THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS AT THE O.R TAMBO INTERNATIONAL AIRPORT: DYNAMICS AND CHALLENGES

by

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DELARATION

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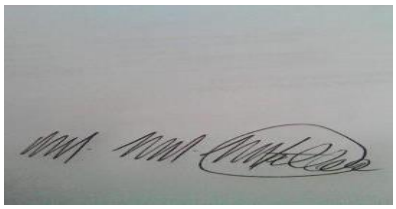

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SIGNATURE DATE

DEDICATIONS

This thesis is dedicated to the following:

- My late father Moshe Matlala. Robala ka khutšo Mokone. O re robalele ditlhokwa le dinyakwa, wena motho'a bo Malapi a'bo Ntsaku, dikobo o tlhagetše, boela borwa.
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.

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SUMMARY

This study interrogates the policing of borders, borderlines and entry ports, with specific reference to the use of technologies in combating transnational crime at South Africa's largest international airport. This is why the study poses the question: What are the dynamics and challenges relating to the interfaces in police work, transnational crime and the use of technologies at the O.R Tambo International Airport (ORTIA)? The aim in the research was thus to explore the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus at the ORTIA. This aim was operationalised through the following research objectives: (1) to describe the dimensions of policing at international airports, with specific contextualisation to the ORTIA; (2) to theorise the policing, transnational crime and techno-securitisation nexus; (3) to uncover the factors that hinder the operational efficiency of the police at ORTIA and to develop a conceptual framework for police efficiency, as well as; (4) making recommendations to the management of the SAPS, on how to enhance the police's operational efficiency, in the fight against transnational crime at borders, borderlines and entry ports that include airports. The research espoused a qualitative approach and drew data from experts in border policing, SAPS border police managers and staff working at the ORTIA. Purposive and quota sampling techniques were used to draw the research participants. Data in the study was collected using semi-structured (primary), literature (secondary), and observations (tertiary) techniques that are aligned to the anti-positivist school of thought and thus with qualitative research. The research findings show that policing at international airports and at the ORTIA, is a complex exercise that consist in multiple securitisation actors who are regulated by protocols in the aviation sector, including legislation and policies in the international, continental, regional and local spheres; that the scope of border policing is huge and cannot pragmatically be fulfilled by an already stretched SAPS alone; that technology, other physical resources, and training, including systematic/scientific approaches to policing are critical in the fight against transnational; and that the newly introduced (in 2023) single border management agency the BMA, is yet to show its worth. In the recommendations, the study conceptualises a policing philosophy that is aligned to the contemporary industrial revolution (post-modern policing), transformative and epistemologically inclusive (ethno-sensitive), thus making obsolete, the more than 195 years old (as at 2024) Peelian western-centric colonial maxims in the philosophy called Modern Policing; conceptualises the interplay (nexus) in policing, transnational crime and technology; develops a thesis whose theorems enable an understanding of the interplay, and together with the taxonomy postulated in the

study, also operationalises the nexus and foster research on the use of crime combating technologies. The research also highlights specific challenges that hinder the operational efficiency of the police at the ORTIA and makes recommendations that not only talk to the identified challenges but to cooperation among various security stakeholders. The research highlights prospects for policing in the Fourth Industrial Revolution, prospects that include the use of robotics, 5G technology, artificial intelligence, and smart software that enable crime combating technologies to perform multiple functions with heightened accuracy and expeditiously, thus making police operations to be efficient. Likewise, the research also makes generic proposals, and further proposes a framework to help the police improve on operational efficiency. Finally, the research identifies several areas of interest that require future research.

Key terms: *Technology; Transnational crime; Organised crime; Techno-securitisation; Aviation; Borders; Entry ports; Border security; Border control; Service delivery; Policing; Crime Prevention; Philosophy; Fourth Industrial Revolution; Database; Airports; Post-modern Policing; Artificial Intelligence; Robotics; 5G technology, Smart software; Operational efficiency.*

ACCRONYMS

ACAC	African Civil Aviation Commission
ACSA	Airports Company of South Africa
AFIS	Automated Fingerprint Identification System
AfCFTA	African Continental Free Trade Agreement
AMD	Arch Metal Detector
ANC	African National Congress
APRM	African Peer Review Mechanism
AU	African Union
AVL	Automated Vehicle Locator
BACC	Border Affairs Coordinating Committee
BCOCC	Border Control Operational Coordination Committee
BI	Business Intelligence
BMA	Border Management Agency
BMAPMO	Border Management Agency Project Management Office
CAA	Civil Aviation Authority
CAS	Case Administration System
CCTV	Close Circuit Television
COMESA	Common Market for Eastern and Southern Africa
CPTED	Crime Prevention Through Environmental Design
CS	Circulation System
DHA	Department of Home Affairs

DoT	Department of Transport
DRC	Democratic Republic of the Congo
DSS	Decision Support System
DQMM	Data Quality Management Model
EBP	Evidence Based Policing
EMCS	Enhanced Movement Control System
EMPD	Ekurhuleni Metropolitan Police Department
ESAEPA	Eastern and Southern African Economic Partnership Agreement
ETD	Explosive Trace Detection
EU	European Union
EUROPOL	European Police
GCS	Gauteng Community Safety
GFI	Global Financial Integrity
GTAC	Government Technical Advisory Centre
HMD	Hand Metal Detectors
IACF	Inter-Agency Clearing Forum
IATA	International Air Transport Association
IBIN	Interpol Ballistic Information System
ICAO	International Civil Aviation Organisation
ICIS	INTERPOL Criminal Information System
ICT	Information Communication Technology
IGI	Inspector General Intelligence

ISC	International Science Council
ISSC	International Social Science Council
INTERPOL	International Police Association
IPID	Independent Police Investigative Directorate
ISOC	Intelligent Security Operations Centre
IUCN	International Union on the Conservation for Nature
JCPSC	Justice, Crime Prevention and Security Cluster
JIA	Johannesburg International Airport
JOC	Joint Operations Center
LA	Lead Agency
MCS	Movement Control System
MIS	Management Information Systems
MIT	Multi, Inter, and Transdisciplinarity
MPD	Maritime Piracy Database
NASP	National Aviation Security Programme
NATIS	National Traffic Information System
NDP	National Development Plan
NISD	Non-Intrusive Scanning Devises
NBRMTC	National Border and Risk Management and Targeting Center
NEDLAC	National Economic Development and Labour Council
NICOC	National Intelligence Co-ordinating Committee
NIDS	National Inter-Departmental Structure

NIU	National Intervention Unit
NKP	National Key Point
NPA	National Prosecution Authority
OAU	Organisation of African Unity
OIS	Operations Information System
ORTIA	O.R Tambo International Airport
PDTK	Portable Drug Testing Kit
PIDS	Perimeter Intrusion Detection System
POP	Public Order Policing
PSC	Public Service Commission
RDMM	Rational Decision Making Model
RFID	Radio Frequency Identification
SA	South Africa
SACU	Southern African Customs Union
SABC	South African Broadcasting Corporation
SADC	Southern African Development Community
SANDF	South African National Defence Force
SAPS	South African Police Service
SARPCCO	Southern African Regional Police Chiefs Cooperation Organisation
SARS	South African Revenue Service
SCP	Situational Crime Prevention
SDGs	Sustainable Development Goals

SONAR Sound Navigation and Ranging

SOP Standard Operating Procedures

SSA State Security Agency

SSRC Social Science Research Council

STF Special Task Force

TOC Transnational Organised Crime

UNISA University of South Africa

UNODC United Nations Office on Drugs and Crime

UNSCS United Nations Security Council Sanctions

USINS United States Immigration and Naturalization Service

VCS Vehicle Circulation System

VRS Voice Recognition System

WTO World Trade Organisation

TABLES AND FIGURES

Figure 17: A framework for police efficiency

TABLE OF CONTENTS

CHAPTER 1: GENERAL ORIENTATION

CHAPTER 2: SPECIFIC ORIENTATION

CHAPTER 9: ANALYSES AND DISCUSSIONS PART C: FACTORS THAT HINDER POLICING AT THE O.R TAMBO INTERNATIONAL AIRPORT

CHAPTER 10: FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 1: GENERAL ORIENTATION

1.1 INTRODUCTION

The dynamics relating to the interfaces in policing, transnational crime and technologies used in securitising borders, borderlines and entry ports environments needs to be studied and to be properly understood. Mlambo (2021:22) opines that whilst the use of technologies is crucial in the securitisation of the border setting, technologies alone will not solve transnational crime, unless there was the integration of three key components namely, man, infrastructure, and technology. It is this last assertion that prompted this study on the interfaces between, policing (done by man), transnational crime and technologies used at the O.R Tambo International Airport (ORTIA). This chapter essentially gives readers a broader orientation on this subject matter.

The use of technologies in securitisation begs the concept termed in this study to be "techno-securitisation". To provide a basis for the term, studies on policing, transnational crime and techno-securitisation are basic in enabling explorations on the spread of the challenges that manifest in the relating dynamics that equally overwhelm efficiency and police service delivery. Though studies on the policing, transnational crime and techno-securitisation nexuses may not necessarily be programme-specific, ensuing explorations could enable a generic understanding and evaluations on the subject. For South Africa (SA), the evaluations could assist police managers to improve the quality of reporting to Parliament's Committee on Safety and Security.

Matlala (2013:59) is of the view that evaluations not only facilitate reporting but also promotes accountability, even within police agencies. In this study, evaluations are not programme-specific but talks generally to interfaces in policing, transnational crime and technologies, and the challenges that stifle police service delivery and accountability. The quest for accountability was similarly one of the reasons why Colton (1979:1) hypothesised that even if technologies were well implemented, the dynamics relating thereto need to be studied to verify their effectiveness in police work. Mlambo (2021) shares the same opinion, hence the author stresses the integration of man, infrastructure and technology to create a harmonised operational milieu within the border, borderline and at entry ports such as land, sea and international airports.

Studies aimed at exploring the dynamics and challenges in the policing, transnational crime and techno-securitisation nexuses at international airports such as the ORTIA is however something that is seldom done on the Afrikan[1] continent. In highlighting some of the causal factors in this poor epistemics, Zeleza (2002:21) argues that research capacities in most Afrikan countries are not strengthened, this owing to challenges in the economic and political spheres. To this end, Gastrow (2000:246) further confirms that the complex interfaces between law enforcement and technologies in the Southern African Development Community (SADC) region generally continue to endure poor understanding. On the same breadth, Mlambo (2021:22) corroborates the last assertions by positing poor interfaces between human beings (the police in this study), infrastructure and technologies.

A survey of literature on the subject matter has indeed shown that research on the policing, transnational crime and techno-securitisation nexus particularly at international airports in the SADC is generally lacking. The scarcity is despite several scholars (Msutu, 2001; Rauch & Van der Spuy, 2006; Van der Spuy & Rontsch, 2008; Van der Spuy, 2009; Mlambo, 2021) having researched widely on police culture and cooperation, community policing, crime prevention, police reform, terrorism and organised crime in the region. Yet, none of the research focuses on the dynamics and challenges relating to interfaces in policing, transnational crime and techno-securitisation in the border setting in the region.

Policing in South Africa is equally challenged in terms of the same kind of research at its international airports. This sentiment is further echoed in the South African Police Service Strategic Plan for 2014-2019. The plan emphasises the need to create spaces for critical dialogue and cooperative research as imperative in understanding the dynamics in various policing environments (South African Police Service, 2014:15). Growing research on the policing, transnational crime and techno-securitisation nexus at the ORTIA could essentially enable the police to promote the professionalism needed to learn and enhance their operational efficiency in combating transnational crime. Research on such nexuses could however only be advanced through intellectual partnerships. Thus, collaborating with research institutions and universities could go a long way in helping the police to grow their research capacity. Also,

[1] Throughout the study, the continent is referred to as Afrika for philosophical reasons that are explained in detail in the footnotes in chapter 8, p 244. The spelling with a "k" however excludes formal country names like South Africa or organisations such as Southern African Development Community, South African Police Service etc., including references used These are formal brands whose names cannot be adulterated.

adopting research-driven approaches could help the police improve their operations, which could go a long way in improving security at the entry ports.

1.2 BACKGROUND TO THE STUDY

South Africa is a first-choice country in Afrika for asylum-seekers and economic migrants (see Akokpari, 2000:71; Parliamentary Monitoring Group, 2016; Mlambo, 2021:24). This is, however, not limited to this country alone but speaks to the global migration trends and patterns. In this context, globalisation and its migration dynamics are responsible for increased challenges in relation to border security and management in all states across the world (see Akokpari, 2000:72; Bakewell, 2008:1341; Parliamentary Monitoring Group, 2016; Mlambo, 2021:19). Despite easing the movement of people across the globe, globalisation has some double-edged sword effect on all border settings (Dale, 1999:3). Globalisation is both a curse as it enables increases in transnational crime, and a blessing in terms of enabling the cross-border movement of people and goods across the globe.

The South African border setting is has many entry ports, which suggests security vulnerabilities. The strategic gaps in land borders include inadequate fencing and poor conditions of patrol roads, which areas are characterised by wildlife poaching and illegal migration (Parliamentary Monitoring Group, 2016). In 2013-2014, about 13 899 illegal immigrants were arrested countrywide, whilst the figure for 2014-2015 was 13 474 (South African Police Service, 2015:179). The challenges in South Africa's borders essentially underscore the need to integrate plans in the approach to policing, securitisation and control of all entry ports and borderline functions. Thus, the establishment of a command-and-control body to carry out the operational responsibility to effectively combat transnational crime at all borders and entry ports is an imperative.

The task to combat transnational crime in South African borders and entry ports is however incumbent upon the South African Police Service (SAPS), State Security Agency (SSA), the Department of Home Affairs (DHA) through its immigration officials, the Airports Company of South Africa (ACSA) through its security staff, the South African Revenue Services (SARS) through its customs officials, as well as the South African National Defence Force (SANDF). For an entry port such as the ORTIA, the Ekurhuleni Metropolitan Police Department (EMPD) and private security companies contracted to secure goods, control access points and assist in other duties at the facility whenever required, also form part of the securitisation actors. The

research in this study however focuses partially on what the implications of the dynamics in this securitisation networks at the ORTIA are, on the SAPS's ability to provide better service. The focus is so that South Africa does not repeat the mistakes of the past. In 2003, the Thabo Mbeki administration put in place a policy that enabled the SAPS to assume the border security role and then it became clear that the police were ill-equipped for the task (Mlambo, 2021:20). This research can thus help ensure that the same is not repeated with ORTIA.

Essentially, the securitisation actors at ORTIA will at any given time interact with one another and are all engaged with the use of various technologies for various reasons. It is such usage that begged the concept "techno-securitisation" which talks to the use of technologies in securitisation processes. To be blunt, it is inevitable that techno-securitisation at ORTIA is bound to create complex interactions and dynamics that also affect police work in many ways. Generally, technology has provided useful tools for the police to access crime intelligence, cooperate with stakeholders and to increase productivity in making arrests (Matlala, 2013:18). As a point of departure and to clear any uncertainties in ensuing discussions, this next section gives a brief explanation and analysis of what the policing, transnational crime and techno-securitisation nexus entail.

1.2.1 The policing, transnational crime and techno-securitisation nexus

Effective securitisation at borders and entry ports requires proper understanding of the interfaces in policing, transnational crime and techno-securitisation. Historically, technology has changed the way in which the police have traditionally done their work. Traditional policing involves answering calls; foot patrols in communities; and reacting to crime (Roufa, 2016). The introduction of telegraphs in the late 19th century, vehicles, two-way radios and computers in the 20th century have allowed the police to dispatch staff to help persons in distress and to attend to crime scenes quicker (Chan, 2001:140). Technology has in this context, redefined the value of communicative and technical resources; institutionalised accountability; enabled built-in reporting procedures; and re-structured the daily operational routines espoused in police practice (Mlambo, 2021:18).

To provide a brief analysis on the use of surveillance cameras, gunshot location devices, Close Circuit Television (CCTV) and soft technology by the police to do crime mapping, hot spot analysis, monitor and analyse crime patterns from centralised locations (Byrne & Marx, 2011:30), epitomise the policing, transnational crime and techno-securitisation nexus as a

concept. For an entry port such as ORTIA, technological capabilities have helped police personnel to understand how crime at the facility evolves. Thus, a simple analysis of the concept is that the police use technologies to fight transnational crime. The proactive interfaces between policing, crime and technology thus signify a change from the traditional reactive approach which is generally used by the police at ORTIA.

Afrika is however challenged in research on the use of technology in police work. The continent ranks last and adds 2% to world research output due to poor infrastructure and using outdated computers (Ford, 2007:313). To improve on this predicament would require adequate funding. Poverty in most of Afrika is without a doubt an inhibiting factor (Mazzitelli, 2007:1073). For the SAPS, the challenges include high training costs (Matlala, 2013:15), skills exodus (Omar, 2008:34), scarce funds (Matlala, 2013:16), low salaries (Omar, 2008:34), disconnected databases (Mlambo, 2021:20) and political play in police work (Panyapanya, 2021). For ORTIA, this has made interfaces in policing and technology dysfunctional and caused poor control of transnational crime at the facility.

1.2.2 Transnational crime in summation

In the past two decades (2000-2020), activities in transnational criminal groups have caused increasing alarm among law enforcement agencies in both the developed and developing worlds. Transnational crime generally consists of violations of law that occur in multiple jurisdictions worldwide (Mlambo, 2021:21). Offences in transnational crime fundamentally consist in the provision of illicit goods which involves drug trafficking, the trafficking of stolen property, contrabanding weapons (illegal import/export of weapons) and counterfeit goods; importing and exporting illicit services that involve commercial sex and human trafficking; as well as the infiltration of businesses and governments, using fraud, the illicit exchange of state secrets (espionage), racketeering, money laundering and corruption (Albanese, 2009).

Generally, operations in transnational crime are not random as they consist in carefully crafted strategies. Albanese (2009) argues that since illicit operations are planned and executed in multiple countries, such dynamic pose unique problems in understanding the causes of, developing prevention plans and prosecuting the related offences. Govender (2015:120) confirms that the SAPS tend to use station-level skills that fall short of effectiveness in combating transnational crime. Plans to fight such crime could become effective if the police gain a deeper understanding of the dynamics in the policing of facilities such as ORTIA. This

could only be attained by forming partnerships to grow research and by engaging in critical dialogues (South African Police Service, 2014:15). Engaging in dialogues is critical in unearthing some of the abstract dimensions which are the policing, transnational crime and techno-securitisation nexus playing out at ORTIA.

Transnational crime is however distinct from international crimes. International crimes involve crimes against humanity and may or may not involve multiple jurisdictions; this is crimes such as genocide and terrorism (Albanese, 2009). On the other hand, transnational crime involves offences in multiple countries (see Reichel & Albanese, 2014:6; Shaw & Gastro 2001:250; Klippin & Harrison 2003:8; Block 2008:74; South African Police Service 2008:5; Mlambo, 2021:21), irrespective of whether the acts are in a networked fashion or consist in cross-border crimes by individuals without collaboration. Crimes that are committed in multiple jurisdictions using a networked approach thus begs the concept: Transnational Organised Crime (TOC). Offences in TOC are harmful to economies and have far adverse impacts than cross-border crimes done by individuals.

1.2.3 Transnational Organised Crime

The threat of TOC threatens peace and human security, through human rights violations, thus undermining societal development, economic and political order (United Nations Office on Drugs and Crime, 2016). A 2011 report by the Global Financial Integrity (GFI) showed that TOC in developing nations consists of illicit trades in drugs, humans, wildlife, counterfeits, currency, human organs, arms, diamonds and coloured gemstones, oil, timber, fish, art, cultural property and gold (Haken, 2011:1). The specific traits in each illicit market vary, but the cohesion in such enterprises is that they thrive in penurious spaces that grapple with inequality and weak states (Mlambo, 2021:22). Though not a weak state, South Africa owing to its apartheid history is trapped in vast inequality (Global Education Magazine, 2017). This fundamentally makes the country vulnerable to TOC.

According to Haken (2011:1), TOC consist of the global illicit flow of goods, guns, people and natural resources estimated at $650 billion a year. To this effect, the GFI report showed that the illicit drug trade alone is worth $320 billion per annum and counterfeiting about $250 billion (Haken, 2011:1). The United Nations Office on Drugs and Crime (2016) further confirmed that TOC manifests in many forms, including trafficking drugs, firearms, persons and the undermining of financial systems by money laundering. The types of cross-border crimes that

include illicit financial flows are also confirmed by Mlambo (2021:21). The TOC relies more on exploiting human mobility, to smuggle goods, services and persons (United Nations Office on Drugs and Crime, 2016). The level of mobility enabled by the ORTIA generally makes the facility highly attractive to TOC. Research (Liddick Jr, 2020; Geldenhuys, 2022; Tumulo, Sumadinata, Sudirman, & Herdiansah, 2022.) does confirm that airports in general are catalysts to the TOC that is characterised by contrabanding or the illicit movements of goods, weapons and persons.

There is no doubt that TOC is big business in the criminal underworld. From South Africa to China, Brazil and Russia, criminals are always seeking new ways to navigate around laws and across borders, to supply and acquire services. The services include but are not limited to weapons trafficking, human trafficking, drug trafficking, money laundering, non-declaration of goods that are otherwise legal so as to avoid paying duty tax, trafficking of rhino horns/elephant tasks horns and other endangered species. In terms of endangered species alone, the International Union on the Conservation for Nature (IUCN) estimates different species that are face possible extinction (Marsh et al. 2022).

Despite the fact that this study does not focus solely on endangered species, the TOC phenomenon uses proceeds from crime to fund terrorism and thus seeks to meet the demands of the highest bidders in the global underworld market (see Haken, 2011:1; Gastrow, 2013:1; Govender, 2015:127; Clunan, 2022:260; Comras, 2022:115; Levitt, 2022:134; Passas, 2022:21), without regard as to the moral acceptability of the illicit actions or bothering about who gets hurt in the process. In this study, the benefits at ORTIA and passenger safety at the facility are the issues at stake. To secure these interests will require effective policing, that is supported using sophisticated technological infrastructure and partnerships. This next section essentially gives a brief overview on the role that the global policing body plays in assisting the SAPS secure national borders.

1.3 THE ROLE OF INTERPOL IN BORDER POLICING

One of the main stakeholders that the SAPS are collaborating with in matters of safety and security is the International Police Association (INTERPOL). This body generally supports all operational efforts to combat transnational crime around borders and entry ports in all its member-state countries. In this study, the entry port referred to is the ORTIA. However, the role of INTERPOL is limited to assisting only the police to fight global crime and to bring

fugitives to justice (INTERPOL, 2021). In this context, the body strictly serves as an exclusive platform to assists only the SAPS to combat crime. All the other securitisation actors at the ORTIA must therefore liaise with the SAPS, to indirectly benefit from INTERPOL. According to the INTERPOL (2021), this body does the following:

- the facilitation investigations that require an international outreach.
- enabling cooperation between police and coordinating joint operations.
- providing the technological support needed to fight transnational crime.

INTERPOL is the world's largest body responsible for aiding police cooperation among 194 of its members (INTERPOL, 2021). The body enables member police to access tools and services that enhance their operational efficiency in combating transnational crime. The initiatives include facilitating targeted police training and expert investigative support, providing relevant crime data and providing access to secure communications channels to member-states police agencies (INTERPOL, 2021). The availability of such resources fundamentally helps member-states police to understand the global, regional and national crime trends and patterns, as well as to analyse data on transnational crime, to secure arrests and to inform prosecutions during judicial processes. Of importance is that INTERPOL as a leading role player in global law enforcement can ease police cooperation in all continents, even in countries where diplomatic relations do not exist (INTERPOL, 2021). The ability to facilitate cooperation where diplomatic ties do not exist, basically enables the SAPS to pursue wanted crime suspects beyond national borders.

1.3.1 Cooperation between INTERPOL and the SAPS

INTERPOL is however focused on promoting mutual assistance within the limits of the laws that exist in different countries whose police are in its membership (Department of International Relations and Cooperation, 2003). The body essentially has a vast capacity to service the global policing fraternity and ensures day-to-day global police cooperation. The work of INTERPOL is similarly done in the spirit of the Universal Declaration of Human Rights and South Africa has been a member since 1993 (INTERPOL, 2016). To date, South Africa is the only African country whose police are represented on the executive committee that steers the

work of INTERPOL (EyeWitness News, 2015). For funding, the body relies on the annual membership fees from member states (Department of International Relations and Cooperation, 2003). The body thus relies on its members to also avail data from their systems to give support in the fight against transnational crime.

The SAPS is also the only law enforcement agency in South Africa that is a member of INTERPOL. In strengthening the level of cooperation, INTERPOL maintains computer systems that have contacts globally, which systems are intended to assist the police to effectively combat all forms of cross-border criminality (Department of International Relations and Cooperation, 2003). Likewise, INTERPOL facilitates training in technology expertise for police personnel and assists the SAPS with resources to improve service delivery (South African Government, 2016a). In this context, specialist training and more resources could go a long way in helping the police to improve security at the ORTIA.

To reciprocate the relationship, the SAPS set up a bureau dedicated to working with INTERPOL. The SAPS INTERPOL Bureau deals with amongst other things, foreign extradition requests, stolen vehicle enquiries, drug and fraud-related offences (Department of International Relations and Cooperation, 2003). Thus, support by INTERPOL also enables the police to handle enquiries on missing persons, human trafficking, child abuse and illegal migration (INTERPOL, 2014). There is no doubt that the bureau plays a key role and contributes to operational efficiency in police work at entry ports. For the ORTIA, such contribution has helped the police to monitor the movement of people in and out of the country, as well as to profile persons suspected of having committed crimes. Mlambo (2021:22) emphasises the importance of surveillance in the border setting. Such a role could be optimised using contemporary hi-tech technologies.

To increase efficiency and to further capacitate the INTERPOL Bureau, the SAPS also developed Standard Operating Procedures (SOP) for the distribution of case files and prioritised the allocation of the additional workforce to key areas that deal with the distribution and analysis of information or intelligence acquired, to enhance performance (South African Police Service, 2016:219). This yielded positive results on joint operations. To explain, 1 400 INTERPOL case files on cross-border investigations were opened in 2015-2016 and 1 043 or 74,5% thereof were finalised (South African Police Service, 2016:219). To this effect, the 70% performance indicator target on the case files was exceeded by 4,5% (South African Police

Service, 2016:219). There is no doubt that such feat came in part or mainly because of technological support given by INTERPOL. For policing at the ORTIA, technological support can bolster the fight against criminal actions.

1.3.2. Technological support by INTERPOL

Apart from enhanced cooperation, the success of the police in managing transnational crime is generally also heavily dependent on the availability of real-time information. Matlala (2013:20) argues that technology provides police agencies worldwide with present-time information on all types of crime. To this end, INTERPOL provides police agencies with quick, direct and real-time access to criminal databases containing millions of records contributed by its member-states (INTERPOL, 2021). Some of the most critical services offered to police agencies specifically at international airports have been outlined in the official INTERPOL (2021a) website and these can be summarised as follows:

- **Interpol Ballistic Information System (IBIN):** Although not accessible in real-time, IBIN enables police agencies worldwide to access stored data to help them investigate firearm-related crimes and projectiles fired from a variety of guns.
- **Individuals Notices:** This is a notices system used to issue out international alerts on suspects, missing persons, corpses, potential security threats, and on persons or organisations subject to The United Nations Security Council Sanctions (UNSCS). Relevant details are stored on the INTERPOL Criminal Information System (ICIS), which provides personal and criminal information on suspects.
- **International Child Sexual Exploitation Image Database:** The system utilises advanced software to connect victims, abusers and places to identify, locate and arrest perpetrators of sexual offences involving children.
- **Forensic Data:** These are INTERPOL services that allow police internationally, to access fingerprint databases and DNA profiles of suspects or individuals.
- **Travel and Official Documents:** **T**he INTERPOL provides a range of electronic platforms that also enable police in member states to detect and prevent the fraudulent use of travel and other administrative documents, to restrict the movement of criminals and illicit goods across borders. Restrictions imposed through this system could significantly assist in combating the trafficking of rhino horns, elephant tasks and other endangered species in and out of the ORTIA.

- **Stolen Property:** The INTERPOL has also made available, databases to detect and prevent the movement of stolen motor vehicles, vessels and works of art. INTERPOL statistics have shown that South Africa alone, accounted for 96-98 percent of the total number of motor vehicle smuggled across SADC borders (INTERPOL, 2014). Such databases could thus also help the police at ORTIA to improve on their operational effectiveness in combating the cross-border trafficking of goods.
- **Firearms and Dangerous Materials:** INTERPOL also provides electronic tools to help police agencies in member states to collect data, trace items, analyse firearms-related trends and to examine radiological and nuclear materials.

One of the key features of INTERPOL that appeals the most to the research in this study is the organisation's ability to provide technological support to deal with TOC. INTERPOL has put in place databases aimed at improving the collection and exchange of data, to support analyses of criminal networks, thereby enabling the police to identify and arrest criminal syndicate leaders and network financiers (INTERPOL, 2021). An example of such a database is the Maritime Piracy Database (MPD), which stores personal data, phone numbers, incident sites and finances of persons involved in sea piracy (INTERPOL, 2021b). Accessing such databases could go a long way in enabling the SAPS to share useful intelligence with the army who are also responsible for curbing maritime piracy/crimes.

Another electronic platform used by INTERPOL is Maras. The technology is designed for organised crime syndicates specifically in El Salvador, Guatemala, Honduras and Nicaragua. The Maras contain personal data, images, weapons, vehicles used and mobile phone numbers of suspects, including activities of syndicates in Central America (INTERPOL, 2015:4). Of concern is why the specific focus on Central America when Afrika and certainly police operations at the ORTIA can also benefit from such initiatives. Hübschle (2010:93) pointed out that most countries in the SADC generally do lack centralised databases where information on crime types, *modus operandi* and crime syndicates can be uploaded. Such shortfall underscores the need to enhance the technological capabilities of the police within the entire Southern African border setting.

1.3.3 The value of technology in police work

The introduction of new technologies is the pillar on which modern policing is premised. This is because the public expects the police to adapt to changing social needs, which changes also include espousing in new and advanced technologies (Manning, 2003:123). The expected deliverables in this context would relate to the effective use of technologies to enhance operational efficiencies in combating transnational crime in the South African border setting, with specific emphasis on the effective techno-securitisation of entry ports such as the ORTIA. It is similar in the same context that the use of technology is understood to be highly beneficial in policing. The easier flow of data enabled by Information Communication Technology (ICT) in particular, has satisfied information demands, eased the flow of data and decreased the costs in communication (see Laudon & Laudon, 2004:486; Kotler & Keller, 2006:13; Nissan, 2008:46; Wen, 2009:3029). Technology also increases police presence or reach in the borders (Mlambo, 2021:21).

The benefits that can be accrued from technology are however not without challenges. For South Africa, the challenges include but are not limited to: a relatively poor understanding of the complex interfaces and dynamics between law enforcement and technologies (see Gastrow, 2000:246; Shaw & Reitano, 2013:21; Reitano, Shaw, Hunter & Gastrow, 2015:21; Huhta et al, 2021:2; Soares et al, 2021:1524; Wang, Zhou & Wang, 2021:64) and the lack of evaluation frameworks for technologies used in police work (see Gastrow, 2000: 245; Matlala, 2013:33; Mlambo, 2021:22; Wang et al. 2021:65). As already cited in 1.1, this is one of the reasons why this study deliberately sought to explore the policing, transnational crime and techno-securitisation nexus at the ORTIA. Also, the intention was to theorise a philosophy that resonate with policing in contemporary times, that is policing in the context of the Fourth Industrial Revolution. Issues on the revolution are outlined in the latter conceptual chapters and the analysis and discussions sections.

According to Gottschalk (2007:106), the one way for the police to overcome the challenges is by interrogating the interfaces in crime prevention and technologies used to achieve such tasks. This can be done by reviewing progress made concerning the types of technologies employed in police practice, which aspect also talks to management and evaluations on the tools of the trade. To this end, Gottschalk (2007:106) summarised the types of technologies that can be utilised in police practice in the following categories:

- **Mobility technologies:** decrease expenditure and maintenance costs. Various authors (Kotler & Keller 2006:13; Nissan 2008:46; Wen 2009:3024; Huhta et al, 2021:2; Mlambo, 2021:22; Soares et al, 2021:1524; Wang et al. 2021:64) agree that technology created a digital revolution, where communication is less costly. Mobility technologies are useful in enabling rapid and flexible patrols and enhancing the capacity to allocate resources for responses to problematic areas where people require police assistance. Classic examples of such include Automated Vehicle Locator (AVL), two-way radios as well as cellular phones.

- **Training technologies:** these are used to enhance staff skills to optimise their performance, and to change police-public attitudes/behaviours for the better, based on the assumption that training can yield the desired outcomes, enough to promote a good police image. Various criminal justice scholars (Manning, 2003:130; Du Preez, 2009:57; Govender, 2015:130; Movchan & Movchan, 2021:122; Smith, Miele, Charles & Fox, 2021:478) persuasively argue that training technologies can be used to educate police officials on how to do adequate crowd control; engage in effective anti-terrorist activities and non-coercive actions; and ensure that police are suitably skilled to do their job.

- **Transformative technologies:** these are used to refine, enhance and review criminal evidence. The technologies are also useful when analysing interactions between suspect behaviours and other devices. Typical transformational technologies include video cameras, audio devices and biometric devices. A key factor about transformative technologies is that they are an agent of change that can be utilised to educate and contribute to the professional development of police officials (see Ertmera & Ottenbreit-Leftwich, 2010:255; Bjerkan, Ryghaug, & Skjølsvold, 2021:101868; 2021:425; Harron & Mason, 2021:213).

- **Analytic technologies:** these are devices designed to aggregate, model and simulate data to facilitate crime analysis, crime mapping and crime prevention strategies (see Egbert & Leese, 2021:242; Fortin, Delle Donne & Knop, 2021:213; Leese, 2021:150). According to Manning (2003:131), equipment such as mobile computers, hand-held computers and laptops are some of the examples of analytic technologies, used by the police at work and from home to immediately access real-time data to enable them to adeptly prevent crime. The key to effectiveness in border and entry ports security is that the right tech-tools will bring about synchronisation in policing (Mlambo, 2021:22).

