the scene, and the explosives were identified as detonating cords. With the Act regulating explosives and the SAPS section responsible for their control and management, the country seems to be losing the battle against the influx and

illegal use. Chelin and Els (2021:1) indicate that several steps can be taken to address this problem and that South Africa has enacted the Explosives Act of 2003, which was signed by the president but is not yet in force. The authors suggest that countries should update their laws and regulations to align with global standards.

1.7 SIGNIFICANCE OF THE STUDY

Bless *et al.* (2013:101) indicate that we cannot waste valuable resources on community development projects that do not achieve the desired goal. In that case, the researcher aims to address the problem that the authority knows exists but has no answers to. It is only through research like this that such challenges will be addressed. This field has not been researched extensively. Furthermore, research focuses on the awareness of an issue, problem, or subject. It is a useful form of inquiry designed to help discover answers (Dantzker & Hunter, 2012:18). The researcher has identified a problem at the Beit Bridge: the influx of illegal explosives into South Africa and their use in illegal activities. Researchers can help identify which community needs should be prioritized so that, when addressed, they produce the greatest positive results for the greatest number of people (Bless *et al.*, 2013:101). The researcher understands that the illegal use of explosives affects not only a certain part of the country but also South Africa as a whole.

Poor management and control of explosives contribute to the number of bombing incidents for cash in the country and illegal mining activities. ATMs, drop safes and CIT incidents are reported on a regular basis to SAPS. The Explosive Section of SAPS focuses on all bombings and recovery incidents. Research has shown that answers to this problem can be provided. Businesspeople, law enforcement, and the community at large stand to benefit from the reduction of explosive-perpetrated crimes. The researcher will evaluate the SAPS's management and control measures for explosives, with particular focus on the Explosive Section. The other role players at the border, including SARS, SANDF, and BMA, will be part of the sample for data collection. The findings will then be presented to SAPS management, in particular the chief inspector of explosives (CIE), for implementation. There are several steps to address this problem, starting with the SAPS (Chelin & Els, 2021:1). Solutions to this existing problem will not only

assist police in reducing incidents of bombing, explosive recoveries, and booming illegal mining but also help the South African economy benefit from the answers provided by the research. Business communities will spend less on repairs and replacements from bombings. The challenge of employment in the country may also be addressed. Employers will focus on growing their business rather than investing in security measures.

Academics and the University of South Africa (UNISA) may benefit from this research, as it will contribute to their knowledge. Curriculum developers and future researchers may refer to this research while doing similar studies. Further engagement by researchers on similar topics with law enforcement teams will reduce the number of criminal activities involving the illegal use of explosives. The influx will be addressed, reducing the supply of explosives to criminal activities that are currently flourishing. For that purpose, this researcher realized that the topic has not been explored much in the past. The researcher also believes that police and other role players should be provided with this research to lessen the impact and the free flow of illegal explosives.

1.8 DEFINITION OF THE KEY CONCEPTS

Leedy and Ormrod (2021:49) explained that without knowing explicitly what a term means, we cannot evaluate the research or determine whether the researcher has carried out what was proposed in the problem statement. Denscombe (2014:282) explains key theoretical concepts as concepts that capture the essence of what the report is about. Silverman (2013:336) explains keywords as a list of approximately half a dozen terms that describe the main areas of interest in one's research. Kumar (2019:92) similarly explains key concepts as operational definitions or working definitions and their purpose in removing ambiguity. For that purpose, the researcher has lined up a few terms that capture thoughts during the research and feature mostly during the study as follows:

1.8.1 Explosives

Any chemical compound, mixture, or device, the primary or common purpose of which is to produce an explosion, is termed an explosive (Dutelle & Becker, 2019:309).

1.8.2 Criminal investigation

Criminal investigation is defined as a systematic, organized, and logical examination and analysis process designed to search for the truth, during which an inquiry and thorough analysis are conducted of all types of crimes or unlawful acts (Zinn & Dintwe, 2015:19).

1.8.3 Police

The term “police" refers to a member of the SAPS, South African Police Services (SAPS), who is appointed to carry out the duties listed in Section 205 of the Constitution Act 108 of 1996 (South Africa,1996).

1.8.4 Crime scene

The crime scene includes all areas through which the participants moved while entering, committing, and exiting the crime scene (Dutelle & Becker, 2019:67).

1.8.5 Robbery

According to Burchell (2013:706), robbery consists of theft of property by intentionally using violence to induce a person to submit to the taking of the property.

1.8.6 Cash-in-transit

Cash-in-transit robbery is a violent robbery of a van or small truck carrying banknotes, coins, and other valuables during transport (Pienaar, 2014:104).

1.8.7 Identification

In its most basic sense, identification entails identifying a person or subject (Zinn & Dintwe, 2015:46).

1.9 RESEARCH METHODOLOGY

According to Liamputtong (2021:2), citing Silverman (2018), methodology refers to a general approach to studying a research topic. Leedy and Ormrod (2021:258) remind us that we need to dig deep to obtain a complete understanding of the phenomenon we are studying. Additionally, it is crucial that qualitative research be situated within a methodological framework (Liamputtong, 2021:4). The researcher aimed to understand the influx of illegal explosives and their impact. The research outcome will not be based on numbers but rather on participants' understanding and experiences.

1.9.1 Research design

Qualitative researchers often use multiple forms of data in any single study (Leedy & Ormrod, 2021:268). They posit that qualitative researchers use observations, interviews, objects, written documents, audiovisual material, electronic entities, and that anything else can help them answer their questions. Yin (2016:83) explains research design as a blueprint. According to Terre Blanche *et al.* (2014:37), when developing a research design, the researcher must make a series of decisions along four dimensions, namely, (1) the purpose of the research; (2) the theoretical paradigm informing the research; (3) the context or situation within which the research is carried out; and (4) the research technique employed to collect and analyse data. The researcher chose an empirical design to perform this study. Maxfield and Babbie (2005:6) explain empirical research as knowledge based on experience or observation. Scientific research is empirical since the aim is to know and understand (Bless *et al.*, 2015:8). Given that the research participants work at the border post where the phenomenon is taking place, the researcher believes that answers will be provided on the basis of their own experiences and observations of the activities by the explosives smugglers.

1.9.2 Research approach

According to Kumar (2019:17), three approaches are used in social research:

- The quantitative or structured approach
- The qualitative or unstructured approach
- The mixed methods approach

In the qualitative method, we dig deep, collect various forms of data, and examine them from various angles to construct a rich and meaningful picture of a complex problem (Leedy & Ormrod, 2021:258). The quantitative approach bases its findings on an analytical and aggregate basis (Kumar, 2019:16). The author explains that the mixed-methods approach leverages the strengths of both methods. Qualitative data is an approach in research that addresses data involving words, images, and not numbers in the collection of data (Bryman, Bell, Hirschsohon, dos Santos, Du Toit Masenge, Van Aardt & Wagner, 2014:100). Additionally, qualitative research focuses on phenomena that are occurring or have occurred (Leedy & Ormrod, 2015:269). The researcher will collect data

through both interviews with participants directly involved in the phenomenon and literature that will help answer the research questions under investigation. that a qualitative approach is best suited for this purpose. Qualitative research is concerned with an in-depth understanding of the issue under examination (Liamputtong, 2021:17). The qualitative approach is the most suitable approach, as it allows the researcher to record words for words as answered by the participant, and it allows the researcher to analyze and gain a deeper understanding of the shared experiences of the participants.

1.10 POPULATION AND SAMPLING PROCEDURE

The target population is the group related. (Whitley & Kite, 2013:485). For this reason, the ideal population the researcher will target to gather data is members of the Explosives Section around the Beit Bridge border post, normal SAPS members, SANDF members, SARS employees, newly established BMA members, and convicted smugglers of explosives. Cox (2013:1) explains the target population as the entire set of units for which research data are used. Different government employees at Beit Bridge constitute an ideal population for this research. The researcher has 6 samples to choose participants from, which are identified as sample “A”, sample “B”, sample “C”, sample “D”, sample “E”, and sample “F”; each sample group has five (5) participants.

1.10.1 Random sample

The accuracy of findings depends largely on how a sample is selected (Kumar, 2019:48). Bryman et al. (2014:170) explain two types of sampling: probability and nonprobability sampling. The researcher opts to use a probable random sample for the population comprising “A” sample SAPS members, “B” sample SARS employees, “C” sample BMA employees, and “D” sample SANDF members because of their sizable numbers. Simple random sampling is easy to perform when the population is small (Kumar, 2019:303). Furthermore, the author states that it is consistent with the definition of randomization, in which each element in the population has an equal chance of selection. Similarly, each participant involved in the study has an equal chance of being selected (Bless *et al.*, 2014:146). To achieve this, the researcher will use a fishbowl draw. In each population group, the researcher will place numbered slips in a bowl and allow participants to pick them out without looking until the required number is reached,

5 participants per population sample. Members from these groups are posted to perform crime prevention along the border post. The main focus of SARS is to clear goods crossing South Africa's borders.

1.10.2 Purposive sampling

The researcher will use purposive sampling for population group “E”, which will include members of the Explosives Section. Purposive sampling involves choosing participants or other units of study for a particular purpose. Kumar (2019:308) indicated that purposive sampling involves the researcher’s own judgment of who can provide the best information. The researcher works for the Explosives Section trained to handle explosive-related complaints in the area. Only a few SAPS members are trained to attend explosive-related matters at the Beit Bridge and are known to the researcher.

1.10.3 Snowball sample

Snowball is the process of selecting samples via networks (Kumar, 2019:308). The researcher deemed this sample ideal for sample “F”, which consisted of convicted explosives smugglers serving time in jail. By using the sample, one can increase the sample size (Bless *et al*., 2014:176). The sample a few individuals in a group, who are then asked to identify others (Kumar, 2019:308). The researcher visits the nearest prisons, Matachi and Kuthama Sinthumule, where prisoners serve time. The identified convicts refer the researcher to prisoners arrested for similar offenses.

1.11 DATA COLLECTION METHODS

According to Bryman *et al.* (2014:376), data collection is the process by which the researcher gathers information. Kumar (2019:215) explained that data can be categorized as primary or secondary. Leedy and Ormrod (2021:109) further reported that primary data are the closest to the truth, whereas secondary data are not derived from the truth itself but rather from the primary data. Primary data include information from interviews, questionnaires, and observations, whereas secondary data include information from sources such as journals, magazines, books, and other recorded information (Kumar, 2019:215). The researcher is an employee of SAPS, attached to the Explosives Section, which is responsible for managing, controlling, maintaining statistics on bombing incidents, training explosive development inspectors, and recruiting suitable candidates to work

under the section. The Chief Inspector of Explosives (CIE) has already shown interest in pending research. Manuals, presentations, the Explosives Act, standard operating procedures (SOPs), and other regulations will be available to support this project's success. Creswell (2014:201) highlights the importance of using multiple data collection techniques. Creswell (2014:201). The author goes on to say it allows a triangulation strategy. To achieve this, the researcher will collect data from both primary and secondary sources. Interviews and literature materials.

1.11.1 Literature review

According to Silverman (2022:84), citing Hart (2001), a literature review has two uses: providing access to material relevant to a project and suggesting appropriate methodologies and data collection techniques. Ravitch and Riggan (2017:10) explain literature review as the process through which you survey what is known about a given topic, how it has been investigated, and the intellectual and analytic tools that might help to better understand. Bryman *et al.* (2014:37) stated that the purpose of a literature review is to provide a sound overview of existing research findings. The secondary data various publications, manuals, standing orders, operational procedures, and Acts regulating explosives. The internet will be searched to help answer the research question. The researcher realizes that the topic has not been explored as extensively by researchers, which might make it difficult to find dissertations and Ph.D. theses to reference. The library has already been visited to check data availability, and some books on explosive-related topics have been identified. The researcher also realized that incidents of explosive recovery, bombings, and other illegal uses of explosives are widely reported through various media in the country. This will allow more data collection to be used during the research. The CIE in SAPS will be engaged to allow the use of statistics retrieved from the BDS. This will assist in the use of correct statistics for explosive recoveries at the focus point, which is the Beit Bridge border post, and crimes perpetrated through illegal use in other areas. It is also intended to study the control measures of neighbouring countries sharing borders to understand what they put in place to manage explosives.

1.11.2 In-depth interviews

Interviewing is a commonly used method for collecting information from people (Kumar, 2019:220). According to Harding (2019:65), semi-structured interviews are likely appropriate in many research situations and are recommended for new researchers. Furthermore, this method helps clarify concepts and problems (Bless *et al.*, 2014:197). Leedy and Ormrod (2021:275--279) outlined twelve guidelines for conducting interviews in qualitative research, as follows:

- Identify general interview questions in advance
- Consider how participants' cultural backgrounds might influence their response
- Make sure your sample includes people who will give you the kinds of information you are seeking
- Find a suitable location
- Get written permission
- Establish and maintain support
- Focus on the concrete and actual rather than on abstract or hypothetical
- Do not put words in people’s mouths
- Record responses verbatim
- Keep your reaction to yourself
- Remember that you are not necessarily getting facts
- When conducting a focus group, consider the dynamics.

The researcher targeted employees from SAPS, SANDF, SARS, BMA, and convicted smugglers to provide answers to the research questions under investigation. One-on-one interviews with semi-structured questions were conducted to prevent participants from influencing one another's answers. In the interviews, the researcher may follow standard questions with one or more individual questions to obtain clarification or check a participant’s reasoning (Leedy & Ormrod, 2021:181).

1.11.3 Focus group interviews

Bless *et al.* (2013:200) explained that a focus group consists of between six and ten respondents who are interviewed together. In focus group interviews, the perceptions, experiences, and understanding of a group of people who share common experiences regarding a situation or event are explored (Kumar, 2019:

238). The researcher has noted the authors' discussions above. The interviews will be one-on-one.

1.12 DATA ANALYSIS AND INTERPRETATION

Once data are collected, they must be organized and checked for correctness, accuracy, and completeness (Bless *et al.*, 2013:21). Marshall and Rossman (2011:207) explain the purpose of data analysis in qualitative analysis as to sort and categorize in such a way that the researcher ends up with themes that help answer the question. Leedy and Ormrod (2021:387) noted that qualitative research data analysis is an interactive process, and a good qualitative researcher is bound to return and forth slightly among the strategies just presented. Leedy and Ormrod (2021:387), citing Creswell (2013), described such data analysis as spiral; in this approach, the data are processed several times via the following steps:

- Organize the data
- Peruse the entire data set several times to get the sense of what it contains as a whole
- Identify general categories or themes and perhaps subcategories or subthemes
- Integrate and summarise.

Creswell (2014:99) sensitized researchers not only to report positive results but also to include negative results.

1.13 METHODS TO ENSURE TRUSTWORTHINESS OF THE STUDY

According to Du Plooy-Cilliers, Davis, and Bezuidenhout (2014:258), trustworthiness is a term in qualitative research that encompasses concepts traditionally known as validity and reliability. Bless *et al*. (2013:222) indicate that reliability is related to the consistency of a measure. Fink (2020:108) agrees that the author that the collection is relatively free from measurement error. Validity is one of the strengths of qualitative research and is based on determining whether the findings are accurate from the researcher's standpoint (Creswell, 2014:201). To achieve trustworthiness in qualitative research, there are four indicators related to validity and reliability (Kumar, 2019:276). The authors list the guiding indicators as follows: credibility, transferability, dependability, and confirmability.

1.13.1 Credibility

Creswell (2014:201) suggested that the term 'validity' in qualitative research is often used to refer to credibility. Silverman (2020:433) simplified this by saying that validity refers to the credibility of our interpretation. Du Plooy-Cilliers *et al.* (2014:258) added that credibility refers to the accuracy with which the researcher interprets participants' data. To achieve this, the researcher plans to spend sufficient time with the respondents and explain to them the importance of contributing to finding solutions to the phenomenon, namely, the explosive influx and its impact on lives. The data provided will be scrutinized daily. The target group to be interviewed will be those at the centre of the problem, either as perpetrators or workers at the Beit Bridge border post. The researcher's view is that valuable information will be obtained, and credibility maximized. To maximize credibility, the researcher followed the following guidelines.

- Triangulation

Denzin and Lincoln (2018:446) define data triangulation as the combination of different data sources examined at different times and places by different people. The researcher will recruit participants from different government departments for data collection, including convicted inmates of different genders. The use of multiple data sources allows researchers to develop a comprehensive understanding of phenomena.

- Prolonged engagement

The researcher is an explosives regulator based at the provincial office in Limpopo. He is in a better position to interact regularly with the other role players at Beit Bridge. This will develop trust and improve the correctness of the outcome. The researcher plans to spend more time with participants, estimated at no less than a week per group.

- Data saturation

The researcher must be able to research a topic (Bless *et al.*, 2013:239). The researcher will collect data from SAPS, SANDF, BMA, SARS, and convicts; by doing so, enough data will be guaranteed. All identified participants are at the centre of the phenomenon, either as perpetrators or law enforcers. This allows the researcher to cover all the aspects that will help answer the research

questions. Kumar (2019:309) noted that very little additional information is available from the participants.

1.13.2 Confirmability

Lichtman (2014:387) explained conformability as the level to which results could be confirmed or corroborated by others. The researcher will, after obtaining data from the participants, analyze the transcripts and send them back for verification before conducting the analysis. The interviewed personnel will be afforded the opportunity to rectify or add information if needed.

1.13.3 Dependability

The researcher must show that each step has been completed thoroughly and carefully (Bless *et al.,* 2013:237). To achieve this, the researcher has done the following:

- The researcher developed the interview schedule to gather data from the participants. The same questions will be formulated for participants in the same group. The participants were given enough time to analyze the questions before answering them.
- The aim of the research and the research questions will be taken into consideration when formulating the interview questions, and the supervisor will be afforded an opportunity to check their relevance.
- The researcher will interview the participants twice on similar questions, provided that answers will be recorded on both occasions. The researcher will spend time listening to whether the provided answers remain unchanged.
- Where the respondent is found to contradict themselves, the researcher will seek clarity, and the participant involved will be contacted.

1.13.4 Transferability

Lichtman (2014:348) defined transferability as the extent to which the study's results can be transferred to another environment. The researcher noted that although this study focused on the Beit Bridge, South Africa has several other borders and may experience similar challenges. Therefore, the researcher believes that his findings may be implemented and function optimally at any other border operate under the same mandate. The government departments managing the border posts are the same and implement the same policies.

1.14 ETHICAL CONSIDERATIONS

Terre Blanche *et al.* (2014:61) explained that the purpose of research ethics is to protect the welfare of research participants. Dantzker and Hunter (2012:190) noted that ethical neutrality requires that researchers' moral or ethical beliefs not influence the collection of data or the conclusions drawn from the analysis of the data. Before undertaking research, adequate consideration should be given to the literature on the subject or the issue under study (University of South Africa, 2016:11). For that reason, the researcher avoids preconceived ideas about the topic. Before deciding on the topic, the UNISA library was visited due to its availability of literature. Bless *et al*. (2013:27) noted that ethics are also about ensuring that we use our knowledge and skills to contribute to our society and to the lives of all people. When the researcher combines experience with the collected data, the analysis will align with the literature. According to Leedy and Ormrod (2021:135), researchers should not expose research participants, whether human or nonhuman animals. Machi and McEvoy (2016:11) noted that no discussion about mindset would be complete without addressing the moral issue of ethical behaviour. The authors list the following tenets to consider before work begins:

- Do not take data out of context
- Perform your own research
- Present only what you believe to be factual
- Present all sides of the question
- Plagiarism can easily sneak into a review unless it is carefully avoided
- You must be the sole writer of your research.

Furthermore, ethics in research relates to doing what is morally right (Dantzker & Hunter, 2012:190). When research involves public documents or records created by human beings, such as birth certificates and newspaper articles, these documents should be considered fair game for research (Leedy & Ormrod, 2013:105). Most researchers agree with several general principles (Silverman, 2022:104). Silverman (2022) lists the most prominent examples as follows:

- Voluntary participation and the right to withdraw
- Protection of research participants
- Assessing potential benefits and risks to participants
- Respecting the privacy of the participant and avoiding deceiving them

- Obtaining informed consent
- Avoiding harm.

When a study involves human beings, the risks of participating should not include the risk of limb, or of being subjected to unusual stress, embarrassment, or loss of self-esteem (Leedy & Ormrod, 2021:135). Kumar (2019:359), citing Bailey (1978), noted that harm includes not only hazardous medical experiments but also any social research that might involve discomfort, anxiety, harassment, invasion of privacy, or demeaning or dehumanizing procedures. The researcher will conduct the research professionally, and participants who are uncomfortable continuing will be allowed to withdraw. The conduct of research should be honest about their own limited competence, belief system, values, and needs (University of South Africa, 2016:12). The researcher has taken note of the UNISA code of ethics as a seasoned police officer, and the researcher believes that he is better suited to address the topic of explosive control and illegal use. The researcher has noted all research ethics, including the UNISA code of ethics. Some information will be collected from SAPS, where the researcher is currently an employee. Permission to access information from SAPS, which includes documents and statistics, has been applied. All sources are acknowledged in the reference. When human participants are used, the researcher will comply with the ethics principles outlined by the authors and UNISA. The researcher avoids factors that may lead to incorrect reporting or bias.

1.14.1 Permission to conduct the study

The researcher has applied to the SAPS Research Nodal Point for permission to conduct the study. Upon UNISA draft approval, the Ethics Committee will provide ethical clearance. The SAPS will issue written permission upon receipt of ethical clearance and an approved research proposal. Permission to continue the study is pending. This is done to ensure that the employer is aware of the intended study and gives permission to access the statistics and documents needed for the data.

1.14.2 Informed consent

According to Leedy and Ormrod (2021:136), most research with human beings requires consent. Harding (2019:54) reminds us that when they take part in research, participants are placed in unfamiliar positions. Furthermore, in every

discipline, it is considered unethical to collect information without the participant's knowledge, their willingness, and informed consent (Kumar, 2019:358). Participants have a right to know what the research is about, how it will affect them, and the risk (Bess *et al*., 2013:32). In that case, when people are specifically recruited for participation in research, they should be told the nature of the study to be conducted and given a choice to participate or not (Leedy & Ormrod, 2021:136). The researcher noted the importance of conducting interviews with only willing participants, and consent forms were made available for all participants to acknowledge and sign. The researcher will allow participants to withdraw at any time upon request.

1.14.3 Anonymity and confidentiality

According to Kumar (2019:360), sharing information about a respondent with others for purposes other than research is unethical. Harding (2019:55) reminds us of the importance of limiting data collection to information that is essential to the topic under study. It is unethical to identify an individual or a respondent, or to disclose the information provided (Kumar, 2019:360). Any research study involving human beings must respect participants' right to privacy (Leedy & Ormrod, 2021:138). Leedy and Ormrod (2021) assert that under no circumstances should a research report, either oral or written, be presented in such a way that other people become aware of how a particular participant has responded or behaved unless such permission is given in writing. The researcher will conduct individual interviews. No names will be used, and participants will be identified by a number. No group interviews will be conducted. The questions asked participants.

1.15 PROPOSED TIME FRAME

Kumar (2019:342) indicated that a researcher should have the need to complete the research within a certain time. For that reason, the researcher plans to have completed the project as indicated in the table below:

Table 1.1: Proposed time frame

Date of commencement	Functions	Date of conclusion
2023-01-01	Conduct a literature review on the Topic	Continuous/on-going

2023-03-01	Draft the research proposal for approval and send it to the supervisor. Apply for ethical clearance and SAPS.	2023-06-31
2023-07-01	Compile interview schedule	2023-07-30
2023-08-01	Compile chapter 2 of the dissertation	2023-09-30
2023-10-01	Collecting data and interviewing participants	2023-11-30
2023-12-01	interpret data and report on findings	2023-02-31
2024-01-01	Write the dissertation	2024-01-15
2024-01-16	Engage the supervisor for correction and advice	2024-01-30
2024-02-01	Follow the recommendations of the supervisor and submit the thesis to the language editor	2024-02-28
2024-03-01	Rectify the editor's comments and submit for final assessment	2023-03-30

Source: The researcher

1.16 BUDGET

It is a good idea to estimate the study's costs and ensure that funds are available (Kumar, 2019:342). The researcher intends to take the time to understand the legislative frameworks related to the control and management of explosives in neighbouring countries and the global world, which might require travel. For this purpose, the researcher's estimate, including other expenses, is shown in the table below.

Table 1.2: Budget

ITEM	NO OF UNITS	PRICE
Registration fee	1	R19 500
translation	1	R4500

binding	2	R18 000
printing	5	R800
laptop	1	R8000
stationery	4	R1500
Travelling	3	R15 000
Total	19	R51 100

Source: The researcher

1.17 LIMITATIONS OF THE STUDY

The availability of data, securing permission from the agency, and obtaining samples are examples of limitations a researcher may encounter (Kumar, 2019:342). Law enforcement at Beit Bridge includes SAPS, SANDF, BMA, and SARS. To increase data trustworthiness, the researcher planned to collect data from all stakeholders at the border. The delay in granting the SANDF permission to collect data and SARS's lack of response led to the exclusion of both entities. This unforeseen challenge did not affect data integrity. Kumar (2019:342) reminds us to communicate such limitations.

1.18 CHAPTER LAYOUT

The research is presented in four chapters. Each chapter comprises the following information:

Chapter 1: General orientation

In this chapter, the researcher provides background information on the study and provides an overview of the problem statement. The researcher developed the research aims. From the research aims, research questions are derived to help address the identified phenomena. The researcher identified key theoretical concepts for the study and provided definitions for each. The researcher's chosen research design is explained, along with the reasons for the choice. The researcher also explained the data collection procedures, the analysis methods, and the methods used during the study. The study's trustworthiness and ethical considerations are included to guide the researcher in treating participants.

Chapter 2: Explosives' regulatory framework through the Beit Bridge border post to South Africa and the impact of poor control.

In this chapter, the researcher will clarify what explosives are and how they are classified. The legislative framework for managing and controlling explosives. Criminal activities linked to illegal explosives and how forensic science may assist investigations.

Chapter 3: Presentation and interpretation of data.

This chapter uses the research to interpret the collected data from various participants. By analyzing the collected data, the researcher can obtain findings.

Chapter 4: Findings and recommendations

The researcher uses the chapter to present findings and make recommendations to address the identified problem.

CHAPTER TWO: EXPLOSIVES' REGULATORY FRAMEWORK THROUGH THE BEIT BRIDGE BORDER POST TO SOUTH AFRICA AND THE IMPACT OF POOR CONTROL

2.1 INTRODUCTION

Explosives play a major role in the mining and civil construction environments in South Africa; however, in recent years, this commodity has been commonly used for criminal activities, including cash access and other illegal mining. The Explosives Act 26 of 1956, which has yet to be replaced by the Explosives Act 15 of 2003, provides guidelines on the total control and management of explosives by SAPS in the country.

In this chapter, the researcher will explain explosives under the Explosives Act and the measures in place to manage their illegal use and transportation. The researcher will also use this chapter to highlight various crimes committed with explosives. The investigation of bombings and explosive recoveries requires specialized expertise from explosive experts, and the analysis of residues and remnants requires forensic analysis. In this study, the researcher examined what happens during an explosion and the associated dangers. The researcher also delved into how a well-preserved crime scene can provide answers about the type of explosives used in the commission of the crime and help link the suspect to the crime scene.

2.2 WHAT ARE EXPLOSIVES

According to the Explosives Act 26 of 1956, explosives shall mean the following:

(a) gunpowder, nitro-glycerine, dynamite, guncotton, blasting powders, fulminate of mercury or other metals, coloured fires, and every other substance, whether similar to those mentioned herein or not, which is used or manufactured with a view to producing a practical effect by explosion or a pyrotechnic effect;

(b) any fuse, rocket, detonator, cartridge, and every adaptation or preparation of an explosive;

(c) any other substance that the State President may declare explosive from time to time by proclamation in the Gazette;

James, Nordby, and Bell (2014:318) explain explosives as compounds or mixtures that decompose rapidly to produce heat and gas. Dutelle and Becker (2019:309) assert that explosives are any chemical compounds, mixtures, or devices used to produce an explosion. Lee and Harris (2000:71) also agree that heat, shock, or a strike is required to produce an explosion. Osterburg and Ward (2015:530) make use of the table below to illustrate how explosives function and appear.

Table 2.1: Types of Explosive Devices

SEMTEX	A yellowish plastic explosive, about one-third more powerful than a similar amount of TNT. It has a texture like clay putty or clay and can be molded. It is easy to transport because it will not explode without a detonator. C-4 Similar to SEMTEX. C-4 is a plastic explosive that can be manufactured in solid or powder form.
HMEs (Home Made Explosives)	These usually involve using fertilizer.
IEDs (improvised Explosive Devices)	Explosive devices formulated with the use of a variety of types of explosives and detonators, including military munitions and other common bomb making material
Triacetone Triperoxide (TATP)	A liquid-based explosive created by mixing the two chemicals, which, when combined, create TATP, forming a white crystalline powder. The powder must dry before use, and it is somewhat difficult to detonate. a suicide bomber, as well as by the detonator under optimum conditions.
Peroxide-Based Explosives	An improvised device that is relatively easy to detonate and easy to obtain on the open market. This type of explosive was used in the 2006 London train bombings.
Pipe Bomb	A device built with a length of a pipe stuffed with explosive (usually black powder) and shrapnel, such as nails or BBs, sealed at both ends, and fitted with a detonator

Plutonium-229	Radioactive material that, when of weapon-grade quality, can be used in the making of nuclear bombs.
TNT (Trinitrotoluene)	Approximately twice as powerful as common Dynamite. TNT has a lower explosive velocity than plastic explosives. It is made of nitric and sulphuric acid, and toluene. It is readily available in the United States and is usually produced in half pound and one-pound sticks.
Ammonium Nitrate	Common fertilizer, when mixed with diesel fuel, has an explosive velocity of 3600 feet per second. The bomb is triggered by the detonator, which delivers an electrical charge. Which causes the explosive to ignite.

Source: Osterburg and Ward (2015:530)

2.2.1 What is an explosion?

During an explosion, a massive amount of energy, characterized by heat and air blasts, is released from a specific point, with the potential to cause property damage or injuries. Dutelle and Becker (2019:309) explain an explosion as an event that results in the release of mechanical or chemical energy in a violent manner, in such a way that it generates great heat (high temperature) and the subsequent release of large quantities of associated gases. In support of Dutelle and Becker (2019:309), Girard (2018:386) states that an explosion is a violent release of mechanical or chemical energy that generates heat (high temperatures and the release of large quantities of gas). James *et al.* (2014:302) define an explosion as a sudden conversion of potential energy into kinetic energy, accompanied by the production and release of gases under pressure. Girard (2015:434) and Siegel (2011:119) likened an explosion to a powerful fire. The authors further posit that sometimes a fire can appear to be an explosion. Many heat and gaseous products can be produced from a relatively small quantity of explosive material (Harris & Lee, 2019:310). An analysis of the information by Dutelle and Becker (2019:309), Girard (2015:434), and James *et al.* (2014:302) revealed that high energy is released from a specific point during chemical reactions and that this energy is released in an explosion. Hess and Wrobleski (2006:268) noted that explosions can be accidental or purposeful. Earthquakes

and plane crashes are examples of accidents, whereas purposeful explosions include those caused by terrorists and arsonists.

2.2.2 Effects and types of explosives

During an explosion, air blasts and heat are the main activities. Houck and Siegel (2010: 458) suggested that explosions can be explained by understanding what happens during an explosion. The authors further indicate that escaping gases in explosions can travel at speeds of up to 8000 miles per hour and exert pressures of hundreds of tonnes per square inch. Brown and Davenport (2012:139) reported that high-energy explosives easily detonate and produce a pressure wave that travels at up to 8.500 m/s.

Not all explosives travel at the same speed after detonation. The rate at which explosives decompose varies widely, allowing their classification as either high or low (Saferstein, 2013:427). Girard (2015:436), Brown and Davenport (2012:137), and Siegel (2011:119-120) mention that there are two types of explosions: deflagration and detonation. James *et al.* (2017:302) described the two subcategories as high-order explosion and low-order explosion. The authors add that high-order explosion is characterized by shattering the confined structure, whereas low-order explosion is characterized by pushing or dislodging the confining structure or container. Brown and Davenport (2012:138) further explained that in a high explosion, the container walls stretch until they burst and fragment. Siegel (2011:119-120) argued that deflagration is a rapid combustion process that results in significant damage and often involves the use of moderately powerful explosives. The author added that a detonation is essentially an instantaneous explosion so powerful that the escaping gases travel faster than the speed of sound.

An explosion that does not cause severe damage to the container is likely to be classified as low, and such an explosion may be referred to as a deflagration. Girard (2015:463) further explained deflagration as a chemical explosion in which the reaction front moves through the explosive at less than the speed of sound, and detonation as a chemical explosion in which the reaction front moves at a speed greater than the speed of sound. Dutelle and Becker (2019:309) share the same view when the authors also say a chemical explosion in which the reaction front moves through the explosive at less than the speed of sound is classified

as deflagration, whereas a chemical explosion in which the reaction front moves through the explosive at greater than the speed of sound is classified as a detonation. During detonation, the container or anything nearby will be shattered.