- **Communicative technologies:** consist of ICT and devices that aid the flow of data. For the information in police custody to become useful, it will have to be disseminated to staff using devices such as cell phones, two-way radios and the Internet, which are all communicative technologies (see Egbert & Leese, 2021:242; Fortin et al. 2021:213; Leese, 2021:150. Apart from facilitating internal communication, communicative technologies are also critical in aiding direct contact between the police and members of the public, thus enabling greater information-sharing (Manning, 2003:132). For the border setting and entry ports such as ORTIA, communicative technologies also contribute to the sharing of intelligence on transnational crime and thus contribute towards enhancing the operational efficiency of all the securitisation actors involved.

Despite the benefits that can be accrued from the utilisation of technologies, the SAPS is also faced up with poor co-ordination, poor leadership, lack of finances and lack of technology resources and expertise, as well as the lack of connectivity among databases in other state institutions (see Brynjolfsson & Hitt, 2000:26; Msutu, 2001; Irish, 2005:10). Various scholars (Manning, 1996:352; Gottschalk, 2006:1; Sinclair & Matlala, 2011:47) argue that police agencies could overcome most of the challenges if they used the technology at their disposal innovatively. Innovations would in this context, include creativity in the use of advanced technologies to promote police efficiency and to attain improved security, which aspect precedes the viability linked with economies created in borders. To this end, this next part gives an overview of South Africa's border setting.

1.4 THE SOUTH AFRICAN BORDER ENVIRONMENT

South Africa shares borders with Botswana, the Kingdom of Lesotho, Zimbabwe, the kingdom of ESwatini and Mozambique (Taute, 2007:2). The country has a land surface of 1 219 090 km^2, nine provinces (South African Police Service, 2015:35) and a total of 3 500km in land borders (Hennop, Jefferson & McLean, 2001:11). The borders consist of seventy-three (73) entry ports made up of fifty-three (53) land ports, nine (9) seaports, one (1) dry port and ten (10) airports that consist of domestic and international facilities (South African Police Service, 2015:38). International airports are by law, classed as national key points whose security is the responsibility of the SAPS (South Africa, 1980).

The work of police in the border environment involves *inter alia*, the profiling of selected motor vehicles, goods containers, cargo identified as high risk and focusing on suspicious individuals and goods from specific countries classified as high risk in terms of crime (South African Police Service, 2015:179). There is no doubt that carrying out such specialised tasks requires diligence. In executing its duties at borders, the SAPS use several communications technologies that include two-way radios, cell phones and computers, to name a few. Information Communications Technologies have generally impacted on all aspect's life. Because police agencies are information-driven, they rely on information for the successful management of crime (Mlambo, 2021:22). Combating crime in modern times could thus not be attained without the effective use of advanced technological tools (see Bloss 2007:211; Sinclair & Matlala 2011:49; Matlala, 2013:39; Egbert & Leese, 2021:242; Fortin, Delle Donne & Knop, 2021:213; Leese, 2021:150).

Transnational crime, however, presents major challenges in all South Africa's borders and entry ports. The problems are precipitated by among other things the fact that the country is riddled with porous borders (Parliamentary Monitoring group, 2016) and that there are large numbers of undocumented migrant persons in and around the border areas (Klaaren & Ramji, 2001:41). In response, the government insisted that the SAPS should increase efficiency in controlling the movement of persons and goods in borders, borderlines and entry ports (South African Police Service, 2015:178). The role of the police in the South African border setting is however faced up with historical challenges, some of which persist. The inherent challenges are outlined in this ensuing section. According to Mlambo (2021:20), it has been clear since 2009 that the SAPS is poorly equipped to effectively securitise the border setting. For the ORTIA, such anomalies require research that can contextualise the inherent challenges, a study such as this one.

1.4.1 Challenges in the South African border setting

Despite existing legislation, the South African border setting continues to be riddled by a myriad of challenges, which have generally hindered policing. In the immediate period following the democratisation of South Africa in 1994, several agencies undertook separate assessments on the state of South Africa's border control. Among the agencies were the United States Immigration and Naturalization Service (USINS) in 1996 and the South African government in 1997 (Steinberg, 2005a:2). The findings in both assessments according to Steinberg (2005a:2) highlighted the following key issues:

- South Africa had too many airports, 32 in total. Smaller airports had no border control capacity, something that essentially resulted in the improper monitoring of international traffic. This meant that criminals could move with impunity (Mlambo, 2021:20). Furtherhereto, the investigations showed that airport security did not have uniform national standards. Likewise, the investigation revealed that seaports were only attended to by SAPS personnel. The absence of immigration and customs officials therefore led to a compromised perimeter and asset security.

- The assessments further showed that there was a huge presence of soldiers at land border posts. Such militaristic atmosphere birthed negative public acuities. Another finding was that entry ports and border posts were understaffed and lacked apt equipment, a problem that persists and evidence of this is outlined in 2.2. Similarly, entry ports were found to have been generally poorly designed and did not ease human and freight traffic flow. The situation improved post the 1994 first democratic elections. Details on the improvements are fully outlined in 2.3.

- Lastly, the investigations revealed that arriving and departing passengers mingled, which is no longer the case, details of which are outlined in 2.2; and that border control was not seen as a specialised field and did not have a professional identity. However, there are efforts to remedy this situation and evidence of this is adduced in 2.6.2. in addition, the investigation found that staff at border posts were not vetted for integrity before being employed in a corruption prone setting; and that the roles of the SAPS, custom and immigration were not clear, with the result that different agencies duplicated some of the roles, which trait still continues to date.

The challenges as outlined in this section thus suggest a disjointed strategic and operational approach to border control, including conflict of interest. To this end, Steinberg (2005a:2) argued that actors involved with border security also did not share information. For the ORTIA, issues on how far the problems have been dealt with are outlined in detail in 2.6 of this study. To deal with the issues, the assessment reports by the INS and South African government recommended the creation of a single body to do border control and securitisation, a body supported through resources with sophisticated technologies included in the mix. The challenges with such move are dealt with in 2.6.2 of this study. Of importance is that the

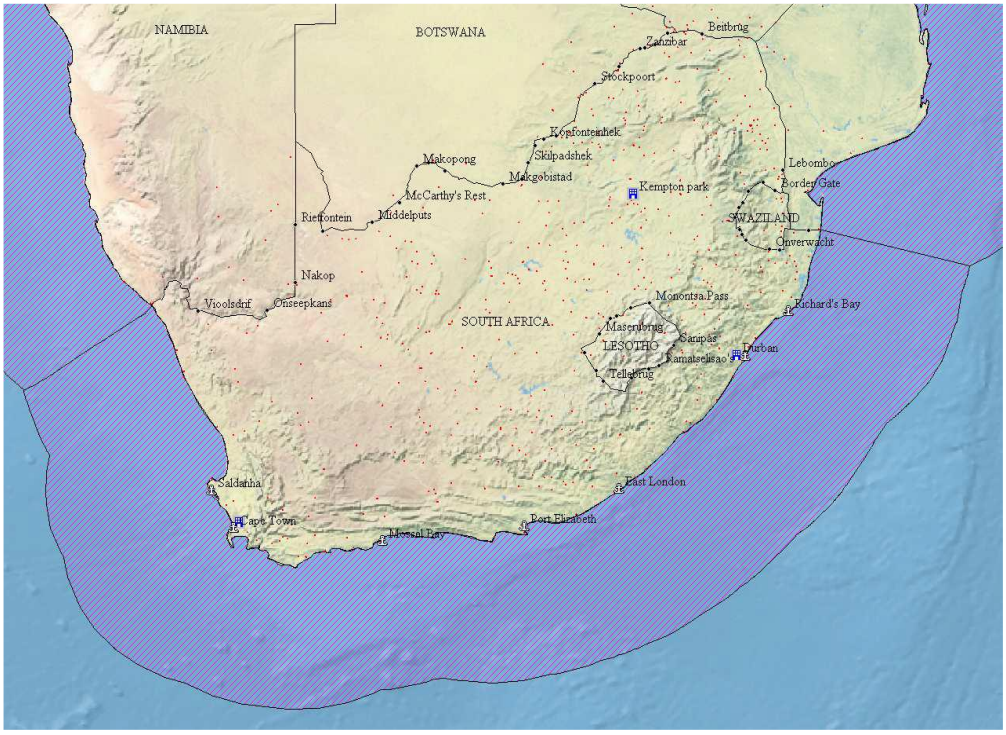
problems in South Africa's borders underscore the need for intervention by the army, whose role in such environments is outlined next.

1.4.2 The role of the army in securing national borders

The subject of securing national borders has sparked rigorous and controversial debates in both public and legal spheres in South Africa. Over the past two decades (2000-2021), human right scholars, activists and civil society bodies have advocated for the creation of new laws and policies, including efficient practices to fight transnational crime at national borders (Montesh & Basdeo, 2012:71). Reflecting on the issues also led to broader outcries over security at entry ports as a national security issue, not just in South Africa but also throughout the entire Afrika, where many countries struggle to manage their borders in order to secure their territorial sovereignty and prevent illegal entries and/or exits, thus failing to properly control the scourge of transnational crime (Okumu, 2011:1).

To secure national borders, the SAPS are also assisted by the SANDF. The work of the military in the border settings however is limited to tackling crimes that threaten the constitutional order of the country, border protection, preventing illegal immigration and the smuggling of goods and persons (Montesh & Basdeo, 2012:73). The army generally does border and borderline patrols along land and sea borders or borderlines (South African Police Service, 2015:178). For the sea, the SANDF uses submarines and warships with search radar and Sound Navigation and Ranging (SONAR) systems (FleetSubmarine.Com, 2015) and aircrafts with missile and electro-optical cameras for aerial patrols (Military.Com, 2015). Figure 1 below depicts South Africa's border setting.

Figure 1: The South African border environment: land, air and maritime[1]



Source: Taute (2007:2)

There is no doubt that military technologies are critical in helping the army protect the territorial integrity of South Africa. By cooperating with the military (SANDF), the SAPS have indirectly caused the deployment of high-tech tools to help them deal with transnational crime at national borders, without stretching their departmental resources. Of concern is that SANDF's efforts to secure national borders are inhibited by continuous budget cuts (eNCA, 2016), staff shortages, corruption and negative public perceptions about the presence of soldiers at borders and entry ports (Mlambo, 2021:21), which would explain why the army has no presence at an international airport such as the ORTIA.

As already cited in this section, the involvement of the SANDF in borders is limited to dealing with activities that threaten the constitutional order of the country (South Africa, 1996). Thus, the army fundamentally protects the country by keeping at bay, military and terrorist threats (South Africa, 1996). What this imply is that the SANDF is by law, not party to securitisation at international airports (Hennop et al. 2001:19), except for the duty to protect the country's airspace (South Africa, 1996). The army will only operate at an international airport if there are

[1] Table 1 above depicts South Africa's land and sea borders and borderlines. The purple-shaded area on the map is the territorial waters, whilst the blue-shaded is international waters

airspace threats in the direct vicinity of the facility. Of concern however is the fact that South Africa has limited surveillance capabilities and coverage over its national airspace (Parliamentary Monitoring Group, 2016). For an entry port such as the ORTIA, such shortfalls spells dire implications for aviation operations.

1.5 THE POLICING OF ENTRY PORTS IN SOUTH AFRICA

The task to secure entry ports such as the ORTIA as already cited in 1.2 is incumbent upon the SAPS and other parties involved in the provision of safety and security, parties such as the EMPD, DHA, SARS and private security. The role of the police (the SAPS in particular) in securitising entry ports, however, remains challenged. Research by Hennop *et al* (2001:25) shows that the SAPS lacks resources, struggles with information management, poor intelligence, lacks profiling systems and grapples with corruption. There is no doubt that police corruption alone puts the integrity of the SAPS into question. For thoroughness, the research in this study similarly interrogates which of the challenges have been tackled, which ones persists and why do the problems continue to subsist. Such line of inquiry has a direct impact on the apt policing of entry ports in South Africa.

The appropriateness of policing at entry ports is generally premised on sound plans. To achieve optimal results, the police must always revise or construct new crime control measures, use problem-oriented approaches, conduct research in collaboration with universities and adapt to new technologies (Weisburd & Neyroud, 2013:13). However, research by Weisburd and Neyroud (2013:13) further found that: “strategies developed in police agencies are generally implemented with little reference to research-based evidence”. Such shortfall fundamentally undermines the value that research could have on plans to combat transnational crime, particularly at a national key point such as the ORTIA. For South Africa, the strategic approach in the effective policing of entry ports such as international airports is premised on three keystones. These are: firstly, a sound regulatory framework; secondly financial support; and thirdly operational capacitation.

It goes without say that the regulatory framework talks to laws and policies that generally govern police work at entry ports. The regulation is then operationalised by allocating an adequate budget (financial support) to enable the purchasing of resources such new technologies and to ease staff deployment to capacitate the operations. A key concern in the policing of entry ports in South Africa is however, the bizarre appointments and political play

that is clearly intended to exclude the SAPS from border securitisation processes with state actors that are not qualified to do securitisation of policing tasks and whose legal mandate is not policing (Parliamentary Monitoring Group, 2016). The issues on the politics that factor within the structure(s) tasked with securitisation at entry ports in South Africa are dealt with broadly in the next chapter in 2.6.1 and 2.7.3 respectively.

To deal with the problems and to attain the required levels of efficiency in the policing of entry ports, Govender (2015:131) argues that the police need to be properly trained, optimise crime intelligence, buy proper equipment (including new technologies), focus more on increasing staff and diversify deployments to hotspots areas that need more attention. Mlambo (2021:24) agrees that police agencies should deploy resources where their service is most needed. An airport such as ORTIA are fundamentally such areas that require increased financial and technological resources to enhance security. This coupled with a clear intent to depoliticise police work, could improve security at ORTIA.

To ensure security at entry ports, the SAPS also employs traditional policing strategies. These include crime prevention and crime investigation operations. The plans involve roadblocks, vehicle patrols and checkpoints, foot patrols, vessel patrols and border perimeter inspections (South African Police Service, 2015:178). For better operational efficiency, the police rely on technologies such as the Circulation System (CS), Case Administration System (CAS), Vehicle Circulation System (VCS) and the Automated Fingerprint Identification System (AFIS) (South African Police Service, 2015). The technologies are applied to screen wanted persons and stolen vehicles (see Matlala, 2013:47; South African Police Service, 2015:178; South African Police Service, 2016a:67; Fortin et al. 2021:213; Rostami & Jooj, 2021;200; Leese, 2021:150), but are not enough.

There is consensus among scholars (see Lebeya, 2007:2; Streefkerk; van Esch-Bussemakers & Neerincx 2008:102; Egbert & Leese, 2021:242; Fortin et al. 2021:213; Rostami & Jooj, 2021;200; Leese, 2021:150) that when used efficiently, technologies can enhance success in crime combating operations. Despite the use of modern technologies, policing at South Africa's entry ports such as ORTIA is further challenged by crime. The activities include: the trafficking of firearms, ammunition; drugs; stolen/robbed vehicles; goods; medicines; illegal immigration; maritime-related offences; and the trafficking of human beings (South African Police Service, 2015:179). To address such problems will indeed require swift and carefully crafted policing plans.

1.5.1 SAPS responses to securitising entry ports

In response to improving policing at entry ports that include airports, the SAPS allocated R1 845 992 for 2016-2017; R1 980 004 for 2017-2018; and R2 129 088 for 2018-2019 (South African Police Service, 2016:9). Whether the funds are enough, is an issue that needs to be interrogated using data from specified financial year circles. Of importance is that the budget allocation is intent on capacitating border policing and thus casts aside any aspersions on the travesty that the SAPS are not doing enough to combat transnational crime. If anything, police management must regularly grapple with limited resources against the backdrop of towering public and political pressures, high service delivery expectations, including financial constraints (Rauch & Van der Spuy, 2006:60). If police resources are not aptly managed, such calamity could put pressures on migration management, infrastructure development, governance, security, population planning, social services, economic development, as well as national security (Mlambo, 2021:19).

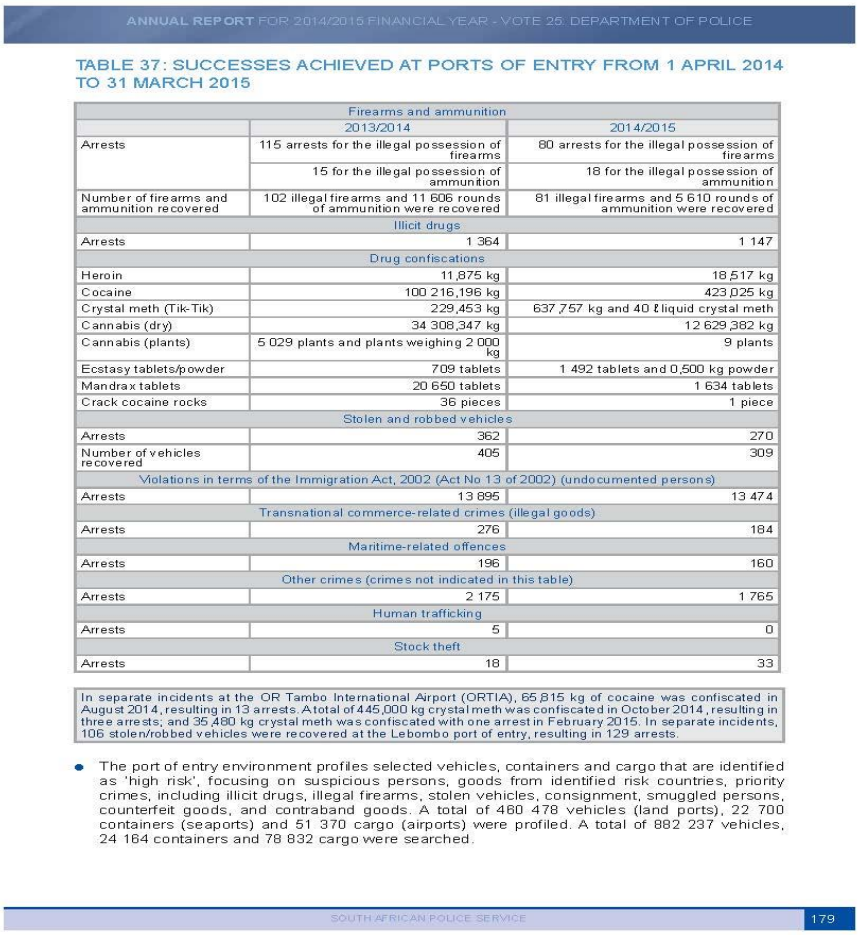
To further show the seriousness in which the SAPS view transnational crime at entry ports, the agency further classified border security as one of the priorities in its visible policing component. Key Departmental Programme 2: Visible Policing seeks to capacitate operations by deploying police officials at entry ports with specialised interventions. For the ORTIA, the interventions included support from the SAPS Air Wing, the Special Task Force (STF), the National Intervention Unit (NIU), the Public Order Policing (POP) units, as well as the K9 units (South African Police Service, 2016:68). Such an approach essentially shows how the SAPS supplicate policy enables operational capacitation at the facility.

The approach adopted by the SAPS in policing entry ports is in line with the White Paper on Transforming Public Service Delivery (1997). This paper compels state institutions to always improve on the quality of service offered (South Africa, 1997). At the ORTIA, the public refers passengers and workers who use the facility. In creating conditions of safety, the police thus must adhere to the *Batho Pele* principles which are consultation, service standards, access, courtesy, information, openness and transparency and redress (South Africa 1997:1). Openness and transparency speak to accountability and reporting, whilst consultation speaks to public involvement in informing policing plans. Embracing such values could help the police add in raising the ORTIA's profile as a user-friendly facility.

1.5.2 Police successes at entry ports

Apart from treating transit passengers and all persons with care, the primary role of the police manifest in dealing with transnational crime and all forms of crime at all entry ports, including at international airports. Tackling transnational crime at entry ports is therefore the core business of the police. The one way of excelling in police business is to arrest as many suspects and to seize illicit objects, which effort must be in line with the redress principle in *Batho Pele* (see South Africa 1977; South Africa, 1987; South Africa, 1996). The commitment of the SAPS to improve the quality of service offered is evident in Table 1 below, which shows the number of arrests and items seized at all national entry ports.

Table 1: SAPS successes at ports of entry countrywide[1]



ANNUAL REPORT FOR 2014/2015 FINANCIAL YEAR - VOTE 25: DEPARTMENT OF POLICE

TABLE 37: SUCCESSES ACHIEVED AT PORTS OF ENTRY FROM 1 APRIL 2014 TO 31 MARCH 2015

Firearms and ammunition		
	2013/2014	2014/2015
Arrests	115 arrests for the illegal possession of firearms	80 arrests for the illegal possession of firearms
	15 for the illegal possession of ammunition	18 for the illegal possession of ammunition
Number of firearms and ammunition recovered	102 illegal firearms and 11 606 rounds of ammunition were recovered	81 illegal firearms and 5 610 rounds of ammunition were recovered
Illicit drugs		
Arrests	1 364	1 147
Drug confiscations		
Heroin	11,875 kg	18,517 kg
Cocaine	100 216,196 kg	423,025 kg
Crystal meth (Tik-Tik)	229,453 kg	637,757 kg and 40 ℓ liquid crystal meth
Cannabis (dry)	34 308,347 kg	12 629,382 kg
Cannabis (plants)	5 029 plants and plants weighing 2 000 kg	9 plants
Ecstasy tablets/powder	709 tablets	1 492 tablets and 0,500 kg powder
Mandrax tablets	20 650 tablets	1 634 tablets
Crack cocaine rocks	36 pieces	1 piece
Stolen and robbed vehicles		
Arrests	362	270
Number of vehicles recovered	405	309
Violations in terms of the Immigration Act, 2002 (Act No 13 of 2002) (undocumented persons)		
Arrests	13 895	13 474
Transnational commerce-related crimes (illegal goods)		
Arrests	276	184
Maritime-related offences		
Arrests	196	160
Other crimes (crimes not indicated in this table)		
Arrests	2 175	1 765
Human trafficking		
Arrests	5	0
Stock theft		
Arrests	18	33

In separate incidents at the OR Tambo International Airport (ORTIA), 65,815 kg of cocaine was confiscated in August 2014, resulting in 13 arrests. A total of 445,000 kg crystal meth was confiscated in October 2014, resulting in three arrests; and 35,480 kg crystal meth was confiscated with one arrest in February 2015. In separate incidents, 106 stolen/robbed vehicles were recovered at the Lebombo port of entry, resulting in 129 arrests.

- The port of entry environment profiles selected vehicles, containers and cargo that are identified as 'high risk', focusing on suspicious persons, goods from identified risk countries, priority crimes, including illicit drugs, illegal firearms, stolen vehicles, consignment, smuggled persons, counterfeit goods, and contraband goods. A total of 480 478 vehicles (land ports), 22 700 containers (seaports) and 51 370 cargo (airports) were profiled. A total of 882 237 vehicles, 24 164 containers and 78 832 cargo were searched.

SOUTH AFRICAN POLICE SERVICE 179

Source: South African Police Service (2015:179)

[1] Data from Table 1 was extracted and copied as a picture from the SAPS Annual Report (2014/2015). Though it is referred to as Table 37 in the image and is titled differently, in this study it is labelled as Table 1 and titled: SAPS successes at ports of entry.

Despite the hard work, evidence of the successes in Table 1 suggests that on the other side, security at South Africa's entry ports is generally inhibited by crime. Financial constraints (Rauch & Van der Spuy, 2006:60), improper coordination of information and poor intelligence, which could eventually escalate transnational and organised crime (Moodley, 2014:42), are once again the other additional problems. Of concern is that research (see Cockayne & Pfister, 2008:25; Morselli *et al.* 2011:179; Mlambo, 2021:15) has shown that organised crime groups generate income to also fund terrorist networks and operations. Non-secure borders that allow drugs, weapons and smuggled goods, material related to weapons of mass destruction, conflict minerals, wildlife and people to be trafficked thus allow for terror funding and puts South Africa at risk (Parliamentary Monitoring Group, 2016). To deal with the problems, Bloss (2007:212) argues that intelligence-led tactics supported through new technologies, could prove priceless. This thus makes techno-securitisation a critical success factor in ensuring that the ORTIA improves business processes and keeps a good profile in the global aviation fraternity.

1.6 PROBLEM STATEMENT

The African Peer Review Mechanism (APRM) identified service delivery as one of the areas that African countries needed to deal with, to improve on the quality of governance and services rendered to the public (Mkhabela, 2007:8). This finding also includes the performance of the police. In this respect, an effective police function in the securitisation of ORTIA, supported using advanced technologies becomes not only critical in enhancing police service delivery, but is also key in improving on operational efficiency in fighting transnational crime. In the same way, an effective police function supported using technologies could never facilitate a proper understanding of interaction between policing and technologies, unless the philosophy of policing is reconfigured to align with contemporary policing, that happens in the Fourth Industrial Revolution. Implied is that the current philosophy of policing no longer suffices as a praxis in contemporary policing. Therefore, this study sought to theorise the policing, transnational crime and techno-securitisation nexus at ORTIA. The problem that thus informs the research in this study is that policing at the ORTIA is inhibited by several aspects. The problems are as follows:

- **Lack of research:** The lack of research on the use of technology in police work in all of Afrika has resulted in poor understanding on the dynamics and challenges in the policing, transnational crime and techno-securitisation nexus, which led to poor planning and poor

securitisation at ORTIA. Hübschle (2010:1) agree that SADC countries need to grow more research to enhance operational efficiency in policing.

- **Inadequate policing:** The SAPS at ORTIA are challenged by personnel shortages owing to promotions, transfers, resignations and deaths (South African Police Service, 2008:141). Generally, the SAPS are struggling with lack of resources (Mlambo, 2021:20) and are marred by skills exodus in specialised areas (Omar 2008:35). Such challenges interfered with adequacy in police work. This has essentially led to operational inefficiency and poor securitisation at the ORTIA.
- **Techno-securitisation blues:** Although the ORTIA is equipped with advanced technologies, not all securitisation actors have their databases connected to those of the police agencies. This creates gaps as the possibility of criminals evading detection and arrest is heightened. The lack of interconnectivity in different state departments was also confirmed by Matlala (2013:16), who further highlights the value of standardising procedures for the storing and processing of data, in cases where there is database connectedness. To this end, Chinsembu and Kasanda (2012:352) articulated that given the correct political and economic order, research and Higher Education Institutions could with the help of industry (police, private security, science and technology institutions) yield requisite levels of technical skills.
- **Political bureaucratism:** The removal of the SAPS Head: Border Police on the basis being junior and appointment of the DHA to lead border security (Department of Home Affairs, 2019:22), attest to the political bureaucraticism. The decision was frivolous and shows an unwarranted lack of confidence in the police. This spell a sense of political superiority that prevailed over reason not to displace skills in border and entry ports security. This point is further interrogated extensively in 2.7.3.
- **Polarised operational approaches:** The political bureaucraticism witnessed in the management and securitisation at entry ports also means that security actors at facilities such as ORTIA do overlapping work. According to Saurombe (2009:102) later confirmed by Mlambo (2021:20), overlapping functions overburdens institutions with commitments and brings about conflicting interests. Of concern is that this spell polarity in policing and securitisation operations within the entire border environment.
- **Silo approaches:** The situation wherein there is more than one securitisation actor at ORTIA has also caused a silo approach wherein state departments do not share information (Parliamentary Monitoring Group, 2016). This is also evident in the lack of connectivity links among the databases of state departments involved with securitisation at

ORTIA. This has also encouraged inter-departmental hostility and has contributed to the polarity created by the fact that securitisation actors at the facility each operate independently, despite them performing similar duties or tasks.

- **Legislative constraints:** As already cited in 1.4, the SAPS are mandated as the only organ that can perform policing and securitisation functions at borders and entry ports (see South Africa, 1995; South Africa, 1996; Parliamentary Monitoring Group, 2016). As such, any decision to cede such functions to another state organ undermines the constitutional order of the country and is unlawful. The establishment of any other securitisation actor outside of the SAPS will require an amendment to the constitution (Parliamentary Monitoring Group, 20160). This would require the highest political intervention and is an unlikely possibility at this stage. In the absence of enabling legislation, any non-police securitisation actor at ORTIA runs the risk of being terminated should court action arise, much to the wastefulness of resources, planning and any other efforts that went into creating such body. This is the same fate that befell the Scorpions, who were replaced by the Directorate for Priority Crime Investigations (DPCI) known as the Hawks, and now incorporated to the police department or SAPS (Berning & Montesh, 2012:3).
- **Disjointed strategic approaches:** Plans to integrate the management and policing in the entire South African border environment including securitisation at entry ports such as ORTIA suggest that consultations are tipped more in favor of revenue collection and tax systems, thus emphasising less on securitisation or police practice (see Parliamentary Monitoring Group, 2016; Mlambo, 2021; Panyapanya, 2021). This suggests a disjointed strategic approach, which could spiral transnational crime at the facility and diminish the current and purported economic benefits linked with ORTIA and diminish its good profile. This issue is further dealt with in 2.3 and 2.4.1.

The arrangements in the securitisation of the ORTIA are complex, confusing and do undermine police work. To elaborate, the political bureaucraticism in how the facility is managed and securitised has resulted in poor accountability in the field of operations. This has resulted in poor evaluations and poor reporting on security at the ORTIA. Such problems put the SAPS in a difficult situation since they are by law, responsible for accounting and reporting to Parliament on security at the facility. Should there be major security bridges, it will be difficult to hold any other securitisation actor accountable, since none of them are by South African law promulgated as policing or securitisation agencies.

1.6.1 Research aim and objectives

To address the problems at the ORTIA fundamentally requires research. Research can however not be conducted, not without a specific aim in mind. The aim of the research in this study is therefore to explore the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus at the ORTIA. Central to operationalising the aim in this research are therefore the following key research objectives:

- To describe the dimensions of policing at international airports, with specific contextualisation to the ORTIA.
- To theorise the policing, transnational crime and techno-securitisation nexus.
- To uncover factors that hinder the operational efficiency of the police at the ORTIA and develop a conceptual framework for police efficiency.
- To make recommendations to the management of the SAPS, on what can be done to improve the operational efficiency of the police, including their use of technologies in the fight against transnational crime at borders, borderlines and at the entry ports.

1.6.2 Research question

According to Kazdin (2021:78) a research question usually follows discussions on the problem statement, the research aim and the objectives. The question that therefore informs the research in this study is: What are the dynamics and challenges relating to the interfaces in police work, transnational crime and the use of technologies at the ORTIA? In this research, the question is dissected into the specifics outlined in the problem statement.

1.7 DEFINITION OF KEY CONCEPTS

The following are the key concepts in the study:

1.7.1 Crime prevention

Crime Prevention *consists of strategies* and measures that are put in place to crime and its potential harmful results against individuals and society, including fear of thereof, through interventions aimed at influencing the multiple causes of crime (see Clarke, 1995:91; Cozens, 2002:131; *Bowers & Johnson, 2003:276;* United Nations, 2010:9; Weisburd, 2021:280). In this study, crime prevention refers to proactive and reactive measures that use technologies to combat transnational crime to ensure the continued sustainability of ORTIA.

1.7.2 Service delivery

Service delivery is an approach that puts pressure on behaviours, systems, processes and attitudes in organisations, redirecting them in favour of customers (South Africa, 1997:12). Fox and Meyer (1995:118) defined service delivery as the provision of activities, benefits and satisfactions that are tangible goods and intangible services. In this context, public service delivery refers to client-oriented activities by state institutions aimed at meeting public needs/expectations (see Fox & Meyer, 1995:1 South Africa, 1997; Matlala, 2013:35; Bezuidenhout & Kempen, 2021:259; Tangi, Benedetti, Gastaldi, Noci & Russo, 2021:101543) and in the context of this study, citizens and travellers who use facilities such as the ORTIA for transit or as a workplace. It is important to note that the SAPS acts on behalf of the government as the main stakeholder, to provide services to the public. As such, it is incumbent upon state institutions to report and account on service delivery issues.

1.7.3 Techno-securitisation

Techno-securitisation refers to ICT used in securitisation. ICT refers to automated devices that are used to access, gather or manipulate, present or communicate data, which devices include hardware (computers and other devices); software applications; and connectivity platforms such as the Internet, local Networking Infrastructures and Video-Conferencing, to facilitate the rapid flow and exchange of information (Lloyd, 2005:3). One distinctive feature about ICT is the rapid advancement of Internet connectivity, Intranets, advances in the inherent speed of computers and innovation in software, hardware, as well as robotics (see Brynjolfsson & Hitt 2000:34; Shih 2004:719; Wen 2009:3025; Wang et al. 2021:64).

1.7.4 Transnational crime

In 1995, the United Nations Office on Drugs and Crime (UNODC) defined transnational crime as “offences whose inception, proportion and direct or indirect effects involve more than one country” (Reichel & Albanese, 2014:6). This concept is inseparable from organised crime or transnational organised crime, which also involves networked criminal activities that occur in multiple jurisdictions/countries (see Shaw & Gastro 2001:250; Klippin & Harrison 2003:8; Block 2008:74; South African Police Service 2008:5; Falode, 2021:411; Anatolii, Svitlana, Viktor, Rostyslav & Mykhailo, 2021:1). Jakobi & Kandt, 2021:197). However, transnational crime does not necessarily always involve organised crime. Any transit crime involving an individual (illegal immigration, illegal boarding of flights and use of false travel documents) is transnational crime.

In this study, transnational criminal actions refer to transit crimes at entry ports such as the ORTIA, irrespective of whether these are organised or non-networked illegal acts by individuals. This next section essentially outlines the contribution that the research done has made.

1.8 SIGNIFICANCE OF THE STUDY

The research in this study ventured into exploration to describe the dimensions which are the abstract dynamics and challenges relating to the use of technologies in police work at international airports. This is a relatively an under-researched area in the Afrikan context. To close the gap, the study theorises the policing, transnational crime and techno-securitisation nexus. In achieving this goal, the study first had to theorise the basic principles (the ontological grounding), to ground the use of technologies in police work in the context of the Fourth Industrial Revolution prodigy. The study also uncovered factors that hinder the operational efficiency of the police at the ORTIA, which also form part of the empirical contributions. Such contributions are adequate for a doctoral study, particularly since the subject studied (the use of technology in police work) is relatively under-researched in the Afrikan and South African context. Likewise, the study further provides conceptual contributions that are in the form of guidelines on how processes can be re-aligned with national regulations to support policing and techno-securitisation, to increase the operational efficiency of the police in dealing with transnational crime at the ORTIA. The research conducted in this study therefore makes theoretical, empirical and conceptual contributions in line with internationally acceptable standards for science and doctrateness. The study is not only empirical but is also philosophical and literature intensive.