The researcher has analyzed two terms, detonation and deflagration, used by various authors. Most explosives used during CIT, ATMs, and safe bombings cause a shattering effect, stretching the metal structure, collapsing walls, and throwing debris as far as 50 meters or more. This is consistent with the authors' explanation of detonation.

Dutelle and Becker (2019:310), Brown and Davenport (2012:138), and Girard (2015:436) include black powder and smokeless powder as examples of low explosives. Brown and Davenport (2012:138) reported that low-energy explosives are often used as propellants. Siegel (2011:61) noted that smokeless powder does not explode but rather combusts. The author added that if the process occurs in a confined space, it can have the force of an explosion. Low explosives explode inside the container beyond its capacity. Low explosives burn rather than explode if not confined (Girard, 2018:388).

Lochner and Zinn (2017:138) noted that high explosives can be further categorized as primary or tertiary. High explosives may still explode massively even in an open place. Brown and Davenport (2012:138) clarified that, unlike low explosives, high explosives do not require confinement to detonate. The authors noted that many high-energy explosives contain TNT (trinitrotoluene).

Saferstein (2013:428) agreed and added PETN and RDX to the list of high explosives. The author added that they detonate almost instantly at rates of 1000--8500 metres per second, producing smashing and shattering effects on their target. In addition to their high energy, these high-energy explosives are slightly more stable than primary high explosives. Harris and Lee (2019:314) confirmed that secondary high explosives can be handled fairly safely. James *et al*. (2014:318) concur and further remind us that secondary high explosives are detonated by the shock generated from primary explosives.

To initiate secondary explosives, primary high explosives should lead to them. Without primary high explosives, perpetrators of bombing incidents may be unable to build a bomb. Brown and Davenport (2012:139) explain that primary explosives are very sensitive to heat, pressure, and movement; by contrast,

secondary high explosives are less sensitive but, if initiated, can cause very violent explosions. Owing to their ability to initiate secondary high explosives, primary high explosives are used in every incident where bombing for cash takes place in South Africa. Saferstein (2013:428) similarly explained the main function of primary high explosives as to detonate other explosives, and they are often referred to as primers. Additionally, the author lists the contents of primary explosives as lead azide, lead styphnate, and diazodintrophenol. Girard (2018:392) explained primary high explosives as detonators and added aluminium as another component used in manufacturing them. Harris and Lee (2019:313), on the other hand, simplify "treacherous" and use it as a detonator.

In addition to explosives being classified by either their intended use: commercial or military. Brown and Davenport (2012:139) reported that commercial explosives are used for mining and road construction. The first was used in 1850 (Girard, 2018:389). Girard (2018) further indicated that Alfred Nobel invented dynamite by using explosives and reducing their sensitivity by adding clay. Cyclotrimethylenetrinitramine (RDX), pentaerythritol tetranitrate (PETN), and trinitrotoluene (TNT) are types of explosives used in the military and found in grenades and small calibres (Brown & Davenport, 2012:139). Nitroglycerin-based explosives have disappeared from the market and have been replaced mainly by ammonium nitrate-based explosives, including water gels, emulsions, and ANFO (Saferstein, 2013:428). Most secondary high commercial explosives used for commercial purposes are ammonium nitrate based. Ammonium nitrate is widely used by farmers (Dutelle & Becker, 2019:310). Harris and Lee (2019:316) agree, highlighting ammonium nitrate as the main ingredient used to manufacture commercial secondary high explosives. To obtain ammonium nitrate explosives with full explosive potential, the correct mixing ratio should be achieved. Girard (2018:389) noted the correct ratio as a mixture containing 94% ammonium nitrate and 6% fuel oil.

2.2.3 Management of explosives

In most southern African countries, the control and management of explosives remains the mandate of the police. The Explosives Act 26 of 1956 gives powers to the CIE, which is appointed by the minister to carry out the provisions of this Act (South Africa, 1956:2). Zimbabwe (1961:4), Malawi (1966:2), and South

Africa (1956:2-3) similarly give the CIE a prerogative to appoint other police officers to work as inspectors of explosives.

When observing explanations by both the Explosives Acts of the southern African countries neighbouring South Africa, the researcher realizes similarities in issuing licenses to transport, manufacture, use, and store explosives. Both Acts require that users possess permits or comply with directives as stipulated in the regulations. Malawi (1966:2), Zimbabwe (1961:1), and South Africa (1956:3-5) have the power to license all users of explosives. Issuing licenses and compliance enforcement are performed by personnel appointed by the CIE.

2.3 USE OF EXPLOSIVES FOR CRIME

According to SAPS (2010a:69), the Explosives Act of 1956 addresses the manufacture, storage, sale, transport, export, and use of explosives. In South Africa, in addition to explosives being used legally for commercial purposes, criminals have found a proper tool to access cash locked in safes. Lochner and Zinn (2017:137) noted that explosives are useful tools that have enabled people to accomplish remarkable engineering feats but have also been used for criminal activities in recent years. Githahu (2022:1), citing SABRIC chief executive Nischal Mewalall, notes that the stats show criminals who target ATMs are increasingly opting to use explosives rather than their previously preferred tool, angle grinders. Each explosion may be classified as either chemical (due to a chemical reaction) or mechanical (due to faulty equipment). Dutelle and Becker (2019: 309) noted that, just like fires, not all explosions are criminal in nature. The authors argue that explosions intended for crimes or terrorism typically make use of explosives. In recent years, there has been an increase in well-funded international terrorism (Harris & Lee, 2019:316). Schmidt (2023:1) noted that smuggled explosives and blasting materials imported by criminal syndicates enable cash-in-transit (CIT) heists, ATM bombings, and even illegal mining operations. Chelin and Els (2020:1) reported that these explosives are sourced from mining and construction industries in the region. Miller, Hess, and Orthmann (2014:457) highlight the actions of Theodore Kaczynski, the notorious Unabomber, who terrorized the country with a string of sixteen mail bombings that killed three people; the bombing at the World Trade Center in 1993 by Ramzi Ahmed Yousef is also

highlighted. The two highlighted incidents are good examples of the use of explosives for criminal purposes outside South Africa.

In South Africa, slightly more than 200 dedicated explosive inspectors, enforcing antiquated laws, hold the line against the syndicate (Schmidt, 2023:1). Permits for explosives are issued by the CIE or by inspectors designated by the minister for safety and security (SAPS, 2010a:70).

2.3.1 Robbery

CIT robbery is an aggravated type of robbery that is growing rapidly in the country (Burger, 2018:1). Explosives have become an integral tool to be used during CIT. With cash vans equipped with strong safes and no keys available, perpetrators have found a powerful tool for breaking into vaults and accessing cash. Mahamba (2020:1) emphasized that heavily armed perpetrators use violence and open cash vehicles with explosives. Thobane (2019:108) also added that CIT industries have been robbed of violence over the years. Dutelle and Becker (2019:240) noted that robbery can be simple or aggravated.

Dutelle and Becker use the table below to illustrate the probability of violence across various types of robbery.

Table 2.2: Probability of violence in various types of robbery

Type	Probability of violence
Vehicle robbery	Low to moderate
Bump-and-grab	Low to moderate
ATM robbery	Low to moderate
Residential robbery	Low to moderate
Commercial robbery	Moderate to high
Carjacking	High
Street robbery	High

Source: Dutelle and Becker (2019:240)

2.3.2 Illegal mining

Illegal explosives enable illegal mining to boom in South Africa. The illegal use of such explosives is so massive that the country's illegal mining, ATM bombing, and cash-in-transit have also created an enormous demand (Els, 2023:1). Brown

(2023:1) indicated that zama zamas, as illegal miners are known in South Africa, are often found heavily armed and in possession of explosives. Additionally, more than 100 explosives and tools used for illegal mining were seized, and six Zama-Zamas were arrested in Benoni (Motloung, 2023:1). The mining sector and the country are also losing billions of rands each year to these illegal mining activities (Chabana, 2022:1).

Although illegal miners focus on minerals, they also commit other crimes, such as theft of cables and rapes (Chabana, 2022:1). In addition, poorly equipped and unmotivated police are said to be no match for professional gunmen armed with rifles and AK-47s. Ownerless mines and abandoned mines are the centre of illegal mining activities (Chabana, 2022:1). Illegal miners also place explosives on strategic spots in tunnels to cause maximum damage to those who are trying to apprehend them (Chelin & Els, 2021:1). Brown (2023:1) referred to such practice as ambushes and booby traps. The author suggested that a single stakeholder cannot stop illegal mining. According to Arnoldi (2023:1), most suspects involved in illegal mining are foreigners from Zimbabwe, Mozambique, Lesotho, the Democratic Republic of Congo, Kenya, Nigeria, Pakistan, and Uganda. The author refers to 4067 suspects arrested recently for illegal mining; 2739 were found to be foreigners. Tshikalange (2023:1) concurred but also highlighted that a sizeable number of South Africans were arrested for illegal mining in 6100 derelict or ownerless mines.

An analysis of the authors' information indicates that various government stakeholders play a role in combating illegal mining. DMRE, Home Affairs, Justice, and Police are considered stakeholders in efforts to reduce illegal mining in the country.

2.4 SMUGGLING OF EXPLOSIVES

The smuggling of explosives across South Africa poses a severe challenge (Els, 2023:1). Explosives smugglers use any form of transport available to cross into the country (Chelin & Els, 2020:1). In South Africa, the main contributor to illegal explosives is Zimbabwe (Els, 2023:1). Transnational truck drivers are also encouraged to insert packages of explosives into their cargos (Schmidt, 2023:1). The author added that a hearse driver was stopped at Beit bridge carrying four spools of detonator cord, together with a backpack-sized load of explosive

cartridges, worth a total of R700 000. Els (2023:1) cited a senior bomb technician and reported that most explosives and accessories are manufactured in neighbouring countries or imported back to South Africa. Zimbabwe (1961:2) prohibits the movement, manufacturing, and possession of explosives without a permit by CIE or inspectors and sub-inspectors

Regulations prohibit different categories of explosives from being transported or stored together, but smugglers do not adhere to safety regulations and endanger themselves and other travellers (Els, 2023:1). Smugglers of explosives neglect all the dangers involved when accomplishing their mission (Schmidt, 2023:1). Schmidt (2023:1) highlights that syndicates target trucks and any other mode of transport. In minibus taxis and public transport, women are predominantly targeted as smugglers of explosives, as they are not easily suspected (Els, 2023:1). In addition to South Africa being the focus of illegal explosives from Zimbabwe, some other neighbouring countries recently found themselves receiving illegal explosives for illegal mining. On 2 November 2022, a group of people was arrested near Chimoio in Mozambique with the consignment of commercial explosives from Zimbabwe (Els, 2023:1).

Schmidt (2023:1) explained the transport of illicit explosives and detonators into South Africa and their secret storage as extremely risky due to the highly sensitive nature of detonators. The author added that electrically fired detonator cords and more stable main charges are often carelessly smuggled and stored together. Chelin and Els (2021:1) cite a senior commander in the Explosives Section who requested anonymity and highlighted the serious cuts in the budget for training and critical resources as another constraint for the section to perform essential tasks. Bomb technicians or inspectors of explosives are responsible for enforcing the Explosives Regulations. Chelin and Els (2020:1) confirmed that once the explosives leave the factory, their transportation, storage, and use become the responsibility of the police. Zimbabwe (1961:3-4) and South Africa (1956:4-5) clarify the conditions of the manufacturing, transportation, storage, and possession of explosives. The Acts also indicate that failure to adhere may lead to conviction.

2.5 INVESTIGATION OF EXPLOSIVE SCENES

Investigating explosives requires specialized knowledge. Lochner and Zinn (2017:137) noted that bomb scene investigation should be treated as a special case. Knowing what to search for during investigations is paramount. Siegel (2011:122) confirmed that finding parts of the explosive device can be very important, especially in terrorist bombings. Brown and Davenport (2012:140) reported that almost immediately after an explosion, investigators work to determine the cause. Harris and Lee (2019:318) explained the first step as sorting through all the material to recover portions of the device and any explosive residue. Genge (2004:199) noted that equipment for explosives and incendiary scenes is highly specialized.

Packaging material may be used to link explosives to a manufacturing company or to a specific type of explosive. Osterburg and Ward (2015:531) reported that some explosives can be traced using markers placed in the material by the manufacturer. During an explosion, some packaging components are likely to survive. The wrapper is often blown into pieces, and unless consumed by fire, a piece of wrapper may bear a serial number or other markings that enable investigators to trace the origin and distribution of the material (Harris & Lee, 2019:320). The author mentions parts of batteries, timing devices, and other items that can survive the explosion and provide information that investigators can use to secure a successful prosecution. Lee and Harris (2000:237) proposed that black plastic electrical tape is commonly used to hold electrical components and that much of the tape survives an explosion. The researcher shares the same sentiments as perpetrators of explosion-related crimes use dark tapes to package and isolate wiring used to build bombs.

Lochner (2017:140) suggested that a bomb cannot be built without the following items:

- The explosive charge
- A means of detonating or igniting the bomb
- A power source, often batteries
- A switch, such as a watch
- A container for the whole package

2.6 ROLE OF FORENSICS IN INVESTIGATION OF EXPLOSIVE SCENES

During an explosion, fragments are flung as far as 50 m away from the point of detonation. Baxter (2015:246) supported this view by indicating that the scene would be torn apart. In a scene of explosion, the area where the bomb was placed. Siegel (2009:121) argues that, similar to fires, the best place to find evidence of a bomb is at the point of detonation. An investigation should attempt to determine the point of detonation and the types of blast effects exhibited by the explosive (Girard, 2015:442). Siegel (2011:121) mentioned the major evidence from a bomb scene as unburned or partially burned residues of explosives and pieces of the explosive device.

The duty of bomb technicians is to reconstruct scenes by collecting fragmented pieces. Brown & Davenport (2012:140) expressed similar sentiments, noting that investigators collect soil samples and debris from inside the crater. In addition to identifying exploded parcels through reconstruction, bomb technicians may collect samples for laboratory analysis. Girard (2015:444) described the process of screening objects found at the scene for explosive residue using an Ion Mobility Spectrometer (IMS). The type of explosive used may be determined by inspecting the residue at the scene (Dutelle & Becker, 2019:312). The duty of bomb technicians includes searching for forensic evidence. The evidence is then sent to the laboratory for further analysis (Brown & Davenport, 2012:140). Not only evidence related to explosives may be found in an explosion scene. Traces of explosives, drugs, or any substance with which the perpetrator of the crime has come into contact can be obtained and examined to determine chemical fingerprints (Yacine & Fellag, 2012:180).

In high-order detonation, finding remnants of explosives can be difficult. Siegel (2009:121) argued that, in some instances, explosive residue analysis can be particularly difficult because the evidence may be hard to locate and separate from other material. Brown and Davenport (2012:140) likened a situation to one in which nothing remains. Lochner and Zinn (2017:139) noted that if a suspect is apprehended shortly after the explosion, clothing should be collected and submitted to the laboratory for analysis and examination of trace evidence and explosive debris. In doing so, approved explosive exhibit packaging containers should be used. Baxter (2015:246) reported that explosive materials may be

soluble in water or evaporate. For that purpose, SAPS (2023:3) gives a directive that explosives should be sent to the laboratory for analysis within 7 working days. Bomb fragments often contain residual explosive material (Baxter, 2015:246). Dutelle and Becker (2019:312) added wood, metal, and fiberglass as areas that should have sufficient residue to allow identification of the explosive. This finding indicates that different materials believed to have been in contact with the explosion can be analyzed in the laboratory for explosive residue. The duty of explosives experts or bomb technicians is to collect residue swabs in areas likely to contain explosive residues. Only a few extremely powerful bombs destroy all the components used in their construction (Girard, 2015:442). Lochner (2017:139) highlighted that it is important to collect the following information in a post-blast scene:

- Soil samples from all areas surrounding the crater
- Suspected bomb components
- Materials associated with the construction and transportation of explosives and explosive devices
- Debris sampling and swabs from the seat of the explosion
- Residues were swabbed off surfaces facing the seat of the explosion
- Adequate control samples to eliminate indigenous material
- Other traditional types of evidence, such as fingerprints, footprints, tyre tracks, trace evidence, and blood
- Debris from rooftops, gutters, trees, and surrounding buildings
- Residues and traces on billboards, traffic lights, streetlights, and road signs in the vicinity

The duty of bomb technicians is to collect evidence to confirm the use of explosives and even link the suspect to the crime scene. Laboratory analyses of explosive and explosive residues utilize a variety of techniques (James, Nordby & Bell, 2014:318). Girard (2018:397) noted that once debris collected from a crime scene reaches the lab, this evidence is first examined microscopically to identify particles of undetonated explosives. These color-coded, multi-layered particles identify the residue as dynamite and indicate the manufacturer (Dutelle & Becker, 2019:312). Baxter (2015:246) noted that any residual evidence should be quickly packaged in airtight containers, such as paint cans, glass jars, or nylon or mylar bags. Gilbert (2007:493) explained that techniques have been

developed to tag explosives, helping investigators trace them to their source. The author explains that chemical tags recovered after an explosion are magnetically collected, decoded, and microscopically examined. The type of chemical additive reveals who made the explosives when they were produced and their commercial destination after production. Chelin and Els (2021:1), citing Colonel Jurie van Staden, the commander of the SAPS Explosives Control Section, present a contradictory account, stating that the commander emphasized the need to implement track-and-trace technology in the commercial explosives supply chain.

The researcher has analyzed the versions by Gilbert (2007:493) and Chelin and Els (2021:1). One author stated that the technique for tracing explosives to sources has been developed and is in place; in contrast, the other authors stated that there is a need to implement track-and-trace technology. Therefore, the researcher believes that South Africa has yet to know or implement such techniques. Chelin and Els (2021:1) blame a delay in implementing the New Explosives Act 15 of 2003 as a main contributing factor to the current problem. The CIE must regulate explosives through outdated legislation and regulations (Els, 2023:1).

2.7 ROLE OF FIRST RESPONDERS IN BOMBING SCENES

Failure to secure an explosion scene may compromise evidence or even result in further injuries. In an explosion scene, the bomb technician typically arrives later to find the scene already cordoned off by first responders (SAPS, 2015:3). The first responder at a suspicious item incident is typically a law enforcement officer. Birzer and Roberson (2012:193) and Dutelle and Becker (2019:311) put it as the first public safety person and law enforcement officer, respectively. Some explosions and explosion scenes are mistaken for ordinary crime scenes, posing a serious risk to first responders or bystanders. Lochner and Zinn (2017:138) assert that investigators are expected to at least know how to identify a scene of an explosion or recognize common materials often found at such scenes; they should at least be able to recognize common materials used to manufacture homemade explosives. SAPS (1999:5) states that no member of the service other than the active bomb technician may handle explosives. In bombing scenes, bomb technicians should enter first and declare the area safe before allowing other role players to conduct investigations. Lochner and Zinn (2017:140) also

assert that it is important to know that no one, including police officials, may enter the scene of an explosion before the bomb disposal operator has completed his or her investigation.

In addition to bomb technicians entering the scene for investigation, ensuring safety in the crime scene is another priority. Girard (2015:442) highlighted that in a post-blast situation, bomb disposal experts should first search to determine whether a secondary bomb has been set to entrap crime scene investigators. Dutelle and Becker (2019:312) noted that all responders should be alert to any location where a secondary device may be or could be concealed. Sniffer dogs and bomb disposal experts can be used to locate explosives (Lochner & Zinn, 2017:138). The SAPS crime scene management training manual states that the reconstruction of bombing scenes should be handled by bomb technicians (SAPS, 2010b:7).

It is important for first responders to understand that crime scenes involving explosives and bombings may not be treated as ordinary. Zinn and Dintwe (2015:165) urge that first responders to the scene of the incident should have an operational understanding of what will happen when they hand over the crime scene to the investigation team. The authors also indicate that the initial decisions and actions of the first responder have a fundamental bearing on how the investigation unfolds. Houck and Siegel (2010:32) pin the success of any crime scene investigation to the actions taken in the first few minutes after the first officer (or FO, for short) or CSI arrives. The Department of Homeland Security recommends that first responders' actions during a pre-detonation incident not be observed or recorded by personnel who do not have a legitimate need to document them.

Gardner (2012:61) explained that to gain control of the crime scene safely and effectively, the first responder must:

- Document the provided information
- Not become a casualty
- Provide for emergency care
- Secure and control the scene and all those within it.

Zinn and Dintwe (2015:165) further outline the duties of first responders as follows:

- Securing the scene of the incident (cordoning off)
- Conducting a threat analysis, establishing any immediate dangers, and arranging medical assistance and support services (dog unit, traffic, fire brigade, air wing)
- Establishing what incident has occurred
- Identifying and securing possible suspects
- Identifying and safeguarding any possible physical evidence
- Making detailed notes and establishing a safe and dedicated route to and from the scene to avoid contamination
- Summoning aids and experts (forensic science laboratories and local criminal records centres).

The primary task of the first responder at a crime is to secure the scene and prevent damage to or alteration of the critical and, at times, the fragile context of a crime scene, according to Houck and Siegel (2010:32). The authors further state that the duties of the first responders are simple but complex in execution;

- Detain the suspect
- Render medical assistance to those who need it
- Do not destroy the evidence
- Prevent others, including superiors, from disturbing the scene

Dutelle (2011:63) summarises the duty of a first responder as two primary duties: preserving life and securing crime scenes and associated evidence. The South African Police Service (2005:11) instructs the first member on the crime scene to call all role players, such as the detective, LCRC, and FSL, to the scene using the dispatcher. In addition, the first responder must remain at the scene and assist the crime scene investigation team in managing it until the crime scene manager hands it over to the relevant authorities.

Besides, first responders are cautioned about preserving evidence and life in a crime scene, specifically an explosion scene. Members of the community disregard all that to scramble for the leftover cash in the bombing scenes. In this process, crucial evidence is lost. In an incident that took place in September 2017 along the R510 road in Monakato near Rustenburg, members of the community helped themselves with cash that was spread all over the scene (All Africa, 2018:1). This has become a norm in any crime scene, making it futile for investigators to search for evidence. An incident at Linden SAPS is another

example whereby police attended a crime scene of business robbery and, upon arrival, discovered that there was little evidence they could collect (All Africa, 2018:1). The researcher realizes that improperly preserved crime scenes may yield incorrect conclusions, which may also be experienced in an explosion scene where residues and other remnants of explosives may be contaminated or destroyed. SAPS (2015:9) emphasizes that removing unauthorized persons from a crime scene remains the responsibility of first responders.

2.7.1 Cordoning of the explosion scene by the first responder

An explosion scene may cover a more vast area than an ordinary scene may cover. With fragmented items thrown into the explosion. Pepper (2010:123) noted that the radius of the inner cordon varies significantly by incident type and location. The College of Police (2013:1) recommended the following minimum distances for cordoning in a bomb scene:

- 100 metres for a minor explosive risk
- 200 metres for a moderate explosive risk
- 400 metres for a serious explosive risk

Bystanders and police officials not assigned to any task at the scene of incidents should remain outside the cordoned-off area (Lochner & Zinn, 2017:29). The College of Police (2023:1) uses the illustration below to illustrate ideal cordoning.

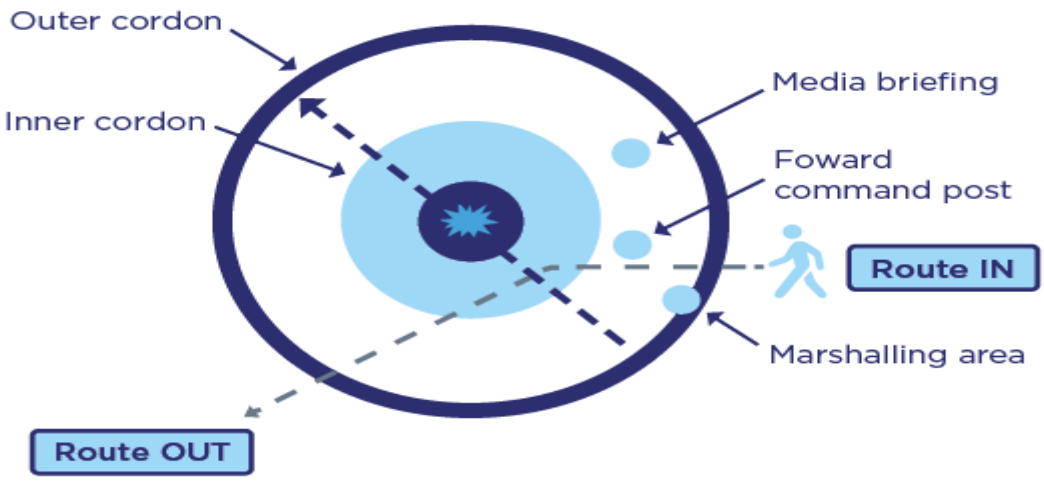

Figure 2.1: Ideal cordoning in an explosion scene

Source: College of Policing (2013:1)

2.8 SUMMARY

In this chapter, the researcher explained what explosives are, the different types of explosives, and their uses. Although explosives were discovered for commercial use, the researcher observed that they are sometimes used to commit crimes. In South Africa, Act 26 of 1956 is currently in use to manage and control explosives from manufacturing, transportation, storage, and use. Zimbabwe uses Act 9 of 1961, which basically has regulations similar to those of the South African Act. The researcher realized that South Africa has a draft Explosives Act 15 of 2003 that might replace the current Explosives Act 26 of 1956.

It is revealed that the Beit Bridge has been used by criminals to smuggle explosives into South Africa. Various types of commercial explosives (detonators and blasting cartridges) are imported into South Africa. In the process, perpetrators used different modes of transport and hiding techniques. Although explosives are regarded as dangerous with strict safety guidelines, perpetrators disregard all that; hence, they transport these explosives unlawfully with unauthorized vehicles carrying unsuspecting passengers at times. The same explosives are used to commit heinous crimes in South Africa, ranging from illegal mining to CIT bombings, the bombing of cash safes, and ATMs. The researcher believes that a foreign company, mines, and civil users of explosives are to blame. A future track-and-trace method can be a helpful tool. In addition to the delay in implementing the new Explosives Act 15 of 2003, which was cited as another hindrance, the authors noted that South Africa has fewer personnel assigned to enforce the Act.

The literature outlines how explosions and explosives should be investigated and how forensic laboratories should collect and analyze evidence to link suspects to the crime scene. The literature review highlights various areas to swab for evidence. Further, it highlights the dangers of secondary devices that first responders may encounter, as well as other evidential clues to search for in bombing incidents.

CHAPTER THREE: PRESENTATION AND INTERPRETATION OF DATA

3.1 INTRODUCTION

In this chapter, the researcher used semi-structured questions aligned with the research questions formulated for this study. These are highlighted below:

- What are the current control measures used by the SAPS to address illegal explosives?
- What is the prevalence of illegal explosives entering South Africa through the Beit Bridge border post?
- What are the challenges encountered by the SAPS in dealing with or policing illegal explosives?
- What are the effective measures for dealing with explosives?

The semi-structured questions were further formulated to determine the level of understanding and knowledge of the Act regulating explosives by both the perpetrators and other role players involved at the border. The researcher formulated a question to explore the identification of explosives, the dangers involved, likely methods of smuggling explosives, and possible hiding places. The researcher also sought to determine whether formal training is provided to empower employees at the border.

The researcher asked the role players that what can be implemented to improve the management and control of explosives entering South Africa through the border. The researcher also wanted to know if a lack of resources and a shortage of personnel contributed to poor control and management of explosives. To achieve this, the researcher interviewed Zimbabwean nationals serving sentences at South African prisons in Thohoyandou. Inmates were involved to supplement information on the Act regulating explosives, smuggling methods and the accessibility, frequency, destinations, and possible uses of explosives. Because of unsafe smuggling methods, the researcher wanted to know whether smugglers are aware of the dangers posed by explosives.

3.2 DEMOGRAPHICS OF THE PARTICIPANTS

The researcher collected data from various stakeholders at the border, including members of the SAPS (Explosives Section, visible policing), the BMA, and perpetrators arrested for smuggling explosives. For easy reference, the

researcher uses the graph to demonstrate the role players who participated during the research and the number of participants who provided data.

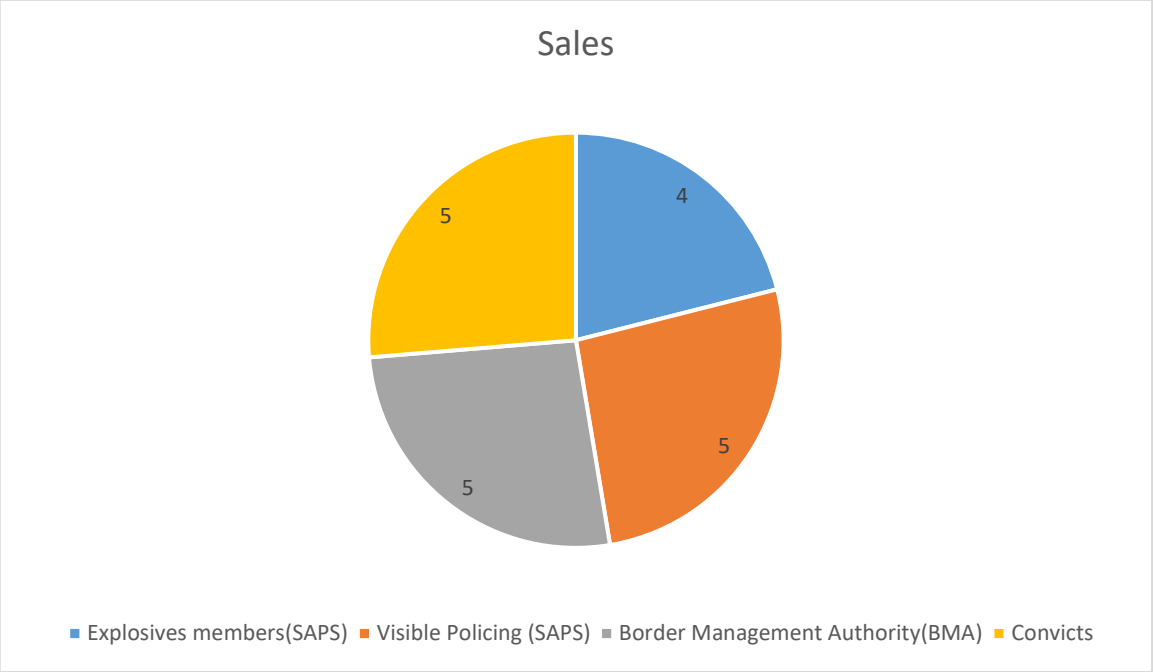

Figure 2.2: Participants who gave data.

Source: researcher

3.3 INTERPRETATION OF THEMES

The themes are interpreted in the following sections. The following section interprets the themes. It presents participants' views, understanding, opinions, perceptions, and, where required, their responses.

3.3.1 Theme 1: Exploring participants' understanding of what explosives are

Four members of the explosives team who volunteered to provide data demonstrated an understanding of the explosives. The interviewed members are certified explosives inspectors under section 2(5) of the Explosives Act 26 of 1956, with extensive knowledge of the explosive environment. The recovery of explosives at the Beit Bridge is reported to them, and the members are also involved in providing evidence before courts where trials for explosive-related matters take place. Their experience in the explosives section ranges from 5 to 15 years. The Explosives Section members were interviewed as sample "E". The Explosives Section members were asked, "What are explosives according to their understanding?", and they responded as follows:

"*This are the substances which can explode*"

"*Chemicals, solid, gas, liquid, when exposed to heat shock and friction rich stability by explosion or deflagration*"

"*Unstable compound or chemicals solid, liquid and gas that can explode*"

"*These are chemical substances manufactured in a solid form, and if they are exposed to friction and shock, they can explode".*

All members of the Explosives Section indicated that these substances or chemicals can explode, and three participants noted that the chemicals can be gas, liquid, or solid, and can explode upon exposure to heat, shock, or friction.

Dutelle and Becker (2019:309) also explained explosives as any chemical compound, mixture, or device that has the primary or common purpose of producing an explosion. The researcher shares the same sentiments as both explosives' experts. Explosives are chemicals with the potential to break or destroy objects in the close vicinity, depending on the quantity and power of the explosive chemicals. The chemicals are initiated by heat from an open flame, friction that increases temperature, and shock from an electrical pulse.

3.3.2 Theme 2: Exploring participants' understanding of the purpose of managing explosives

In South Africa, the Explosives Act 26 of 1956 serves as a guideline for the management and control of explosives. The SAPS is currently working to introduce a new Act, the Explosives Act 15 of 2003. The researcher wanted to determine the level of understanding of the objectives of explosives management in the country among sample "E" participants. Sample "E" is composed of explosives experts, also known as bomb technicians. The four participants provided their answers as follows:

"*to reduce the illegal transportation, storage, dealing, or use of explosives without authority in any activity*"

"*to control and manage the movement and usage of explosives*"

"*to manage the movement of explosives and minimize illegal use*"

"*to ensure that explosives are used for what they are manufactured for, e.g., blasting cartridges for civil blasting and the mine industry, to eliminate the element of crime and to ensure the safety of the public*"

Considering the explanations of the four participants, the objective for managing explosives is centred around four things, summarised as follows:

- Control transportation and movement.
- Control storage.
- Minimize illegal usage.
- Eliminate elements of crime for public safety.