1.9 DELIMITATION OF THE RESEARCH

The research conducted in this study is limited to the ORTIA as a single case study. The research used grounded theory to posit the policing, transnational crime and techno-securitisation nexus at the facility. Since the research ventured into a relatively under-researched domain within the African context, the research thus embarked on exploration research. The research in this study essentially followed a qualitative approach, which explains the use of a single overarching research question. Similarly, the research used non-probability sampling tools to select participants from the population. The sample consisted of experts (border movement of goods and services and policing practitioner expert), SAPS members working at ORTIA, as well as managers responsible for reporting on the activities at the facility. The data collected was analysed using phenomenographic and grounded theory as the

techniques of choice. Details on the research methodology and methods applied in this project are outlined in detail in Chapter 3 of the study. This next section thus outlines the structure in terms of how this research report was compiled.

1.10 RESEARCH LAYOUT

The research layout that follows begins with chapter 2 of the study. The reason for this is that by the time the readers get to this point, they will already have acquainted themselves with what this first chapter entails. Hofstee (2006:90) recommends that the section on research layout should not contain substantiations or contentions on issues but should indicate what will be explored in the research report and the order followed, in exception of the first chapter itself, which would have been covered by the time the reader reaches this point of the report. The following is therefore a depiction of how the research is structured:

CHAPTER 2: SPECIFIC ORIENTATION: Outlines the profile of the ORTIA and its value, including the research, policing, management and techno-securitisation dynamics and challenges at the facility. The chapter further discusses transnational crime at the ORTIA.

CHAPTER 3: RESEARCH METHODOLOGY AND METHODS: explains the research methodology and methods and aspects on how data in this research was collected and preserved. Furtherhereto, the chapter focuses on the ethical aspects of the research done.

CHAPTER 4: THE RATIONALE FOR THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS: applies theories to conceptualise and explicate the policing, transnational crime and techno-securitisation nexus, to provide a philosophical basis that is the ontological, epistemological and hermeneutic grounding for the nexus. In the overall, the chapter essentially outlines the rationale for the theorisation of the policing, transnational crime and techno-securitisation nexus using the ORTIA as a case study.

CHAPTER 5: TECHNO-SECURITISATION AT AIRPORTS: compares various technologies applied to securitise airports in selected countries in the developed and developing economies. Therefore, the chapter draws from best practices around the world. This chapter compares systems at the ORTIA with systems used in other countries.

CHAPTER 6: THE REGULATION OF SECURITY AT INTERNATIONAL AIRPORTS: compares the different tools used to manage and regulate securitisation in South Africa's international airports and international airports in various countries from around the world.

CHAPTER 7: ANALYSES AND DISCUSSIONS PART A: DIMENSIONS OF POLICING AT INTERNATIONAL AIRPORTS: THE O.R TAMBO INTERNATIONAL AIRPORT IN CONTEXT: this chapter gives analyses and discussions on the social, political and legal dimensions relating to the police's use of technologies at international airports. The chapter further outlines the trials and prospects for policing in the Fourth Industrial Revolution.

CHAPTER 8: ANALYSES AND DISCUSSIONS PART B: THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS: provides discussions, critical analyses and synthesis of the raw empirical data sets collected to inform the research conducted to inform this study. In the main, the chapter applied grounded theory to conceptualise the policing, transnational crime and techno-securitisation nexus. The chapter gives discourse on only the second research objective.

CHAPTER 9: ANALYSES AND DISCUSSIONS PART C: FACTORS THAT HINDER POLICING AT THE O.R TAMBO INTERNATIONAL AIRPORT: gives analyses, discussions and syntheses on the second and third research objectives. These talk to uncovering factors that hinder operational efficiency and proposing guidelines on re-aligning systems, to grow police efficiency in dealing with transnational crime at the ORTIA.

CHAPTER 10: FINDINGS, CONCLUSIONS AND RECOMMENDATIONS: reports on the findings, conclusion and gives recommendations based on the research findings. This chapter thus gives a summary of the main findings based on the research objectives and synthesises the data to give it new meaning in the form of conclusions. Likewise, the chapter also makes recommendations on what can be done to address the problems that were identified through the research and makes recommendations for further research.

1.11 CONCLUSION

The dynamics relating to the policing, transnational crime and techno-securitisation nexus at borders, borderlines and entry ports needs to be studied. This is useful in informing plans on combating transnational crime. Such a goal is achievable through growing research on securitisation technologies, dealing with the related challenges, addressing the policing bottlenecks created by the political, legal and economic dynamics, and bettering the approach in border management and securitisation. Whilst discussions in this chapter provide a general overview on issues relating to the policing and techno-securitisation of South Africa's borders

and entry ports, more specific content on policing, transnational crime and techno-securitisation issues at the ORTIA are dealt with in the ensuing chapter.

CHAPTER 2: SPECIFIC ORIENTATION

2.1 INTRODUCTION

South Africa boasts about eight international airports, with the O.R Tambo International Airport (ORTIA) being the largest and busiest. The key to safeguarding the business and economic viability of this airport is the effective securitisation thereof, which continues to be threatened by transnational crime. Until the signing into law of the Border Management Authority Act (Act 2 of 2020) the duty to securitise the ORTIA was in the ambit of the SAPS which was assigned to perform law enforcement functions at all entry ports. The Act provides for the creation of a new border management agency that will take over securitisation roles at borders, entry ports and borderlines (South Africa, 2020)

The SAPS generally provide a wide range of services that include patrol, investigations, as well as enhanced safety to all airport employees and passengers (Geldenhuys, 2016:49). However, by August 2021, the new border management agency had not been established. This meant that the SAPS had to in the interim, continue with the securitisation of entry ports. The work of the police at the ORTIA is however tainted by a myriad of issues that include lack of research on the use of technologies in police work and on the relating interfaces; lack of database inter-connectivity among securitisation actors; political bureaucratism; disjointed operational and strategic approaches; and poor dissemination of information among state agencies responsible for securitising the airport. These problems have resulted in poor understanding of the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus at the facility, which impeded effective planning and caused inadequate policing with poor service delivery that resulted in poor security at the facility.

To provide specific context to the problems, this chapter gives overviews on the profile of the ORTIA, with specific emphasis on the developments and economic viability of the facility. Further thereto, the chapter discusses transnational crime, with specific focus on security technologies used by the police and problematise issues pertaining to research, the management and policing issues at the facility. Finally, the chapter outlines the role of police (the SAPS) at the ORTIA pending the establishment of the new border police agency and further discourses on the techno-securitisation and policing dynamics, including the political bureaucratism that continues to stifle policing and securitisation.

2.2 PROFILE OF THE O.R TAMBO INTERNATIONAL AIRPORT

The ORTIA is located in Kempton Park in the City of Ekurhuleni, Gauteng. It is one of only four airports in the world that fly scheduled non-stop services in all six continents, the others being Abu-Dhabi, Doha and Dubai (FractalDesign, 2016). As the largest and busiest on the continent, the ORTIA is dubbed "Africa's gateway to the world" (Gauteng Tourism Authority, 2016). The airport boasts the world's longest runways stretching more than 4.4 km (Gauteng Tourism Authority, 2016) and has high-tech equipment with two terminals, one for domestic and one for international flights (see South African History Online, 2015a; Gauteng Tourism Authority, 2016; Wilkinson, 2021). The facility carries over 28 million passengers a year (South African History Online, 2015a) and employs more than 18 000 staff in various resident businesses (Gauteng Tourism Authority, 2016).

There is no doubt that the annual passenger volumes and employees at the ORTIA place significant pressure on police operations at the facility. To elaborate, in 2015 the SAPS had a total of 150 950 members servicing about 57 million people at a police-population ratio of 1:358 countrywide (South African Police Service, 2015:35). Of the total number of police staff, about 1 121 were stationed at the facility in 2006-2007 (South African Police Service, 2008:141). If the number of police was to be isolated from the national ratio of 1:358, and computations are done according to the annual ORTIA passenger volumes of 28 million alone, then the police-population ratio becomes 1:24 977, which suggests understaffed police and spells incapacity in combating transnational crime.

To add to the problems, Border Police at the ORTIA had lost about 158 staff members in 2008, 100 to guarding the Pan-African Parliament and 58 owing to promotions, transfers, resignations and deaths (South African Police Service, 2008:141). There is no reason to believe that the situation will or may have changed significantly moving forward to December 2021. This is because it is common that the SAPS will always lose staff due to a myriad of reasons, including the ones cited herein. Thus, Border Police will continue to be stretched for resources and despite increases in staff, units at entry ports such as ORTIA will continue to be understaffed, owing mostly to growing global travel demands.

2.2.1 The founding of the airport

The ORTIA was founded as Jan Smuts[1] International Airport in 1952 (Why joburg.com, 2013). The airport replaced Palmietfontein a former air force base, which accommodated flights from Europe in 1945 during World War II (see Gauteng Tourism Authority, 2016; Marais & Twala, 2021; Wilkinson, 2021). The name was changed to Johannesburg International Airport (JIA) in 1994 (see Gauteng Tourism Authority, 2016; Marais & Twala, 2021; Wilkinson, 2021). This facility was built to ease escalating aviation traffic, international and domestic travelling needs (see Gauteng Tourism Authority, 2016; Marais & Twala, 2021; Wilkinson, 2021). There is no doubt that the mobility at ORTIA had a role in further exposing the facility to transnational crime.

Scholars (Bloss, 2007:211; Nuth 2008:437; Weinstein, 2008:22) argue that increases in public safety endangerment came as a result of exposure to transnational crime, which is enabled by globalisation and advancements in technologies. This phenomenon has also enabled criminals to embrace new technologies to circumvent systems and to outsmart the police (Galeotti, 2005:1). Of worry is that police efficiency at the ORTIA is inhibited through using outdated technologies. Panyapanya (2021) conceded that plans to install full-body scanners at the facility have been in the pipeline since 2013. This means that criminals could pass through security checkpoints without being properly screened until full-body scanners were installed at the facility in 2016 (News24, 2017).

The lack of technological resources is however not unique to the ORTIA. Afrika has generally been marginalised in the digital landscape owing to globalisation processes that manifest in vast inequalities (Fuchs & Horak, 2008:100). The injustices have essentially resulted in the police on the continent not being able to compete with their counterparts in more affluent countries (Matlala, 2013:77). This is further worsened by the general exclusion of police from debates on science and technology. The debates are intended to aid information-sharing and the cross-pollination of ideas and best practices in the digital landscape. For police units at the ORTIA, the most common form of the divide relates to the lack of database inter-connectivity, which issues are outlined further in 2.7.2.

[4] Jan Smuts, former South African Prime Minister, British Commonwealth statesman, military leader (see Why joburg.com, 2013).

2.2.2 The renaming of the airport

Since its founding, the facility underwent additional name changes. In 2006, the JIA was renamed after former African National Congress (ANC) President, O.R Tambo (Gauteng Tourism Authority, 2016). The process was preceded by the repealing of a policy barring international airports from being named after politicians (Why joburg.com, 2013). This paved the way for the change from Jan Smuts to Johannesburg International Airport (JIA) in 1994. The policy was rescinded in 1996 (Why joburg.com, 2013) and the facility was renamed ORTIA by President Mbeki (South African History Online, 2015a). This was to affirm national unity and to honor a liberation struggle icon. Figure 2 depicts O.R Tambo.

Figure 2: Oliver Reginald Tambo

Source: Getty Images (2016)

Born in Bizana, in South Africa's Eastern Cape Province on October 25 in 1917, Oliver Reginald Tambo opened the first black law firm in the country with Nelson Mandela and went on to live in exile as President of the African National Congress, returning in 1990 to turn over party leadership to Mandela (Bio, 2016), who became South Africa's first democratically elected President. Tambo died on April 24, 1993. From a political outlook, the decision to rename the airport after him was to enable travellers to experience the use of a facility that

links transition with the name of a national hero (South African Government, 2016b). The reverence linked with the name is one of the reasons that inspire refurbishments at ORTIA, which is why the security thereof needs to be prioritised.

2.3 DEVELOPMENTS AT THE ORTIA

The ORTIA last underwent major renovations ahead of the 2010 FIFA World Cup. This was to grow the handling capacity; parking and retail space (Gauteng Tourism Authority, 2016). The renovations included installations of high-tech security technologies (News24a, 2016) and the revamping of shopping and dining spaces (Gauteng Tourism Authority, 2016). To this end, ACSA spent an additional R80 million on perimeter security upgrades (News24a, 2016). Though this study does not interrogate such expenditure, the researcher posits that the spending was justified. The facility carries many travellers and goods that need to be secured and is for many a symbol of national pride, particularly because of the name it carries. This also makes securitisation and the role of the police at the facility a politically sensitive exercise, a point briefly ventilated in 1.6 of this study.

There are additional pipeline plans to improve the ORTIA. These include transforming the precinct into an aerotropolis. To fund the project, the City of Ekurhuleni set aside an amount of R300 billion, to roll out a bus rapid transport system at the precinct by 2016; extend the Gautrain rail network to feed into the existing airport network (Business Day Live, 2016) and roll out a R2 billion optic fibre network (eNCA, 2016b). The initiative was in response to the changing global needs to leverage on existing industrial bases and to support rapid growth and redevelopment within communities. Such plans will undoubtedly further enhance the global profile of ORTIA. Once attained, the developments will however also attract more transnational crime at the facility.

The ORTIA is comparable to world standards because it is a modern, capable and major hub for air travel in the global south (see Why joburg.com, 2013; Marais & Twala, 2021; Wilkinson, 2021). The planned expansions could further change the dynamics at the facility by placing bigger demands on police and securitisation actors' resources. To deal with the problems will require policing, customs and immigration control plans to be reconfigured, since these weigh up on revenue collection. Whether the SAPS are part of the advisory in such plans is a matter for another inquiry. Of weight is that advice from the police is critical in curbing transnational and organised crime that includes all forms of illicit trafficking. Crime Prevention is thus crucial in ensuring that the ORTIA sustains its economic worth.

2.3.1 The economic viability of the airport

International airports have become key drivers of economic growth and competitiveness in major cities worldwide. For the ORTIA, the decision to ensure that the facility becomes competitive is derived from the White Paper on National Civil Aviation Policy, 2015. The paper states that airports should evolve based on their economic and financial viability (South Africa, 2015:47). To this end, competitiveness is enabled by globalisation and the use of technologies (Wen, 2009:3024). Therefore, airports are hubs that will shape business location and urban redevelopment in the twenty-first century, in the same way that highways did in the twentieth, railroads in the nineteenth and seaports reliably did in the eighteenth-century epoch (South African Cities Network, 2016:330).

The development of airports is however not only about easing movement. This is because any developments can have both adverse and positive impacts on police work (see Kirk, 2002:1; Nuth, 2008:437; Matlala, 2013:40). The adverse impacts relate to the worldwide safety of states and individuals alike, which continues to be threatened by globalisation and technology (Matlala, 2013:40). Technology has created a digital revolution which changed the world into a global village where the flow of information is easier, and communication is less costly (see Laudon & Laudon 2004:486; Kotler & Keller 2006:13; Wen 2009:3024). The developments have equally enabled criminal syndicates to communicate and execute their illicit plans (see Mafstroski & Lum 2008:488; Nissan 2008:45; Streefkerk *et al.* 2008:101; Ring, 2021:9). This has put more pressure on police to innovate and increase their efforts to fight crime by improving operational efficiency.

One of the reasons why South Africa attracts transnational crime has to do with the economic vibrancy in its airports. For example, the ORTIA generates about R4 billion per annum, 42% of which is from commercial operations (Business Day Live, 2016). In 2015, operations at the facility grew by 4.2%, generating about R4.6 billion, from R4.4 billion in 2014 (Airports Company South Africa, 2015:96). According to the Integrated Report of the Airports Company South Africa (2015), the ORTIA is one of South Africa's business air transport hubs and creates value for both the provincial economy and its stakeholders. One such stakeholder is the government which can use part of the revenue accrued from airports, to develop the country's infrastructure and to improve the lives of the citizenry.

The benefits from the economic activities at ORTIA are also evident in the increases in departing passengers from 17.4 million in 2014, to 17.8 million in 2015 (Airports Company

South Africa, 2015:96). To this end, the retail spend per passenger in the international airside duty-free mall of the facility accounts for 84% of departing passengers and grew by 20% from R390 to R466 per passenger in 2014 (Airports Company South Africa, 2014:133), whilst assets generally stabilised at R27.4 billion and capital expenditure was R826 million in 2015, down from R928 million in 2014, which is an 11% drop (Airports Company South Africa, 2015:96) and shows sound management. If not properly managed, transnational crime could also diminish the purported benefits that can accrue from plans to further develop and reposition the ORTIA, so that it remains among global leaders in aviation security and as one of the key drivers in the South African economy.

2.3.2 Purported benefits from planned developments

With plans to transform the facility into an aerotropolis, there is no doubt that the ORTIA will continue to be a world-class transit facility and a strategic economic hub (Gungubele, 2015). An Aerotropolis can be described as a city built around an airport, to link time-sensitive suppliers, manufacturers, distributors and businesses to far-flung customers, marketplaces and may extend in a radius of 30 km or more (South African Cities Network, 2016:330). For the City of Ekurhuleni, planned improvements at the ORTIA are expected to create new jobs, help in social infrastructure expansions and generally improve the living standards of people (South African Cities Network, 2016:331). However, the COVID-19 pandemic which saw South Africa going into lockdown from March 2020 and imposing travel restrictions imposed negative impacts on aviation (Malik, 2020), something that rendered the ORTIA almost redundant, except for opening up for business only for the transit of essential goods, safer to state that transnational crime at the facility may have decreased due to restrictions on human mobility from level 5 to 3 of the COVID lockdown.

Bongani Maseko who is the ACSA CEO forecasted that plans to upgrade the ORTIA could create more than 3 000 jobs, with a 10% increase in air passenger traffic, which translates into a 2% increase in job growth in the SADC (Engineering News, 2016a). Upon completion of the improvements, contributions to the provincial Gross Domestic Product (GDP) are forecast at R8.1 billion a year (Gungubele, 2015). Of relevance to the research in this study is the fear that the economic viability of the ORTIA will continue to attract more illicit activities, which could result in upsurges in transnational crime. This will undoubtedly present more challenges for the police as the upsurges would imply diminished security.

The ORTIA makes the City of Ekurhuleni well suited for an aerotropolis type of economy. To elaborate, during 2014 about 90% of the 360 thousand tons of air freight handled, passed through the facility, with over 60% of the trade flow emanating from Western Europe, 17% from the Middle East, 9% from North America and 6% from East Asia, resulting in air cargo traffic through the airport being projected to reach 550 thousand tons by the year 2025 (South African Cities Network, 2016:330). The number of imports and exports at the facility thus justify an aerotropolis. To ensure that the ORTIA remains a viable economic hub will however require integrated tactics that go beyond conventional policing, to address the social, economic, spatial and political drivers of crime (South African Cities Network, 2016:148). This will require further resource allocation and evidence-driven policy implementation that is well-aligned with the legislative framework.

Safeguarding the economic viability of the ORTIA will also require efficient techno-securitisation. Such a move will undoubtedly require information sharing and cooperation between the police and other actors in security. Sinclair and Matlala (2011:47) pointed out that the police could overcome most of their problems if they put the technologies that they have to good use. Technology essentially enables the police to successfully carry out a shared vision of fighting crime (see Pillay, 2004:599; Du Preez, 2009:57; South African Police Service, 2009:35; Ring, 2021:11). For the SAPS, access to data from other securitisation actors at ORTIA, including the inter-connectivity of technological databases could provide a more detailed picture of the dynamics and challenges at the facility. The understanding aided by cross-pollinated access to technologies is key in enhancing the quality of police service delivery and efficiency in fighting transnational crime at the facility.

2.4 TRANSNATIONAL CRIME AT THE ORTIA

There is no doubt that the ORTIA is a high-profile and world-class facility. This is what makes it a preferred site for transnational crime. The illicit activities at the ORTIA include but are not limited to the trafficking of cocaine, crystal meth, ephedrine and other illicit drugs (see Letlatsa, 2008:55; South African Police Service, 2015:179; eNCA, 2016a); the illegal trafficking of musical instruments, the contrabanding of abalone (see Letlatsa, 2008:37; News24b, 2016; Buchanan-Clarke, 2021); and the illegal trafficking of human organs (Khoza, 2009:40). In general, the trend in South Africa is that because of the economic opportunities presented, the likelihood of facilities such as the ORTIA attracting relatively higher crime rates than airports in

other African states is much higher (see Letlatsa, 2008:56; South African Cities Network, 2016:147; Buchanan-Clarke, 2021:15).

Other criminal activities at the ORTIA involve the use of the facility to traffic women, girls and boys for sexual and labour exploitation (South African Government News Agency, 2015a); the illicit trafficking of ivory, tiger skins/skeletons (see Wits Journalism, 2016); and rhino horns (News24c) destined for countries such as China, Thailand, Vietnam, Nepal, the United States of America (USA) and Tibet (Wits Journalism, 2016); the illegal trafficking of medicines (South African Government News Agency, 2015b) and precious stones (Mail Online, 2016); illegal immigration (IMCOSA, 2015); the trafficking of firearms (Minnaar, 2007:19); the utilisation of illicit or fraudulent travel documents (Department of Home Affairs, 2016); as well as the illegal boarding of flights (Eyewitness News, 2016).

In response, the police at ORTIA confiscated 65,815 kg of cocaine in August 2014 and made thirteen arrests; seized 445,000 kg and 35,480 kg of crystal meth in October 2014 and February 2015 respectively and made four arrests in both incidents (South African Police Service, 2015:143). In January 2016, the police also seized more than R3 million undeclared cash and arrested two SAPS members and one SARS employee (South African Police Service, 2016:195b). Having received an anonymous tip-off on two suspects arriving at the facility also in January 2016, the police seized drugs worth R1 533 844, 80 (South African Police Service, 2015:216). Of concern is that crime syndicates generally use such crimes to also finance terrorist operations that also pose more risks to national security (South African Police Service, 2015:222). This last claim also speaks to the Transnational Organised Crime (TOC), which point is outlined in 1.2.3 of this study.

Unlike TOC, not all transnational crime is networked or organised. For example, the illegal boarding of a flight by an individual acting alone to do illegal migration is transnational crime, though not networked. Because of its networked nature, TOC threatens global and national security, thus also the benefits that can be expected from democracies (Sanderson, 2004:49). According to Mazzitelli (2007:1073), most Afrikan states are vulnerable to TOC owing to corruption, instability, dictatorship and poverty. While South Africa does not display much instability and dictatorship, other features as expressed by Mazzitelli are prevalent. To deal with this, scholars (see Bloss, 2007:212; Brady, 2007:2; Buchanan-Clarke, 2021:196) argue that the police need to use new era technologies. Such usage highlights the value of techno-securitisation in police work.

To succeed in dealing with the scourge that is TOC will however also require a shift from traditional policing to new tactics. Thus, an important consideration in dealing with TOC is for the SAPS to always adopt Problem-Oriented Policing (POP) and be responsive to the needs of the public (Baker, 2008:68) in this context, travellers and employees at the ORTIA. Any approach to address TOC should likewise deepen accountability, crime intelligence, performance management (Rauch & Van der Spuy, 2006:58) and change the management regimes and technologies used, including police training and many other aspects of border policing (Buchanan-Clarke, 2021:196). Such a move supported by technologies will undoubtedly grow the economic viability and security at ports of entry.

2.4.1 Security technologies at the airport

As already posited, authorities at the ORTIA need to rely on advanced technologies to effectively deal with transnational crime. The demand for high-quality services at the facility cannot be divorced from effective techno-securitisation. Techno-securitisation is intended to keep abreast of or at least parallel with global standards for international airport security. To this effect, information technology has improved controls in the execution of business processes and data integrity at airports by enabling the effective segregation of duties and audit trails of data for key applications aimed at combating transnational crime (see Bloss, 2007:2; Brady, 2007:3; Airports Company South Africa, 2014:142; Buchanan-Clarke, 2021:194). Audit trails are crucial in informing evaluations on operations. In congruence, Hughes and Love (2004:1) argue that evaluations are important in enhancing the level and quality of service rendered by public institutions.

The technologies at ORTIA include the Perimeter Intrusion Detection System (PIDS), which includes physical fence lines; closed-circuit television (CCTV) cameras; intelligent-video surveillance; Command, Control and Communications (C3) centres; and inter-operable network solutions (News24, 2016a; Cheng & Zhang, 2024; Technews Publishing, 2024). The surveillance system includes 650 cameras; and the Intelligent Security Operations Centre (ISOC), which is the management platform for viewing, storing and using all camera data from the many cameras that are deployed throughout the facility, which technology is equipped with scene tracker software applied to connect multiple cameras in both the immigration and airside

areas, to provide real-time data from multiple footage images in a single and/or integrated digitised view (Securitysa.com, 2016; Cheng & Zhang, 2024; Technews Publishing, 2024). Although the list of technologies cited herein is not exhaustive, other devices at the ORTIA include biometric fingerprinting used to control access to restricted areas (Engineering News, 2016b). These technologies were deployed to ensure compliance with International Civil Aviation Organisation (ICAO) security prescripts (Engineering News, 2016) and are also applied to combat transnational crime. Without these technologies, the work of securitisation actors at the facility would be near impossible. A key question that needs to be answered is whether these hi-tech tools are optimised to produce the required results. This study however examines this question by zooming into the role of the SAPS.

2.4.2 Securitisation actors at the ORTIA

As cited in section 1.2, several actors interact with one another and are all engaged with the use of various technologies to combat transnational criminal activities at the ORTIA. According to Panyapanya (2021), airport securitisation actors perform law enforcement functions and provide a wide range of duties and responsibilities including patrols, investigations, traffic flow management, as well as controlling and responding to airport emergencies. This last-mentioned commentator further pointed out that airport securitisation actors are also responsible for safeguarding persons employed at the airport and passengers in transit, including the screening of passengers, enforcing rules and regulations on the airfield and in secured areas, as well as assisting with traffic and air control duties. All these roles spell an overlap with policing functions at the ORTIA.

One actor in the securitisation of the ORTIA is the State Security Agency (SSA). This agency has been helping the SAPS to combat crime at selected airports since 1998 (Minnaar, 2001:97). The role of the SSA is to gather and share with the police, intelligence on criminal activities at facilities such as the ORTIA (Minnaar, 2001:97), which intelligence the police can reciprocally share with INTERPOL and other security actors. To achieve its mandate, the SSA also uses a range of technologies. Some of the devices generally used in the intelligence community include biometric facial scanners, retinal scanners and voice recognition devices (Halpern & Mwesiumo, 2021:100667), satellites, audio recorders, surveillance video cameras, micro spy cameras, spy watches, deceptive phone protectors, cork wallets, clip-on cord coils, electronic tip jars, as well as spy copters or drones used to gather and process information

(Mr.Spy, 2016). This study however does not do evaluations on any of the specific technological gadgets that are listed herein.

Other securitisation actors at the ORTIA include the ACSA and DHA. The ACSA uses devices such as the Explosive Trace Detection (ETD) at checkpoints to detect gun powder and radiation material (Airports Company South Africa, 2015:72), the previously mentioned PIDS, CCTV, intelligent-video surveillance in C3 centres (News24, 2016a), as well as the Arch Metal Detector (AMD) and Hand Metal Detectors (HMD) to search passengers and hand luggage (Panyapanya, 2021). The DHA on the other hand uses technology such as the Movement Control System (MCS) and Enhanced Movement Control System (EMCS), which are linked to some of the SAPS systems (South Africa Police Service, 2015:178). Whether the linkage is optimised is essentially a subject matter for future research. Of importance is that security actors should always improve on how they use technologies.

According to Panyapanya (2021), a worrying factor about the ACSA's is that it is the only department that runs the C3 centre at the ORTIA. This commentator further states that the ACSA's C3 is equipped with state- of-the-art technology that includes CCTV, two-way radios and alarm monitors. However, some of the challenges with the C3 include the fact that monitors are focused mainly on the parking area, that there are no Standard Operating Procedures (SOP) for the centre and that key control registers within the centre are manual (Panyapanya, 2021). Such deficiencies mean that not all areas at the facility are under surveillance and this constitutes a security risk. Similarly, using manual procedures and lack of SOP's could have broad implications in terms of both accountability and reporting. The exclusive use of the C3 spells a polarised operational and silo approach to policing.

It is also Panyapanya's (2021) view that security processes led by the ACSA at the ORTIA needs to be improved significantly. This he postulates with specific reference to diplomatic immunity. Because there are no judicial officers stationed at the ORTIA to issue out search warrants, Panyapanya (2021) argues that the possibility of diplomats abusing their status of being exempt from searches and thereby enabling the illegal trafficking of any kind of goods, is heightened. This not only suggests gaps in security at the ORTIA but also spells a disjointed strategic approach, a point made in the problem statement. Of concern is that the ACSA security operates independently from police, not unless they arrest a suspect whom they must hand over to the SAPS for criminal prosecution (Panyapanya, 2021).

Another security actor at the ORTIA is the SARS. The entity uses devises such as X-ray technology to scan smuggled cargo; the Automated Number Plate Recognition system to detect stolen cars (South African Revenue Service, 2015:73); and Non-Intrusive Scanning Devises (NISD) to detect smuggled goods in bulky cargo (see South African Revenue Service, 2016). There is also private security hired to control access in restricted areas; screen passengers for dangerous goods and illegal weapons using metal detectors; escort valuable cargo to volts; and work as stand-ins when ACSA has staff shortages (Panyapanya, 2021). Then again, there is the Ekurhuleni Metropolitan Police Department (EMPD) who do traffic and by-law enforcement at outer perimeters of the facility using various technologies (Ekurhuleni Metropolitan Municipality, 2005:42), which are also not conversed herein, but do need to be researched to ascertain their effectiveness. To give further context, this next thus section discusses the ORTIA in Afrikan policing research.

2.5 THE ORTIA IN THE CONTEXT OF RESEARCH IN AFRIKA

The research conundrum at international airports is not limited to South Africa. Research on the application of modern technologies to support police work at airports in Afrika is lacking. The scarcity however excludes a 2009 study by Siror, Huanye, Dong and Jie on how the Kenyan custom services used Radio Frequency Identification (RFID) to track transit goods at Nairobi airport (Siror et al 2009:1532). Despite the study having limited the role of police to escorting goods, the police at ORTIA could derive key implementation lessons from it. Siror, Guanggun, Kaifang, Huanye and Dong (2010:190) further assessed the impact of the same technology at Nairobi airport. This study also limited the role of police to that of support as opposed to them using crime prevention tech tools.

Given the limited research on the use of technologies in police work on the Afrikan continent and in particular at the ORTIA as a case study in this project, it can be argued that such lack of scholarship is partly due to the deepening under-development of knowledge economies on the continent. Van der Spuy (2009:244) agrees that Afrika does lack development. Thus, developing research on how the police in Afrika use or interact with technologies should be considered a niche area that requires Afrikan scholars to adopt as a flagship. The flagship should focus on among other things, exploring the policing, transnational crime and techno-securitisation nexus, with reference to specific policing areas and technological programs, including studies on the management of technologies used to combat transnational crime and to improve police service delivery.

As already cited in 2.2.1, the success of technology in combating transnational crime in Afrika is largely inhibited by the digital divide. Fuchs and Horak (2008:100) argue that Afrika has been digitally marginalised due to globalisation processes that are based on inequalities that exclude many parts of the continent. The exclusions not only created unjust inequalities on the world stage, but also restrict the police from accessing the benefits as contemplated in section 1.3.3, that can arise from the use of technologies in police work. Fuchs and Horak (2008:101) further hypothesise that the issue of global inequality connects with the digital divide because the use of technologies correlates directly to wealth and knowledge creation. For South Africa, the digital divide lurks on the economic viability of entry ports such as the ORTIA and this is technological apartheid.

Another factor that needs to be further explained about the digital divide is that the police at the ORTIA- are not able to compete with their counterparts in developed countries (Matlala, 2013:77), which issue was briefly accentuated in 2.2.1. The most common form of the digital divide in this case relates to computer and Internet penetration ratios per country. The lesser the technological penetration a country has, the greater the likelihood that its police agencies will also enjoy little penetration. This is because in terms of technological penetration, each police agency can only be as good as its country's spectrum. Little technological penetration in this context is therefore indicative of the gaps that are characteristic of the digital apartheid. Table 2 shows the 2001 Computer and Internet access rates per country, which figures have arguably since not changed much.

Table 2: Computer and Internet Penetration Rates for Highest, Lowest and Largest Countries International Telecommunications Union (2001)

Country	Region	Computers per 100	Internet Users per 100	Population (000s)
United States	North America	62.50	50.15	284,797
Sweden	Europe & Central Asia	56.12	51.63	8,910
Denmark	Europe & Central Asia	54.15	42.95	5,355
Switzerland	Europe & Central Asia	53.83	30.70	7,245
Australia	East Asia & Pacific	51.58	37.14	19,387
Singapore	East Asia & Pacific	50.83	41.15	4,131
Norway	Europe & Central Asia	50.80	46.38	4,528
Korea (Rep. of)	East Asia & Pacific	48.08	52.11	46,790
Canada	North America	47.32	46.66	30,007
Netherlands	Europe & Central Asia	42.84	49.05	16,105

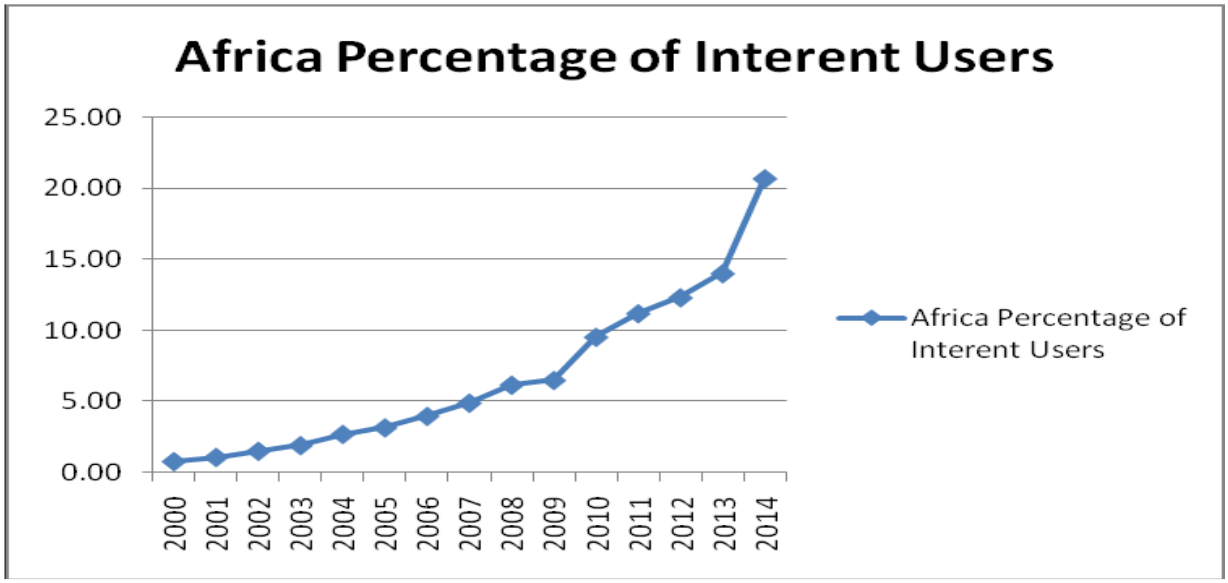
Japan	East Asia & Pacific	35.82	38.42	127,291
Mexico	Latin America & Caribbean	6.87	3.62	100,368
Brazil	Latin America & Caribbean	6.29	4.66	171,827
Russia	Europe & Central Asia	4.97	2.93	146,760
China	East Asia & Pacific	1.90	2.57	1,312,710
Indonesia	East Asia & Pacific	1.10	1.91	209,170
Nigeria	Sub-Saharan Africa	0.68	0.10	116,929
India	South Asia	0.58	0.68	1,027,015
Pakistan	South Asia	0.41	0.34	144,971
Bangladesh	South Asia	0.19	0.14	131,175
Benin	Sub-Saharan Africa	0.17	0.39	6,446
Chad	Sub-Saharan Africa	0.16	0.05	7,665
Cambodia	East Asia & Pacific	0.15	0.07	13,440
Burkina Faso	Sub-Saharan Africa	0.15	0.16	11,668
Mali	Sub-Saharan Africa	0.13	0.29	10,400
Angola	Sub-Saharan Africa	0.13	0.15	13,528
Malawi	Sub-Saharan Africa	0.13	0.19	10,386
Ethiopia	Sub-Saharan Africa	0.11	0.04	65,390
Myanmar	East Asia & Pacific	0.11	0.02	48,363
Niger	Sub-Saharan Africa	0.05	0.11	11,227

Source: Chinn and Fairlie (2006:24)

Statistics in Table 2 show that in 2001, Afrika was lacking compared to the rest of the world and that South Africa did not even feature among the top Afrikan countries in terms of computer and Internet penetration. Likewise, the table shows that Nigeria was the highest placed Afrikan country in this regard. Although this seems like good news, the Internet penetration also has its own downturns. Broadhurst (2006:2) argues that the rapid expansion of computer connectivity has allowed criminals to take advantage of online security vulnerabilities. The 419 scams by Nigerian syndicates using wireless networks to defraud individuals is an example. This scam has arguably also been problematic in all SADC airports, which calls for research as one appropriate response.

While Afrika still trails the rest of the world in terms of Internet penetration (Table 2 refers), the continent is however rapidly bridging some of the gaps. According to Nyirenda-Jere and Biru (2015:8), Internet penetration in Europe was 19.6 times greater than Afrika's in 2005. These last-named authors further pointed out that the situation with Internet penetration changed to 3.9 times by the end of 2014. Afrikan countries have experienced a steady growth in Internet penetration growth from 0.78% in 2000 to 20.71% in 2014. Figure 3 below shows growth in terms of Internet penetration within sub-Saharan Afrika.

Figure 3: Africa Percentage of Internet users



Source: Nyirenda-Jere and Biru (2015:8)

For the police in Afrika, Internet penetration and access to technologies could bring about or enable new ways of fighting transnational crime, faster ways of communicating, new ways of facilitating training and transforming just about every aspect of border policing. However, the benefits of Internet penetration are also not evenly distributed, owing to the digital divide (Nyirenda-Jere & Biru, 2015:2). Despite a slow start, Internet usage in Afrika is growing and its transformative effects are also becoming more accessible. Forward to 2021, South Africa's Internet users grew to 13, 124, 100, Tanzania 23, 142, 360, Zambia to 9, 870, 427 and Zimbabwe to 8, 400, 000 to cite a few (Miniwatts Marketing Group, 2021). For the SADC, Internet penetration and access to technologies in police practice at various entry ports, needs to be researched and to always be checked for relevance.

2.5.1 Research emerging out of the SADC

Despite the lack of research on the use of technologies and in the securitisation of airports in terms of police work in Afrika, studies from the SADC region have of late begun to emerge. The 2011 research by Sinclair and Matlala titled: The Use of Technology and Leadership in Enhancing Strategic Cooperative Policing in the SADC region, is one such study (Sinclair & Matlala, 2013). This research showed how regional police used technologies and worked together to ensure security during the 2010 soccer world cup in South Africa. Although the research did not interrogate any specific technology, the use of two-way radios, computers, CCTV and metal detectors at the tournament, attests to an element of techno-securitisation

and a commitment from various SADC countries to jointly combat crime, in particular, transnational criminal activities. This is the same reason why Sinclair and Matlala (2011:490) argued that the use of technology supports the basic principles or tenets, upon which the notion of cooperation in police work is premised. The police at the ORTIA could similarly utilise such a study to benchmark on as best practice.

It is important to also re-emphasise that research by Sinclair and Matlala (2011) did not focus on securitisation at international airports *per se*. The study implies that with the help of INTERPOL, the levels of strategic planning, regional police cooperation and technologies used, congested the space for criminals during the 2010 FIFA event. The same approach (regional cooperation and the use of technology) is required to effectively securitise the ORTIA. The levels of security attained during the tournament infer that technology allows the police to cooperate and to combat transnational crime (see Pillay, 2004:599; Du Preez, 2009:57; South African Police Service, 2009:35; Smith et al. 2021:476). To add to the existing *corpus gnaritas* (body of knowledge), the researcher thought it prudent to explore the policing, transnational crime and techno-securitisation nexus at the ORTIA, to enable better grasp of the relating dynamics and challenges.

Another study to have also emerged from the SADC region is the 2013 research by Matlala titled: The Use of the Automated Fingerprint Identification System to Improve the Quality of Service Rendered by the South African Police Service in the East Rand. This is an unpublished dissertation in fulfilment of the requirements of a master's degree. Although the study interrogated mainly how fingerprint technologies contributed to police service delivery, the study fundamentally speaks to research on the use of technology in police work and thus covers techno-securitisation and transnational crime issues (Matlala, 2013). This study can also be used by the police at the ORTIA to scale for best practice.

For the SADC region to address its research deficit on the use of technology in law enforcement, the region must ensure that policies on science and technology, development and on combating transnational and organised crime are adaptable to the local contexts of member states (Bwalya & Healy, 2010:23). This is crucial in ensuring that countries that cannot afford to connect to technology platforms are not side-lined from the benefits that can be accrued from adopting technology-driven crime-combating plans. To this effect, Table 3 below depicts the Internet penetration rates in the SADC region.

Table 3: SADC Internet Penetration in 2009

Country	Population (2009 Est.)	Internet Users Dec/2000	Internet Users Latest Data	Penetration (%Population)	User Growth (2000-2009)	% Users in Africa
Angola	12,799,293	30,000	**550,000**	4.3 %	1,733.3 %	0.8 %
Botswana	1,990,876	15,000	**100,000**	5.0 %	566.7 %	0.2 %
Malawi	15,028,757	15,000	**139,500**	0.9 %	830.0 %	0.2 %
Mozambique	21,669,278	30,000	**350,000**	1.6 %	1,066.7 %	0.5 %
Namibia	2,108,665	30,000	**113,500**	5.4 %	278.3 %	0.2 %
Tanzania	41,048,532	115,000	**520,000**	1.3 %	352.2 %	0.8 %
Zambia	11,862,740	20,000	**700,000**	5.9 %	3,400.0 %	1.1 %
Zimbabwe	11,392,629	50,000	**1,421,000**	12.5 %	2,742.0 %	2.2 %

Source: Bwalya and Healy (2010:28)

Although Table 3 shows 2009 data from only a few countries in the region, it is important to note that the SADC far exceeds the number of other users in Africa. This means that the SADC region enjoys more access to technology than the rest of the continent (column 5-7 in Table 3 refers). Once again, South Africa is not featured in Table 3 owing mainly to inequality and the marginalisation of most people from the mainstream economy (Global Education Magazine, 2017), a point that was briefly made in 1.2.3 of this study.

Despite the problems cited above, the level of growth in Internet connectivity in the SADC makes the region a strategic location in leading in technology-driven strategies aimed at combating transnational crime on the continent. For South Africa, an important question that needs to be answered is whether the ORTIA has positioned itself to fully embrace and reap the benefits that can be accrued from research on the use of technology in police work. This next section thus probes issues on policing research at the ORTIA.

2.5.2 The research conundrum at the ORTIA

The securitisation networks in the border setting have indeed created complex dynamics and challenges that have influenced police work in many ways. The inherent interfaces as cited in 1.6 however remain under-explored. To re-capture, the grey areas in the securitisation network

spread to, but are not limited to lack of research on the use of technologies in police practice, no frameworks to evaluate the effectiveness of technologies used, including the lack of research on the policing, transnational crime and techno-securitisation nexus, which is the core subject matter for the inquiry in this project.

The lack of research has resulted in limitations in understanding the policing dynamics and challenges at the ORTIA. The shortfalls also mean poor operational and strategic planning, poor securitisation and inadequate policing at the facility. These are among the issues cited in 1.6. The inadequacies imply diminished public safety and improperly managed transnational crime at the facility. Similarly, the inherent shortfalls further imply poor quality in police service delivery. This is something not in line with the *Batho Pele* principles as cited in 1.5.1 and defeats the advice of the African Peer Review Mechanism (APRM), which deems service delivery as key to good governance in South Africa, as already cited in 1.6.

A survey of the literature on the use of technologies in police work has shown that no research on the subject has been conducted in the context of the ORTIA. This scarcity is despite several scholars (Minnaar, 2001; George, 2003; Minnaar, 2004; Steinberg, 2005a; Steinberg, 2005b; Geldenhuys, 2016) having researched widely on border control and on various South African airports with specific reference to general policing, tourist's perceptions of safety, airport security and drug smuggling to cite a few. Yet, none of the research unearthed focuses on the use of technologies in police work or the interfaces in policing, transnational crime and techno-securitisation. According to Geldenhuys (2016:49), securitising an airport is like policing a multi-national community. Without a clear understanding of the relating dynamics and without the utilisation of new technologies, the police at the ORTIA could never attain the required levels of safety.

What is more disconcerting about the lack of research in police practice at the ORTIA is that it not only implies faded understanding, operational inefficiency and poor performance but also calls into question the police's moral right to hold power. The police cannot hold power when their crime prevention efforts do not offer value for money. As cited in 1.1, addressing the issues would require funding for research. For the SAPS, issues that inhibit funding are briefly outlined in 1.2.1. These are the same issues that prevent the procurement of technologies and the development of apt skills to effectively combat transnational crime (see Stovin & Davies, 2008:499; Huhta et al, 2021:4; Soares et al, 2021:1525; Wang et al. 2021:62; Smith et al. 2021:476). Key to introducing new technologies is that such initiatives should inspire

novel research projects. It is in the same context that this next part probes the management and policing issues at ORTIA.

2.6 THE MANAGEMENT AND POLICING CHALLENGES AT ORTIA

In addition to research, an integrated management and policing plan is critical if operations at the ORTIA are to be optimised. Such plan needs to focus on increasing security at the facility; enabling smoother border crossings; simplifying and harmonising processes; optimising resources; soliciting faster response times to problems; improving cooperation among stakeholders; enabling the development of long-term and joint strategic approaches to management and policing; as well as defining the limits and mechanisms for reviews (see Federal Office for Migration, 2012:6; Achermann, 2021:6; Birdi et al, 2021:3; Maluleke, Tshabalala & Tolla, 2021:1035). Reviews are vital in enhancing the quality in management, securitisation and operational viability reports.

Plans to integrate the management and policing processes at the ORTIA have however been in the pipeline since 2009. This means that processes are protracted and that it may take several years before such integration plans are operationalised. The decision for the integration came about as a directive from the 2009 State of the Nation Address (SONA) by President Jacob Zuma and a subsequent cabinet resolution taken in 2013 (Parliamentary Monitoring Group, 2016). The address highlighted in line with the National Development Plan (NDP), the need to establish an agency to deal with transnational crime at borders and entry ports (South Africa History Online, 2015b). As already cited in 2.1, by August 2021 such an agency was not formed or had not yet come into existence.

The problem with proposed plans to integrate the management and policing in the entire South African border environment including processes at the ORTIA is that the initial consultations were tipped more in favour of revenue collection and tax systems, whilst giving less emphasis to securitisation or policing (see Parliamentary Monitoring Group, 2016; Mlambo, 2021:23). Therefore, the consultative processes failed to take the constitutional role of the police into account (Parliamentary Monitoring Group, 2016). In effect, such focus signifies a fundamental shift from the 2009 SONA. This address emphasised putting real operational energy in police work to intensify the fight against transnational crime, particularly at all national borders, borderlines and ports of entry.

Another problem with plans to integrate management and policing at borders, borderlines and entry ports is that structures put in place to coordinate the actions of different state organs that include the police, immigration control, customs and excise control, have resulted in systems not talking to one another, owing to a culture of state organs withholding information from one another (see Parliamentary Monitoring Group, 2016; Maluleke et al. 2021:1038; Mlambo, 2021:22; Okunade & Ogunnubi, 2021:132). This fundamentally resulted in a silo approach to border law enforcement and protection.

According to Mr. Apleni, the former Director General for the DHA, structures tasked to control South African borders lack teeth and have also failed to address the systemic and structural challenges, which also led to a polarised approach to border management (see Apleni, 2015:23; Parliamentary Monitoring Group, 2016; Polity.org.za, 2021; Skhosana, 2019:93; Department of Home Affairs, 2021). It can therefore never be over-emphasised that border management and securitisation do need a careful approach, wherein interrogations are research-driven and address the technology and law enforcement challenges. This next section discourses on some of the structures referred to herein.

2.6.1 The Border Control Operational Coordination Committee

The Border Control Operational Coordination Committee (BCOCC) is the body tasked with the securitisation of all borders, borderlines and entry ports. South Africa's cabinet appointed the DHA as Lead Agency (LA) at Non-Commercial Ports and SARS at Commercial Ports, as part of the process to attaint effective management (see Charo, 2021:128; Mphahlele-Ntsasa, 2021:110; Taplin, 2021:14; Parliamentary Monitoring Group, 2024). The approach wherein leadership in commercial ports is separated from non-commercial one's spells disjointed operational and strategic approaches. These are the same points that are postulated in 1.6.

The DHA formally assumed the Lead Agency (LA) role to chair the BCOCC on 1 February 2015. Ninety-three staff from SARS were seconded and placed in the Border Management Agency Project Management Office (BMAPMO), which is responsible for aiding trade, travel and addressing security risks at borders, borderlines and entry ports (see Taplin, 2021:14; Government of South Africa, 2024; Parliamentary Monitoring Group, 2024). The appointment was despite DHA and SARS staff not having apt skills to oversee border security. This decision

to appoint the DHA as LA in border security which is not mandated as a police agency, essentially underscores skills displacement in borders and entry ports security in South Africa.

The problem with appointments in management positions in the BCOCC is that the approach followed is also not in line with legislation. In terms of the National Key Points Act (Act No. 102 of 1980), the ORTIA is classified as a national key point, whose securitisation and reporting thereon, is the responsibility of the SAPS (South Africa, 1980; South Africa, 1996; Dube & Nhamo, 2021), not SARS or the DHA. Up until the enactment of the Border Management Authority Act (Act 2 of 2020), the SAPS was the only agency authorised by law to lead the securitisation of National Key Points. How the authorities addressed this issue prior to the establishment of an agency under the Border Management Authority, demonstrated how far political powers are prepared to respect the rule of law. This was demonstrated in the enactment of the Border Management Authority Act (Act 2 of 2020). Of importance is that South Africa does need an agency dedicated to border, borderlines and entry port security to alleviate the SAPS is overly stretched in terms of its overall huge crime prevention mandate.

The main concern with non-compliance with the law as witnessed in the way in which the BCOCC was constituted, indeed also underscored the need for public institutions to observe the rule of law and not employ non-qualified staff for whatever reason. Using non-experts or non-qualified staff in security is tantamount to for example, tasking a civil engineer to perform a heart transplant on a patient. Thus, even if the appointed lead agencies could or may have procured apt expertise, they are not in the business of securitisation and not authorised by South African law to perform such specialised tasks.

Another problem with appointments made within the BCOCC related to decisions that seemed irrational. This argument follows some bizarre reasoning advanced to remove the SAPS Head: Border Police as BCOCC chair on the basis that such head holds a junior position (Parliamentary Monitoring Group, 2024). This reasoning raises questions as to whether the SAPS head is junior based on skills and other competencies. It was clear from the decision that the approach was frivolous and showed an unwarranted lack of confidence in the police. This spelled a sense of superiority that prevailed over reason not to unduly displace policing skills from the setting.

2.6.2 The Border Management Authority Bill

In a move to regularise policing and management in the border setting, the South African government then introduced the Border Management Authority (BMA) Bill. This was to among other things: position the BMA as a regulatory and professional body for persons working in border security (Parliamentary Monitoring Group, 2016). The introduction of this Bill also followed from the 2009 SONA and a 2013 cabinet resolution to produce enabling legislation to establish a single body to manage security at national borders and entry ports. Structures in this initiative included the Border Affairs Coordinating Committee (BACC), the BCOCC, the National Inter-Departmental Structure (NIDS) and the Inter-Agency Clearing Forum (IACF), which are all tasked to refine the Bill (Parliamentary Monitoring Group, 2016), despite not being capacitated with legislators or law makers or Parliamentarians.

The Bill highlighted among other things, the founding of a National Border and Risk Management and Targeting Center (NBRMTC) as a nerve centre in the efficient operation of the BMA (Parliamentary Monitoring Group, 2016). As cited in 2.6, the Bill has been in the pipeline since 2009. This unrelenting protraction was caused by several problems which the Parliamentary Monitoring Group (2016) that can be summarised as follows:

- The Bill implied that a basket of border law enforcement functions would be transferred from relevant state organs (such as the police) to the BMA. Of concern is that the Constitution of the Republic of South Africa (Act 108 of 1996) established the SAPS as the only state organ responsible for policing at security in the border environment and entry ports (South Africa, 1996). Therefore, the duties assigned to the police cannot be ceded to another, not without duly enabling legislation or law.

- The proposed transfer of functions from other state departments has resulted in disagreements in the National Economic Development and Labour Council (NEDLAC). The disputes related primarily to the establishment of the BMA as an independent body that does security vetting and routine searches at all entry ports.

- The Bill was open to many interpretations, failed to outline the role of police and to take the SAPS mandate into account. More details are outlined in chapter 6.

- The role of other state organs that are securitisation actors in borders and entry ports was also not outlined, which creates uncertainty. Similarly, the Bill fails to clarify which sections of the different state actors would be transferred to the BMA.

- Similarly, the Bill is taking too long to be finalised and may take longer before it can be put into operation. The protraction hinders policing and techno-securitisation at facilities such as the ORTIA and could increase the trends in transnational crime.

- Since South Africa is a signatory to some protocols, another concern with the Bill was that it failed to clarify how the movements of people would be tracked and how this will impact the SADC and African Union (AU) protocols on free movement.

- Likewise, the Bill further failed to outline what the position and role of borderline guards and immigration officers would be, should the BMA become operational.

The BMA Bill generally sought to introduce a new armed agency to police national borders, borderlines and entry ports. Despite the challenges identified herein, the Bill also failed to pronounce on whether staff to be recruited would receive military training or be armed, what the powers of its Commissioner would be, to whom will the Commissioner report and what the term of office will be (Parliamentary Monitoring Group, 2016). To add to the woes, the cabinet agreed that the BMA will include the DHA and not the SAPS (Parliamentary Monitoring Group, 2016), which decision trivialised the logic of having one police agency.

Another troubling issue with the BMA Bill was that processes were informed using studies by the Government Technical Advisory Centre (GTAC), the Davis Tax Committee Report and Socio-Economic Impact Assessment (see The Davis Tax Committee, 2013; Government Technical Advisory Centre, 2015; Parliamentary Monitoring Group, 2016). The GTAC is a National Treasury agency formed to support public finance management through professional advisory services; program and project management; and transaction support (The Davis Tax Committee, 2013). Therefore, the agency promotes public sector capacity building through forming partnerships with academic and research institutions, civil society and businesses (The Davis Tax Committee, 2013), which has nothing to do with policing and/or crime prevention at national entry ports. The agency reports to the Finance Minister and is established under the Public Service Act (South Africa, 1994).

The use of studies conducted by government agencies that are not mandated to do policing, adds little or no value to securitisation efforts in the national border settings that include entry ports such as the ORTIA. This problem is also evident from the use of the Davis Tax Committee Report to inform the Bill. The report assessed the South African tax policy framework, economic growth, employment creation and fiscal viability (The Davis Tax Committee, 2013), which is disconnected policing. Using such a report thus begs questions as to whether the strategic approach followed to inform processes relating to the establishment of the BMA are fundamentally flawed and followed a scientifically incorrect path. For any report to attain relevance and to properly inform securitisation at the ORTIA, it should involve research and narratives on the role of the police in the border setting.

2.6.3 The Border Management Authority Act

The Border Management Authority Act (Act 2 of 2020) was promulgated into law on 21 July 2020. This legislation enables the creation of an agency in line with the Constitution of the Republic of South Africa (Act 108 of 1996) and international law. An agency that will police cross-border travel, prevent the illicit movements of persons and goods, the trafficking of humans in and out of national borders, protect the national environment, seas and natural resources from expropriation, protect the country from infectious diseases from outside the borders, ensure bio-security, as well as provide oversight mechanisms for a new border policing agency (see Erasmus, 2020; Government of South Africa, 2020b; South Africa, 2020; Subban & Govender, 2020; The Presidency, 2020).

According to Subban and Govender (2020), “the Act provides for the establishment of the Border Management Authority, the appointment and employment of border officials, and the establishment of an Inter-Ministerial Consultative Committee, Border Technical Committee and advisory committees”. The Government of South Africa (2020b) captured the essence of the Act accurately and provided a summary of key pointers. According to this last-named source, the Border Management Authority Act (Act 2 of 2020) intends to:

- provide for the formation and regulation of the BMA;

- provide for the appointment, terms of office, basic conditions of service and functions of the Commissioner and Deputy Commissioners of the BMA;

- provide for the appointment, basic terms and conditions of employment of officials;
- provide for the duties, functions and powers of BMA officers;
- provide for the establishment of an Inter-Ministerial Consultative Committee, Border Technical Committee and advisory committees;
- define the delegation of powers;
- provide for the review or appeal of decisions of officers;
- provide for certain offences and penalties;
- facilitate annual reporting to Parliament;

Up until the promulgation of the Act, the securitisation of the border and entry ports such as the ORTIA continued to be the responsibility of those multiple actors that are cited in 1.2. This arrangement is most likely to continue into 2021 and yonder, depending on how quick the authorities will move towards the establishment of the BMA and do away with multiple securitisation actors within the border and entry ports environment. In the midst of the delays dating from the draft Bill itself, a fair argument to make would be that- the involvement of multidisciplinary actors in the securitisation of the border environment in South Africa has in any event, not been able to curb the cross-border trade in illicit cigarettes and the proliferation of counterfeit goods from neighboring and other countries (Subban, & Govender, 2020). Whether the creation of the BMA aided by the Act would bring stability and curb transnational crime, is something that will require future research.

An important consideration about the establishment of the agency under the BMA is whether such entity will address the issues outlined in 1.6 in the problem statement. Of interest is that the implementation of the provisions of the Border Management Authority Act (Act 2 of 2020) is likely to open new avenues for scholarly research on securitisation and techno-securitisation and entry ports, borders and borderlines in the country. This next section extrapolates the functions of the police at the ORTIA, off course pending the establishment of the BMA agency, until the SAPS does the official handing over process.

2.6.4 The establishment of the BMA

The decision to establish a border management agency was taken in 2012 by the National Intelligence Co-ordinating Committee (NICOC). In June 2013, the Cabinet resolved to the agency under the DHA. This move was intended to address the weaknesses in border management and security. The move was hailed in the public and political spaces as a pioneering move, particularly because the agency is the first of its kind on the Afrikan continent. Because this is a newly formed agency, the public and scholars will have to wait and observe on the types of technologies used and what the level of efficiency is produced.

The BMA was formally launched by President Ramaphosa on 1 April 2023. According to the Government Communication and Information System (2024), the establishment and launch of the BMA signified an integrated border management platform, with centralised command and control in the quest to support, secure borders, safe travel and trade in South Africa. Sucuring trade attests to the value of the ORTIA as a transit point, not just for the country but for the entire SADC. As such, trade will not prosper if the ORTIA lacks security.

Since the launch, border guards were deployed along the Lesotho's borders with the Free State, KwaZulu-Natal borders with Eswatini and Mozambique to the north and Lesotho in the west, Mpumalanga borders with Eswatini, as Limpopo borders with Zimbabwe. As per the 24 November 2023 report by Dr. Mike Masiapato the National Commissioner of the BMA, border guards have intercepted dagga (marijuana) at the Oshoek border post bordering Eswatini, seized firearms at Sani Pass towards the Lesotho borderline, and intercepted 27 stolen vehicles at the Lebombo and Beitbridge border posts, destined for illegal sales in Eswatini and Zimbabwe, respectively (Border Management Authority, 2023).

As at 26 February 2024, there is no evidence that the BMA has deployed guards at the ORTIA. However, the fact that the agency advertised a 12 months internship for a Digital Content Creator, shows the seriousness of the agency in terms of digitising and digitalisation (see INTERN-ADVERT-2.pdf (bma.gov.za)). The advert closed on the 29th of February 2024. What is key is that once border guards are deployed at international airports, this will alleviate the vast operational mandate of the police at ORTIA, whilst the public and scholars await to see what technological innovation the agency will bring afore.

2.7 FUNCTIONS OF THE POLICE AT THE ORTIA

The task to ensure security at borders, borderlines and entry ports as cited in 1.2 is currently in the ambit of the SAPS, assisted by the INTERPOL, SANDF and other actors (see South Africa, 1995; South Africa, 1996; INTERPOL, 2024). This arrangement is only until a new agency under the Border Management Authority Act (Act 2 of 2020) is formed to take over the roles form the SAPS and other actors. The work of the SAPS at airports consists in monitoring the Movement Control System (MCS); monitoring and registering the movement of firearms, ammunition and crime suspects; the processing of case files on undocumented immigration, as well as false travel documents (Geldenhuys, 2016:49).

There is no doubt that the role of the SAPS at airports and in the border setting in general is premised on upholding the basic rights of every person as guaranteed by the Constitution (see South Africa, 1995; South Africa, 1996; South Africa, 2020). In this context, police protection is not limited to citizens only, but all persons in the Republic. This last claim follows the logic that human rights are universal and apply to everyone, including passengers who use ORTIA as a transit point. To this effect, the police at the ORTIA are authorised to combat transnational crime independently, without interference from other state organs and other actors (South Africa, 1995), this duty is despite the new agency yet to be established under the Border Management Authority Act (Act 2 of 2020).

To fulfil their mandate, border police at the ORTIA work closely with customs, port health and immigration officials. According to Geldenhuys (2016:51), these actors hold regular meetings to harmonise operations and security at the airport. This last-named author further pointed out that the processes include regular operational meetings, weekly Joint Operations Center (JOC) meetings to discuss airport operations, monthly airport security meetings and regular incident management meetings to deal with occurrences at the airport. For ORTIA, the EMPD, Gauteng Community Safety (GCS), Ekurhuleni Emergency Service, as well as the BCOCC are part of the actors involved with processes.

The functions of the SAPS at the ORTIA and in the border setting are outlined in section 13(6) of the South African Police Service Act (Act 68 of 1995). In terms of this clause, the role of police include; controlling the illegal movement of people across all borders of the country; searching any person, premises, vehicle, vessel, aircraft or any other place within 10km or any

reasonable distance from any border post, territorial waters or airport of the Republic, as well as the seizure of items that may be lawfully confiscated (South Africa, 1995). These functions are further supplicated in section 22 of the Criminal Procedure Act (Act 51 of 1977), which allows the police to search people and places, seize articles without a warrant issued by the court and make arrests (South Africa, 1977).

In the overall, the police at the ORTIA derive their mandate from the country's constitution. This supreme law of the land refers to a single police agency being the SAPS with the mandate to prevent and investigate all crime within the borders and entry ports (South Africa, 1996). Such powers cannot without enabling legislation, be ceded to another state organ, and Border Management Authority (Act 2 of 2020) is such an enabler. On the same breadth, it is difficult to imagine how any structure intended to securitise borders and entry ports can be legitimised, unless it is placed under the Department of Police. However, this is a discussion for another study. To address the problems in the overall, plans to regularise processes in the border setting, will have to split commercial and management tasks from policing. Details on regulatory issues at borders, borderlines and entry ports environments are further outlined in chapter 6 of this study. This next section essentially outlines the role of the Justice, Crime Prevention and Security Cluster.

2.7.1 The Justice, Crime Prevention and Security Cluster

As a specialised area, policing in South Africa is generally also supported by the Justice, Crime Prevention and Security Cluster (JCPSC). This body is generally responsible for ensuring that the SAPS improve on the efficiency in fighting crime. The objectives of the JCPSC are thus essential in helping the SAPS to combat organised crime (The Presidency, 2016:14). Pre-1994, the JCPSC departments did however not function well. The departments protected an illegitimate political establishment of apartheid (The Presidency, 2016:14). Instead of being monitors of justice and protecting the citizenry, JCPSC departments brutalised people based on race (The Presidency, 2016:14). Post-1994, the cluster reconfigured its approaches and aligned with democratic principles.

Generally, the JCPSC departments are involved with various aspects of securitisation. The actors include the Department of Justice and Constitutional Development, the National Prosecuting Authority (NPA), the SARS, the SAPS, the SANDF, the DHA , as well as the BCOCC

(South African Government, 2016b). This cluster is also collectively responsible for tackling corruption, enabling access to justice and managing national borders, borderlines and entry ports (see Manyathi-Jele, 2014:13; Government of South Africa, 2020a; Government of South Africa, 2024a). Its establishment attests to government's commitment to ensure an integrated approach to security at borders, borderlines and entry ports. What is perturbing though was the move to establish a BMA agency which is neither part of the JCPSC nor the department of police.

It is indeed worrying that some of the securitisation actors cited in earlier discussions in 2.4.2, also do not form part of the JCPSC. For example, private security and ACSA are not part of the JCPSC and yet are involved with management and securitisation at the ORTIA. Likewise, the EMPD only enjoys access to the JCPSC through its connection and cooperation with the SAPS. Such approach is a deviation from the object to effectively address the dysfunctionality and polarity in policing, inherited from apartheid, which was deliberately intended to deny services to most people (Manyathi-Jele, 2014:12). Services referred to in this context relate to the equitable treatment of people, following the historical segregation of blacks (The Presidency, 2016:14). The segregation also meant that blacks suffered a technological apartheid and if they were in the employ of any of the securitisation actors, they could not use or access certain technologies.

2.7.2 The techno-securitisation and policing dynamics

From the synopsis on the technologies in the custody and control of other security actors at the ORTIA, police at borders are operating in a setting where they are not in control of, or do not have access to all technology platforms at the facility. The DHA is the one department whose databases are linked with those of the SAPS. The criminal records and fingerprint databases of the SAPS have been connected to the DHA databases since 2013, following the enactment of the Criminal Law (Forensic Procedure) Amendment Act (Act 6 of 2010), which regularises such inter-connectivity across state entities (see South Africa, 2010; Matlala, 2013:89; Burger, 2015).

Other systems that are interconnected with those of the SAPS include the Department of Transport databases (Matlala, 2013:89). Although the Department of Transport was never mentioned in earlier discussions as one of the securitisation actors at the ORTIA, the Home Affairs National Identification System and National Traffic Information System (NATIS) used by the DoT are both connected to the SAPS's Automated Fingerprint Identification System (AFIS)

databases (Matlala, 2013:89). Of significance to this study is that NATIS is used by the EMPD to detect traffic offenders (AARTO Facts, 2011). Other than traffic enforcement, the interconnectivity also enables the EMPD to detect stolen motor vehicles, as well as identify and apprehend individuals found in any vehicle investigated, individuals who are wanted in connection with serious offences that may include transnational crime.

In addition to the interconnectivity of systems, there are other underlying dynamics at ORTIA, which specifically hinder policing. The issues involve the strategic approach followed and the relationship dynamics between the police and other securitisation actors at the facility. Panyapanya (2021) persuasively summarises the challenges as follows:

- Although managers from all security actors meet before every shift to converse about the day's operations, this is not regularised by any formal document, which implies that the operational approach at the ORTIA happens on an *ad hoc* basis;

- There is no single strategic approach to securitisation processes at the facility as each department does separate operational planning, independently from the others, which predicament result in the lack of information transfer between the involved state departments. Such approach attests to a silo approach and compromises the level and quality of the policing services at a national key point;

- The fact that the SAPS is designated by law to lead securitisation at ORTIA, and that ACSA operates as landlord at the facility also creates additional constraints;

- The constraints mean that the power dynamics at ORTIA are tipped in favor of private security in that there are instances where the Civil Aviation Act (Act 13 of 2009) supersedes the South African Police Service Act (Act 68 of 1995), which creates friction between the SAPS and ACSA security staff, primarily because the police have to be searched using technological devices before accessing restricted areas unless they enter in their capacity to execute official duties such as arrests. To this end, the role of police in aviation security is relegated to that of being part of a sub-committee in the National Aviation Security Programme (NASP), which falls under the Civil Aviation Authority (CAA) jurisdiction (see South Africa, 2015).

The securitisation regime at ORTIA has created gaps that enable corruption to thrive. According to Panyapanya (2021), situations wherein the police must be searched before accessing restricted areas, may have already led to some SAPS staff using false pretense to gain access. This usually leads to corrupt acts going undetected and compromises security. The way in which securitisation is handled at ORTIA has created a hostile setting in which the police are undermined by other actors. This also talks to the political bureaucratism point that has already been accentuated in 1.6. According to Klaaren and Ramji (2001:39), bureaucratism creates inefficiency, especially if the innate processes produce illegalities in dealing with border securitisation and transnational criminal activities.