The researcher shares the same view as explained by the participants. Anything related to manufacturing, storage, sale, transport, import, export, and use of explosives is regulated under the Act. Explosives experts, also known as bomb technicians, are responsible under CIE. The Explosives Act 26 of 1956 regulates explosives, from licensing to their use (South Africa, 1956). As part of the establishment of an Explosive Section within the CIE to oversee the process from cradle to grave.

3.3.3 Theme 3: Exploring participants' perceptions of evidence collected at explosion scenes

A crime scene will always contain some elements that can be of evidential value. Only a few extremely powerful bombs destroy all the components used in the construction (Dutelle & Becker, 2019:312). To collect evidence that may be used to identify and link explosives to perpetrators, the crime scene and its origin remain the responsibility of explosives experts. Sample "E" participants who are members of the Explosives Section were asked, "What evidence do you search for in an explosion scene? They responded to the question as follows:

"*the clues of what type of explosives were used, whether perpetrators are the same, how explosives were used or initiated*"

"*explosives residues, remnants including packaging and unexploded explosives*"

" *traces of explosives, including packaging material and remnants*"

"*any item related to explosives or resembling explosives or containing explosives in any form or state, e.g. solid, liquid, metal*"

The researcher realized that two participants mentioned remnants and packaging materials in their explanations, as items they would search for. The other two referred to clues and items related to explosives. One expert indicated that he would determine if perpetrators are the same and how the explosion was initiated. Brown and Davenport (2012:144) noted that a wire, pipe, or device used to detonate an explosion can provide information about the perpetrator. In an explosion scene, clues to search for include anything left behind. This informs the investigating team about how the explosives were initiated, their type, and their manufacturer. In some cases involving explosives, experts can identify the type and manufacturer. The collected evidence is analyzed by a forensic laboratory to determine (Girard, 2015:445).

3.3.4 Theme 4: Participants' views on measures to be taken to control illegal explosives

Chelin and Els (2021:1) insinuate that several steps are needed to address the influx of explosives through Beit Bridge, and that SAPS should start with them. To understand the current efforts of SAPS and their explosives experts, the researcher wanted to understand the current attempts to curb the continued influx of explosives through the border. The researcher asked the participants working under the Explosives Section, "What measures should be taken to control and manage illegal explosives from entering through the border post?

The four participants responded as follows:

"*Borderline Patrol, establishments of a team of explosives experts together with members of other departments who have knowledge of explosives to mend the border, share more knowledge with members working at the border through workshops and courses*"

"*Strengthen security at the border, perform operations with other role players, and present or equip border employees with knowledge to identify explosives*"

"*Law enforcement should search and identify explosives at the border, arrest perpetrators, perform operations regularly, and post people with knowledge of explosives*"

"*SAPS members should be knowledgeable about explosives so that they can identify explosives. There must be a thorough search at the border, assisted by*

detection dogs and scanners. The border fence should be fixed to prevent unauthorized entry on the border line"

Two explosives' experts mentioned the ability to identify explosives by role players at the border as another requisite that may play a role in controlling explosives at the border. The other mentioned explosives knowledge as another critical measure for employees at the border. One member added courses and workshops as another way of providing knowledge to role players at the border. The other expert cited the use of detection dogs and fence repairs as effective methods to curb the smuggling of explosives.

The researcher concurs with all the explanations provided by the explosive's expert. Operations that focus on curbing the influx of explosives are rare. Most of the time, experts involved in the recovery of explosives are limited to collection and safekeeping. A platform should be established to allow CIE and those responsible for the control of explosives to share information and relay new developments in the Southern African Development Community (SADC) region (Chelin & Els 2021:1). Saferstein (2011:86) says that the purpose of identification is the determination of the physical or chemical identity of a substance with certainty. Some explosives experts feel that other law enforcement personnel working at borders should be adequately trained to identify explosives. It is clear that SAPS does less to improve the status quo. Equipping law enforcement personnel with knowledge and equipment to curb the influx has never been a priority.

3.3.5 Theme 5: Exploring participants' perceptions of the role of law-enforcement agencies in preventing explosive smuggling

The researcher wanted to know from the explosives experts how they believe other role players may help prevent explosive smuggling. The four explosives experts provided the following answers:

"*Liaise with SAPS each time other agencies come across the illegal explosives, joint operations with different law enforcement agencies*"

"*They should identify explosives and report explosives section*"

"*Role players may use their knowledge to identify explosives and arrest the smugglers*"

"*Conduct joint operations with SAPS in enforcing the laws of the security, identify dedicated members who will be taken to workshops or courses in order for them to be able to identify explosives*"

Three of the participants included the identification of explosives by the other role players in their explanations; they indicated that role players should identify explosives, report, and arrest smugglers. Two of the participants added that joint operations should be conducted by SAPS and other role players. Notably, one participant added that workshops or courses should be to help them identify explosives. The participants who spoke about operations and the use of detection dogs also had valid points. Chelin and Els (2021:1) support the idea that, to curb the smuggling of explosives and firearms into the country, task teams comprising explosives K9 units, SARS, and other border control officials are needed to conduct operations at ports of entry.

3.3.6 Theme 6: Exploring participants' understanding of the significance of cordoning off explosive scenes by first responders

In an explosive incident, the risk should be managed urgently (Holgerson, 2016: 92). SAPS (2005: 1) dictates that the handling of explosives remains the responsibility of the SAPS Explosives Section. Although the directives clearly state who should render the explosive incident scene, members of the Explosives Section are not the first to arrive at any crime scene. First responders, who are usually uniformed police officers, are the first to arrive at crime scenes. The researcher asked the explosives experts whether they were satisfied with the first responders' scene cordoning. The explosives' experts responded as follows:

"*No, there would be no cordoning when you attend, or the cordoning left some evidence out*"

"No*, not all, first responders' cordon without considering the secondary devices, evidence which is outside the explosion area*"

"*No, mostly cordons too close to the incident, first responders disregard secondary devices*"

"*Yes, other role players have come to the party, they understand the importance of scene cordoning*"

Three explosives experts were quick to say no while giving their answers. Two of them mentioned secondary devices that the first responders had disregarded. One expert explained that there would be no cordoning when the scene is attended. In contrast, one expert indicated that he was satisfied with the cordoning by the first responders and added that some role players understood the importance of scene cordoning. However, the statement showed some uncertainty, and the member was inconclusive.

Based on his years of experience, the researcher does not believe that first responders consider the dangers in explosive incidents; cordons are set up too close. Secondary devices are not commonly known by first responders. The lack of effort to educate other law enforcement personnel about the dangers of explosives contributes to the identified challenge, which fails to account for the possibility of secondary devices. In addition to the presence of a secondary device in an explosive scene, it is important for first responders to preserve the evidence and avoid contamination. Reiber (2019:27) explained that contaminated scenes may compromise the analysis of evidence. Some explosion scenes lack evidence that can be analyzed by a forensic laboratory to determine the presence of explosives. Explosives experts depend on their knowledge of brisance effects to convince courts that an explosion has occurred. The increased temperature produced by an explosion facilitates the shattering of any material in its path (Girard, 2018:390). The breaking down and shattering effect is termed the brisance effect. When exposed to an explosion, the metal part or any object, due to heat or air blast, will be stretched and disintegrate in a manner that is consistent with the effects of the explosion. In a brisant explosive, the maximum pressure is reached rapidly during combustion, such that the shock wave shatters any material (Girard, 2018:390).

3.3.7 Theme 7: Exploring participants' understanding of the importance of linking explosives to manufacturers

Explosives may be manufactured by companies in the country and abroad. They also come in different sizes, shapes, and packages. The researcher wanted to know whether these explosives could be linked to manufacturers. Explosives experts were asked a question. Are you able to link the explosives to the manufacturer? and they responded as follows:

"*Some explosives do have a trademark, and others are difficult to link them to the manufacture*"

"*No, most the explosives are from foreign country they are brought to South Africa illegally*"

"*Sometimes, trough packaging branded with company name*"

"*Sometimes through packaging material*"

Two explosives' experts indicated that packaging can be used to link the explosives to the manufacturer. One expert also indicated that some explosives were brought into the country from foreign countries. Another expert mentioned that explosives do have trademarks and that it is difficult for others to link them to the manufacturer. Osterburg and Ward (2015:532) support the elaboration of participants' views, noting that some explosives can be traced through markers placed by manufacturers. The bulk of explosives entering through the Beit Bridge border explosives experts. Chelin and Els (2021:1) suggested that South Africa needs a framework for tracking explosives by uniquely marking each item. The authors continue to compound the failure to link the delay in implementing the new Explosives Act 15 of 2003 to the failure to link explosives. The researcher realizes that explosives experts currently use their knowledge to identify explosives and link them to manufacturing companies. Culprit companies and users are not held liable by any means. Explosives that leave the hands of manufacturers and users may not be traceable by any means. Currently, South Africa properly monitors the movement of explosives.

3.3.8 Theme 8: Exploring the participants' understanding of the role of the forensic science laboratory

At the crime scene, explosives experts collect samples and send them to the laboratory for analysis. In the laboratory, evidence is examined under a microscope to identify particles of undetonated explosives (Girard, 2018:397). The researcher asked the sample, consisting of the explosives expert, a question, "Explain the role of the Forensic Laboratory in explosives samples collected". The following answers were provided:

"*To analyse the presence of explosives from the sample collected*"

"*Analyse residues to confirm use of explosives, and provide report*"

"*Analyse explosives and provide a scientific report*"

"*They assist with confirmation of what type of explosives were used and their composition*"

Three of the experts began their explanations with the word "analyze," which underscores the forensic laboratory's main function. Analyzing collected samples for the presence of explosives and providing a scientific report are basic functions of the forensic laboratory. One participant mentioned that the forensic laboratory confirmed the type and composition of the explosives. Explosive experts have shown that they are content and understand the role of FSL in analyzing collected swabs for investigative purposes. Moreover, FSL has not been used for anything other than analyzing the presence of explosive chemicals. Explosives did not mention anything beyond analysis, confirmation, and determination of the explosives' composition. The researcher realizes that FSL is not further used to link explosives to the manufacturing company. The researcher believes that such services should be expanded and normalized in the explosive environment.

3.3.9 Theme 9: Exploring participants' understanding of the impact, control, and management of explosives

The explosives experts were asked how a lack of resources impacts the control and management of explosives. The following answers were given:

"*Late response results in poor work*"

"*Poor quality job or work, poor control and management of explosives*"

"*Lack of resources impacts the service delivery in a very bad way. The explosives section, as we speak, does not have enough members or vehicles, which makes it hard to even conduct operations more often. Members are always exhausted, which hampers their productivity*"

"*it delays members from removing explosives from the community when explosives are recovered, it takes time to do community explosives awareness, and explosives dealers become reluctant because they are not visited more often*"

All four explosives experts' quality of work and delays in service delivery. One expert mentioned vehicles and personnel as resources that hamper service delivery. The Explosives Section has always been under-resourced in terms of personnel and other resources. Members from the Explosives Section in South Africa are poached by the private sector, leaving the Explosives Section less capacitated every year. sufficient support. Slightly more than 200 dedicated explosive inspectors are enforcing antiquated laws with insufficient resources (Schmidt, 2023:1). Chelin and Els (2021:1), citing an Explosives Section senior commander who wanted to remain anonymous, also highlighted budget cuts for training and critical resources as another contributing factor. The interviewed members of the Explosives Section are in agreement. has regressed in recent years. Most offices of the Explosives Section face severe resource shortages, and the challenge is well known to management.

3.3.10 Theme 10: Exploring participants' knowledge of explosives through visible policing at the Beit Bridge

At the Beit Bridge, the search for vehicles travelling through the border is carried out by uniformed SAPS members at the vehicles and trucks' search bays. All the different modes of transport stop at the search bays for passengers, drivers, and their luggage to be searched. In these search bays, explosives and other illegal materials are recovered. Members of visible policing were identified as sample "A" in this research. On the day of data collection, the researcher found members of shift "B" on duty. The random selection process used the fishbowl method. Five (5) members were then selected to provide data. The police rank of the selected members ranged from sergeant officer to warrant officer. They all had ten (10) years or more in the employment of SAPS.

3.3.11 Theme 11: Exploring participants' understanding of commercial and military explosives

The Beit Bridge is notorious for recovering commercial explosives recovered at the border or dumped along the border line. Explosives with similar features are used and recovered throughout South Africa. The researcher wanted to understand the level of knowledge of SAPS members posted at the search bays regarding military and commercial explosives. To gauge their level of understanding, the researcher posed a question: "What is your understanding of

commercial and military explosives according to your understanding?" The participants responded as follows:

"*I don't know, they are not wanted in South Africa*".

"*Commercial explosives are those used explosives used at the mines, military explosives are explosives used by military*"

"*I don't know*"

"*I do not have any knowledge about military explosives and commercial explosives, I only saw it on TV and internet*".

"*Commercial and military explosives are the over pressure and can blast a big area than normal explosives*"

Of the five (5) participants, three (3) gave straightforward answers, indicating they did not know what commercial or military explosives are. One participant gave a precise answer while military explosives are used by the military. One gave inconclusive answers in his explanation. One participant highlighted that he had seen explosives on Television and the internet. Explosives sourced into the country are often commercial explosives used in Zimbabwean mines (Chelin & Els, 2020:1). Understanding the types of explosives smuggled into the country and used for criminal activity would improve recovery rates. Although the researcher agrees that smuggling of military explosives may become a problem in the future, South Africa is currently struggling with the illegal influx of commercial explosives through the Beit Bridge, and the same explosives are used for criminal activities.

3.3.12 Theme 12: Exploring participants' ability to identify explosives at the Beit Bridge

The recovery of explosives by law enforcement at the border strongly depends on the identification of different explosive items by employees patrolling the border. The researcher posed the following question: "Are you content with your ability to identify explosives?" The following answers were provided:

"*They are the dangerous things in South Africa*"

"*Sometimes I can identify*"

"*Not really" only on social media*"

"*Yes, but not much*"

"*Yes, I once found them hidden in the quantum false compartment*"

Among the five participants, only one was content with his ability to identify explosives and indicated that he once found explosives in a quantum vehicle hidden in a false compartment. Looking at the other answers provided by the participants, it was clear they did not know much about explosives. Gilbert (2007:104) stated that the purpose of identification is to determine the physical or chemical identity of a substance with the greatest certainty that existing analytical techniques will permit. The researcher is of the opinion that without the proper ability of employees at the border to identify explosives, illicit properties, including explosives, may slip through the border.

3.3.13 Theme 13: Exploring participants' perceptions of the danger of explosives

Explosives are initiated by heat, shock, or friction. It is important for individuals handling explosives to understand what to do and what not to do. The researcher asked the participants, "Do you understand the dangers posed by explosives?" The following answers were provided:

"*Yes, very dangerous*"

"*Yes, explosives can damage property and can kill*"

"*Yes, it is very dangerous*"

"*Yes, explosives can destroy people, including goods, around the damaged area*"

"*Yes. e.g. they bomb the ATM machine at the banks in South Africa*"

The participants corroborated each other by showing that they understood that explosives are dangerous; one participant said that they bomb ATMs and banks in South Africa. The researcher also noted that none of the participants shared information on how the explosives were initiated. Schmidt (2023:1) explained that illicit explosives and detonators are transported secretly and stored carelessly together. The Explosives Act 26 of 1956 classifies explosives for transport based on their sensitivity. Good Governance Africa (2023:1) also explains that different

categories of explosives may not be transported in the same vehicle. Smugglers of explosives do not adhere to such safety precautions. Explosives of different classes are stored in the same container or vehicle, posing serious danger to unsuspecting commuters and law enforcement at the border.

3.3.14 Theme 14: Exploring participants' views of smuggling methods for explosives at the Beit Bridge

Different modes of transport and luggage form part of the smuggling method used to transfer explosives from Zimbabwe to South Africa. Some smugglers make efforts to conceal explosives in their luggage or transport. The researcher asked the participants a question. "Do you understand the smuggling methods used to bring explosives into the country through Beit Bridge?" The following answers were provided:

"*Yes, sometimes they build another steel in the trunk for us not to see*"

"*Yes, through vehicles, trunks, and others use minibuses and buses*"

"*Yes, they smuggle through buses and vehicles*"

"*Yes, explosives are smuggled through the buses and small cars, hidden in a sack containing agricultural products*"

"*Yes, they are smuggled via truck, taxis, and they are hiding inside the bags*"

Upon analyzing the answers, the researcher realized that all participants corroborated one another. All the different types of transport that pass through the border were mentioned as being involved in smuggling explosives. Notably, smugglers may also disguise themselves by using false compartments to hide explosives. Some explosives are carried in the luggage inside passenger transport. Schmidt (2023:1) emphasized that transitional truck drivers are also induced to insert packages of explosives into their cargoes. Smugglers use every possible opportunity to smuggle illicit goods from Zimbabwe into South Africa. A hearse was stopped at the Beit Bridge carrying a detonator cord together with explosives cartridges (Schmidt, 2023:1). It is further explained by Schmidt (2023:1) that women with kids are also involved in their innocence and sympathy. It is clear that any form may be used to smuggle explosives. This requires that law enforcement officers at the border be sensitized to the possibility.