2.7.3 Political bureaucratism at the airport

Policing as a social order happens within a highly dogmatic setting. This explains the many laws and policies put in place. The many different mechanisms that regulate police work essentially attest to bureaucratism in the policing environment (Gastrow, 2000:245). Bureaucracy alone however does not imply anything negative. In fact, government departments could never function unless they are strictly regulated. Bureaucracy therefore only becomes problematic if there is political meddling and police service delivery is compromised. In police agencies, bureaucracy also becomes problematic if it defeats accountability, reporting and efficiency in dealing with crime.

For the SAPS, the way in which the border setting in general and specifically how security is managed is problematic. One such problem as already cited in 2.6.1 is the 2015 appointment of the DHA as LA in border management (Parliamentary Monitoring Group, 2024). To recollect, the decision followed a 2008 recommendation to Parliament's Safety and Security Portfolio Committee to replace the SAPS's Head: Border Police as chair of the BCOCC, with the Deputy Director General from the DHA (Government of South Africa, 2024). The only logical explanation to ascribe to such a decision is that the SAPS Head: Border Police, who is a General and a career police official was perceived as politically inferior or too junior to lead a body tasked with border, borderlines and entry ports security at national level. This proposal thus ignored the fact that the Deputy Director General from the DHA was not a security expert.

To deal with the problems in the management and securitisation of South African borders and entry ports such as ORTIA, will require strong political will. Hansohm, Breytenbach, Hartzenberg and McCarthy (2005:172) argue that less commitment from political authorities always hinders efficiencies in public service institutions. If the police are to succeed in effectively managing transnational crime at borders, borderlines and entry ports, then police practice will without a doubt need to be reinforced by political will and scientific research to unpack the relating dynamics, notably research on the use of technologies in police work and on the management and securitisation of airports, including research on the depoliticisation of police agencies, as well as research on the policing, transnational crime and techno-securitisation nexus.

Securitisation at ORTIA should indeed not be politicised based on the name that the facility carries but should be objective enough to follow a research-driven approach. As already implied in 2.5, research on policing in Afrika is not comprehensive enough. To recollect, the deficiencies are typified by among other things, the lack of frameworks to assess the effectiveness of technologies used in police practice (Matlala, 2013:152), caused by bottlenecks in the political and economic spheres (Zeleza, 2002:21), including the global digital divide (Fuchs & Horak, 2008:101). For a high profile and strategic economic facility such as ORTIA, the shortfalls are also evident in the lack of proper guidelines on how management and securitisation processes can be re-aligned with the existing national legislative and policy framework, as already postulated in 1.6. These shortfalls essentially makes the way in which the SAPS operate and how they manage their use of technologies at international airports, to be not well-integrated with plans to combat transnational and organised crime, not only at an entry port such as the ORTIA, but in the entire border setting, which fundamentally raises national security concerns.

2.8 CONCLUSION

The securitisation arrangements at the ORTIA are highly complex and do need to be studied. Such studies are vital in enabling a broader understanding of the dynamics and challenges that hinder policing in South African borders and entry ports. Studying the policing, transnational crime and techno-securitisation nexus at the ORTIA could unearth the challenges that create the bottlenecks that inhibit the harmonisation of management and policing at the facility. To address the issues, such processes will however require enabling legislation to legitimise a single body to securitise borders, borderlines and entry ports. The difficulty with such a body is the legalities

pertaining to the fact that duties to securitise the entire border setting are entrusted to the SAPS and cannot be ceded to other state organs. It is thus unimaginable that a body established to securitise South Africa's borders and entry ports could be legitimised unless placed under the Department of Police. Such issues do need to be thoroughly interrogated through research. The next chapter outlines the research methodology, methods used and ethical considerations in this study.

CHAPTER 3: RESEARCH METHODOLOGY AND METHODS

3.1 INTRODUCTION

Research follows the logic that the questions raised should be interrogated and answered by operationalising the research aims and objectives. Remler and Van Ryzin (2021:2) argue that research cannot be done unless there are clear aims and objectives that give direction in terms of how the research will be conducted thus confirming that the purpose of the aim and objectives is to answer the research question. The question raised in this study as cited in 1.6.2 is: What are the dynamics and challenges relating to the interfaces in police work, transnational crime and the use of technologies at ORTIA? This question is the pivot of the research done and it hinged on the aim and objectives of the study.

The aim of the research in this study is to explore the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus at the ORTIA, whilst the three research objectives are: to describe the dimensions which are the abstract dynamics and challenges relating to the use of technologies in police work at international airports; to theorise the policing, transnational crime and techno-securitisation nexus; to uncover the factors that hinder the operational efficiency of the police at the ORTIA; as well as to propose guidelines on how to re-align systems, to support policing and techno-securitisation, to grow operational efficiency in police work and to grow capacity in dealing with transnational crime at the borders, borderlines and entry ports such as airports.

This chapter essentially outlines the research methodology and methods used to explore and conceptualise the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus at the ORTIA. Research methodology refers to the philosophical underpinnings/principles which the research espouses, whilst research methods refers to the physical techniques applied to operationalise the research (see Bombala, 2021; Diaz-Bone, 2021; Dictionary.com, LLC, 2021; Kumatongo & Muzata, 2021; Polkinghorne & Given, 2021; Ronkainen & Wiltshire, 2021; Schlagwein, 2021).

In explaining the research methodology and methods, this chapter discusses the paradigmatic and theoretical assumptions in the study, the approach and design, the theoretical basis, population and sampling, methods of data collection and analyses, issues on how the integrity of the data was preserved, including the ethical issues taken into consideration to protect the research participants from harm. Also, the chapter discusses measures put in place to ensure

data integrity and quality. As a point of departure, this next section discusses the research methodology espoused in the study.

3.2 RESEARCH METHODOLOGY

Methodology derives from the Latin word *methodologia* and the French word *methodologie.* It is a combination of two words, *method* and *ology.* Method comes from the Greek word *methodus* which means a way of scientific inquiry and *ology* refers to a branch of knowledge (Vocabulary.com, Inc, 2021). To this end, Dictionary.com, LLC (2021) defines methodology as a philosophy or a set of principles that govern a discipline. Research methodology thus refers to a set of rules that govern the application of methods or techniques in a discipline. In this study, the discipline in question is Social Science. Since policing is a social order, this study espoused the Social Science methodologies. Though the study is Police Science, the discipline forms part of broader Social Sciences.

The philosophical underpinnings in Social Science research methodology follow in the main two paradigms. These are the positivist and the anti-positivist schools of thought. The positivist paradigm supposes itself on explanation and prediction. This paradigm uses hypothetico-deductions as the mode of making inferences to do theory verifications in research (see Kumatongo & Muzata, 2021; Polkinghorne & Given, 2021; Rebetino, Kohtamäki & Federica, 2021). To align with the core principles, positivist researchers collect empirical data using numerical or statistical, laboratory and field experiments, tests and many other approaches and draw from large samples to make generalisations or explain causal or correlational relations between specified variables (see Rebetino et al. 2021; Ronkainen & Wiltshire, 2021; Polkinghorne & Given, 2021).

Having explained the rules of the game in positivism, the anti-positivist school of thought on the other hand follow a theoretical stance that social reality is multiple or relative and should be interrogated by drawing from the perceptions, experiences and beliefs of those involved directly with phenomena being studied (see Bombala, 2021; Diaz-Bone, 2021; Schlagwein, 2021). In the context of this study, the phenomenon being studied is the interfaces between policing, transnational crime and securitisation technologies used at the ORTIA. Also known as interpretivism, naturalism or negativism, anti-positivism is used for generating theories and hypotheses that can be tested using positivist methods. Anti-positivism is generally used for research in the natural sciences, and it draws from relatively smaller samples to contextualise to a specific case (Blaikie, 2018:635).

In contrast to the detractors of anti-positivism who argue that the relating methods do not constitute proper science, are inferior to positivism and are an opposition to positivism (Diaz-Bone, 2021), anti-positivism essentially complements positivism. This postulation is against the backdrop of the posit made herein that anti-positivism is used to generate theories and hypotheses that can be tested using positivist approaches. The ill-conceived arguments that relate to positivism vs. anti-positivism are thus narrow discipline-specific politics that are unfounded. The fundamental differences between the two paradigms is that positivism uses deductions and objectivity whilst anti-positivism uses inductions and subjectivity as the basic logic (see Bombala, 2021; Diaz-Bone, 2021; Kumatongo & Muzata, 2021; Polkinghorne & Given, 2021; Rebetino et al. 2021; Schlagwein, 2021). This study follows the anti-positivist rules whose approach and design is discussed next.

3.2.1 Research approach and design

In terms of the underpinning approach in the research, this study espoused qualitative research. Qualitative research is a naturalistic inquiry that seeks to unearth in-depth knowledge on social phenomena in natural settings, to enable an understanding of why things happen the way they do, by drawing from the experiences and meanings attached by humans to the events around them (see Elliot & Timulak, 2021; Frost, 2021; McGannon, Smith, Kendellen & Gonsalves, 2021). In this study, the research drew from the experiences of those involved with policing transnational crime at the ORTIA, people who use various technologies to fulfil this task. The process wherein inquiry draws from people's lived experiences thus affirm qualitative research as an anti-positivist approach.

In addition to qualitative research, this study also espoused exploratory research as an approach. Exploratory research is used to interrogate a problem in an area in which there is relatively little, or no research done (see Casula, Rangarajan & Shields, 2021; Jardim et al. 2021; Szollosi & Donkin, 2021). In this study, the under-researched area is the use of technology in police work in Afrika. Essentially, exploratory research was used to grow the pool of empirical, conceptual, and theoretical knowledge. Though inconclusive in nature, exploratory research creates better-researched operational definitions and lays the foundation to grow the empirical base in less researched areas. This kind of research can use either one or both positivism and anti-positivism. In this study, exploratory research is approached using anti-positivist lenses and the theories, concepts and hypotheses developed can be further

tested using positivist tactics to confirm the novel ideas. The value, type, and novelty of the contributions in this study is delineated in 1.8.

To complement the research approach, this study espoused two research designs. These are the case study and grounded theory research designs. The case in question relates to the dynamics and challenges at the ORTIA, whilst the theory part refers to the conceptualisation of the policing, transnational crime, and techno-securitisation nexus. In this context, research designs refer to blueprints for data collection and analysis (Kazdin, 2021). They are investigative strategies for the research and are intended to address the research problem (see Silverman, 2020; Abadie, 2021; Kazdin, 2021). To this end, a case study is defined as an in-depth study of a research problem with focus on a specific case, whilst grounded theory refers to methods applied to generate theory using data collected and analysed systematically to uncover social dynamics/issues (see Beerbaum, 2021; Liu & Tseng, 2021; Shim, Johnson, Bradt & Gasson, 2021; Thomas, 2021).

Research generally requires that the designs used should also align with the selected approach and paradigm. To this end, Igwe et al. (2021:1635) have demonstrated the use of case study and grounded theory research designs in qualitative research. This attests to the fact that both the case study and grounded theory designs align to the anti-positivist paradigm, which underpins the qualitative research approach selected. It is however not the intention in this study to claim that case studies and grounded theory research designs align only to anti-positivism. This is because cases can be studied in the positivist approach and theories can also be generated and/or tested using positivism. Such concession is fundamental in grounding research in its proper paradigmatic assumptions.

3.2.2 The paradigmatic assumptions

Perhaps before outlining the paradigmatic assumptions in this study, it is important to explain to readers what a paradigm is. According to Tang, Mehra, Du, and Zhao (2021:253), a paradigm is a worldview that defines the perimeters for an entire constellation of belief patterns, values and rules that regulate the type of inquiry in a discipline. Thus, a paradigm provides the lenses through which an inquiry is done, how the world operates, how knowledge is gained, how sense is made of the world, what the inherent biases are, what the language of the research should be and what methodologies apply (see Frazier & Gonzales, 2021; Panchal, 2021; Tang et al. 2021).

Essentially, a paradigm has six types of assumptions. These are the ontological, epistemological, axiological, hermeneutical, rhetorical, and methodological assumptions. Ontological assumptions consist in the values or principles that regulate inquiry; epistemological assumptions talk to the sources of knowledge and how knowledge is obtained; axiological assumptions are a disclaimer that talks to researcher biases; hermeneutical assumptions refer to ways of reasoning or making sense of the world; rhetorical assumptions talk to the language used in research; whilst methodological assumptions define the appropriate methods to be used in research (see Braun & Clarke, 2021; Frazier & Gonzales, 2021; Guignon, 2021; Mitchell & Demir, 2021; Polkinghorne, 2021; Reddekop & Trownsell, 2021; Sawyer & Brady, 2021; Tang et al. 2021). The purpose of a paradigm is therefore to ensure consistency in research. This means that a paradigm pairs approaches, designs and the research methods used to the research questions and findings (see Frazier & Gonzales, 2021; Panchal, 2021; Tang et al. 2021).

The ontological and epistemological grounding for the anti-positivist paradigm are dealt with in section 3.2, which states that the paradigm is premised on assumptions that the world consists of multiple realities (ontology) and that aligned research draws from beliefs, experiences and perceptions of persons involved with the phenomenon being studied (epistemology). Likewise, the hermeneutical assumptions are highlighted in section 3.2. The hermeneutical assumptions in this study are premised on pan *Afrikanism*, which subjective assumptions are accentuated in section 8.3.1. To this end, the anti-positivist paradigm uses subjectivity and inductive inferences to make sense. On the same breadth, the methodological assumptions are thus dealt with in section 3.3 of this chapter.

As for the axiological assumptions in this study, these are discussed in section 3.5.2. This is because researcher biases talk to honest reporting in research, which is an integral part of research ethics. In qualitative research, axiological assumptions also talk to how researchers subjectively and inductively select the methods for the inquiry, which issues are dealt with in 3.3. On the same breadth, the rhetorical assumptions are visible throughout the research. The rich, in-depth descriptions and interpretive text on the dimensions of policing at international airports in Chapter 7 are but one example of the rhetorical assumptions in this study, which fulfils the first research objective in this study.

To recap, the first research objective talks to describing the dimensions which are abstract dynamics and challenges relating to the use of technologies in police work at international airports, whilst the other descriptive and interpretive objectives talk to theorising the policing, transnational crime and techno-securitisation nexus; uncovering factors that hinder the operational efficiency of the police and; proposing guidelines on how to re-align systems, to support policing and techno-securitisation. Assumptions that are premised on a descriptive and interpretive approach are also confirmed in section 3.2.1. These assumptions align with anti-positivism and therefore with the qualitative approach in this study. The alignment attests to the aptness of the research approaches and designs in this study. This next section outlines the issues relating to the theoretical basis in this research.

3.2.3 Theoretical basis for the study

Having outlined what a paradigm entails, the purpose thereof and what the different types of assumptions are, discussions in this section essentially defines the paradigmatic assumptions in this study. Paradigmatic assumptions consist of the basic theories or norms used to give direction to, or to premise a discipline in terms of how fundamental categories are assigned (see Frazier & Gonzales, 2021; Panchal, 2021; Tang et al. 2021). Assumptions thus define the philosophical orientation in research. The orientation generally has implications on decisions made in terms of how the research is conducted, in terms of what the research question is, what the aims and objectives are, what the approach and design are, and what the sampling, data collection and analysis modes are.

Aligning research to the paradigmatic assumptions goes further than the techniques used. Prosek and Gibson (2021:168) argue that the philosophical orientation in research also guides the nature of reality perceived, the sources from whence knowledge is derived, the rationale for the choice of research methodology and techniques. These last-named authors further posit that qualitative researchers use paradigmatic assumptions to check if the research approach and designs selected are appropriate for the question posed in the research and whether salient text/literature used in research are appropriate. Salient text talks to quoting text written by leading authors in the specific field being researched.

In this study, the salient text is visible in citations on the works of authors that lead in the use of technology in police work. Colton (1979), Brüschweiler et al. (2003), Adam (2005), Balkin (2008), Chan et al. (2009), Brayne et al. (2021), as well as Anderson, Bates and Schaefer (2023) to cite a few, are some of the seminal authors referenced in this study. Other salient

texts used talks to the policing of borders and transnational crime. However, the authors are not cited in this section. This was to demonstrate that the use of technology in police work is an under-researched area in Afrika, a point cited in 1.6. Most leading authors in the field including the ones cited herein wrote in foreign contexts, in the Americas, EU and Asia.

3.2.4 Constructivist phenomenology

Having touched on the issue of leading authors, this study now explains the theoretical foundations for the paradigmatic assumptions espoused. For brevity, the theoretical premise in this study follows social constructivism and descriptive phenomenology. Constructivism assumes that reality derives from human intellect and is gained through interfaces in and with the real world, whilst phenomenology is a philosophy that relies on perceptions, thoughts, beliefs, and human experiences to define reality (see Fernandez & Zahavi, 2021; Käufer & Chemero, 2021; Stepchenkove & Belyaeva, 2021; Wickberg, 2021). Thus, this study combines the two theories to form constructivist phenomenology.

It is not far-fetched to posit that phenomenology is part of constructivism**.** The origins of phenomenology can be traced to the influences of the Vancouver school of thought. This convention is premised on descriptive phenomenology, the interpretive hermeneutic phenomenology, the constructivism of Husserl, as well as the Heideggerian interpretive descriptive phenomenology (see Freitas, Gonçalves, Morais & Pasechnik, 2021; Stepchenkove & Belyaeva, 2021; Wickberg, 2021; Płotka, 2021). The Vancouver way of Husserl's phenomenology involves silence, reflection, identification, selection, interpretation, construction, and verification to derive meaning from phenomena (see Fernandez & Zahavi, 2021; Käufer & Chemero, 2021; Płotka, 2021). By inference, the construction part thus attests to the linkage between phenomenology and constructivism.

To draw the attention of readers to the appropriateness of the theoretical basis in this study, reference is now made to additional assumptions in constructivist phenomenology. Køster Fernandez (2021:2) argue that phenomenology is a theory that follows subjectivity as a logic and is used by Social Science scholars in qualitative research to describe phenomena by drawing from the experiences of humans involved with the subject matter being studied. On the same breadth, Maxwell (2021:111) persuasively contends that constructivism as a qualitative philosophical paradigm, assumes that knowledge is constructed by individuals who do so by drawing from their lived experiences. Given the assumptions that are based on descriptions, interpretivism and drawing from lived experiences, it is logical to resolve that

constructivist phenomenology is premised on the anti-positivist school of thought and is thus an apt theory for qualitative research methods.

3.3 RESEARCH METHODS

Developing research methods is an integral part of the research designs, which aspect talks to the investigative mode or inquiry strategies used. To this effect, research methods or the inquiry strategies dictate what kind of data will be collected, how the collection will be done, including what kind of analytical techniques will be applied and how will the techniques be applied (see Fellows & Liu, 2021; Frost, 2021; Lamont, 2021; Remler & Van Ryzin, 2021). In pragmatic terms, researchers must make decisions depending on the type of data sets needed to give adequate responses to the research question posed.

To elaborate further on inquiry strategies, when a researcher wants to measure something or test hypotheses, quantitative methods will be apt; and when the aim is to explore ideas, experiences, and meanings, then qualitative methods will be appropriate (see Blersch, Franchuk, Lucas, Nord, Varsanyi & Bonnell, 2021; Rehman, 2021; Rost, 2021). This last assertion is the fundamental difference between the positivist and anti-positivist schools of thought. The combination of the two is known as mixed methods.

In contrast to methodology, research methods refer to the techniques used in the physical execution of the research process (see Bombala, 2021; Diaz-Bone, 2021; Kumatongo & Muzata, 2021; Polkinghorne & Given, 2021; Ronkainen & Wiltshire, 2021; Schlagwein, 2021). To execute properly in the research done in this study, the selected research methods were aligned to the anti-positivist and qualitative methodological assumptions that are cited in section 3.2.2. In qualitative inquiry, assumptions are made by the researcher, in relation to the inductive route followed in the identification of the techniques to be used in choosing the research participants, and for collecting and analysing data (see Bombala, 2021; Diaz-Bone, 2021; Elliot & Timulak, 2021; Frost, 2021; Kumatongo & Muzata, 2021; McGannon et al. 2021; Polkinghorne & Given, 2021; Ronkainen & Wiltshire, 2021; Schlagwein, 2021). Therefore, assumptions in qualitative research are premised on the researcher's own subjective experiences in collating and analysing data.

Processes wherein researchers apply inductions to select the techniques to be used is far from bias but serves to satisfy the philosophical premise in anti-positivism. This is because in the language of research, subjectivity which in everyday language is often interpreted in a

pessimist fashion and understood to mean bias, refers to a logic. Thus, subjectivity as a logic uses inductive inferences to make sense of the world. To this end, the inductive processes followed, and the techniques applied in this research relate to the researcher subjectively targeting a predefined population for the research; selecting the sampling procedures that the researcher deems suitable to identify research participants; and selecting the data collection and analyses techniques that the researcher deems appropriate. In this context, bias refers to reliance on the researcher's intuition to select research participants. Implied in such exercise is the lack of randomnised ways to give other persons an equal chance of being selected, which ways are used in the positivist paradigm. The techniques applied in this study are thus outlined in the ensuing sections.

3.3.1 Population and sampling

In research, population refers to a subset of people who share common characteristics that are relevant to the subject of inquiry (see Mottron, 2021; Naseri, 2021; Taksler et al. 2021). Equally, sampling refers to the process and techniques used to select the research participants from the subset of a people called the research population (see Mthuli & Singh, 2021; Mottron, 2021; Naseri, 2021; Taksler et al. 2021). Thus, the purpose of sampling is to enable researchers to select specific individuals who are to inform a study. The selection that is from a pre-defined group or subset of the larger population group is done to collect data from the selected individuals, to draw conclusions in the research.

In this research, the population refers to all actors involved with the securitisation of borders, borderlines and entry ports as conceptualised in 1.2. However, due to the case study design selected as cited in 3.2.1, the population had to be re-defined to include persons who police transnational crime. These are the people who use various technologies to fulfil the task at the ORTIA. Despite the re-definition, the population had to be further re-defined to only include SAPS personnel involved with policing at ORTIA.

The research population also required the inclusion of experts in police work and the cross-border movement of persons, goods, and services. Experts were included because they have in-depth knowledge of *modus operandi* and actors in transnational crime. The re-definition was justified by the fact that at the time of the inquiry, securitisation at the ORTIA was the responsibility of the SAPS, pending the establishment of an envisioned border police agency under the BMA. By December 2021 the agency had not materialised, until the 14 July 2022, when the Minister of Home Affairs officiated over a deployment ceremony to welcome about

200 border guards at the Beitbridge border post in Limpopo, which neighbors the Zimbabwe border (Department of Home Affairs, 2022).

Despite the event of the 14 of July 2022, the BMA still has a momentous task to fulfil. This is considering the vast South African border setting which includes land, sea and airports. The delay in fully instituting a border police agency is worrisome. Gwardyński and Zboina (2021:413) reminds us that border policing is key to ensuring the territorial independence and integrity needed to guarantee a citizenry's rights and freedoms. For the ORTIA, the public can only hope that the DHA will expedite the recruitment of the multi-disciplinary skills required to ensure efficiency in securitising the facility. This next section identifies the selected sampling procedures and how the tactics were applied.

3.3.2 Sampling procedures and the application

In selecting the research participants from the population, this study used purposive and quota sampling techniques. Purposive sampling is a non-probability technique in which research participants are selected based on the researcher's knowledge and judgement, whilst quota sampling is also a non-probability technique used to divide the population into mutually exclusive groups to ascertain which proportion of the group is to be part of the sample (see Robinson, 2014; Althumiri, Basyouni, BinDhim & Alqahtani, 2021; Andrade, 2021; Ktistakis, Pavlovic & Fontaras, 2021; Naseri, 2021; Susanti, 2021). The purposive sample in this study consisted of 2 experts (1 in the policing of borders and 1 in contrabanding and cross-border movements of goods and persons, both are specialists in transnational crime), as well as 3 SAPS managers at the ORTIA. Similarly, the quota sample consisted of 2 groups, each with 6 SAPS personnel who do policing at the ORTIA.

In total, the purposive sample consisted of 6 participants, whilst the quota sample consisted of 12 participants. Thus, 18 persons formed the sample. The reason for such a small sample is that the research is intended to contextualise to a specific case being the ORTIA, as opposed to generalising to a larger population. As already cited in section 3.2, Blaikie (2018:635) confirms that in contrast to quantitative research, qualitative research uses smaller samples to contextualise to a specific case. This last assertion attest to the suitability of purposive and quota sampling in the anti-positivist paradigm and to their methodological alignment.

An important consideration about the application of the sampling procedures is that all research participants consented to be included in the sample. The consent manifested in the signing of the consent form as per Appendix D. In applying the sampling techniques, the researcher considered that the 2 experts that are in policing and in cross-border movements, both with knowledge on transnational crime, were highly knowledgeable. This was the reason why these participants were approached to inform the research. As for the 3 SAPS managers at the ORTIA, these participants were selected on the basis that they lead teams or reliefs that use technologies to combat transnational crime at the facility. Naturally, managers would have reports from their teams, which reports would carry rich and in-depth information on police operations at the facility. The experts and managers were purposively chosen for the reasons cited herein.

As for the SAPS personnel that formed part of the 2 focus groups in this study, these participants were selected because they are front line operatives. These are workers with first-hand information on the modalities relating to the policing of transnational crime at the ORTIA, workers who interface with technologies every time they are at work. A study by Yang et al. (2021:1) demonstrated the value of first-hand experience in research. This last-mentioned study postulates that first-hand experiences enable an understanding of practice, the inherent challenges in the field of operations, give proper context to the problems and enable researchers to understand the extent of the problem. Selecting the participants in the focus groups was thus key in enabling this research to have a proper diagnosis of the problems, to adequately deal with the identified research problem(s).

3.3.3 Non-probability sampling

Having outlined that both purposive and quota are non-probability sampling techniques, this section of the study delves into the logic that underpins non-probability sampling. The purpose is to ground the selected sampling techniques in the paradigmatic assumptions in this study. This is done to show evidence of alignment between the sampling techniques applied in this study and the paradigm that underpin the study. As already cited in 3.2.2, the purpose of a paradigm is to align the research approaches and designs to the methods applied (see Frazier & Gonzales, 2021; Panchal, 2021; Tang et al. 2021). The purported alignment thus talks to the suitability of the sampling methods in this study.

Non-probability sampling is a technique or process in which research participants are chosen based on the researcher's subjective or arbitrary ruling (see Lyon, 2015; Ndenje-Sichalwe &

Elia, 2021; Pace, 2021). In non-probability sampling, the likelihood of a person being selected in the sample is unknown. This method differs from random selection processes that are aligned to the positivist paradigm that uses quantitative approaches. In quantitative approaches there is certainty in that selections are based on a pre-designed sampling frame, which for example, guarantees selection of every tenth or hundredth person, to ensure/dictate consistent rules of engagement in the selection of the research participant(s) (see Lyon, 2015; Ndenje-Sichalwe & Elia, 2021; Pace, 2021).

A sampling frame is a set of pre-defined rules that prescribe how research participants are to be selected, which rules give all members of the research population an equal chance of being selected in the sample (see West, 2016; Francis, 2021; Han et al. 2021; Hyman, Sartore & Young, 2021; Kazdin, 2021; Switchenko et al. 2021; Miller et al. 2021). The technique wherein there is certainty about the selection of the research participants based on a pre-designed sampling frame is referred to as probability sampling (see Maxwell, 2021; Pace, 2021; Teshome & Demissie, 2021). In comparison, non-probability sampling is less stringent as it depends on the researcher's intuition. Literature (Lyon, 2015; Fadhilah, Zebua & Prayoga, 2021; Lyon, 2015; Tyrer & Heyman, 2016; Ndenje-Sichalwe & Elia, 2021; Malik, Munir, Ghani & Ahmad, 2021; Pace, 2021) confirms the subjectivity linked with the dependency of non-probability methods on the expertise of the researcher and further postulate that such techniques are utilised in qualitative research.

Other types of non-probability sampling techniques include convenience, consecutive and snowball sampling (see Lyon, 2015; Tyrer & Heyman, 2016; Ndenje-Sichalwe & Elia, 2021; Pace, 2021). Although these techniques are not discussed in this study, they also form part of the techniques generally used in qualitative research. To this end, the subjectivity logic and reliance on the researcher's intuition confirms the alignment of non-probability sampling techniques to the anti-positivist school of thought and thus appropriate to be used in qualitative research. Having explained how the research participants were selected and how the purposive and quota sampling aligns to the paradigm, this next section discusses the methods applied to collect the data in this study.

3.3.4 Methods of data collection

Methods of data collection consist of tools used to gather data for the research (see Crick, 2021; Frost, 2021; Maxwell, 2021; Saldaña, 2021). The purpose of the exercise in data collection is to facilitate analyses on the problem, to examine the consequences and

implications thereof and to study the current and future outcomes and trends, to validate the research (see Crick, 2021; Frost, 2021; Maxwell, 2021; Saldaña, 2021). Data collection essentially enables researchers to obtain first-hand insights into the research problem. The insights are key in enabling accurate diagnosis of the research problem. Proper diagnosis of the problem enables adequate prognosis. In this study, prognoses are found in Chapter 10 which deals with the findings, conclusions and recommendations.

Qualitative research generally uses a variety of data collection techniques. These include observations, textual and visual materials such as books and videos, artifacts, as well as individual and group interviews, which tactics do not rely on numerical sources (see Crick, 2021; Frost, 2021; Maxwell, 2021; Saldaña, 2021). To reiterate, data collection in qualitative research enables analyses that lead to conclusions that are made following a subjective and inductive logic and drawing from people's perceptions, beliefs and lived experiences (see Crick, 2021; Frost, 2021; Maxwell, 2021; Wilson & Kim, 2021). This logic attests to the alignment of the techniques cited herein with the anti-positivist paradigm, which talks to their appropriateness to be applied in a qualitative paradigm.

In alignment with the anti-positivist assumptions, this study used four data collection techniques. These are observations, semi-structured interviews, focus group interviews and literature review. To this effect, observations consist in the process of physical observations to collect data (Frost, 2021); semi-structured interviews is the posing of open-ended questions that are unstructured (Mahat-Shamir, Neimeyer & Pitcho-Prelorentzos, 2021); whilst focus group interviews refer to conversations with a group of people usually 6 or more, to probe their opinions, beliefs, experiences or perceptions on the subject matter interrogated in the research (Nowicki et al. 2021); and literature review talks interrogating text (books or articles) that have been published, to acquire contextual and broader insights into the subject matter being interrogated (Grazia & Molinari, 2021). This next section elucidates how each data collection method was applied in this study.

3.3.5 The application of data collection techniques

The observations in this study, were done informally over several years (2011-2017). These were during the researcher's transit across international airports in countries that included Hong Kong, Germany, Switzerland, Hungary, the Netherlands, Macedonia, Ethiopia and the United States to cite a few. To mitigate bias and preconceptions during the observation, the researcher never conversed with any of the police officials in the foreign countries, but just

made reflexive observations. The researcher thus looked at the types of securitisation technologies used in these developing and developed countries cited herein, in terms of the infrastructure and how the police at the international airports operated. The observations greatly influenced my curiosity, which aspect prompted the research in this study, particularly on the interfaces in policing, transnational crime and technologies used. To contextualise the research, this study chose the ORTIA as a case.

Whilst initial observations made prompted the research in this study, other observations made relate to interfaces with the research participants. This was during the empirical phase of the research, that is during the interviews phase. From what I could gather, some of the research participants were suspicious of the interview process, though it was not all the research participants but rather a minority among the group. This is despite the researcher having permission to conduct research, which permission was granted by the SAPS (see Annexure C). Also, the suspicion was despite the researcher having guaranteed the participants that anonymity and confidentiality will be maintained, which aspects are also covered in the consent form (see Annexure D), signed by each of them.

The observations pointed to a lack of trust that members of the SAPS generally have towards researchers, especially if it is people they don't know or people that do not work for the organisation. This was evident, particularly when the question on the technology-based violations by personnel was raised (see Annexure A). There was generally some discomfort and hesitancy when the participants were asked whether they were aware of any abuses of technologies in violation of human rights. Eventually, some of the research participants did respond to the question. This was after some convincing by way of explaining that research is an inquisitorial process and not some prosecutorial witch hunt.

Further suspicion was evident with the audio recording of the interviews. Again, an explanation that the recording was for producing transcripts for data analysis and record-keeping requirements. Likewise, the researcher had to convince the participants that the recordings cannot be used as a measure to collect evidence that can be used against any of them. The participants seemed relieved when told that the interview was without prejudice, that there was a researcher-participant legal privilege protected by law in terms of the non-usage of the collected data in criminal or disciplinary proceedings and that anonymity and confidentiality were not just a legal issue but also an ethical consideration.

In terms of the semi-structured interviews, the questions as per Annexure A were lengthy. This was exacerbated by the fact that semi-structured interviews use open-ended questions that allow further probing based on the responses given. Mahat-Shamir et al. (2021:83) confirms that open-ended questions posed in semi-structured interviews enable the researcher to ask probing questions that are not necessarily on the interview schedule. This last-named author further submits that the probing is prompted by responses that in the view of the researcher, require further elaboration or clarification.

Part of the reason why the questions in the interview schedule were many is because research on the use of technology in police work in Afrika is rare. Thus, the researcher had to probe into the subject of inquiry as widely as possible. In alignment with the exploratory research espoused as cited in 3.2.1, the researcher wanted to cover as much empirical ground as possible, which led to an interview schedule with more questions. Generally, qualitative research uses less questions as there is room for probing further (see Cullin, 2021; Mahat-Shamir et al. 2021; Mozetič, 2021; Kiatkoski Kim et al. 2021). In the case of the research done, the researcher was pushed by the zest to uncover as many dynamics as possible and challenges drawing from the lived experiences of police officials, in terms of their use of various technologies in combating transnational crime at the ORTIA.

The lengthiness of the questions in both the interview schedule and probing questions resulted in the prolonging of the interview process. Out of concern for the wellbeing of the participants, the researcher implemented interval comfort breaks. This was done to avoid mental duress due to long interviewing, to avoid loss of concentration and interest in the process and to ensure that the process conforms to the ethical considerations cited in 3.5. The interviews were one-on-one with participants in the purposive sample cited in 3.3.1. Interestingly, this group of participants seemed to enjoy the interview and were less suspicious. This contrasted with the participants interviewed in the focus groups.

The researcher can only speculate that participants in the purposive sample seemed to enjoy the interview because these are highly skilled individuals, probably with high academic qualifications and therefore a bit more amenable to participating in informing the research. Also, the interviews with experts were in the comfort of their offices, which aspect could have contributed to a more relaxed mood during the interview. As for the managers at ORTIA, all were also interviewed in their offices. However, 1 was interviewed during the day and 2 at night. All the same, the participants seemed relaxed.

Since all the interviews in this study were face-to-face, strict conditions had to be applied to ensure safety against the spread of the COVID-19 virus. In adherence with the National Disaster Management Act (Act 57 of 2002), the researcher ensured that all participants wore masks and that there was adequate social distancing. Likewise, the researcher also brought extra masks and sanitising spray, in case of some of the participants did not bring such utilities.

The precautions cited herein were implemented not only in response to government regulations put in place to prevent the spread of the COVID-19 virus, but also as a requirement in terms of university rules. To this end, the precautions tally with the ethical considerations in 3.5, which talk to the responsibility to protect research participants from harm. At the time of the interviews, South Africa was on lockdown level 1 which according to university rules on research ethics, allowed face-to-face interviews with precautions.

A key issue to highlight during the empirical phase of the research is that SAPS management at the ORTIA seemed to welcome the research process and concerned about the spread of the COVID-19 virus. This is because I was alerted by the manager overall in charge to take the necessary precautions not to have the virus spread. Similarly, a boardroom with adequate sitting arrangements for social distancing was prepared and this is where the focus group interviews took place, two nights following. Such arrangements attest to the SAPS being a caring organisation that protects its staff. Similarly, the provisions instilled confidence that the organisation also protects its visitors.

Despite the scare of the COVID-19 virus, the interviews in this study were a success. However, the research participants in the focus group were tense at the beginning of the process. After the convincing as stated herein, the participants started easing. For some reason, the focus group interviews were the most enjoyable for me as the interviewer. This is because some of the research participants occasionally made jokes, which prompted laughter. The laughter I deemed as the right tonic to get other participants into a relaxed mood. At the end of the session, some of the participants requested to exchange contacts with me. These are students who study at the institution I work for, which is the University of South Africa. The aim was to get some assistance with their studies, an initiative which I warmly welcomed as both an academic and as a researcher.

The interviews with the focus groups were conducted in the evening at the ORTIA. This is because the airport is less busy compared to peak times in the day. The researcher targeted the shift changes and interviewed personnel starting on the night shift. Such an approach

proved fruitful as the participants had rested as opposed to having to interview staff on day shift, who might either be tired at the time of the interview or may not have had enough time to engage during morning and daytime peak hours at the airport. Peak hours normally call the police into a lot of activity, so that they maintain security at the facility. As a researcher, I could not take away police from duty during peak times, not when the research I am doing is intended to increase their operational efficiency in fighting transnational crime and maintaining security at the airport by using various technologies.

All the interviews conducted in this study were done up until the data was saturated. Blaikie (2018:637) agrees that qualitative researchers collect data until saturation is reached. This last-named author describes saturation as having reached a point where no new information is coming through. This is a point where research participants are regurgitating on what others interviewed before them have said. Reporting on saturation is essentially an important aspect that ties up with honest reporting, which aspect is one of the key principles in the ethical considerations that are dealt with in 3.5 of this study. To this end, focus group 2 did not get all the questions posed to them as per interview schedule and this is because their responses pointed to saturation. For all practical purposes, this group had the shortest of the interviews done to collect data in this study.

The fourth data collection tool in this study is the literature review. This was one of the most intensive and tiresome techniques in this study, particularly because the literature on the use of technology in the Afrikan context is rare and the researcher had to draw mostly from foreign texts. In terms of literature review as a data collection tool, there is no doubt that this study is literature intensive. The more than 100 pages on the list of references bears testimony. As cited in 3.3.3, literature review talks to interrogating published text to acquire more contextual and broader insights into the research problem (see Eti, 2021; Grazia & Molinari, 2021; Mullen & Klimaitis, 2021; Revez & Corujo, 2021). Literature used in this study talks to the use of technology in police work; policing in the border, borderlines, and entry ports; security technologies at international airports; transnational and organised crime; and literature on research methodology and methods.

This research report referenced all text used in-text and gave full citations in the list of references. As such, literature was a useful compass that helped guide this research, which evidently delved into complex issues that involved not only the policing of borders, borderlines and entry ports, the policing of transnational crime, the use of technologies in police work, the

types of technologies used at international airports around the world, but also on the philosophy of policing, regulations in aviation and policing in the Fourth Industrial Revolution. These complexities are problematised and analysed in this study.

3.3.6 The analytical techniques

Having dealt with the data collection issues, this section now explains issues relating to the data analysis techniques. Data analysis generally consist of a process of examining, refining and casting the information collected to inform the research (see Silverman, 2020, Azen & Walker, 2021; Bulmer, 2021). The purpose thereof is to extrapolate on the findings that are relevant to the research problem, interpret and synthesise or give new meaning to the information, to support the conclusions and recommendations in the research (see Silverman, 2020; Azen & Walker, 2021; Bulmer, 2021; St. Pierre, 2021). Without data analysis there are no tangible results in research. At best, the results would amount to the regurgitation of information produced by other authors. Such approach does not constitute a scientific inquiry and in research this amounts to a fruitless exercise.

The research in this is study espoused three analytical techniques. These are the phenomenographic or phenomenological analysis, grounded theory, and qualitative conventional content analysis. Phenomenographic analysis is defined as a process wherein cognitive insights are interrogated without theoretical assumptions as to their causes, by describing individual perceptions and lived experiences (see Björk et al. 2021; Jordan et al. 2021; Shahbaz et al. 2021; Guisasola, 2023; Seymen, Arzu & Gamze, 2023). Han and Ellis (2019:4) argue that the aim of phenomenographic analysis is to identify qualitatively different categories that signify disparities in individual experiences. The similarities and differences in terms of the responses by research participants are highlighted throughout the analyses and discussions penned in Chapter 7 of this study.

Grounded theory, on the other hand, entails the technique or process of systematically discovering constructs or theory from data sets through identifying and coding themes with keywords or phrases, grouping the codes into hierarchies and categorising concepts using relationship identification and using inductive inferences in executing processes (see Corbin, 2021; Njie-Carr et al. 2021; Zhu, Luke & Bellini, 2021). The modalities for and operationalisation of grounded theory are dealt with in detail in Chapter 8 of this study.

To synthesis data sets in chapter 9, the study used qualitative conventional content analysis. Qualitative conventional content analysis refers to a study design intended to study phenomena in which theory or literature is limited, with coding that flows from data sets, instead of being preconceived (see Hsieh & Shannon, 2005; Luo, 2019; Shah et al. 2023; Swiatek, 2023). The phenomenon being studied is interfaces between policing, transnational crime, and technology. In the context of South Africa and the continent at large, the use of technology in police work is a relatively under researched area. This next section thus outlines processes on how this study applied the analytical techniques.

3.3.7 The application of the analytical tools

From a philosophical perspective, the interrogation of cognitive insights without theoretical assumptions as to their causes by describing individual perceptions and lived experiences and the use of inductive inferences attest to phenomenographic analysis and grounded theory as analytical tools premised in the anti-positivist assumptions and thus appropriate as analytical tools in qualitative research. Servant-Miklos (2021:81) confirms that both phenomenographic and grounded theory are qualitative analytical techniques. The analytical tools in this study essentially followed the espoused anti-positivist tradition.

Phenomenographic analysis focused on ways that the research participants experienced technologies in combating transnational crime at the ORTIA. These are the experiences related to the dynamics and challenges from the participant's perspective. Thus, the participants were selected based on the researcher's subjective intuition to fulfil the qualitative axiological assumptions underpinned in the anti-positivist traditions. The analyses dissected the participant's ideas and ways of thinking about their work. This led to the creation of hierarchical relationships. An example of the relationships is presented in Figure 16, which talks to the taxonomy that helps the researcher to visually plot the problematic areas in the interfaces in policing, transnational crime, and technologies. To this end, several studies (Bragagnolo, 2021; Jacobson, 2021; Roybal-Lewis, 2021) have demonstrated how grounded theory can be qualitatively applied to produce taxonomies.

According to Han and Ellis (2019:3), the phenomenography consist in data collection and sampling; aligning to the principles of phenomenography; and communicating the research results. These last-named authors further argue that phenomenographic analysis is iterative rather than sequential. This principle essentially implies not making quick decisions on data categories and directing analyses on the collective meaning of responses, in contrast to

focusing on specific individual responses. The focus in this section is to outline the steps on how the analytical techniques were operationalised.

In terms of applying the principles in phenomenographic analysis, there is evidence of the researcher having dissected the data by going through utterances made by the research participants during the interviews. These phrases were grouped in terms of those that concur and those that differ. The researcher then contrasted and synthesised the phrases, to create new meanings. Evidence of the operationalisation of the principles in phenomenographic analysis can be found in chapter 7 of this study. In terms of communicating the result, this issue is dealt with in chapter 10. Communicating the results is essentially a data integrity issue, which aspect form part of the next discussions.

Another analytical tool applied in this study is grounded theory. Creswell and Guetterman (2019:452) prescribes eight steps that can generally be used in grounded theory analysis. The steps are: (1) the researcher deciding on whether the design is best to address the research problem; (2) identifying the study process; (3) obtaining approval and access; (4) doing theoretical sampling; (5) data coding; (6) using selective coding to develop theory; (7) validating the theory; and (8) reporting on the theory. To a greater extent, this study complied with the eight steps as contemplated by Creswell and Guetterman (2019).

On face value, the researcher used own intuition to decide that though not the only analytical tool suited in this study, grounded theory was key in the theorisation of policing, transnational crime, and techno-securitisation nexus. Similarly, the researcher obtained ethical clearance (see Annexure B) from the university, as well as permission to conduct research (see Annexure C) from the SAPS. This enabled the researcher to gain access to SAPS staff that use technologies to combat transnational crime at the ORTIA. Interacting with such staff thus attest to the theoretical sampling in this study. According to Creswell and Guetterman (2019:452), theoretical sampling involves identifying and selecting research participants who have experience in the subject matter under inquiry.

Whilst the coding and development of theory are dealt with in Chapter 8, the validation and reporting thereof is dealt with in Chapter 10 of this research report. This chapter outlines the Post-Modern Policing philosophy and the Matlala Thesis. Of importance is that qualitative researchers don't normally have to restrict themselves to the eight steps cited herein (Creswell & Guetterman, 2019), this owing to the grounded theory being flexible, which trait is linked with

the nature of qualitative research and the anti-positivist paradigm (see Tie et al. 2019; Elliot & Timulak, 2021; Frost, 2021; McGannon et al. 2021).

The grounded theory analysis in this study was operationalised using the Research Design Framework model developed by Chun Tie, Birks, and Francis (2019). The model follows several integrated steps to do grounded theory analysis. These start with using purposive sampling, data collection using interviews and focus groups, initial coding which includes the identification of categories, intermediate coding which involves the selection of the core category and ends with the advanced coding which involves the creation of the storyline and theoretical coding (Chun Tie et al. 2019:3). The aim is for the process to adhere to theoretical sensitivity and sampling, and to enable parallel data collection, analysis, and comparisons. According to Chun Tie et al. (2019:3), the steps creates cohesion in methods and enable directional flow needed to crop grounded theory. In applying qualitative conventional content analysis, the researcher followed the 5 steps proposed by Luo (2019). The operationalisation of the steps is elucidated in chapter 9.

In aligning with the steps, the application of sampling procedures is outlined in 3.3.2 of this study, which procedures involves the use of the purposive sampling technique. The data collection methods are defined in 3.3.4 and the application thereof is outlined in 3.3.5. to this end, the initial coding is dealt with in 8.2.1, intermediate coding in 8.2.2, whilst advanced coding is explicated in 8.2.3. As for a detailed storyline, aspects thereof are evident throughout chapter 8, starting from 8.3. The fact that the steps suggested by Chun Tie et al. (2019) recommend specifically purposive sampling attest to the alignment of grounded theory with the anti-positivist paradigm espoused in this study. The alignment implies that the sampling procedures used in this study are appropriate and enabled the generation of suitable data to inform the theories generated in this study.

This study also used qualitative conventional content analysis. This technique is defined in 3.3.6. in applying qualitative conventional content analysis, the researcher commenced with the coding of data sets during the data collection phase. During the period, the researcher made notes during each interview to extract codes. The notes were combined once interviews with all research participants were concluded. The codes were used to contract the analytical categories in Chapter 9 of the study. To this end, literature (see Hsieh & Shannon, 2005; Luo, 2019; Shah et al. 2023; Swiatek, 2023) confirms the steps followed in this research to be in conformity with qualitative conventional content analysis.

3.4 DATA INTEGRITY

Using suitable sampling and data collection tools to draw information that is relevant for the inquiry or the research question, is a data integrity issue. According to Watts (2008), integrity in qualitative research relates to sound ethical practices in data collection and analysis. Essentially, data integrity is the glue that creates coherence between data that was collected, the techniques used in the collection and the underpinning paradigm (Palermo, Reidlinger & Rees, 2021:263). To this end, data integrity in qualitative research is confirmed using credibility, dependability, confirmability, transferability and reflexivity, which construct are the equivalents of validity and reliability in quantitative research (see Stahl & King, 2020; Baumgart, Craig & Tong, 2021; Hays & McKibben, 2021; McGinley, Wei, Zhang & Zheng, 2021; O'Kane, Smith & Lerman, 2021; Palermo et al. 2021).

To define the constructs, credibility talks to the accuracy of the research (internal consistency) and is equivalent to internal validity (Prosek & Gibson, 2021:167); transferability is the degree to which the results can be applied to the research or participants and parallels external validity (Kelly et al. 2021:6); dependability talks to the consistency of the findings and is equivalent reliability (McGinley et al. 2021:10); confirmability is the extent to which the results are reflective of the submissions made by the participants, which parallels objectivity and replicability (Baumgart et al. 2021:539); and reflexivity talks to a recurrent procedure in terms of engaging with and articulating the researcher's role and context of the research (Stenfors, Kajamaa & Bennett, 2020:598).

The issue of the constructs used to attain validity and reliability in qualitative research relates alignment with the paradigmatic assumptions, empirical acceptability, and practical worth. According to Ronkainen and Wiltshire (2021:13), ontological plausibility, empirical adequacy and pragmatic efficacy are key in enabling critical thinking. These last-named authors further argue that the last-mentioned aspects accompanied by using practical scientific techniques can lessen risks to validity, in the case of this study threats to credibility. To this end, this chapter discusses all measures in place to attain ontological plausibility, empirical adequacy, and pragmatic efficacy to reduce risks to internal validity.

For clarity, internal validity talks to the extent to which the researcher can be confident that causal relations between variables in a study cannot be explained by other factors (Sundbom, Näslund, Näslund & Ottosson, 2021:606), which is indicative of the hypothetico-deductive logic cited in 3.1; external validity is the application of scientific finding to other contexts outside the

context of the study (Findley, Kikuta & Denly, 2021:365); whilst reliability (internal) refers to the overall consistency of a measure (Pourmehdi, 2021:72); and objectivity (external reliability) talks to the extent to which research findings are not contaminated by researcher biases (Tong & Zuo, 2021:153).

3.4.1 Application of the data integrity constructs

Implied from the preceding discussion is that validity and reliability talk mostly to the extent to which the measurement instrument does what it was intended or designed to do. This attests to the fact that validity and reliability are indeed quantitative constructs. Part of the reason why these constructs cannot be used in the anti-positivist paradigm is that in qualitative research, the researcher is the instrument. Silverman (2020:72), confirms that in qualitative research, the researcher is the one who designs the sampling procedures, and does the physical collection and analyses of the data. In the context of qualitative research, there is therefore no criteria for measuring the researcher, except determining how credibility, dependability, transferability, confirmability, and reflexivity were factored.

In applying the constructs cited herein, the researcher adopted the model articulated by Queens University of Charlotte (2021). This model presupposes that credibility uses reflexivity, member checking, spending longer periods with participants and using the participants' exact words in the final research report; that transferability requires the utilisation of the same data collection techniques with various demographic clusters; that dependability describes the purpose of the study, the sampling, data collection and analysis procedures, synthesises the data and present the findings; and that confirmability involves taking post-interview notes on personal feelings, biases and insights, not posing leading questions in the interviews, and reflecting on new insights.

For clarity, the reflexivity aspect which talks to a recurrent procedure in terms of engaging with and articulating the researcher’s role and context of the research is evident in how the interviews were conducted in this study. Similar sets of questions were posed to different participants in the same categories of the different samples; member checking is discussed in 3.4.5; the interviews took longer due to many questions asked and the initial observations which prompted this study took about 7 years, which aspects are dealt with in 3.3.5; and the data analyses Chapters 7, 8 and 9 reflect the exact phrases used by the research participants. Equally, the sample consisted of male and female, experts, managers, and lower-level staff, all of whom are from different racial groups. The racial composition of the research participants

consisted of persons from the Coloured, Black Afrikan, white, and Indian racial groupings. To this end, the cross-racial and cross-gender mix was done to satisfy the transferability construct, which interposes the use of the same data collection tactics for various demographic clusters in the chosen research sample.

In further applying the data integrity constructs, this report outlines the aim and objectives of the study in 1.6.1. To recap, the aim or purpose of this study is to explore the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus at the ORTIA. Outlining this aim was done to fulfil the dependability construct which talks to describing the purpose of the study, the sampling, data collection and analysis. The application of the sampling tactics is dealt with in 3.3.2, whilst the application of data collection and analysis tools is cited in 3.3.5 and 3.3.7, respectively.

To further satisfy the requirements for dependability, this study demonstrated syntheses on the data throughout the analytical Chapters 7, 8 and 9. These chapters give new meaning to the data sets obtained from the interviews and literature sources. Likewise, the study presented the findings, conclusions, and recommendations in Chapter 10. This was also to align with the dependability as a construct that fulfils the element of data integrity. Of importance is that this study gives detailed description of how each aspect of the research methods was aligned to the paradigmatic assumptions in the study, including how the methods were deployed, to demonstrate pragmatism in the research.

Lastly, the researcher wrote post-interview notes on the personal feelings, biases and insights of the research participants, to comply with the confirmability construct. The notes largely informed the observations made in section 3.3.5. These touched on personal feelings, biases, fears, and insights of the research participants during the interviews. Equally, all questions asked in the interviews were open-ended and not leading, to further satisfy the requirements for dependability. This led to the researcher reflecting on new insights that include the conceptualisation of the Post-Modern Policing philosophy in section 10.3, the policing in, transnational crime and techno-securitisation continuum in section 8.5 (see Figure 15), the Matlala Thesis in section 10.3, as well as the Matlala Taxonomy in section 8.5.2 (see Figure 16) of this study. To elucidate, the taxonomy is a framework that has been conceptualised in this study. The conceptualisation is intended to help police managers to easily plot the level or classify the technology-related challenges in terms of combating transnational crime. This next section thus unpacks the various triangulation issues as part of the data integrity aspect.

3.4.2 Triangulation

Triangulation refers to the use of multiple theories or paradigmatic premise, and methods to collect and analyse data on the same subject of inquiry, to create an in-depth understanding of, and to enable different interrogation methods in dealing with the research problem (see Breyl, 2021; Broadbent, 2021; Fellows & Liu, 2021; Feng & Chen, Ahn, 2021; Hayes, 2021; Munafò, Higgins & Smith, 2021.). The research problem in this study is unpacked in section 1.6. To this end, triangulation is used to enhance the validity and reliability, in the case of this study, credibility, dependability, transferability and confirmability. Therefore, triangulation is a key aspect in validating the research findings.

There are four types of triangulation methods, and these are theoretical, methodological, data and investigator triangulation. According to Lee (2021:16), investigator triangulation refers to the use of more than one researcher in the study. Since only one researcher was used to interrogate the policing, transnational crime, and techno-securitisation nexus at the ORTIA, this study used theoretical, methodological and data triangulation. To this end, theoretical triangulation refers to the use of two or more theories to interpret phenomena being studied; methodological triangulation is the use of two or more methods to sample, collect and analyse data sets; and data triangulation talks to periods that were spent in the research and with the participants (see BUI, 2021; Feng et al. 2021; Liu, Kulturel-Konak & Konak, 202l; Panchenko, Korzhov, Kolomiiets & Yenin, 2021).

Key to describing the different types of triangulations, it remains important that the researcher should outline how the three selected types of triangulations were factored into the research done. In attaining theoretical triangulation, this study espoused the qualitative and exploratory research approach, as well as the case study and grounded theory designs as cited in 3.2.1. Furtherhereto, the study espoused social constructivism and descriptive phenomenology to form constructivist phenomenology as the theoretical basis for the study, which aspects are dealt with in 3.2.4. Similarly, the study used purposive and quota sampling to source research participants from the population, an aspect outlined in 3.3.2; used observations, semi-structured interviews, focus group interviews and literature review to collect data as cited in 3.3.4; and the study used the phenomenographic, grounded theory and qualitative conventional content analytical techniques to synthesise data sets, to interpolate the methodological triangulation traits.

In as far as data triangulation goes, this study used wide-ranging literature. The sources were quoted in-text and in the extensive list of references. To satisfy the element of data triangulation, the study uses triangulation and crystallisation. For this study, data triangulation not only talks to periods spent in the research and the people who partook in the process (research participants) but also refers to the other sources used. Thus, in this context, triangulation also refers to the use of three sources and crystallisation refers to the use of four or more sources to confirm statements and postulations made in-text.

Ellingson (2009:150), hypothesises that triangulation and crystallisation serve as a framework for evaluating rigor in qualitative research. To this end, the amount of time taken to do observations that prompted this study as cited in 3.3.5; the longer interview that is reported on in 3.4.1; the research participants who informed the study as indicated in 3.3.2; as well as the in-text referencing using 3 or more sources thus attest to how the study ensured data integrity and how rigor was built into the research done. To further enhance rigor, the researcher also conducted a pilot study which is discussed next.

3.4.3 Pilot study

A pilot study is a process embarked upon before the research to check the feasibility and validity of the selected methods and techniques, using a relatively smaller sample (see Ewers, Bloomer & Hutchinson, 2021; Malterud, Siersma & Guassora, 2021; Siyam & Abdallah, 2021). A key consideration about a pilot study is that it serves as an early warning system on aspects where the research could miscarry, on where oversights on protocols may occur, on whether the selected research methods are inept or too complex, and on whether the level or line of questioning is inappropriate, insensitive or offensive to the research participant's personas, the organisation(s) being researched or the professional integrity of any person(s) whom the finding(s) may jeopardise or insult.

Generally, pilot studies satisfy an assortment of crucial functions. Among the roles is the provision of valuable insights and discernments for other researchers (see Ewers et al. 2021; Malterud et al. 2021; Siyam & Abdallah, 2021). According to Van Teijlingen and Hundley (2010:49), there is a need for researchers to intensify discourse and write on the importance of the process and outcomes of pilot studies. This call for discourse is against the backdrop of some of the disadvantages associated with doing pilot studies. Teleworkva.org (2021) insinuated some of the drawbacks as including but not limited to: pilot studies sending the message that the research may fail which could discourage researchers, especially the

novices; causing delays in starting the research; and causing discontent among those from the research population, not chosen to be in the sample.

In doing the pilot study, the researcher interviewed persons in and outside of the police and the cross-border movement of goods and services. The group excluded people at the ORTIA who would form part of the research population in this study. In total, 4 persons were interviewed to check the veracity (reliability/dependability) of the questions and their aptness to the research question. Also, the individuals both males and females were requested to do quality assurance on the level of sensitivity in the questions and on the content, the spelling and grammatical correctness of the questions in the schedule.

The reason for using persons outside of the field(s) as cited herein was to check for complexity, simplicity and/or comprehensibility or clarity of the questions posed in the interview schedule. It is the submission in this study that if a lay person can properly understand what the question is, this should suffice as appropriate and clear-cut. This postulation is on the basis that a lay person does not necessarily have to know the answer to the question but should at least have the clarity of thought on what is being interrogated.

3.4.4 Member checking

A pilot study is more like member checking except that in the latter, the researcher checks with the research participants. Various authors (Harvey, 2015; Varpio, Ajjawi, Monrouxe, O'Brien & Rees, 2017; Smith & McGannon, 2018; Amir, McCarthy & Tong, 2021; Hays & McKibben, 2021; King, 2021) argue that in qualitative research, member checking talks to a process wherein researchers give feedback to research participants to improve the accuracy, credibility, validity and transferability in the study. Essentially, pilot studies enable researchers to do checks and balances on the accuracy/honesty of their reporting.

Generally, member checks do bear some advantages and disadvantages. The advantages include: an opportunity to understand and assess what the research participant wanted to do or meant; an opportunity for research participants to correct inaccuracies; as well as an opportunity for participants to give more information; whilst the disadvantages include: time-consuming for research participants who have already informed the study; participants may find it difficult to comprehend the research findings; is based on the assumption that there is a static truth of reality; and research participants may convey what they think the researcher

should hear (see Harvey, 2015; Varpio et al. 2017; Smith & McGannon, 2018; Amir et al. 2021; Hays & McKibben, 2021; King, 2021).

In this study, the researcher summarised the submissions made by the research participants during the interviews. This was in the form of a consolidated report which was sent via email to all the research participants, for them to correct any inaccuracies in terms of the conclusions, inferences and meanings derived from the data they provided to inform the study. The exercise as expected, delayed the examination submission of this thesis by at least two weeks. However, the process was worth the wait since member checking ensures that none of the research participant's submissions during the interviews are misrepresented, thus also making it a critical ethical considerations issue.

3.5 ETHICAL CONSIDERATIONS

One of the most important aspects of social science research methodology and methods is ethics. Ethics in research essentially talks to being humane and accountable. To this effect, ethics in research generally has to do with moral behaviour that ensures the safety of the research participants, honest reporting, obtaining consent for the research, not plagiarising the work of other scholars, acknowledging the sources from whence the information was extracted and adhering to institutional protocols on doing research (see Asiedu, Karlan, Lambon-Quayefio & Udry, 2021; Lowe, 2021; Recker, 2021; Stern, 2021).

Whereas there is no consensus on what constitutes ethics in research, various scholars (Babbie 1995; Mouton 1996; May 2001; Asiedu, Karlan, Lambon-Quayefio & Udry, 2021; Lowe, 2021; Recker, 2021) concur that ethics talks to appropriate moral behaviour that is in the interests of the research participants. To this end, a key assertion to consider is how far can moral behaviour go without encumbering academic and intellectual freedom, particularly where information is sensitive but is also in the public interest. This question is one of the reasons why critics such as Terre Blanche, Durrheim and Painter (2006:63) argue that ethical reviews in research may corrode academic freedom. This is doubtful as social science like any other discipline, cannot allow researchers a free for all without any controls in place. This study, therefore, hypothesises that research without ethical reviews will lose credibility or trustworthiness and thus set up precedents for abuses.

The one disturbing era in which abuses in research were prevalent was in the reign of Nazi Germany. This was in the time of World War II, when Nazi researchers conducted atrocious medical experiments and testing, human subjects (see Terre Blanche *et al.* 2006:61;

Hildebrandt, 2021; Stern, 2021). To elucidate, some of the scientific malice by Nazi physicians included doing painful and sometimes fatal experiments on prisoners of war without their consent using dubious scientific standards, often with long-term negative psychological or physical effects or defects on the victims who survived the relating ordeal (see Weindling, von Villiez, Loewenau & Farron, 2016; Hildebrandt, 2021; Stern, 2021).

According to Stern (2021:64), Nazi research exhibited salient connections flanked by racism, medicine and supremacism. This last-named author argues that the atrocities were apparent during the Holocaust and were also branded by dehumanising hatred, discernment and bigotry against the gay, lesbian, transgender, bisexual, queer and differently abled people. These carnages point to a time when research bodies either did not have adequate rules on ethics and it was a free for all era, lacked the will to enforce the rules if they were existent, or Nazi Germany being a power unto itself, simply did not care about morality and pushed science using a supremacist ideology that made them decide who gets to live or die (see Weindling et al. 2016; Hildebrandt, 2021; Stern, 2021).

To ensure that history does not repeat, the world needs an obligatory approach to ethical reviews. To extrapolate, currently reviews on ethics in research are left to Higher Education Institutions and/or universities. Most institutions have set up internal research ethics committees that investigates research proposals and the envisioned methodologies and methods. Based on the research proposals, the committees decide on the level of risk involved and on whether to grant or decline an application for ethical clearance. This approach applies to all research, irrespective of the involvement of human participants. Of concern is that at no stage does regulatory bodies such as the International Social Science Council (ISSC), the International Science Council (ISC) or the Social Science Research Council (SSRC) to cite a few, conduct reviews on the work of the research ethics committees within universities. This implies that research ethics at a global stage is not properly monitored, and accountability is left to individual universities.

To deal with the problem, international bodies need to develop frameworks and timelines to review member countries/institutions on regular frequencies. This is key in ensuring global standardisation in terms of accountability and in ensuring that member disciplines/institutions do not flaunt the rules so they can appear to be proper. To this end, a study by Asiedu et al. (2021) makes an emphatic call for standardisation in research ethics. Such a move could lead to reviews like those done by bodies such as the Commonwealth of Learning, who focus reviews on qualifications in member states universities. Ethical reviews can also be done

nationally by members. The next section consequently explains the ethical constructs in this study and how these were factored.

3.5.1 Ethical constructs and their operationalisation

As already cited in section 3.5, one of the key aspects of social science research methodology and methods is ethics. Scientific inquiry is a dynamic process that can sometimes result in the invasion of individual or organisational rights. To mitigate, researchers must demonstrate which ethical constructs were duly operationalised in the study and how these were operationalised. To this effect, this study explains how the ethical constructs namely: individual privacies, issues on consent, anonymity, participants' safety and responsibility to the academic community were operationalised as an integral part of the blueprint for the ethical considerations in the study. The following is an exposition of the ethical constructs covered in this study and how they were applied:

- **Individual privacies:** One of the disputatious subjects in Social Science research is the invasion of the privacies of the research participants by researchers. A study by Hajli, Shirazi, Tajvidi and Huda (2021) accentuates the importance of respect for the participant's right to privacy during the research process. In adhering to respect for individual privacies, this study did not acquire the personal information of the research participants, except for the signatures consenting to the research. The information is kept in a password protected computerised file. Also, the type of questions asked in the interviews did not interrogate the research participant's personal information, their private or intimate lives or their families or other kinship. Reference to the questions is in the interview schedule is attached as Annexure A.
- **Consent:** According to Klykken (2021:1), consent should be congruent with the epistemological framework in the study and this construct, which is an ethical and reflexive tool, should be premised on the information. Such premise gives birth to the construct of informed consent. To align with the epistemological grounding, this study targeted an organisation (SAPS) involved with, and persons who use technologies when policing transnational crime at the ORTIA. To attain informed consent, the researcher applied for ethical clearance (see Annexure B), permission to conduct research from the SAPS (see Annexure C) and had research participants sign a consent form (see Annexure D). The application for ethical clearance was accompanied by an approved research proposal and standard forms that indicate the level of risk involved in the research, the application to the SAPS had a request letter and the research proposal,

whilst the consent form gave information on what the research is about, who the researcher is, what the aim and objectives are, the right to opt out of the process at any point, as well as issues on observing COVID-19 protocols. Key aspects of the research proposal is that it not only contained information on what the research is about but also explains the envisioned methodology and methods to be used, as well as issues on ethical considerations. Availing the information was to enable all parties involved to make an informed decision on whether to grant permission for or to partake in the inquiry.

- **Anonymity and confidentiality:** Fieldwork in qualitative research requires that the information on research participants be treated with the utmost confidentiality and anonymity, to ensure utterances made during the interviews, are not traced back to the interviewees when research findings are made public (see Abadie, Fisher & Dombrowski, 2021; Dougherty, 2021; Moriña, 2021). To this end, Hoft (2021:223) argues that anonymity and confidentiality are appropriate in case studies. This is the same research design used in this study. To ensure anonymity and confidentiality in this study, the identities of the research participants are not revealed. Research participants are referenced as Interviewees 1-17. Likewise, all the interview numbers are not connected to any of the research participants interviewed. Reference to interview phrases and numbers is thus found in Chapters 7, 8 and 9.
- **Harm to participants**: Asiedu et al. (2021:1) argue that the key responsibility of any researcher is to ensure that research participants are not in harm's way as a result of the processes emanating from the inquiry. In ensuring this, the study already made submissions in 3.3.5. This section talks to the measures put in place to ensure that no psychological or emotional harm befalls any of the participants. Also, the section talks to measures put in place to curb the spread of COVID-19.

- **The academic community:** In terms of ethics, every researcher has a responsibility to uphold the integrity of the academic community. Thus, the goal of ethics in research is not only to protect researchers, their work and the research participants (Miller & Brewer, 2003:99) but to also protect the professional integrity of the academic community (Sivasubramaniam et al. 2021:1), to avoid falsification and fabrications, as well as to avoid compromising the work of other scholars (Armond et al. 2021:13). Various sources (Miller & Brewer, 2003; Khan, Richardson & Izhar, 2021; Xu & Hu, 2021.) accentuates aspects that include revealing the shortcomings in the research; honest reporting on the research findings; reporting on personal biases; avoiding plagiarism; and adhering to

institutional protocols on research, as part of the responsibility to the academic community. In aligning to this, all sources used in this study were referenced in-text with the full citations noted in the list of references, which information is dealt with in 3.4.2. Also, the work of other scholars cited herein is paraphrased or synthesised and where direct phrases are used, these are noted in inverted commas. Similarly, where phrases are extracted directly from a source but are partially amended, these are noted in inverted commas and square brackets. The measures put in place to protect the integrity of the academic community are also in line with the University of South Africa (UNISA) Policy on Research Ethics (2007), which forbids plagiarism, fabricated inventions and piracy, but equally uphold norms that promote informed consent, respect for individual privacy, and ensuring anonymity and confidentiality of the research participants.

In the context of research conducted in pursuit of postgraduate studies at master's and Doctoral levels, research that does not observe ethical protocols not only damages the reputation of the student who is the researcher in question, but also that of the person responsible for the supervision that is the supervisor or promoter in the study, including the institution in which the degree is registered for. In pursuit of the ethical protocols that are cited herein, plagiarism was dealt with using referencing as cited in section 3.4.2 and honest reporting was dealt with using member checking which aspects are dealt with in section 3.4.4. To this end, the researcher's biases are dealt with in section 3.5.2 of the study, whilst the limitations in the research are discussed in section 3.5.3 of the study.

3.5.2 Researcher biases

As already cited in section 3.3.2, reporting on researcher biases has to do with fulfilling the axiological assumptions in the research. To recap, the assumptions talk to the researcher's subjective insights or perceptions, principles, prejudices, or preconceptions. Fundamentally, researcher biases refer to an act wherein the researcher deliberately or unknowingly influences the outcomes in an empirical inquiry, based on the inherent preconceptions (see Buetow & Zawaly, 2021; Mehrabi et al. 2021; Romano et al. 2021). According to Enago Academy (2021), non-reporting on researcher biases leads to poor validity and credibility, including inaccuracies in the research findings. Poor results arise when researchers allow their beliefs/emotions to inspire their thoughts during synthesis.