3.3.15 Theme 15: Exploring participants' views on improving the recovery rate of smuggled explosives

The employer may implement strategies to improve the recovery rate of explosives at the border; such measures or equipment may help employees easily deter attempts to smuggle explosives into South Africa. The researcher asked the participants in sample "A" a question. "Do you think there is something that can be done to improve the recovery rate of illegal explosives crossing the Beit Bridge border post? The participants provided the following answers:

"*Yes, if we can have scanners, I think we can recover a lot of illegal explosives*"

"*If all the people can be arrested, it will be better; others won't do it again*"

"*Yes, knowledge to the members working at the border is important, in-service training is important*"

"*Yes, scanners because criminal always ahead of us*"

"*Operations should be conducted at least twice a week*"

Two (2) could improve the recovery of explosives at Beit Bridge. Notably, participants mentioned knowledge of explosives, which can be acquired through in-service training. One member advised that operations be held twice every week at the border. The researcher acknowledges that the bulk of explosive recovery currently takes place through standard searches without the use of scanners. Only SARS uses scanning devices during searches or luggage checks. At the search bays. Luggage is searched visually. Service training is the most effective way to impart knowledge to the police. The researcher believes that such a partnership, in which SAPS, through its Explosives Section, presents identification methods for explosives to other law enforcement agencies, may yield results.

3.3.16 Theme 16: Exploring participants' views of the involvement of BMA in managing the border

The Border Management Authority (BMA) is a recently established law enforcement entity tasked with managing the movement of goods and persons at South African borders and ports. At the Beit Bridge border, many BMA members search for vehicles and people crossing into South Africa. According to the BMA

fact sheet, BMA was gazetted into law on 2020 July 21 for border and port-of-entry controls. This finding indicates that the BMA is a fairly new establishment. According to the BMA fact file, it provides a sustainable solution to the structural and systemic challenges of border security. The challenges at the Beit Bridge border include illegal explosives crossing the border into South Africa. The researcher included BMA employees as sample "C" and asked questions about contributions to the management and control of explosives. Participants were asked about the role of BMA officials. The following responses were given by the participants:

"*To search for and seize illegal explosives, to confirm that explosives entering and leaving the country are legal, to ensure that the personnel area is complying with the Explosives Act 26 of 1956*"

"*Is to protect and secure the border of South Africa, for intercepting illegal goods and illegal immigrants*"

"*To enforce the law of our country toward the people coming in and out of our country through the borders, ensuring they do so legally*"

"*Safeguarding our border and border line for access control of what comes in and out of our border (goods and personnel), to control the movement within the premises*"

"*Enforce the immigration Act, safeguard the border line, and ensure that nothing illegal enters or leaves the republic."*

The explanations given by all participants indicate that they understand their role primarily as safeguarding the border and controlling the movement of goods and people entering and exiting South Africa. Four (4) of the participants corroborated each other. One participant indicated that he was a former SANDF member and based his explanation on protecting the border against explosives and enforcing the Explosives Act 26 of 1956. The researcher concludes that BMA members understand their purpose at the Beit Bridge border post.

3.3.17 Theme 17: Exploring participants' opinions about reporting smuggled explosives by BMA

The Explosives Act 26 of 1956 mandates that CIE control and manage explosives within the borders of South Africa, including attending to all incidents related to explosives, such as the recovery of explosives. BMA and other role players at the border may not, by themselves, handle explosives. The question "Where should BMA report smuggling illegal explosives?" was posed to the participants, and they responded as follows:

"*To the South African Police Service*"

"*SAPS explosives squad*"

"*To the South African Police Service*"

"*To South African Police Service*"

"*To SAPS*"

All participants corroborated their answers and provided specific details. All BMA participants reported explosive incidents to SAPS. One participant, there is a specific section mandated to handle them. Four (4) of the participants mentioned only SAPS. It might be that the Explosives Section is not yet known to some BMA employees. National Instruction 6/1999 prohibits any personnel other than those assigned to the crime scene from handling explosives. Below are restrictions on what may not be done by any other role player but only an explosives expert:

- Touch, tamper with, dismantle, inspect, or remove any suspected explosive device, explosive substance, or explosive ordnance that has been found at a scene or found abandoned or found in the possession of a suspect or on premises or in a vehicle where a suspect is being sought.
- Touch, tamper with, inspect, or remove any suspected explosive device, explosive substance, or explosive ordnance found in the possession of a suspect or on premises or in a vehicle or where a suspect is being sought.
- Perform the physical post-blast investigation of a scene where an explosion has taken place, or it is suspected that a potential explosive device has exploded.

- Remove any exhibits from the scene where an explosion has taken place, or it is suspected that a potential explosive device has exploded at any station or holding area without the permission of the Bomb Technician who attended the scene. No explosive residue remains, or exhibits may be handed in or kept at a police station.

The reasons include avoiding unnecessary injuries, as explosives are unpredictable. A lack of knowledge may lead to loss of life or property damage.

3.3.18 Theme 18: Exploring participants' understanding of the identification of explosives via BMA

To safeguard the border, BMA members need to understand and identify anything deemed illegal. Illegal explosives are also a challenge at the Beit Bridge. It is imperative that BMA members be able to identify explosives. To gauge their knowledge of explosives identification, the researcher asked, "Are you content with your ability to identify explosives?" The participants responded as follows: three (3) gave a straight "no" answer; one responded, "only a few of them, since I don't have much knowledge"; and the last one said "yes" and indicated that he acquired the knowledge from his former employer, the SANDF. Although BMA has members deployed at the border to prevent the illegal movement of goods, some goods, such as explosives, may not be identifiable by BMA employees. No formal training has been presented to BMA members in that regard. It is the researcher's opinion that individualizing recovered explosives and the source or manufacturing company that contributed to the influx of explosives. Ogle and Plotkin (2018:8) clarify the individualization of an object on the basis of the uniqueness and identification of the source of the evidence. The recovered explosives at Beit Bridge mostly come with branding that is positively linked to the manufacturing company.

3.3.19 Theme 19: Exploring participants' knowledge of Explosives Act 26 of 1956 by BMA employees

The Explosives Act 26 of 1956, which may soon be replaced by the Explosives Act 15 of 2003, is regarded as the primary law governing explosives in the country. Chelin and Els (2020:1) highlighted that the Mine Health and Safety Act 29 of 1996 and the Occupational Health and Safety Act 85 of 1993 contained some regulations that supported the Explosives Act. The SAPS is mandated by

the Explosives Act to regulate the movement, storage, manufacturing, and use of explosives. Although SAPS is its inspectors, it is important for other role players to understand the Explosives Act. The researcher posed a question to the BMA participants: “Do you have any knowledge of the Explosives Act 26 of 1956?” They responded as follows: four (4) responded with a straight “no”, one responded with “yes”. It is clear that BMA members know little about the Explosives Act, except for some members recruited from the SANDF or the police. For the BMA role at the border, the researcher believes that it will be futile to continue posting members who may not identify explosives and other contrabands. However, it remains the prerogative of SAPS, through the Explosives Section, to educate other role players about the regulations, enable them to identify explosives, and ensure they are aware of them.

3.3.20 Theme 20: Exploring participants’ understanding of the dangers of illegal explosives in the country

It has been explained that explosives are used for various activities, including committing crimes in the country. BMA members were asked, “Do you understand the dangers posed by illegal explosives in the country?” and responded as follows:

“*Yes, I do, they are utilized mostly to bomb ATM’s and cash transit vehicles*”

“*Yes, to commit a crime*”

“*They are used for crime*”

“*no*”

“*Yes, they are used in committing serious crimes*”

Except for one participant, all BMA members are aware of illegal activities involving explosives. The researcher shares the same sentiments as BMA members who participated in the study. Illegal explosives crossing the border are used mainly to commit crimes in South Africa. Explosives are used in illegal mining and bombings to access cash.

3.3.21 Theme 21: Exploring participants' views about the significance of initiating explosives

It is important for anyone handling explosives to understand how they are detonated. In their work environment, BMA members will at some stage encounter the recovery of explosives. Not knowing how to handle explosives may lead to injury or death. The researcher posed the question, "Do you know how explosives are initiated?" All the participants responded with a straight "no", except for one former SANDF member. The researcher realizes that BMA members lack knowledge of explosives, which may expose them to danger. Explosives need heat, shock, or friction to initiate (Lee & Harris, 2000:71). Most BMA members are unaware of how explosives are initiated. The researcher considers these safety aspects to be the most neglected or unknown among role players expected to prevent the smuggling of explosives.

Primary explosives are very sensitive to heat, pressure, and movement (Brown & Davenport, 2012:139). With all these possible dangers that may occur or result in explosions, people still do not keep recovered explosives safe. The smugglers of explosives also seem unable to understand the dangers of combining primary and secondary explosives. Women with children often transport explosives and detonators crammed together through the border or Limpopo River (Schmidt, 2023:1).

3.3.22 Theme 21: Exploring participants' views on the role played by explosives' smugglers

Explosives smuggling involves several processes, including the assistance of individuals in crossing the border illegally into South Africa. The individuals source explosives in Zimbabwe with the intention of transporting them to South Africa for cash benefits. The researcher included convicts in his sampling to gain insight into their involvement throughout the process. Five (5) convicted explosives smugglers serving sentences of eight (8) to fifteen (15) years in Thohoyandou prison volunteered to provide data. Convicts gave data as sample "F".

3.3.23 Theme 23: Exploring participants' knowledge of the Explosives Act by Zimbabwean citizens

The researcher wanted to understand whether the citizens of the neighboring country, Zimbabwe, are aware of the regulations under the Explosives Act, given that illegal explosives are sourced and transported to South Africa. The Zimbabwe Explosives Act 1961 governs the control and management of explosives. The researcher asked the participants the following question: "Do you know the Act regulating explosives? All the participants responded as follows:

"*I don't know*"

"I did not know, only learned in court"

"*I don't know much as yet, but I will find out*"

"*I did not know the Act before about explosives*"

"*I do not know, I have never heard about it*"

The researcher realizes that the Explosives Act is not known in Zimbabwe, the neighboring country. None of the interviewed participants were hesitant to make it clear that they were unaware of the Act regulating explosives. Although participants are aware that the possession of explosives is illegal, they lack knowledge of the legislatures regulating explosives. The researcher believes that not only in Zimbabwe, where the Explosives Act is not widely known, but also in South Africa, most citizens lack knowledge of the Explosives Act.

3.3.24 Theme 24: Exploring participants' views of explosives' control in Zimbabwe

Inspectors demand to see permits for purchasing and moving explosives. The Explosives Act in both Zimbabwe and South Africa mandates the police to regulate explosives. The researcher posed the following question: "How easy or difficult was it for you to hold explosives?" The participants responded as follows:

"*At first it was difficult as you need to have a license, but I got in contact with someone who is licensed in Zimbabwe, he bought them and gave them to me*"

"*It was not difficult because I bought them from another guy in Zimbabwe; I do not have an idea if he is working at the mine or not*"

"*For me, it was not difficult because I have been a border jumper since Covid 19, which started on March 30, 2020. The package was not mine, and I was careless not to find out, so when I jumped the border, I was not afraid, and the Zim police did not suspect anything because I was a regular border jumper*"

"*I bought explosives from a guy in Zimbabwe*"

"*I did not know there were explosives inside the bag; someone gave to me to cross with it*"

Except for two convicts who indicated that the luggage did not belong to them but were only asked to cross the border with them, the other three participants were clear that they did not struggle to purchase the explosives. One participant referred to a licensed dealer who sells to the public, and another participant had no idea whether the seller was working at the mine. The researcher concludes from these data that access to explosives in Zimbabwe has become easier. Although Zimbabwe controls explosives via the use of the Explosives Act, like in South Africa, the market has become conducive to illegal purchases. It is prohibited for any person to purchase explosives without a permit (Zimbabwe, 1961: 2). The Explosives Act in Zimbabwe prohibits illegal storage, transportation, and use. With all the legislative guidelines in place, the purchase of explosives and their smuggling into South Africa remain easy.

3.3.25 Theme 25: Exploring participants' views of explosives' smuggling methods

Various tactics are used to smuggle illicit goods into the country, and explosive smuggling is no different. The researcher wanted to know the most preferred method for smuggling explosives. The researcher asked the convicted explosives smugglers to "explain your smuggling method", and they responded as follows:

"*Explosives were inside the bag and clothes on top*"

"*I was carrying them in the bags and passed through the river, I wanted to use public transport*"

"*The explosives were in the bags; the police officers did not ask me to open the bag*"

"*I came through the Limpopo River with explosives in the traveling bags. Once in South Africa, I was going to use public transport*"

"*I packed explosives in the bags. I was assisted by the boys who carry luggage across to South Africa; they are not searched and do not go through the scanners. Once in South Africa, I used public transport*"

The participants' explanations suggested that explosives are smuggled into South Africa either by river or through normal border crossings. Smugglers use traveling bags and disguise the luggage as other items, such as clothes. Most smugglers intend to use public transport to reach their destination. It has also been highlighted that searching for luggage is not compulsory. Luggage carriers assisting migrants are not regularly searched. Although explosives are dangerous, public transport is commonly used to transport them. One participant indicated that her luggage was not searched by the police. Majadibodu (2024:1) reported that two (2) Zimbabwean males were arrested with bags containing explosives in public transport. It is clear that travelling bags are commonly used in smuggling explosives. Good Governance Africa (2023:1) supports the fact that public transport is predominantly used by female smugglers of explosives, whereas male smugglers prefer hiding explosives in their cargo.

3.3.26 Theme 26: Exploring participants' views of the danger of explosives

Explosives are dangerous and can detonate if exposed to heat, shock, or friction. That caution should be taken when smuggling explosives. The researcher was poised to determine whether explosives smugglers understood the dangers associated with their actions. The researcher asked a question, "Do you understand the danger posed by explosives?", and the following responses were given:

"*I did not know, I only thought they were used in the mines, now I understand after the police explained*"

"*I did not know that they were very dangerous before, until someone working with explosives testified against me in court*"

"*I did not know, however, I got to understand when it was explained to me in court*"

"*They explained about it in court, and then I knew how dangerous it is*"

"*At first I did not know, but learned in court when someone was testifying*"

Clearly, the dangers of explosives are not known to the public, including Zimbabwean citizens, and all participants came to know about the dangers in court or after the police explained them. understand all the risks associated with explosives. The Explosives Act 26 of 1956 prohibits the transport of explosives of different classes together. separating explosive items by class. Good Governance Africa (2023, 1) notes that explosives smugglers fail to adhere to safety standards, thereby endangering themselves and unsuspecting passengers. In his work environment, the researcher noted that explosives of different classes crammed in the same luggage pose a serious danger.

3.3.27 Theme 27: Exploring participants' perceptions of the destinations of explosives

Smuggled explosives resembling those that are recovered at the Beit Bridge border post are a common feature in most illegal mining activities and at some crime scenes involving ATMs, cash safes, and CIT bombings. The researcher wanted to know whether smugglers had a common destination after crossing the border into South Africa. A simple question was asked of the participants: "What was your intended destination?", and they responded as follows:

"*To Benoni in Johannesburg, there is a mine between Benoni and Daveyton*"

"*I was supposed to hand it over to the person who gave it to me at the Musina taxi rank*"

"*I was taking explosives to Johannesburg to hand over the package to the owner*"

"*I was taking the explosives to Benoni in Johannesburg, where there were mining activities next to where I was staying*"

"*Benoni in Johannesburg for illegal mining*"

Among the five (5) participants, three (3) indicated that their destination was Benoni for mining activities; one participant only said she was taking the explosives to Johannesburg without specifying the exact area. Only one participant stated that the explosives were intended for the Musina taxi rank. Explosives crossing the Beit Bridge border undeniably contributed to the increase

in illegal mining activities in South Africa. The benefit of such activities does not exclude bombing for cash in South Africa. To support the notion that illegal mining in Benoni, Gauteng, thrived with smuggled explosives from Zimbabwe, Good Governance Africa (2023:1) reported that Fortunate Sibande was arrested with explosives bound for Benoni. The author continues to highlight the fact that explosives were transported via public transport with passengers. It is also confirmed by Schmidt (2023: 1) that Benoni in the East Rand is the primary destination. The CIT robbers, ATM bombers, or Zama Zamas will then come to source their explosives (Schmidt, 2023:1).