To mitigate the level of bias in research essentially requires a triangulated approach. Frost (2021:89) points out that assessing researcher bias signifies a move from traditional triangulation. This last-named author further contends that determining researcher bias requires the utilisation of various methods to assess the level of influence on the findings. To comply with the assessment, this study espoused the Enago Academy (2021) framework. Though the espousal was in part, this study used design bias, selection or participants bias, analysis bias, data collection bias and procedural bias as the yardstick. These were used concurrently to ensure triangulation in reporting on researcher biases.

To explain, design bias occurs when the questions in the research instrument do not talk to the research question (Enago Academy, 2021); selection or participant bias is when some of the participants are excluded based on accessibility (Pirastu et al. 2021); analysis bias talks to focusing analyses on data sets that confirm the researcher's views and expectancies (Greenland, 2021); data collection bias is when the researcher allow personal feelings to dictate how data is gathered (Manchanda et al. 2021) and; procedural bias occurs if there is not enough time allocated for the inquiry (Underwood et al. 2021).

In avoiding design bias, the researcher ensured that the questions in the interview schedule talk to the dynamics and challenges relating to the policing, transnational crime, and techno-securitisation nexus at the O.R Tambo International Airport (see Annexure A). Also, the questions in the interview schedule are aligned to the research aim and objectives in 1.6.1. To avoid selection or participation bias, all participants were interviewed face-to-face. This was done to avoid lack of or poor access to the interviews, owing to poor connectivity or data bundles issues, had the interviews been conducted using online platforms, which are not always easier to access, to download or to navigate.

About analysis bias, I must indicate that as a researcher I served as a police official (1993-2009). In the period, I did borderline and land port duty (1997), as well as duty at the O.R Tambo International Airport (2002-2003). As a researcher, I am familiar with how policing in such milieus used to happen but admit that having exited the SAPS more than 12 years ago, I am out of practice and may not have been familiar with the current challenges, due to the ever-changing dynamics in the policing milieu. In mitigating any preconceptions, the research was conducted without any expectations of the findings, particularly because of being out of action for the number of years cited herein, not knowing the current dynamics that include the

technologies that may have been upgraded after my tenure, as well as the 2020 enactment of the law on a new border police agency as outlined in 2.6.3.

To curb data collection bias, the researcher used data collection techniques that are cited in 3.3.4. The methods were selected based on the paradigmatic assumptions in the study. This was to align with the espoused anti-positivist school of thought as cited in 3.2 and not on personal feelings. Similarly, the observations in this study started in 2011 as cited in 3.3.5, the interviews took longer, reasons for which are outlined in 3.4.1 and the period of first registration for the study was in 2016. The duration taken to complete the study (2016-2021) and the time taken to do observations (2011-2017), including the time spent in conducting the interviews with the participants thus attest to the mitigation of procedural bias in the study. This next section discusses the limitations of the research.

3.5.3 Limitations of the research

Limitations of the research refer to various constraints that impact the credibility of the findings and conclusions, which issues can be found in the methodology and methods (see Ross & Zaidi, 2019; Ghaffar et al. 2021; Lamont, 2021). According to Ross and Zaidi (2019:261) limitations of the research point to restraints in the research design, which weaknesses that may sway the findings and conclusions in a study. To this end, reporting on limitations of the research serves as a barometer to ascertain not only the validity of research findings and conclusions but is also a measure of honest reporting that talks to the ethical considerations in the research.

Having widely perused how salient literature cited herein is defining the limitations of the research, the researcher is convinced that reporting on the limitations must be more structured than what literature is letting off. This means that a more detailed reporting framework is required. This study hypothesises that the reporting framework on the limitations should consist of the paradigmatic, methodological, methods, pragmatic and conceptual constructs. The paradigmatic realm must talk to weaknesses in the overarching assumptions, whilst the methodological construct should talk to issues in the approach and design. Equally, the methods should talk to the flaws in the techniques applied in the study, the pragmatic construct must talk to miscellaneous issues that created bottlenecks during the scientific inquiry process and the conceptual construct must talk to formative and summative phases of the research. Including a pragmatic mix

will add key empirical contributions on what postgraduate students at the master's and doctoral levels can expect in their journey.

To satisfy the paradigmatic construct, this study reports as cited in 3.2 that the anti-positivist paradigm espoused is not ideal to test the theories generated in this study. This can only be done using positivist approaches, since correlational relations among constructs will have to be tested. By implication, the shortfall means that the Matlala thesis and the theorems postulated in 10.2.2 (see Table 11) require further testing. Like the framework for police efficiency that is hypothesised in 10.2.3 (see Figure 17), all such postulations need to first be tested before they can qualify as models. Having acknowledged this shortfall, the study makes recommendations on further research in 10.2.1. Some of the recommendations generated in this study include but are not limited to research on the effectiveness of technologies in combating crime; on the value of MIS in police work; research on the type of security of technologies used by the police; on the implications of digitisation in police agencies and police attitudes towards digitisation; and research on Fourth Industrial Revolution technologies (robotics, smart software and Artificial Intelligence) and how these factor in smart policing.

As far as methodological weaknesses, this study as cited in 3.2.1 used a case study design. According to Thomas (2021:286), it is difficult to generalise case study findings to other settings. This study only focused on the ORTIA case, which aspect is outlined in 1.9. Consequently, it is not easy for the findings to be applied to other international airports in South Africa. The limitation is imposed by the paradigmatic assumption in anti-positivism whose key principle is to contextualise to a case as opposed to generalising to other similar cases. However, the lack of generalisability is mitigated by transferability which assumes that the results can be transferable to other international airports, subject to the proviso that they display similar dynamics/challenges in policing and technologies.

In terms of the methods construct, the study used non-probability sampling techniques that are cited in 3.3.2. The issue with non-probability techniques is that the likelihood of a person being selected as posited in 3.3.3, is unknown. This contrasts with probability samples wherein processes are more structured, and a sampling frame gives equal chances to all. This shortfall is also influenced by the paradigmatic assumptions that compel methods in anti-positivism to utilise relatively smaller samples as postulated in 3.3, in comparison to large samples in positivism.

The pragmatic construct is also reported in this section. To this end, the pragmatic dynamics include having to deal with suspicious research participants, convincing them that there is nothing untoward in the inquiry and having to conduct some of the interviews at night, which information is cited in 3.3.5. Also, having to be mindful of the existence of and curbing the spread of COVID-19 placed some pressure on the researcher, even though enough support was in place as cited in 3.3.5. Such encounters may in some cases discourage researchers or make them lose concentration or hope in proceeding with the inquiry. This is more likely to be the case with novice researchers at master's level. Another pragmatic constraint was the lack of research on the use of technology in police work in the Afrikan context, which issue is part of the problem statement in 1.6.

Reporting on the conceptual construct is dealt with in the formative and summative phases of the project. In the formative phase, the research used a pilot study. The disadvantages associated with pilot studies are documented in 3.4.3. To recap, these include sending the message that the research may fail which could discourage researchers, especially the novices; causing delays in starting the research; and causing discontent among those not chosen to be in the sample. To mitigate part of the problem, issues on doing a pilot study were never communicated to any member of the research population. Thus, the pilot-testing phase was never conversed with anyone at the ORTIA.

Lastly, to satisfy the summative phase, the researcher used member checking. The disadvantages of member checking are also well documented in 3.4.4. To recap, these include being time consuming for research participants who have already informed the study; participants finding it difficult to comprehend the research findings; philosophically assuming that there is a static truth of reality; and research participants conveying what they think the researcher should hear. There was nothing that the researcher could do to lessen the time factor for the participants as the confirmability of the study hinged upon checking with them. However, in terms of comprehension, the summary to the participants was written in simplistic language, the same way that this report is written. The summative phase of the conceptual construct may lead to the publication of the thesis. However, this is dependent on recommendations made by the assessors. This can only happen once the examinations process is finalised, and the results are released.

3.6 CONCLUSION

Reporting on methodology and methods is key to unearthing paradigmatic assumptions in research. Discussions in this chapter explained how the research techniques were applied and how the integrity of the data and the measures for ethical aspects were operationalised. Accordingly, discussions on research methodology and methods are not only intended to ensure paradigmatic congruence but also to explain the rationale for the application of specific techniques. The discussions are essentially also intended to ensure the quality assurance aspects. Part of what ensured quality in this study was editing. This study was scrutinised for grammatical, content and academic soundness and a certificate is attached hereto (see Annexure E). For continuity, the next chapter confers the rationale for the policing, transnational crime and techno-securitisation nexus.

CHAPTER 4: THE RATIONALE FOR THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS

4.1 INTRODUCTION

Efficiency in combating transnational crime requires of the police to philosophically ground strategies, practices and technologies used when policing critical settings that include borders, borderlines and entry ports such as the ORTIA. An effective approach to policing such settings thus requires among other things that the policing, transnational crime and techno-securitisation nexus should be explicitly theorised. To this effect, policing, transnational crime and techno-securitisation as a construct, comprise different theories that form the foundation or ontological grounding for the nexus. These entail in the main, varied crime prevention and Management Information Systems (MIS) theories.

As already cited in section 1.1, the effective securitisation of an entry port such as the ORTIA requires deeper understanding of the interfaces in policing, transnational crime and techno-securitisation. The understanding is crucial in enabling decisions on whether to apply a traditional approach which is mostly reactive; techno-securitisation which is more proactive; or combine the two when dealing with crime. To this end, scholars (Manning, 1992:386; Nissan, 2008:21; Streefkerk *et al.* 2008:102; Brayne & Christin, 2021:612; Wood, Roos & Johns, 2022:1; Yu & Chen, 2021:9) agree that the police can apply technologies as dual crime-control tools; both proactively and reactively.

The police in Afrika have however failed to properly integrate into a single set of values, the basic principles in policing, crime as well as techno-securitisation (Pierskalla & Hollenbach, 2013:207). Simply explained, this last claim means that routine police operations that involve the use of technologies to combat transnational crime are not well integrated with the basic values or philosophy of policing. Pierskalla and Hollenbach (2013:207) agree that law enforcement in Afrika generally misread the challenges, dynamics and interfaces relating to policing, crime and technology. To deal with the problem requires the conceptualisation of and sound understanding of values in what this study terms as the Post-Modern Policing philosophy. For brevity, this is a set of values used to ground policing in the context of the Fourth Industrial Revolution prodigy or epoch.

The challenges as cited in this section also imply that the police in Afrika not only lack knowledge bases to support the use of technologies in securitising international airports, but

also lack the necessary skill sets. The causes of this problem are the same as outlined in 1.2.1. To recall, these include poverty (Mazzitelli, 2007), high training costs (Matlala, 2013), skills shrinkage (Omar, 2008), poor funding (Matlala, 2013), disjointed databases (Matlala, 2013), political meddling (Panyapanya, 2021) and the lack of frameworks to evaluate technologies used in police practice (Matlala, 2013). From this group of causalities, it can be inferred that Afrika's police do not have enough incentives to really take the policing, transnational crime and techno-securitisation nexus seriously.

For policing, the problems as noted in the preceding discussion essentially spell a random approach to crime prevention. The March 2017 robbery wherein more than R200 million was stolen at the ORTIA (The Herald, 2017), not only raises questions as to the surveillance capabilities but also suggests poor intelligence and undoubtedly a random approach to policing at the facility that is a national key point. Such a problem could only be tackled if the SAPS adapt their plans and use of technologies within the perimeters of diverse, but inter-disciplinary philosophies. Adopting Multi, Inter and Transdisciplinarity (MIT) could enable a better grasp of the basic assumptions that provide the real reasons as to why technologies are applied to deal with crime. In the main, MIT talks to the integration of diverse disciplines (Stavridou & Ferreira, 2010:1). Drawing from policing, crime prevention and MIS theories essentially verifies the MIT approach in this study.

In a move to enable a proper grasp of a construct such as the policing, transnational crime and techno-securitisation nexus, this chapter articulates on the assumptions in the modern and post-modern policing paradigms. The chapter further discusses the crime prevention and MIS theories as the underpinning foundations for the nexus. To provide a theoretical basis for transnational crime, the chapter also outlines a few crime causation theories. In the latter part, the chapter summarises the epistemological aspects of the nexus. This chapter essentially serves as the theoretical framework for the research in this project. As a point of departure, this next section provides a background on the philosophy of policing, which governs police practice at international airports such as ORTIA, despite not having espoused the use of technologies in its basic assumptions.

4.2 THE PHILOSOPHY OF POLICING

The philosophy of policing is generally premised on the power of the state to protect citizens, their civil liberties and properties (see Reiner, 1992:762; Rawlings, 2012:115; South Africa, 1996; Hall, Critcher, Jefferson, Clarke & Roberts, 2013:599; Koslicki et al, 2021:3; U.S Department of Justice, 2024). Fundamentally, the emphasis in the philosophy is on protecting human rights, observing international and national laws, ethical conduct, safeguarding democracies and non-discriminatory professional practices (United Nations, 2004:3). Observing international law, implies that the philosophy places greater emphasis on the general rule that police protection is not limited to nationals of one country, but should be extended to all persons without any partiality, perceived or real.

From its early beginnings, policing was intended to be the first line proxy in enabling criminal justice processes, peace, including safety and security within society (see Dale, 1994; Bush & Dodson, 2014; Encyclopedia Britannica, Inc. 2017; Koslicki et al. 2021:9). Police were thus formed to ensure security in communities, on behalf of the state. This last claim undeniably attests to the fact that the philosophy of policing is about protecting society. A key feature about the philosophy is that it is grounded in providing essential services to, and fostering good relations with local communities (see Dale, 1994; Rawlings, 2012:115; Bush & Dodson, 2014; Encyclopedia Britannica, Inc. 2017; Koslicki et al. 2021:7). One such service is using technology to securitise borders, borderlines as well as entry ports such as land, sea and international airports such as the ORTIA.

The philosophy of policing can in the context of this study, be defined as:- a set of values, attitudes, ideas, viewpoints, beliefs and the thinking that holistically governs police practice (see Dale, 1994:19; Bush & Dodson, 2014:200; Kelling, Whetstone, Brodeur, Walsh & Banton, 2017; Koslicki et al. 2021:7). In essence, policing generally refers to tasks performed by members of a public agency that has the legal right to maintain order and to enforce the law within a particular society (see Dale, 1994:19; Bush & Dodson, 2014:194; Encyclopedia Britannica, Inc. 2017; Kelling et al. 2017; Koslicki et al. 2021:7). Such legal obligation/right thus explains why the South African government charged the SAPS with the duty to ensure security at the borders, borderlines and at all entry ports.

The right to enforce the law has, however, always placed police actions under spotlights, wherein police actions are always at the centre of active public debates in the media. The central concern in such debates is for the police to constantly justify their actions and policies

before wider audiences that include members of communities being serviced and political authorities, which justification speaks broadly to police accountability. To this end, the lack of research, inadequate policing, techno-securitisation blues, polarised operational approaches, the silo effect, legislative constraints and disjointed strategic approaches as cited in 1.6, have constrained policing at the ORTIA and thus inhibited the quality of reporting, which problems generally spill-over and inhibit police accountability.

To overcome the challenges requires the police to not only become research-driven, but police to also continue to foster good relations with other state departments, foreign police agencies and have sound policies that support their strategic and operational objectives (Matlala, 2013). Central to policies and practices in policing is an element of soundness and the existence of a holistic philosophy. Dale (1994:19) argues that "[the lack of such a philosophy is a weakness that hinders informed decisions concerning the appropriateness of actions in policing]". Without a universally accepted philosophy, contemporary policing could never attain the cooperation levels needed to effectively combat transnational crime at international airports, which issue weighs heavily on INTERPOL who must facilitate global police cooperation as contemplated in 1.3.

For the SAPS, the non-conceptualisation of the policing, transnational crime and techno-securitisation nexus and dislocation thereof from the philosophy of policing, is problematic. As cited in 1.2.1, the non-conceptualisation of the nexus alone implies a poor understanding of the dynamics and challenges relating to policing at borders, borderlines and entry ports such as the ORTIA. The non-conceptualisation has far-reaching implications on the adequacy of policing. This is because such shortfall dislocates police practice from philosophical, operational and strategic soundness, often resulting in a random approach to securitisation. To deal with the problems will require investigations to determine the extent to which the nexus is dislocated from the philosophy of policing. One way to explore such dislocation is through a conceptual analysis of the basic principles in the policing philosophy, as outlined in the next section.

4.2.1 The basic principles in the policing worldview

The dawn of the 20th century presented philosophical problems that could not have been foreseen by the 19th century founding fathers of modern policing, one such being Sir Robert Peel. Among the challenges is the introduction of policing technologies, which aspect was never considered when the philosophy of modern policing was theorised by Peel (see Peel, 1829; Clark, 2005; Nazemi, 2009; Bullock, 2014; Cordner, 2014). To explain, Sir Robert Peel

conceptualised about nine norms that form the philosophical bases for modern policing (see Peel, 1829; Nazemi, 2009; Bullock, 2014:101; Cordner, 2014:148). These are known as "*The Peelian Principles*". An analysis of the said principles showed that none of these accentuates the use of technologies in police work. Nazemi (2009) essentially gives a detailed showing of the 9 Peelian Principles as follows:

- **Peelian Principle 1:** *"The basic mission for which the police exist is to prevent crime and disorder."*
- **Peelian Principle 2:** *"The ability of the police to perform their duties is dependent upon public approval of police actions."*
- **Peelian Principle 3:** *"Police must secure the willing cooperation of the public in voluntary observance of the law to be able to secure and maintain the respect of the public."*
- **Peelian Principle 4:** *"The degree of co-operation of the public that can be secured diminishes proportionately to the necessity of the use of physical force."*
- **Peelian Principle 5:** *"Police seek and preserve public favor not by catering the public opinion but by constantly demonstrating impartial service to the law."*
- ***Peelian Principle 6:*** *"Police use physical force to the extent necessary to secure observance of the law or to restore order only when the exercise of persuasion advice and warning is found to be insufficient."*
- ***Peelian Principle 7:*** *"Police, at all times, should maintain a relationship with the public that gives reality to the historic tradition that the police are the public and the public are the police; the police being only members of the public who are paid to give full-time attention to duties which are incumbent on every citizen in the interest of community welfare and existence."*
- **Peelian Principle 8:** *"Police should always direct their action strictly towards their functions and never appear to usurp the powers of the judiciary."*
- **Peelian Principle 9:** *"The test of police efficiency is the absence of crime and disorder, not the visible evidence of police action in dealing with it."*

The modern policing worldview as postulated by Sir Robert Peel in 1829, essentially serves as criteria to assess whether police practice in general, does not conflict with the founding principles that underpin modern law enforcement (Peel, 1829). In practical terms and the context of this study, this last assertion means that *"The Peelian Principles"* prescribes specific ways on how borders, borderlines and entry ports such as the ORTIA should be policed and effectively excludes others. Ways that are excluded include among other things, racially biased

policing tactics, as well as brutal approaches previously used by the JCPSC departments, an issue already cited in 2.7.1 of this research report.

From further analysis of the Peelian principles, it can further be inferred that modern policing is grounded in assumptions that include but are not limited to the prevention of crime; forming sound police-community relations; observing the rule of law; enhanced operational efficiency; the judicious use of force; and respect for authorities that include government and courts (Peel, 1829). Despite no mention of technologies in the Peelian thesis, the assumptions therein can be considered a yardstick that can be used to determine whether tactics and technologies used to combat crime, conform to the generally accepted norms in policing, because the use of technologies is part of practice in contemporary policing. Contemporary policing essentially speaks to Post-Modern Policing. Aspects of modern and Post-Modern Policing are further dealt with in 4.2.3.

To align with the philosophy in modern policing, the SAPS follow assumptions that are informed by community participation, which is universally recognised as Community Policing. The SAPS fundamentally subscribe to a set of principles that are embedded within the Community Policing philosophy (South African Police Service, 2001). This worldview however also forms part of the broader philosophy in modern policing, though with specific emphasis on police-community partnerships. In the context of this study, community participation implies that the police rely on the cooperation of persons who use the ORTIA (passengers and employees), to help them fight transnational and other forms of crime. Bush and Dodson (2014:199) agree that community participation is a vital ingredient in philosophically grounding police-community relations. In Sir Robert Peel's interpretation, police-community relations are critical because "the police are the people and the people are the police" (see Peel, 1829; Bullock, 2014:101; Cordner, 2014:148).

4.2.2 Key issues with the philosophy of policing

The theorisation of modern policing as premised on Sir Robert Peel's nine principles of law enforcement facilitated a paradigm shift from an ancient approach wherein policing was repressive, punitive and excluded an element of community participation (Cordner, 2014:148). The one key issue however is that to date, there is no consensus on what constitutes a holistic philosophy of policing. To this end, Dale (1994:25) cited that: "[the establishment of a generally agreed philosophy of policing is a highly ambitious aim]". This last-named author further argues that the absence of a generally accepted philosophy could result in assessments on

police strategies and operations being misdirected. What this means is that if the police use technologies without being clear of the underlying philosophical assumptions, they may find themselves misdirected because such usage may not necessarily be premised on a principle that resonates with policing.

To corroborate the assertions by Dale (1994) in the preceding paragraph above, Matlala (2013:140) further hypothesises that the philosophy of policing is critical in informing approaches in crime combating operations. This last claim was further given credence in 4.2.1, through the postulation that the philosophy of policing can be applied to evaluate police operations. Worrisome in this context as already inferred, is that the absence of a globally agreed-upon philosophy of policing could have adverse impacts on the conceptualisation of strategies, resulting in operational inefficiencies in police work. The eventuality could gradually lead to escalating crime trends. Such eventuality would in reality defeat the basic crime prevention values that underpin the philosophy of policing.

The establishment of a single and generally accepted philosophy of policing as postulated by Dale (1994) is indeed a mammoth task, but not an impossibility. This last assertion is not far-fetched, specifically when considering that worldviews in different police organisations around the world are primarily shaped by indigenous systems from the different countries of origin. To this effect, the diverse cultures, politics and sociology in each country around the world, can shape what is acceptable or unacceptable as the basic principles that underpin the philosophy espoused by the police (see Dale, 1994; South African Police Service, 2001; Bush & Dodson, 2014; Kelling et al. 2017; Koslicki et al. 2021:7). The role of politics in shaping policing thus explains how political bureaucratism factored into policing at the ORTIA, which issue was outlined in 2.7.3.

The one major concern with cultures, politics and sociology shaping social orders is the fact that systems in Afrika have over the years been disrupted by colonial repression (Nkrumah, 1963:52). In South Africa for example, disjointed policing during apartheid was deemed unacceptable, particularly in black communities, this owing to the racial and brutal approach followed (The Presidency, 2016:14). The approach as already cited in 2.5.2, led to the moral authority and legitimacy of the apartheid police being publicly questioned. In reality, the conduct of apartheid police defied all logic denoted in the philosophy of policing. This is because the approach followed was dual and conflicted along racial lines. The one logic was

to protect white citizens and the other was to brutalise black people, thus suggesting a paradoxical philosophical stance on policing.

The polarity linked with the divergent worldviews eventually prompted Cordner (2014:148) to conclude that policing or police practice consist in different semantic sponges loaded with ideological, political, philosophical, cultural and occupational issues. To curb the confusion, the SAPS post-1994 further adopted Democratic Policing (see South African Police Service, 2001; South Africa, 1996; Calland & Pienaar, 2016), as an approach that subscribes to the constitutional supremacy ideals that include openness, accountability, respect for human rights and for the rule of law (South African Police Service, 2001). To this end, Community Policing and Democratic Policing have helped the SAPS to become a non-racial and essential service, following a past brutal and racist colonial reputation.

The assertion by Cordner (2014) that policing is semantic is without a doubt factual. In some states, policing follows religious lines with emphasis on enforcing spiritual/moral values (Ebbe, 2013:225). In such states, blasphemy and adultery are criminalised (Ewald, 2012:1090), as opposed to most democracies where moral and spiritual transgressions are not necessarily criminalised. There are however exceptions to this last claim. Despite being modern democracies, Malawi and Senegal have for example outlawed same-sex relations and gay people are arrested and prosecuted (Thoreson, 2014:23). Such an approach fundamentally adds to the metaphysical dilemmas in policing. Amid these multi-layered semantics, policing must find itself metaphysically, that is in the context of their use of technology and that of the Fourth Industrial Revolution.

4.2.3 Points of convergence in the policing philosophy

Despite the metaphysical dilemmas hypothesised by Cordner (2014:148) in 4.2.2, there are no doubts that policing must have specific points that can be considered on a consensus, as the core convergence principles that underpin its philosophy. The consensus is critical in enabling a clear shift from modern policing to a Post-Modern thinking. Though this study does not purport to provide an exhaustive list of what the convergence principles are, a serious attempt is made in this section to present a holistic list that may arguably be accepted in most

societies, as the seven core convergence values that underpin the philosophy of policing in post-modern times[1]. The values are:

- **Service-oriented:** the police globally have a common purpose of giving efficient service to the public (see Ngobese, 2011:2; Zondi, 2012:1; Matlala, 2013:1; Koslicki et al. 2021:7). For the SAPS, the services are defined in section 205 of the Constitution of the Republic of South Africa. The functions are to prevent, combat and investigate crime; maintain public order; protect and secure the inhabitants of the country and their property; and uphold the law (South Africa, 1996). Inhabitants in this context refer to citizens and non-citizens, irrespective of whether such persons are in the country legally or illegally. As cited in 2.7 of this report, services offered by the SAPS at the ORTIA include using technologies to monitor the movement of firearms and suspects; and to process case files on undocumented migrants and false travel documents (Geldenhuys, 2016:49).

- **Problem-solving:** Police generally exist to solve problems in communities. Such service can be effectively attained through strong police-community partnerships aimed at reducing crime (see Hornberger, 2013:599; California State University, 2016; West Yorkshire Police, 2017; Koslicki et al. 2021:1). For ORTIA, problem-solving goes beyond dealing with transnational crime or assisting passengers/employees with any issues. For example, the police can help passengers to skip long queues, where such passengers are required to board flights, assist the elderly to transit easily between terminals or act as mediators between quarrelling individuals. Research (Dale, 1994:21; Moore & Braga, 2003:439; Nuth 2008:437; Matlala, 2013:66: Koslicki et al. 2021:2) has shown that the gravity of crime and ever-swelling demands for services are some of the factors that necessitated a methodical move towards problem-solving in police practice.
- **Rule of law:** another core value in the philosophy of policing is the observance of the rule of law. This value entails that in executing their work, the police have to enforce existing national and international laws, abide by the same laws that they enforce and refrain from engaging in brutal acts (see Brogden & Shearing, 2005:112; Council of Europe, 2017; United Nations Peacekeeping, 2017). Thus, the brutal and racially biased approach used by the police in South Africa as cited in 2.7.1, was a deviance from the rule of law and was disconnected from the core principles that underpin policing as a

[5] Post-modern policing refers to 21st century policing. Other policing epochs also briefly described in this study are ancient policing (3000 BC-1799 AD), modern policing (from 1800-1999). In contemporary terms, modern and post-modern actively still overlap.

worldview. For the police at the ORTIA, observing the rule of law also implies not using law enforcement technologies in a manner that unduly violates the privacies of individuals, including passengers and staff who use the facility. Matlala (2013:83) cogently argues that when the SAPS use technologies in an unlawful manner to violate individual privacies. This not only raises serious questions regarding the freedoms that can be enjoyed in a democracy but is also a violation of the country's constitution and supreme law.

- **Oversight:** There is consensus among scholars (Sorensen & Pica, 2005; Taylor, 2005; Wen, 2009; Faull, 2010; Smith, 2010; Matlala, 2013; Calland & Pienaar, 2016; Koslicki et al. 2021:1) that the police cannot be left unmonitored. The monitoring thus necessitates the establishment of oversight institutions to respond to cultures of impunity within police agencies (Smith, 2010:59). This includes responding to corruption; poor service delivery; police brutality; excessive use of force; maladministration and mismanagement of resources, including technologies. Dealing with such problems requires independent oversight institutions that can carry out their mandate with impartiality, in accordance with the law and without interference from any authority or person (see Faull, 2010:33; Smith, 2010:60; Calland & Pienaar, 2016:67). To this end, Article 8 of the United Nations Code of Conduct for Law Enforcement Officials emphasises that police oversight should be entrenched in every country's jurisprudence (see United Nations, 1979; Smith, 2010:60; Calland & Pienaar, 2016:68; Ali & Nicholson-Crofty, 2021:523). At the ORTIA, criminal oversight on police practices, is done by the Independent Police Investigative Directorate (IPID). In addition, the SAPS must report on organisational performance to the Parliamentary Portfolio Committee on Safety and Security regularly, on a quarterly and annual basis.

- **Good governance:** Good governance in police organisations has to do with the cost-efficient utilisation of resources; making decisions on the future of policing services; continuing to transform police practice into an efficient and effective machinery; making decisions that need to be communicated to staff, communities, members of the public and political authorities; as well as acting with integrity (see Jones, 2009:338; Shearing & Johnston, 2013:57; The Chattered Institute of Public Finance and Accountancy, 2016). Thus, the principles in good governance are ethics and integrity; openness and stakeholder engagement; defining outcomes; determining interventions; developing leadership; managing risks; monitoring performance; and effective accountability (see

The Chattered Institute of Public Finance and Accountancy, 2016; Adams et al. 2021:2; Mzumara & Ndhlovu, 2021:118). A study by Jones (2009) found that- "[the police have the ability to transform themselves into institutions deemed as legitimate legal authorities providing effective service to their recipients through: the limitation of arbitrary exercise of power; establishing institutional arrangements for successful social problem-solving; and cultivating the appropriate character for staff who carry out their institutional mandate]". To achieve good governance will thus require the SAPS at ORTIA to strike a firm balance between efficiency and accountability.

- **Techno-centrism**: Modern police could never attain the required levels of operational efficiency without the use of sophisticated technologies (see Colton, 1979; Matlala, 2013; Reitano et al. 2015; Govender, 2016; Adams et al. 2021:7). This last assertion is given credence in section 1.2 of this report. One inference that can be drawn from section 1.2 is that the achievement of a firm balance between efficiency and accountability requires proper mechanisms to be put in place to evaluate the effectiveness of technologies used in police work and to report thereon, to the relevant authorities. However, such processes must also be aligned with the police's theory of governance as embedded in legislation and relevant national policy frameworks. The balance is essentially critical in enabling modern police agencies to philosophically ground their use of technology in crime combating operations. The SAPS at ORTIA is to this end, supported by the Information Technology Resource Strategy (ITRS) 2002-2005 and their strategic plan for 2014-2019. These directs the implementation of policies that support the use of technology in attaining the organisational strategic and operational goals (see South Africa, 2002; Matlala, 2013:39; South African Police Service, 2014).
- **Peace-making:** Police officials globally are generally appointed as peace officers and conservators of peace (see Joubert 2010:224; South Africa, 2014:5; African Union, 2015; United Nations Police, 2015; Cohen, 2021:4). The deployment of police officials by the United Nations in peacekeeping missions throughout parts of the world (see Caparini & Osland, 2014; Oksamytna, Bove & Lundgren, 2021:17; Williams, 2021:164) attest to the peace-making role of the police. For an entry port such as ORTIA, peace-making implies that the police should conduct themselves in a professional, legal, ethical and accountable manner when dealing with the public. The same preserve should thus also be accorded to the different technologies utilised to combat transnational crime at the facility. Thus, peace-making at ORTIA goes beyond just resolving the crime problem, but also involves creating a safe environment for passengers and employees at the facility,

including mediating between quarrelling individuals, therefore portraying the country as a beacon of peace and democracy, where human rights are valued. Peace-making essentially starts with a vow from an individual police official at a local policing precinct, before it can be escalated to the regional, continental or global stages.

The seven core convergence values as outlined in this section marks a fundamental shift from Peel's theory. Whilst the values accentuate all of Peel's principles, techno-centrism and good governance for example marks a clear point of departure from the modern policing assumptions. To this end, techno-centrism is accommodative of the policing, transnational crime and techno-securitisation nexus. Accommodating the nexus in contemporary law enforcement is indeed an important exercise; considering that combating transnational crime in the 21st century could never be attained without the use of hi-tech technologies (see Bloss 2007; Sinclair & Matlala 2011; Matlala, 2013; Govender, 2016), which point has already been highlighted in section 1.4 of this report.

For contemporary policing in Afrika to remain philosophically relevant will essentially also require a move from the Peelian premise to conjectures that incorporate indigenous systems and technologies, which would equally spell a move from modern to post-modern policing. This kind of shift has long been advocated by Clark (2005), in a publication titled: *"The importance of a new philosophy to the post-modern policing environment"*. In this paper, Clark postulates that traditional paradigms in modern policing need to be replaced by post-modern and heterogeneous models, since modern policing paradigms are no longer holistic enough, thus not completely suited to deal with the crime terrain in the 21st century (Clark, 2005:642). The seven core convergence values as outlined in this section are therefore an example of assumptions in post-modern policing, which police agencies on the Afrikan continent also need to espouse to philosophically ground their utilisation of technologies in fighting transnational crime at international airports such as the ORTIA.

4.2.4 Afrika and policing: the philosophical dissonance

Afrika remains philosophically challenged in accommodating policing technologies at its international airports. As already cited in 4.1, poverty (Mazzitelli, 2007); high training costs (Matlala, 2013); lack of skills (Omar, 2008); poor funding (Matlala, 2013); detached databases (Matlala, 2013); political meddling (Panyapanya, 2021); and the lack of frameworks to evaluate technologies (Matlala, 2013); are among some of the issues that have made the police on the

continent not to take the policing, transnational crime and techno-securitisation nexus seriously. Arguably, most worrisome in taking the nexus seriously is also the fact that contemporary policing continues not to resonate with Afrikan philosophies and other indigenous praxes, which issue signals a condescending monopolistic neo-colonial stance, resolute on excluding others (Matlala & Sinclair, 2013).

Historically, policing has its origins in Afrika. The first policing organisation was founded in Egypt around 3000 BC, with the mandate to protect subjects of the empire (Encyclopedia Britannica, Inc. 2017). The empire was divided into 42 administrative jurisdictions in which the Pharaoh appointed an official responsible for justice and security (Kelling et al. 2017). This official was assisted by a chief of police known as the *Sab heri seker* or chief of the hitters, who was responsible for a body of men who collected taxes and enforced laws within the empire (Encyclopedia Britannica, Inc. 2017). The systems in Egypt were unduly disrupted by the rise of western colonial imperialist occupations.