3.3.28 Theme 28: Exploring participants' perceptions of the frequency of smuggling

New people are arrested in possession of smuggled explosives through the Beit Bridge border post. Several of the offenders end up serving lengthy jail sentences. To understand how frequently the explosives smugglers get involved in illicit activity, the researcher asked the participants, "Was it your first time, and would you do it again?" and they responded as follows:

"*It was my fourth trip, and I would not do it again. The sentence is long*"

"*Yes, and I will never do it again*"

"*It was my first time and I will never do it again, and will never commit crime of any kind*"

"*Yes, it was my first time. I will never do this again*"

"*It was my first time, I don't intend to do it again*"

The researcher realized that there are regular smugglers making several trips through the border with explosives. One offender explained that she was arrested while on her fourth trip. Four (4) of the convicts explained that they were arrested on their first attempt. There has always been a resurgence of explosives smugglers due to demand in South Africa. New groups are always tempted to join in the smuggling of explosives. The researcher took the opportunity to determine whether convicted explosives smugglers would engage in such activities in the future. The response indicated that they are less likely to be involved in these contraventions. One participant highlighted the sentence as too

long. It is clear that the sentence serves as a clear deterrence. The researcher realizes that women are mostly involved in smuggling explosives. All convicts who participated in the data collection were women and intended to use public transport to reach their destination. Schmidt (2023:1) concurs by highlighting that women with children become involved in their innocence and sympathy.

3.4 SUMMARY

The researcher used this chapter to collect primary data from law enforcement personnel and convicted explosives smugglers. Law enforcement personnel from BMA and SAPS all raised similar concerns regarding the identification of explosives. The chapter highlighted that the majority of members are performing their duties without sufficient knowledge to identify explosives.

BMA is a newly established entity tasked with providing border security. Within the BMA, knowledge gained from previous employers. SAPS members at the border are also not content with their knowledge to identify explosives. Members of the Explosives Section cite resource constraints as a hindrance to the effective management and control of explosives.

The researcher used the chapter to gather views from members of the Explosives Section on how to increase the recovery of illegal explosives in South Africa and curb their influx. Lack of resources is the centre of concern and is identified as a major need to empower the Explosives Section.

CHAPTER FOUR: SUMMARY, FINDINGS, AND RECOMMENDATIONS

4.1 INTRODUCTION

This chapter presents findings and recommendations made based on the literature review and the experiences of the participants who provided the data. The influx and use of explosives for criminal intent has been proven to be a phenomenon that exists in the country. Most participants in the law enforcement sector do not deny their lack of sufficient knowledge in addressing the influx of illegal explosives into the country. Members of the Explosives Section also assisted with their experiences and challenges in dealing with the influx of explosives at Beit Bridge. The Beit Bridge borders South Africa and Zimbabwe, and the two countries use their Explosives Acts to regulate the manufacture, storage, transportation, and use of explosives. Both the South African Explosive Act and the Zimbabwean Explosive Act contain similar critical points.

The researcher embarked on this study to find answers to the following questions:

- What are the current control measures used by SAPS to address illegal explosives?
- What is the prevalence of illegal use of explosives entering South Africa through the Beit Bridge border post?
- What are the challenges encountered by SAPS in dealing with or policing illegal explosives at the Beit Bridge border post?
- What are the effective measures for dealing with illegal explosives?

The SAPS explosives section is regarded as the main stakeholder in the management and control of explosives. With the involvement of other law enforcement agencies, these research findings and recommendations provide guidelines and a clear understanding of how to reduce the amount of explosives entering South Africa unnoticed.

4.2 FINDINGS

The researcher presents the findings of this study after analyzing data from all sources consulted. The findings are based on different sources, including law enforcement personnel with experience managing the border. Secondary data have also been used to support primary data. Considering the data obtained from the consulted sources, the findings of this research are as follows:

4.2.1 Research question one findings

Research question one: What are the current control measures used by SAPS to address illegal explosives?

The Researcher has found that South Africa bases its control and management of explosives on the Explosives Act 26 of 1956. Explosives Act. The Explosives Act regulates the manufacture, storage, transportation, and use of explosives. The Explosives Act mandates the CIE to appoint inspectors of explosives. Section 2 of the Explosives Act 26 of 1956 mandates that the minister appoint the CIE. Inspectors of explosives, also known as bomb technicians, attend all incidents involved. Beit Bridge borders South Africa and Zimbabwe. The researcher based his study on the border. Zimbabwe has its own Explosives Act with regulations similar to those of the South African Explosives Act. The Explosives Act was not popular with citizens.

4.2.2 Research question two findings

Research question two: What is the prevalence of illegal use of explosives entering South Africa through the Beit Bridge?

All the explosives that cross the Beit Bridge border illegally into South Africa are intended to be used in criminal activities. The explosives are used in illegal mining, in the bombing of ATMs, in the bombing of CIT vehicles, and in cash safes. Although explosives from local manufacturing companies are occasionally recovered, it is clear that the large quantities that are used for criminal activities come from a foreign company and enter South Africa through the Beit Bridge. The branding and packaging materials for the explosives provide information that supports this notion. Explosives entering through the Beit Bridge are sometimes destined for Benoni in Gauteng.

4.2.3 Research question: three findings

Research question three: What are the challenges encountered by SAPS in dealing with or policing explosives?

The researcher found that the control and management of explosives have not received much attention. The fact that no effort has been made to support law enforcement personnel at Beit Bridge suggests that the management undermines the threat posed by illegal explosives to the country and stability in the

communities, although they are aware of an explosive influx and the use of explosives for criminal purposes. Research has revealed that although explosives are recovered at Beit Bridge by law enforcement personnel, they lack professional training to identify explosives. The inability of SAPS, BMA, SANDF, and other role players to identify explosives may suggest that some explosives slip through the border under the watch of law enforcement personnel.

Research has also revealed that the Explosives Section within SAPS is under-resourced, which affects the quality of its work. The operations used to detect illegal explosives at Beit Bridge were mentioned by the explosives members as another way to curb the influx. Other law enforcement personnel noted that they were unsure how to identify explosives.

4.2.4 Research question four findings

Research question four: What are the effective measures for addressing illegal explosives?

Explosives are regulated under the Explosives Act 26 of 1956 in South Africa. The SAPS, in conjunction with the explosives section, is currently working to implement the new Explosives Act 15 of 2003. Some sources suggest that the delay in implementing the Explosives Act 15 of 2003 had an impact on the continuation of the influx of illegal explosives.

Other law enforcement personnel at the border need basic skills to identify explosives. There is a need for collaboration among other government officials responsible for border control (Chelin & Els, 2020:1). South African law enforcement, including SAPS, needs to normalize operations along the borders to curb ongoing smuggling of explosives. Other detection methods, including the use of explosives dogs and scanners, should be implemented to increase the recovery rate. A regional protocol or strategy would help mitigate the threat of explosives smuggling (Chelin & Els, 2020:1). The influx of illegal explosives into South Africa is attributed to poor control in Zimbabwe. The easy access to explosives in the neighboring country and the available market for them in South Africa contribute massively to the influx. It is important for all law enforcement personnel and role players to be conversant with all possible smuggling methods for explosives, including false compartments in vehicles, luggage disguised as clothing, containers with false labels, and crossing the Limpopo River.

4.3 RECOMMENDATIONS

Recommendations are based on the findings, and the researcher presents them as follows:

- Consider finalizing the implementation of the new Explosives Act 15 of 2003 to replace the Explosives Act 26 of 1956.
- The CIE in the SAPS should have regular meetings with Zimbabwean counterparts to address this challenge.
- All law enforcement (SAPS, BMA, SARS, SANDF) at the border should understand the danger posed by explosives.
- All law enforcement (SAPS, BMA, SARS, SANDF) at the border should have basic knowledge to identify explosives.
- Explosives' manufacturing companies, which are identified as the main contributors to the influx, should invest in the traceability of explosives.
- Explosive crime scenes should be processed thoroughly for clues that will reveal the culprit's manufacturing company.
- Capacitate the explosives section with enough personnel and resources.
- Consider regular disruptive roadblocks and searches by explosives members and other role players to focus on explosives.
- Scanners and explosives' sniffer dogs should be deployed at the border.
- Develop an effective partnership with CIEs in the neighboring countries for the effective control of explosives.
- Carriers assisting immigrants should not be exempted from search.
- Conduct awareness campaigns to educate the public about the dangers of explosives.
- For successful smuggling, various methods are employed, including false compartments in vehicles, luggage disguised as clothes, and containers with false labeling.
- Public transport is commonly used for transporting explosives entering South Africa through Zimbabwe.

4.4 CONCLUSION

This study revealed that law enforcement personnel at Beit Bridge need to do more to curb the influx of explosives into South Africa. It is also important that SAPS, in conjunction with other law enforcement at the border, put measures in

place to support efforts to contain the movement of illegal explosives. Providing all law enforcement at the border with the knowledge to identify explosives has been identified as a fundamental need.

The researcher is hopeful that benefit employees at the border and the South African community at large. The crime committed with the use of explosives has affected every corner of South Africa, with cash savings, ATMs, CITs, and illegal mining activities. fewer instances of illegal use of explosives. Implementing measures to reduce supply will lead to fewer instances of illegal explosive use.

The Explosives Section of the SAPS plays a major role in leading initiatives to identify explosives, reduce explosives, and strengthen security. The findings also indicate the need to involve and uniformed members of SAPS in the management of explosives. With support from SAPS management, the findings and recommendations of this study may yield results.

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ANNEXURES

ANNEXURE A: SAPS, CORRECTIONAL SERVICES, AND BMA PERMISSIONS TO CONDUCT RESEARCH

SAP 21

SUID-AFRIKAANSE POLISIEDIENS | SOUTH AFRICAN POLICE SERVICE

Private Bag X322, ARCADIA, 0001

Verwysing Reference	3/1/5
Navrae Enquiries	Col NM Rababalela Lt Col DN Rikhotso
Telefoon Telephone	012 421 0413 012 421 0409
Epos E-mail	RababalelaM@saps.gov.za

DIVISIONAL COMMISSIONER
DETECTIVE AND FORENSIC SERVICES
HEAD OFFICE

The Divisional Commissioner
RESEARCH

For attention: Lt Col (Dr) Smit

PERMISSION TO CONDUCT RESEARCH IN THE SOUTH AFRICAN POLICE SERVICE: UNIVERSITY OF SOUTH AFRICA: MASTERS DEGREE: AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST: RESEARCHER: TS SIMANGO

1. Your letter with reference 3/34/2 dated 2024/01/24 bears reference.
2. Permission is herewith ***granted*** / ~~***NOT granted***~~ to the request for research by researcher: Simango TS.
3. Researcher Simango TS is to comply strictly with the conditions and requirements as set out in the attached letter as per paragraph 8.
4. Kindly heed that Colonel NM Rababalela is the coordinator for the research. Her contact details are as follows:

   Cellphone: 082 378 3457

   Office Telephone: 012 421 0413

   Email Address: RababalelaM@saps.gov.za

5. A copy of the outcome of the research must be forwarded to the Divisional Commissioner: Detectives and Forensic Services for consumption

MAJOR GENERAL
HEAD: CRIMINAL RECORD AND CRIME SCENE MANAGEMENT
LA MANGALE

Date: 2024 . 03 . 20

South African Police Service | Suid-Afrikaanse Polisiediens

Privaatsak Private Bag X94	Pretoria 0001	Faks No. Fax No.	(012) 432 7866

Your reference/U verwysing:

My reference/My verwysing: 3/34/2

THE HEAD: RESEARCH
SOUTH AFRICAN POLICE SERVICE
PRETORIA
0001

Enquiries/Navrae: **Col (Dr) Smit**
W/O Thenga
Tel: **(012) 432 7866**
Email: ThengaS@saps.gov.za

TS Simango
UNIVERSITY OF SOUTH AFRICA

RE: PERMISSION TO CONDUCT RESEARCH IN THE SOUTH AFRICAN POLICE SERVICE: UNIVERSITY OF SOUTH AFRICA: MASTERS DEGREE: AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST: RESEARCHER: TS SIMANGO

1. The above subject matter refers.

2. You are hereby granted approval for your research study on the above-mentioned topic in terms of National Instruction 4 of 2022.

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

The Divisional Commissioner: Visible Policing and Operations:

- **Contact Person:** Captain Baartman
- **Contact Details:** (012) 400 6096
- **Email Address:** BaartmanJ@saps.gov.za

The Divisional Commissioner: Detective and Forensic Services:

- **Contact Person:** Colonel NM Rababalela
- **Contact Details:** (012) 421 0413
- **Email Address:** RababalelaNM@saps.gov.za

4. Kindly adhere to paragraph 8 of our attached letter signed on **2024-01-24** with the same abovementioned reference number.

MAJOR GENERAL
THE HEAD: RESEARCH
DR PR VUMA

Date: 2024-02-22

correctional services

Department:
Correctional Services
REPUBLIC OF SOUTH AFRICA

RESEARCH ETHICS COMMITTEE
Private Bag X136, Paymens Building, 124 W F Nkomo Street, PRETORIA, 0001,
Tel (012) 307 2059/2282, Enquiries: Ms S.T Mahlangu; SyMa.Mahlangu@dcs.gov.za
Ref: REC 2024/25

The Area Commissioner
Polokwane Management Area

Dear Colleague,

AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVE BY SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER

This is to inform you that the DCS research ethics committee has **approved** the application of the above-mentioned research.

You are kindly requested to grant permission to the following researcher: **Mr T.S Simango** to conduct the said research at **Thohoyandou** and **Kutama Senthumule Correctional Centres.**

Kindly note the following:

1. The researcher is not allowed to use photographic or video equipment during their visits to the Correctional Centre, however the audio recorder is allowed;
2. It is the researcher's responsibility to make arrangements with the Centre for the visiting times. The researcher has been informed of this arrangement;
3. The security measures are still applicable and must be adhered to by the researcher.

Should you have any enquires regarding this process, please contact Ms Elda Mohapi for assistance at telephone (012) 307 2151 / 069 117 0309.

Yours sincerely,

MR S ZIKALALA
DEPUTY COMMISSIONER: POLICY COORDINATION & RESEARCH (ACTING)
DATE: 24/06/2024

OFFICE OF THE COMMISSIONER

ENQUIRIES: Mr T Dubazana **Tel: 083 556 0572**

Mr TS Simango
Masters Researcher:
UNIVERSITY OF SOUTH AFRICA

Dear Mr Simango

REQUEST TO CONDUCT RESEARCH TITLED "AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVE BY THE SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST"

Your request to conduct research in the Border Management Authority (BMA an evaluation of the management and control measures of explosive by the South African Police Service at Beit Bridge Border Post" has reference.

The BMA, has approved your request to conduct research at Beit Bridge Border Post. The approval is based on the submission of all the required documents and the relevance of the study to the Authority.

Please take note that the approval of your request is **ONLY** for completion of your studies and should you wish to publish any part of your dissertation/thesis, a formal written request should be made to the Authority for consideration and approval.

It is our understanding that the research will be conducted using the data collection tool submitted to the Authority to ensure that the security of the Authority is not compromised.

The research will be conducted without disruption of the duties of the employees of the Authority and where it is necessary for the research, research procedure or instruments to disrupt the duties of an employee, prior arrangements have to be made with the commander of such employees.

Furthermore, participation in the interview will be on a voluntary basis, and therefore the names of the participants will not be made public.

309 Arcadia St.
Arcadia,
Pretoria, 0007
T: (+27) 012 432 6629
www.bma.gov.za
info@bma.gov.za

Prior arrangement regarding the research study should be made with the following:

Name	:	Mr E Maisha
Contact	:	082 074 6566
Designation	:	Acting Regional Commander: Northern Region

And/or

Name	:	Commandant A Makhado
Contact	:	072 285 5713
Designation	:	Port Commander: Beit Bridge

NB: Upon completion of the study, the Border Management Authority requests that you furnish the Research Management unit with a copy of the article for our records.

BMA wishes you all the best in your research study.

Kind Regards

DR NM MASIAPATO PHD
COMMISSIONER: BORDER MANAGEMENT AUTHORITY
DATE: 26/03/2024

909 Arcadia St,
Arcadia,
Pretoria, 0007
T: (+27) 012 432 6629
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info@bma.gov.za

ANNEXURE B: UNISA ETHICAL CLEARANCE

UNISA university of south africa

College of Law_RERC

Ref #: 2429
Name: Mr THEMBA SIMON SIMANGO
Student #: 37116614

Date: 15/01/2024

Dear: Mr THEMBA SIMON SIMANGO

Decision: Ethics Approval from 15/01/2024 to 15/01/2027

Researcher: Mr THEMBA SIMON SIMANGO

EXPLOSIVES SECTION,MYNGENOEGEN, POLOKWANE

POLOKWANE

37116614@mylife.unisa.ac.za 0834037475

Supervisor: Dr Dumisani Quiet Mabunda mabundq@unisa.ac.za

AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST

Qualification: MA CRIMINAL JUSTICE

Thank you for the application for research ethics clearance by the College of Law_RERC for the above mentioned research study Ethics approval is granted for three years.

The **medium risk application** was **reviewed** by College of Law_RERC on 15/01/2024 in compliance with the Unisa Policy on Research Ethics and the Standard Operating Procedure on Research Ethics Risk Assessment.

The proposed research may now commence with the provisions that:

1. The researcher(s) will ensure that the research project adheres to the values and principles expressed in the UNISA Policy on Research Ethics.
2. Any adverse circumstance arising in the undertaking of the research project that is relevant to the ethicality of the study should be communicated in writing to the College of Law_RERC .
3. The researcher(s) will conduct the study according to the methods and procedures set out in the approved application.
4. Any changes that can affect the study-related risks for the research participants, particularly in terms of assurances made with regards to the protection of participants' privacy and the confidentiality of the data, should be reported to the Committee in writing, accompanied by a progress report.

5. The researcher will ensure that the research project adheres to any applicable national legislation, professional codes of conduct, institutional guidelines and scientific standards relevant to the specific field of study. Adherence to the following South African legislation is important, if applicable: Protection of Personal Information Act, no 4 of 2013; Children's act no 38 of 2005 and the National Health Act, no 61 of 2003.

6. Only de-identified research data may be used for secondary research purposes in future on condition that the research objectives are similar to those of the original research. Secondary use of identifiable human research data requires additional ethics clearance.

7. No field work activities may continue after the expiry date 15/01/2027. Submission of a completed research ethics progress report will constitute an application for renewal, for Ethics Research Committee approval.

Additional Conditions

1. Disclosure of data to third parties is prohibited without explicit consent from Unisa.
2. De-identified data must be safely stored on password protected PCs.
3. Care should be taken by the researcher when publishing the results to protect the confidentiality and privacy of the university.
4. Adherence to the National Statement on Ethical Research and Publication practices, principle 7 referring to Social awareness, must be ensured: "Researchers and institutions must be sensitive to the potential impact of their research on society, marginal groups or individuals, and must consider these when weighing the benefits of the research against any harmful effects, with a view to minimising or avoiding the latter where possible." Unisa will not be liable for any failure to comply with this principle.

Note

The reference number 2429 should be clearly indicated on all forms of communication with the intended research participants, as well as with the Committee.

Kind regards,

Prof Lincoln Fitz
Chair of College of Law_RERC
E-mail: fitzlg@unisa.ac.za

Executive Dean / By delegation from the Executive Dean of College of Law_RERC
E-mail: koleoj@unisa.ac.za

ANNEXURE C: INTERVIEW SCHEDULE

PARTICIPANT INFORMATION SHEET

Ethics clearance reference number: 2429 (See attached ethics

Clearance certificate.

Research permission reference number (if applicable): 2429 /**19 January 2024**

Title: AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY THE SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST

Dear Prospective Participant

My name is Themba Simon Simango, and I am doing research with Professor Dumisani Quiet Mabunda, in the Department of Police Practice, School of Criminal Justice, towards my master's degree in criminal justice at the University of South Africa. We invite you to participate in a study entitled: An evaluation of the management and control measures for explosives by the South African Police Service at the Beit Bridge border post.

WHAT IS THE PURPOSE OF THE STUDY?

To explore, describe, and analyze the management and control measures of explosives by the South African Police Service at the Beit Bridge border post.

WHAT IS THE NATURE OF MY PARTICIPATION IN THIS STUDY?

This study will require your participation in only one stage, which is:

1. (SAMPLE A, VISIBLE POLICING AT THE BORDER) The management and control measures of explosives by the South African Police Service at the Beit Bridge border post:

- What is your understanding of commercial and military explosives according to your knowledge?

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- Are you content with your ability to identify explosives?

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- Do you understand the danger posed by explosives?
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- Do you understand the smuggling methods used to bring explosives into the country through the border?
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  ……
- Do you think there is anything that can be done to improve the recovery rate of illegal explosives at the border?
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2. (SAMPLE B, SOUTH AFRICAN REVENUE SERVICES (SARS) AT THE BORDER) The management and control measures of explosives by the South African Police Service at the Beit Bridge border post:

- What is your responsibilities at the border?
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- Are you content with your ability to identify explosives?
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- Are you satisfied with the resources used to search for illicit goods, including explosives?
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- Do you understand the danger posed by explosives?
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- Do you understand the smuggling methods used to bring explosives into the country through the border?
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- Do you think there is anything that can be done to improve the recovery rate of illegal explosives at the border?
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3. (SAMPLE C, BORDER MANAGEMENT AUTHORITY (BMA) The management and control measures of explosives by the South African Police Service at the Beit Bridge border post:

- What is the role of Border Management Authority (BMA) officials?
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- Where should BMA report smuggling of illegal explosives?
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- Are you content with your ability to identify explosives?
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- Do you have any knowledge of the Explosives Act 26 of 1956?
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- Do you understand the dangers posed by illegal explosives in the country?
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- Do you know how explosives are initiated or exploded?
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4. (SAMPLE D, SOUTH AFRICAN DEFENCE FORCE) The management and control measures of explosives by the South African Police Service at the Beit Bridge border post:

- What are illegal explosives?
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- What are the smuggling methods of explosives known to you?
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- Besides your knowledge of military explosives, can you identify commercial explosives?

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  ……

- Do you know criminal activities perpetuated by explosives?

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- What can the explosives section and the police in general do to curb the influx?

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5. **(SAMPLE E, EXPLOSIVES SECTION MEMBERS**) To answer the following questions regarding the management and control measures of explosives by the South African Police Service at the border post:

- What do you understand about explosives?

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- According to your understanding, what are the objectives of managing explosives?

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- What type of evidence do you search for in an explosive scene?

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- What are illegal explosives?

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- What measures should be taken to control and manage illegal explosives from entering through the border post?

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- What role can the SAPS play to prevent illegal explosives smuggling?

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- What role can other law enforcement agencies play to prevent illegal explosives smuggling?

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- Are you satisfied with scene cordoning by first responders when you attend an explosives scene?

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- Are you able to link the recovered explosives to the manufacturer?
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  ……..
- Explain the role of the Forensic Science Laboratory in explosives samples collected?
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- Do you think Police and community members understand the dangers of explosives?
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- In which way does the lack of resources impact the control and management of explosives?
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6. (SAMPLE F, CONVICTED SMUGGLERS OF EXPLOSIVES) The management and control measures of explosives by the South African Police Service at the Beit Bridge border post:

- Do you know the Act regulating Explosives?
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  ……..

- How easy or difficult was it for you to get hold of explosives?

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- Explain your smuggling methods?
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- Do you understand the danger posed by explosives?
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- What was your intended destination?
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- Was it your first time, and would you do it again?
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Can I withdraw from this study even after agreeing to it?

PARTICIPATE?

Participating in this study is voluntary, and you are under no obligation to consent to participation. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a written consent form. You are free to withdraw at any time, without giving a reason; just inform the researcher via email.

What are the potential benefits of taking part in this study?

There are no direct possible benefits for participants. There is no compensation for participating in this research. The benefits will be for prevention of re-offending, empowering victims and the whole of the criminal justice system. The data provided by participants will assist the researcher

in fulfilling the aim set out in the research study and also provide some insights in exploring the significance of explosives.

Are there any negative consequences for me if I participate in the research project?

There are no foreseeable negative risks associated with participation in this research study. The foreseeable inconvenience to you for participating is your time, which the researcher requests you to set aside for the interviews outlined above. All the information provided by you in this research will be treated as highly confidential, and your name will not be used in any report of this research study without your consent. The information obtained from you will only be used for the purpose of this study, and thereafter the records on supplied information will be submitted to Unisa for safekeeping. Thereafter, they will be destroyed in accordance with the university's policy on the collected data for research purposes.

Will the information I convey to the researcher, and my identity remain confidential?

You have the right to insist that your name not be recorded anywhere and that no one, apart from the researcher and identified members of the research team, knows about your involvement in this research, or your name will not be recorded anywhere, and no one will be able to connect you to the answers you give. Your answers will be given a code number, or a pseudonym, and you will be referred to in this way in the data, any publications, or other research reporting methods, such as conference proceedings. Your answers may be reviewed by people responsible for ensuring that research is conducted properly, including the transcriber, the external coder, who will be required to sign a confidentiality agreement, and members of the Research Ethics Review Committee. Otherwise, records that identify you will be available only to people working on the study, unless you give permission to others to see them. Your anonymous data may be used for other purposes, such as a research report, journal articles, and/or conference proceedings. In whatever form your supplied data is used, your name and identity will always remain confidential and private.

How will the researcher(s) protect the security of data?

Hard copies of your answers will be stored by the researcher for a minimum period of 15 years in a locked cupboard/filing future research or academic purposes; electronic information will be stored on a password-protected computer. Future use of the stored data will be subject to further Research Ethics Review and approval if applicable. After five years the records of the data collected from you will be destroyed as follows:

- ✓ Hard copies will be shredded and/or
- ✓ With the exception of electronic copies, will also be available for research at Unisa.

Will I receive payment or any incentives for participating in this study?

There are no payments or incentives for participating in this research study; participation is voluntary. Furthermore, there are no foreseeable costs that will be incurred by participating in this research study.

Has the study received ethical approval?

This study has received written approval from the Research Ethics Review Committee of the School of Law, Unisa. A copy of the approval letter can be obtained from the researcher if you so wish to have it.

How will I be informed of the research's findings?

If you would like to be informed of the final research findings, please contact Themba Simon Simango at 083 403 7475 or @vut.ac.za / 37116614@mylife.unisa.ac.za . Should you require any further information or wish to contact the researcher regarding any aspect of this study, please use the previously mentioned contact details. Should you have concerns about the way in which the research has been conducted, you may contact Professor Dumisani Quiet Mabunda at 012 433 9467 or mabundq@unisa.ac.za. Contact the research ethics chairperson of the School of Law Ethics Committee, Prof Fitz, at fitzlg@unisa.ac.za if you have any ethical concerns. Thank you for taking the time to read this information sheet and for participating in this study.

Thank you.

Themba Simon Simango

CONSENT TO PARTICIPATE IN THIS STUDY

I, _____ (participant name), confirm that the person asking my consent to take part in this research has told me about the nature, procedure, potential benefits and anticipated inconvenience of participation.

I have read (or had explained to me) and understood the study as explained in the information sheet.

I have had sufficient opportunity to ask questions and am prepared to participate in the study.

I understand that my participation is voluntary and that I am free to withdraw at any time without penalty (if applicable).

I am aware that the findings of this study will be processed into a research report, journal publications, and/or conference proceedings, but that my participation will be kept confidential unless otherwise specified.

I agree to the recording of the interview.

I have received a signed copy of the informed consent agreement.

Participant Name & Surname…… (Please print)

Participant Signature……..Date……

Researcher's Name & Surname Themba Simon Simango…… (Please print)

Researcher's signature……..Date…19/01/2024……

APPENDIX A: Human participant information sheet and consent template

PARTICIPANT INFORMATION SHEET

Ethics clearance reference number:

Research permission reference number (if applicable):

2023-11-15

Title:

AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST

Dear Prospective Participant

My Name is Themba Simon Simango and I am doing research with Dr Q.R Mabunda a senior lecturer in the Department of Police towards a MA in Criminal Justice at the University of South Africa. I have funding from UNISA. I am are inviting you to participate in a study entitled : **AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST**

WHAT IS THE PURPOSE OF THE STUDY?

I am conducting this research to find out how SAPS can curb the continued influx of explosives entering South Africa through the border.

WHY AM I BEING INVITED TO PARTICIPATE?

I decided to include you in my research as you are directly involved in crime prevention activities in the border. Your department has in the past been involved in explosives recoveries and investigation related to bombing / you have first have information as you have been convicted for possession of explosives after you were found smuggling into South Africa. Five (5) participants will be involved in data collection from the identified groups (SAPS explosives section, BMA,SANDF, SARS and convicts)

ANNEXURE D: EDITING CERTIFICATE

LANGUAGE EDITING CERTIFICATE

BK EDITORIAL AND PUBLISHING (PTY) LTD [REG: 2020157767/07] CERTIFIES THAT

"AN EVALUATION OF THE MANAGEMENT AND CONTROL MEASURES OF EXPLOSIVES BY SOUTH AFRICAN POLICE SERVICE AT BEIT BRIDGE BORDER POST"

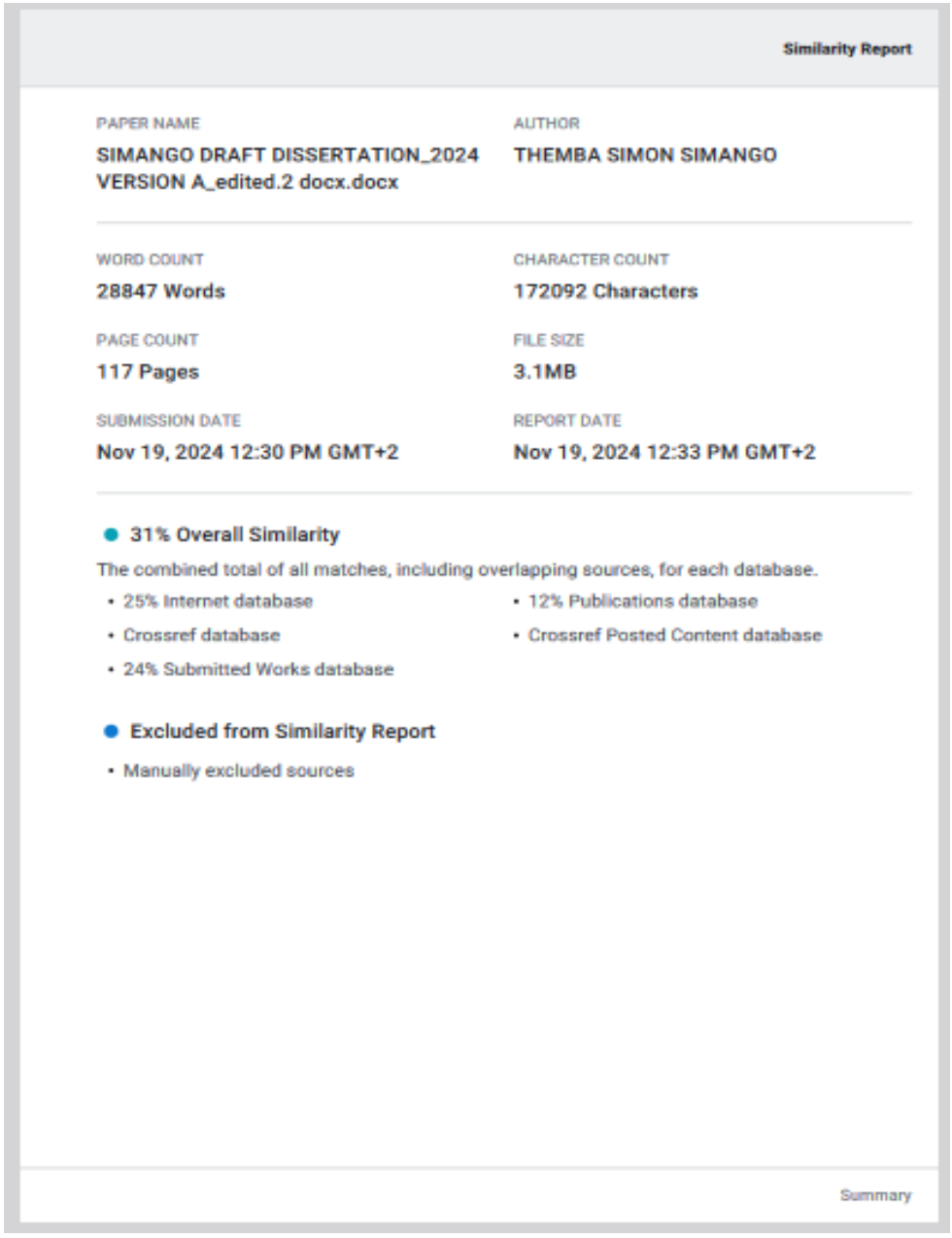
has been edited and proofread to improve grammar, consistency, readability, flow, and logic.

OCTOBER 29, 2024

Mr KM Leshaba, Managing Editor

Professional Editor's Guild (Membership: LES003)

ANNEXURE E: TURNITIN REPORT



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