There are no doubts that policing as a social order in ancient Egypt, was also seriously disrupted by colonialism. It was the Roman Empire who first plotted the progressive destruction of the cultural and political; including many other aspects of life in Egypt (Webster, 1996:13). Roman rule over Egypt began around 30 BC and subsisted for about 700 more years (see Jones, 1986; Webster, 1996; Ancient Egypt Online, 2017). Subsequently, the British, French, Portuguese and many other western colonial powers followed suite in most of Afrika from the 1600's. The repression that followed gradually subverted economic and social orders, thus also political self-determination and the indigenous Afrikan philosophies that govern social interactions (see Nkrumah, 1963:52; Nyerere, 1967; Thompson, Gupta & Nyerere, 1971; Nyerere, 1987; Mamdani, 1997).

One Afrikan philosophy that found itself under colonial siege is *Ubuntu.* Also known in the Swahili language spoken in parts of Afrika that include Zambia, Kenya, Tanzania (Zanzibar), Uganda, the Democratic Republic of the Congo, Mozambique, Malawi, Rwanda, Burundi and Somalia, as *Uhuntu, - s*imply translated, *Ubuntu* is a South African word, in particular an IsiZulu word that means humanness (see Karsten & Illa 2005:607; Matlala, 2013:43; Matlala & Sinclair, 2013:122). *Ubuntu* is therefore a universal philosophy with emphasis on reciprocity, inclusivity and shared destiny for all mankind (see Enslin & Horsthemke, 2004:257; Karsten & Illa 2005:607; Abubakre, Faik & Mkansi, 2021:6).

Ubuntu as an Afrikan philosophy is best captured in utterances made by Dr. Mamphele Ramphele, a South African academic, social justice activist and liberation struggle proponent who once declared that: "[*Ubuntu* as a philosophy of social relationships must stand alongside other approaches and be judged on the value it can add to improve human relations within our societies worldwide]" (Abubakre et al. 2021:4). To this end, it is inconceivable that the philosophy of policing can advocate sound police-community relations as an imperative in dealing with transnational crime at entry ports such as the ORTIA, not when the philosophy does not embed humaneness as an integral segment.

For the Afrikan continent, a philosophy such as *Ubuntu* is not visible in the philosophy of policing (Matlala & Sinclair, 2013:131). This is worrisome, considering that the values that highlight respect for members of the public and the judicious use of force, as cited in 4.2.1; respect for human rights and individual privacies, being service-oriented, problem-solving, accountability and respect for the rule of law, peace-making and using technologies within the boundaries of the law, as accentuated in 4.2.3; could never be attained in isolation of sound levels of humanness, which equates to humanising law enforcement. The isolation of indigenous philosophies from policing simply defies logic as it suggests the fallacy that policing is Western, thus allowing supremacism to subsist.

Matlala and Sinclair (2013:131) strongly argue that the one way to integrate Afrikan values into the philosophy of policing is by re-emphasing *Ubuntu* as an over-arching rule in police work. For South Africa, the problem with the non-integration of indigenous philosophies with the policing philosophy is the fact that the country also inherited colonial police that were racially biased and repressive (Govender, 2017:2). Kelling et al. (2017) confirms that most former colonies kept the policing regimes imposed by their colonisers. In post-modern times, it can nonetheless not be appropriate for policing and the use of technologies to securitise the ORTIA, to be disconnected from humaneness.

The disconnection of *Ubuntu* principles from policing spells a philosophical dissonance. Indeed, such disconnection does condescendingly contain undertones that have historically and to this day, suggest that policing is a Western initiative. To counter-argue such mischievous fallacy, scholars need to always remind themselves that there is evidence that shows that historically policing has its rooting in Afrika. In light of the historical facts adduced in this section, the researcher in this study agrees without a doubt that policing as a philosophy

is semantic, but further postulates that it is a universal construct that happens to have only been re-conceptualised and reduced to writing by scholars in western lands, perhaps in not so recent times by the likes of Sir Robert Peel.

The claim on the historical rooting of policing essentially raises questions as to why the police's usage of technologies and crime prevention on the continent continues to be problematic, when history reminds the world that policing was born on Afrikan soil. Apart from laying the blame solely on colonialism, the question raised in this section requires mainly Afrikan scholars to continuously ponder on solutions for policing on the continent (Afrikan solutions to Afrikan problems). This is crucial, particularly as the world enters the Fourth Industrial Revolution, in which crime prevention strategies need to be adapted thereto. Issues on crime prevention and this industrial revolution are outlined in the next chapter.

4.3 CRIME PREVENTION THEORIES

Crime prevention theories generally refer to a body of knowledge that comprises the basic assumptions that inform plans intended to deal with crime (see Clarke, 1995; Bowers & Johnson, 2003; Clark, 2005; United Nations, 2010; Wood & Thompson, 2021:414). Because of the prologue of technologies, crime prevention theories also had to depart from the Peelian orthodox axioms to a post-modern thinking. The shift manifested in new paradigmatic views that stresses on improved leadership, sound governance (Mzumara & Ndhlovu, 2021:118); cooperation, science and technology (Wood & Thompson, 2021:414), accountability (Matlala; 2013:58); as well as oversight (Calland & Pienaar, 2016:67).

As crime is becoming more sophisticated and spatially unrestricted, there are parallel growing demands for ways to better align technologies with prevention strategies and in the main, with the post-modern crime prevention theories. The alignment is also crucial in enhancing the police's operational efficiency in fighting transnational crime at settings that include borders, borderlines and entry ports in sub-Saharan Afrika. Wood and Thompson (2021:414) agree that the 21st century crime obliges the use of new technologies to help unpack crime patterns and create apt plans that are rooted in post-modern prevention models, for ensuring that operations are aligned to the assumptions in both the modern and post-modern policing philosophy. The convergence values as outlined in 4.2.3 are essentially an example of the assumptions in post-modern policing.

To align operations with assumptions in post-modern policing effectively requires police scientists or theorists and practitioners to unpack the dynamics and challenges relating to crime and the use of technologies in police work. As already cited in 1.1, the unpacking requires that the police should become research-driven. In this context, the police teaming-up with higher education and research institutions would be a step in the right direction. Such a move could prove to be a catalyst in the theorisation of the nexus and in enabling the police at ORTIA to consciously fit operations into post-modern crime prevention theories, as opposed to using random approaches. As a background, this next section discusses the thinking behind early post-modern crime prevention theories.

4.3.1 The thinking in post-modern crime prevention

Early post-modern theories in police work galvanised with the dawn of technologies in police work. One technology to be first used in policing is the polygraph. Developed in 1921 by a Canadian psychologist John A. Larson, the polygraph was first used by Larson and Leonarde Keeler in 1925, during interrogations on criminal suspects held by the Berkeley Police Department in California (Polygraphia, 2011). Though utilised for the first time during the modern policing era, technologies marked the genesis of an end for modern policing, signalling the dawn of a new era, that of post-modernism. The move essentially paved the way for the development of post-modern crime prevention theories. However, the Fourth Industrial Revolution as a contemporary epoch, brought with it new elements of smart technologies, an issue that early post-modern theories never took into consideration.

A key consideration about the thinking in post-modern crime prevention is that the movement began in the early 20th century, thus overlapping with modern policing. Despite not having fully operationalised, there are apparent signals of post-modernism having begun to emerge strongly in contemporary policing, these fueled by advancements in science and technology. In this context, the "[transition from modern to post-modern policing is marked by changes that include: the restructuring and relocation of policing authority and responsibility; the re-conceptualisation of public policing; and the rationalisation of public and private policing]" (Bordbar et al. 2021:919). Private policing in this context refers to the role played by private security companies, who assist the police to fight crime and are also party to securitisation at an entry port such as the ORTIA.

To succeed in securitising the ORTIA requires of the police to adapt to post-modern thinking. This is the same thinking as postulated by Murphy (1998), which requires the relocation of

authority and responsibility. This could only be attained using robotics. According to Bordbar et al. (2021:919), mobile robotics have increasingly entered service into policing. Generally, the value added through robotics include: increased evidential value owing to the accuracy linked with the data collection abilities (Boyer & Farzaneh, 2021:87); keeping humans such as bomb disposal experts out of harm's way (Wired, 2016); providing speed and cost-effective service (see van Asten, 2014:170; Boyer & Farzaneh, 2021:94; Szewczyk, 2021:98); manipulating objects using cameras, sensors and microphones (see Robotics Tomorrow, 2017; Bordbar et al. 2021:921; Boyer & Farzaneh, 2021:84); and patrolling dangerous areas instead of tasking humans (McDonald, 2017).

The use of advanced technologies such as modern robotics essentially signify the relocation of authority and responsibility from human police. The reality with post-modern crime prevention is that robots are coming to patrol streets, the same way as self-driving cars and drones will be used for crime prevention (McDonald, 2017). Despite such prophetic claims, an important consideration is for crime prevention technologies such as robots, to be programmed in a manner that will ensure that such machines don't harm humans. To this end, the issue of non-harm or safety of humans should thus be considered the first among the basic principles when conceptualising post-modern policing theories.

4.3.2 Crime prevention through environmental design

One post-modern policing theory that stands out is Crime Prevention through Environmental Design (CPTED). This theory was coined by C. Ray Jeffery in 1971. Generally, the theory places emphasis on tactical designs and the effective use of the built or structural environment, to reduce crime; the opportunities and fear thereof (see Guerette & Bowers, 2009; University of Cambridge, 2014; Guerette, Johnson & Bowers, 2016; Greater Manchester Police, 2017; Book, 2021; Shariati & Guerette, 2017; Fisher, Maimon & Berenblum, 2021; Lamoreaux & Sulkowski, 2021). As part of the thinking in post-modern theory, CPTED is based on proactive, rather than reactive measures used to control crime.

The CPTED theory has to do with the fitting of securitisation measures into architectural sketches, before designs are set into stone (see Greater Manchester Police, 2017; Book, 2021:4; Lamoreaux & Sulkowski, 2021:481). Thus, CPTED underscores the significance of the

police in advising on security aspects when entry ports such as the ORTIA are to undergo architectural expansions, an example of which is the planned aerotropolis that is cited in 2.3.2 of this study. Of importance in such expansions as already cited in 2.3, is that counsel given by police is key to the effective management of transnational crime at the facility. Such counsel is likewise also key in determining which technologies to install on the planned aerotropolis architectural structure and where such tools should be positioned.

In the main, the theory of CPTED consist of five principles, these are: *physical security; surveillance; movement control; management and maintenance;* as well as *defensible space* (see Fennelly & Crowe, 2013:27; Armitage, 2014:251; Greater Manchester Police, 2017; Book, 2021:4; Fisher et al. 2021:2; Lamoreaux & Sulkowski, 2021:481). In the context of this study, physical security includes technologies such as the PIDS, CCTV, intelligent-video surveillance, Command, Control and Communications (C3) centres, and inter-operable network solutions, which tools are cited in 2.4.1, whilst on the other hand, movement control would systems include biometric technologies such as the AFIS, which is applied to control access in restricted areas at ORTIA, as already cited in section 2.4.1.

4.3.3 Situational crime prevention

The CPTED theory is in addition, reinforced by Situational Crime Prevention (SCP). Like CPTED, SCP also advocates the reduction of crime opportunities (University of Cambridge, 2014). The theory promotes the reinforcement of potential targets; the improvement of surveillance using CCTV; and redirecting potential offenders by limiting access to places where crime might be committed (see Guerette & Bowers, 2009; University of Cambridge, 2014; Guerette, Johnson & Bowers, 2016; Shariati & Guerette, 2017; Shane, 2021). To this effect, SCP as a post-modern theory is also apt in supporting policing and techno-securitisation in the fight against transnational crime at entry ports such as the ORTIA.

The approach in SCP is premised on action research or Transdisciplinarity using technology-driven solutions (Smith, 2017). Thus, SCP places emphasis on identifying problems in communities and working with the same communities to solve the problems. Originally, SCP was developed in the 1970s and 1980s, drawing from frameworks that focus on the importance of analysing crime and the settings in which it occurs (see Guerette, Johnson & Bowers, 2016; Shariati & Guerette, 2017; Smith, 2017; Shane, 2021). In addition to communicative

technologies, the model depends on analytic technologies that are cited in 1.3.3. Some of the most prominent proponents in SCP include, but are not limited to Clarke (1980); Clarke (1995); Clarke (2009); and Lee (2010).

The reliance on technologies effectively make SCP a post-modern theory. Essentially, post-modern crime prevention theories such as SCP not only support strategies and operations, but also provide the basic assumptions for the legitimate deployment of technologies in police practice. Like CPTED, SCP fundamentally also prescribe the basic reasons for which the police should use technologies. Any diversion from the basic assumptions is thus a theoretical misalignment and a departure from the ontological grounding in the policing philosophy. Such diversion could cause problems in terms of the effective management (monitoring and evaluation) of securitisation technologies used in police work. This type of management in fact begs the adoption of Management Information Systems (MIS) theories as additional assumptions or discipline in police work.

4.4 MANAGEMENT INFORMATION SYSTEMS IN POLICE WORK

The MIS theory refers to the study of people, technology and organisations. (University of Arizona, 2017). Thus, MIS is defined as the use by managers, of electronic and computer systems, to organise, evaluate and efficiently direct organisational activities (see McLeod & Schell, 1998:1; Laudon & Laudon, 2004:1; Business Dictionary, 2017; University of Arizona, 2017; Laudon, 2021:1). For the ORTIA, the effective use of MIS could enable police managers to monitor employee activities, analyse past and present data, and predict future patterns on transnational crime. Such techno-centric capacity enables proper decision-making and informs strategic and operational planning (see Laudon & Laudon, 2004:1; Kotler & Keller, 2006:1; Business Dictionary, 2017; University of Arizona, 2017; Laudon, 2021:1), which are essentially key features in effective control.

Primarily, MIS consist of software, data resources such as electronic databases that store information, hardware for decision support, people management and project management (see McLeod & Schell, 1998:1; Laudon & Laudon, 2004:1; Kotler & Keller, 2006:1; Business Dictionary, 2017; University of Arizona, 2017; Laudon, 2021:2). Thus, MIS can be used not only to facilitate planning and for organising operations, but also for evaluations on a wide

range of policing activities. In essence, MIS enables reporting and accountability, accentuates the good governance and oversight values as noted in 4.2.3.

The key feature of MIS as a discipline is that it being a study of people, technology and organisations, it consists of broad theory bases with emphasis on techno-centric practices. MIS is thus the umbilical cord that connects the policing, transnational crime and techno-securitisation nexus, which connection also accentuates the techno-centrism value in 4.2.3. The problem with the SAPS however is that the organisation does not take MIS seriously. Once again, high training costs (Matlala, 2013), lack of apt skills (Omar, 2008), poor funding (Matlala, 2013), low salaries (Omar, 2008), disjointed databases (Matlala, 2013) and the lack of frameworks to evaluate technologies (Matlala, 2013) have proved to be the problematic issues that continue to hinder an organised approach to managing crime.

An organised approach to efficiently fight transnational crime specifically at an entry port such as ORTIA, requires of police management at every level to make sound operational, tactical and strategic decisions. There is no doubt that achieving such a goal requires among other things, the effective implementation of MIS. Thus, an imperative feature about MIS is that it enables organisations to design and implement procedures, processes and routines that provide appropriate and detailed reports that are accurate, consistent, and on time (see McLeod & Schell, 1998:1; Laudon & Laudon, 2004:1; Kotler & Keller, 2006:1; O'Brien & Marakas, 2006:102; Laudon, Laudon & Brabston, 2011:300; Business Dictionary, 2017; University of Arizona, 2017; Laudon, 2021:3). Such capabilities could essentially determine whether the police win or lose the fight against transnational crime at the ORTIA.

Generally, MIS applies modern computerised systems to gather relevant information from inside and outside of the organisation on a daily basis (see Laudon & Laudon, 2004:1; O'Brien & Marakas, 2006:102; Laudon, Laudon & Brabston, 2011:300; Business Dictionary, 2017; University of Arizona, 2017; Laudon, 2021:1). In police practice, such capability is central to the quality of crime intelligence. For the SAPS, such data is after being collected, processed, integrated and stored in centralised databases, such as AFIS, CAS, the CAS Circulation System and AFIS referred to in 1.5. These systems are constantly updated and availed for police managers to utilise the data therein to inform operations intended to efficiently combat transnational crime at facilities such as ORTIA.

4.4.1 MIS models for the public sector

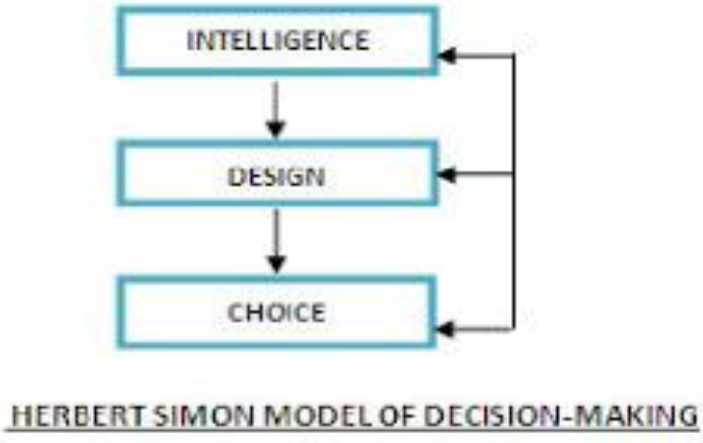
In reality, MIS can be used by managers in public sector institutions to streamline and re-engineer business processes (see McLeod & Schell, 1998:1; Laudon & Laudon, 2004:1; Kotler & Keller, 2006:1; O'Brien & Marakas, 2006:102; Laudon, Laudon & Brabston, 2011:300; Business Dictionary, 2017; University of Arizona, 2017; Laudon, 2021:1), even when the business entails the effective management of transnational crime at facilities such as international airports. To successfully implement MIS in police agencies, the inherent processes will however have to be preceded by knowledge of and understanding of the relating theories and models that can be arrogated within police practice itself. Such a move is crucial in ensuring that only specific appropriate MIS models are adopted, since police work is a complex field, influenced mainly by the country's cultural and political climates, and is not modelled on profit-making, like private firms/companies are.

One model that seems appropriate for public sector institutions and in particular for police organisation, is the Rational Decision-Making Model (RDMM). Conceptualised by Herbert A. Simon in 1945, the RDMM consists of capabilities that include gathering and analysing intelligence on potential problems and identifying opportunities; assessing consequences and options; cross-checking consequences and decisions with policies; and choosing the preferred and appropriate option to deal with problems (see Simon, 1979:493; Glöckner & Betsch, 2008:2; Gigerenzer & Gaissmaier, 2011:451). Simon's work is aimed at exposing gaps in the scientific administration theory using the RDMM, which model indeed proved to be appropriate for scientific public administration (Simon, 1979).

Gigerenzer and Gaissmaier (2011:453) argues that Simon's revolution could not have been realised without formal models and modern computers. For the SAPS, this last claim underscores the techno-securitisation blues problem in 1.6. To revolutionise and improve on their approach to combating transnational crime will thus require the SAPS to start taking MIS seriously. The initiative should start by engaging in discourse on the implementation of MIS models, the recruitment and retention of MIS specialists and teachers within the ranks, as well as encapsulating as part of the curriculum at basic training, orientation on MIS theories and models. This is crucial because police are information-intensive organisations (see Beare, 2013:1; Matlala, 2013:21; Allen, Karanasios & Norman, 2014:421; Govender, 2015:122) that require all staff to be competent in how they handle data. The knowledge of and optimisation of models such as the RDMM could equip police personnel with appropriate skills to handle

information efficiently. Figure 4 below depicts the model of decision-making developed by Simon.

Figure 4: Hebert A. Simon's model of decision-making



Source: Blogspot (2011)

The effective implementation of MIS models generally appeals to reforms within public entities or organisations. Cordella and Iannacci (2010:52) agree that MIS theories do support and drive reforms in the public sector. What this means for police agencies is that MIS serves as a catalyst to drive profound transformation that can enable police agencies to re-engineer their approach to dealing with transnational crime. For example, the implementation of the RDMM in Figure 4 above, using advanced electronic systems could enable the police to gather and analyse intelligence and design several strategies to combat transnational crime at facilities such as ORTIA. More strategies would fundamentally spoil police managers for choice, in terms of which strategy to apply to which specific kind of problem, using what type of resources and at which point in time.

Another model that is relevant to the public sector is the Data Quality Management Model (DQMM). In the context of MIS, the model (DQMM) is defined as the use of electronic systems to ensure the rigorous management and measurement of data and information; to ensure that the data conforms to transparency, integrity, compliance and is readily available; to ensure that it is adequately retained and disposed of responsibly, in order to enable managers to comply with reporting and accountability aspects within the organisation (see Wang & Strong, 1996:5; Cassidy, Fenton, Fletcher, Koch, Stewart, Watzlaf & Willner, 1998:1; Lee, Strong, Kahn Wang,

2002:133; American Health Information Management Association, 2017; Laudon, 2021:1). Figure 5 depicts the DQMM.

Figure 5: The Data Quality Management Model

Source: Cassidy et al. (1998)

There is no doubt that embracing the DQMM would ensure that police practice becomes consistent with MIS, whose inherent values support the use of technologies in line with the philosophy of policing and in line with the principles in post-modern policing. For the ORTIA, attaining such feat would mean that the police would have begun to take the policing, transnational crime and techno-securitisation nexus seriously. Similarly, there is no doubt that the synchronising processes in data collection, application, analysis and warehousing as postulated in the DQMM (Figure 5 refers) could significantly enhance how the police handle crime intelligence, which could bolster operational efficiencies in combating transnational crime at borders, borderlines and at an entry port such as ORTIA.

Literature (see Cassidy et al. 1998:1; Wang & Strong, 1996:5; Lee et al. 2002:133; American Health Information Management Association. 2017) shows that the DQMM eases access to data that is valid, reliable, comprehensive, precise and explicitly defined. From an analysis of the DQMM in Figure 5 above, there is no doubt that the police could with the correct levels of managerial and political will, successfully espouse values that include accessibility, consistency, currency, granularity, precision, competitiveness, accuracy, relevancy, definition and timeliness, as accentuated in Figure 5. To this effect, police agencies can use the different MIS models to ontologically ground practices that involve the use of technologies to fight transnational crime at entry ports such as ORTIA.

4.4.2 Types of Management Information Systems

As already cited, a key feature about the different kinds of MIS is that the tools can be used to process data using computers (see Laudon & Laudon, 2004; Siror et al. 2010; Gigerenzer & Gaissmaier, 2011; Laudon, Laudon & Brabston, 2011; Laudon, 2021). Since MIS supports business processes in organisations, it makes sense to hypothesise that as a specialist field, it should also form part of academic studies of police science. The integration is key, particularly because MIS is linked with fields such as information systems, information technology, informatics and e-commerce. In police agencies, the connections also spell e-governance. For all practical purposes, the following are some of the types of MIS that can help police managers to manage crime effectively:

- **Decision Support Systems (DSS):** the DSS are interactive computerised tools that provide information that enables managers to make informed smart decisions (see Cebeci, 2009; Laudon, Laudon & Brabston, 2011; Gigerenzer & Gaissmaier, 2011). The DSS consists in the Database Management System (DBMS), which stores huge chunks of data on specific problems; the Model-Based Management System (MBMS), which transforms data to the DBMS to support decision-making; and the Dialog Generation and Management System, which provide user-friendly interfaces for the systems (see Laudon & Laudon, 2004; Cebeci, 2009; Laudon, Laudon & Brabston, 2011; Gigerenzer & Gaissmaier, 2011; Laudon, 2021).
- **Operations Information Systems (OIS):** These systems collect broad data, organises and summarise it in a simplified manner (see O'Brien & Marakas, 2006; Gigerenzer & Gaissmaier, 2011; Laudon, Laudon & Brabston, 2011; Laudon, 2021). There is no doubt that the use of this system could enable managers to easily understand information relating to transnational crime, including the dynamics and challenges in the policing, transnational crime and techno-securitisation nexus at ORTIA. Such capability could also without a doubt, enable better operational planning and greatly enhance the police's operational efficiency.

Despite the benefits offered, MIS as a discipline has noticeable drawbacks. Ghosh (2010) argues that the one problem with electronic communication and the processing of information is the loss of the human element. However, this study postulates that the advantages far outweigh the disadvantages. Apart from the systems outlined in this section, many other MIS applications can assist public institutions to streamline other processes that do not relate to

crime combating operations. These include, for example, business to business procurement systems and performance management systems (Laudon, Laudon & Brabston, 2011). For the police, MIS talks typically to the analytic and communicative technologies cited in 1.3.3. The types of MIS outlined herein are thus by no means exhaustive. These were only cited because they appeal the most to crime combating operations and were picked for concision purposes. This next section discusses the causes of transnational crime drawing from a few theoretical perspectives.

4.5 CRIME CAUSATION THEORIES

Efficiency in combating transnational crime requires a sound understanding of the factors that predispose people or individuals to crime. Within the scientific community, these are explained through various theories, commonly known as the crime causation theories. Like any other anti-social behavior, transnational crime can for example, also be explained using theoretical lenses. According to Wikström and Treiber (2007:237), crime causation theories consist of a body of knowledge with assumptions that explain why people do crime. These theories focus mainly on factors that push people to become criminal (see Wikström & Treiber, 2007:237; Oberwittler & Wikström, 2009:35; UK Essays, 2017; Altikriti, 2021; Karstedt, Nyseth Brehm & Frizzell, 2021). Crime causation theories thus explain why people do crime. The theories are key in ontologically grounding the transnational crime aspect in the nexus being unpacked in this study, that is the interfaces in policing, transnational crime and techno-securitisation at the ORTIA.

One crime causation theory that stands out in this study is that of rational choice. The rational choice theory postulates that individuals always make prudent and logical decisions to attain maximum benefit and satisfaction, even if it's through criminality (see Green & Fox, 2007:15; Oppenheimer, 2008:2; Boudon, 2009:17). The second theory is that of control. Control theorists (Wright, Caspi, Moffitt & Silva, 1999:479; Hirschi, 2002:32; Wikström, 2004:32; Wikström & Svensson, 2010:395; Cornish & Clarke, 2014:105) argue that people conform to crime because it is the easy way to satisfy needs and desires. The third in the assumptions that underpin crime causation is action theory, which postulates that social actors can choose between different means and ends, even when the choices are criminal (Gallupe & Baron, 2014:284; Wikström, 2014a:4845; Wikström, 2014b:71; Montano & Kasprzyk, 2015:12).

There are other crime causation theories that have not been cited in this study. This is because it would not be possible to discuss all the theories in this one study. Of importance is that the

few theories briefly outlined in this section can be used to understand in part, the psyche of individuals who commit transnational crime at ORTIA. However, this study does not purport that every individual that does crime at the facility may be evaluated in terms of the crime causation theories as cited in this section. Exceptions include persons who are mentally incapacitated but continue to do transnational or cross-border crimes. Other examples of exceptions include those individuals who are forced to do transnational crime because of being coerced through blackmail and those individuals who without their knowledge/consent, traffic contraband.

The exceptions in terms of explaining crime causality using theoretical lenses underscores the need to understand transnational crime as an epistemology. To achieve this would require research. As already cited in 1.1; in 1.5; in 1.6 and 2.5 of this study, research on policing, transnational crime and techno-securitisation at international airports in Afrika is generally lacking. Such shortfall means that there is in fact no clarity as to what exactly forms the epistemological grounding in terms of the policing, transnational crime and techno-securitisation nexus. This next section provides a brief discussion on what constitutes the epistemology or sources of knowledge for the nexus.

4.6 THE EPISTEMOLOGICAL GROUNDING FOR THE NEXUS

The word epistemology refers to the study of the nature, origin and limits of knowledge in the custody of humans (see Martinich & Stroll, 2003; Martinich & Sosa, 2008:281; Martinich, 2015:210). The concept was derived from two Greek words, *epistēmē,* which means knowledge, and *logos*, which means reason (Martinich, 2015:210). Thus, epistemology refers to the theory of knowledge. In essence, the word epistemology is by definition, a branch of philosophy or metaphysics that investigates the origin, nature and methods, including the limits of human knowledge, to test the validity thereof (see Martinich & Stroll, 2003; Martinich & Sosa, 2008:281; Martinich, 2015:211; Dictionary.com, 2017; Merriam-Webster Incorporated, 2017). Martinich (2015:211) confirms that the word epistemology speaks to metaphysics, which is a branch of philosophy that deals with the underpinning principles of things and abstract constructs such as being, knowing, identity, time, space and the most general attributes of reality.

In this study, general attributes in terms of the reality about the origins and nature of knowledge in policing are the experiences, tangible observations and interactions in the social, legal and political spaces. Events in these spaces solicit some form of reaction from the police,

particularly when events suggest subversions to the law and the police have to act upon or are required to perform some active service to solve a problem (Mutsaers, 2016). This last claim explains why epistemology in this study, is equated to "sources of knowledge". Epistemology also talks to aspects in the natural world, that explains from a philosophical view, whether policing is efficient or problematic. To clarify such aspects, this study outlined constructs, which the researcher sees as sources of knowledge that inform the policing, transnational crime and techno-securitisation nexus.

Perhaps as a disclaimer, it is prudent at this point to preface further discussions in this section by stating from the onset, that the list of constructs or points listed herein as forming part of the epistemology or sources of knowledge in the policing, transnational crime and techno-securitisation nexus, is by no means an exhaustive one. This disclaimer follows the logic that the researcher does not purport this study to be the panacea for all of the ongoing contemporary discourses on police and policing, including the metaphysical dilemmas relating to epistemology in policing or the use of technologies.

To explain the value of discussions on epistemology in policing as a practice, the research in this study drew insights from literature (see Beebe, 2014; Greene, 2014; Beebe, 2015; Wood, Cockcroft, Tong & Bryant, 2017), which has shown that there are growing debates on how, and what kind of science contributes to understanding the police and policing. Wood et al. (2017:1) argues that: "[the current exposition of police knowledge through discourse on Police Science and Evidenced-Based Policing (EBP), leads to inflated claims about what is, and can be known about policing, as the current orthodoxy underestimates the challenges of applying knowledge in police practice]". To advance the discourse and orthodoxy in policing, transnational crime and techno-securitisation, this study outlines the following variables as the epistemological aspects for the nexus:

- **Communities:** Communities are a source of knowledge for policing because individual members of communities and community institutions such as schools, churches, Non-Governmental Organisations, generally provide information on crime and a myriad of other complaints and problems that affect society daily (see Bradford, 2014:26; Bradford et al. 2014:410; Mabunda, 2014:10; De Wet, 2015:56; Kempen, 2017:51). For policing at the ORTIA, passengers, employees and other persons in the vicinity of the facility forms part of the community and can give or decline to give information on crime, and can also indicate whether they are happy or dissatisfied with the quality of policing. What

this means is that communities around the world are essentially the first point of reference in terms of providing information on whether policing in a particular location is appropriate or problematic. Essentially, any form of appraisal by communities serves as a barometer that can be used for measuring the dynamics relating to the legitimacy of police actions and assessing the police's moral authority to hold power in society (see Bradford, 2014:25; Bradford, Huq, Jackson & Roberts, 2014:409; De Wet, 2015:56; Pomerantz et al. 2021:1).

- **Police organisations and police practice:** Police agencies and practices by staff also serve as the core sources of knowledge in policing. Evidence on how police organisations and police practice serves as the most reliable and primary point of reference in terms of knowledge is well documented in the literature (see Seba, Rowley & Delbridge, 2012:114-128; Wilensky, 2015:1; Kempen, 2017:50; Weisburd et al. 2021:161). Police organisations and practice thus serves as an epistemology for policing because society draws insights from what police agencies say or do, and how police staff carry themselves when enforcing the law. As hypothesised in 4.2, the right to enforce the law always places police actions under public scrutiny, this in a quest to demand increased accountability, which argument confirms police agencies and practice as reliable sources of knowledge. What the claim in this point also means is that the police are themselves, the primary custodians and gatekeepers of knowledge in their agencies and profession. To elaborate, the police, among many other things, keep records on cases reported, services rendered and statistics on crime, some of which data is classified (example is intelligence) and inaccessible to the public.
- **Government and oversight institutions:** Governments throughout the world have a duty to support the police in the fight against crime (see Bailey, Perito & Perito, 2010). Thus, government through its oversight function and institutions monitors and evaluates actions within police agencies. For South Africa, the Parliament Portfolio Committee on Safety and Security is the body that the SAPS reports to and is on behalf of the state, responsible for overall oversight on police performance (South Africa, 2015). There is also the Civilian Secretariat for Police, which serves as a technical advisory to the Minister of Police on matters of governance, service delivery and resourcing the SAPS (South Africa, 2015; South Africa, 2017). Other oversight functions are in the ambits of: the IPID, which investigates police misconduct and criminality (Independent Police Investigative Directorate, 2013); the Public Service Commission (PSC), which investigates administrative discrepancies in public entities (Public Service Commission, 2017); the

Auditor General who monitors the use of public monies (South Africa, 1995a); and the Inspector General for Intelligence (IGI), which investigates abuses of authority by the intelligence services (South Africa, 1994a). The key issue with the parliament committee, civilian secretariat, IPID, PSC and IGI is that all these bodies serve as sources of knowledge that provide data on what is happening in various businesses that involve policing and thus form part of the epistemology.

- **Political parties:** another source of knowledge that indicates whether policing is sound or problematic, is political parties. Apart from exercising their oversight roles of holding the police to account for their actions through the various structures in government, political parties can themselves as so often demonstrated in South Africa, lay charges against the police. Several reliable sources (Rauch, 2001; Bruce & Nield, 2005; Ellison, 2007; Youthlaw Young People's Legal Rights Center, Inc. 2014; Brewer, Wilford, Guelke, Hume & Moxon-Browne, 2016; Human Rights Watch, 2017; Midrand Reporter, 2017) have since the dawn of the 21st century, reaffirmed the role of political parties as a point of reference in keeping the police in check, thus confirming that political parties through their being vocal, form an integral part of the epistemology that informs police practice.
- **Business**: Businesses are also a source of knowledge for policing. There are business activities that are illicit and harmful to economies. These do need to be studied and to be understood to ensure that police responses are equal to the task. It is noted in literature (see Waggoner & Suchma, 2007; Laufer, 2008; Bernasco & Block, 2011; Holden & Rodenberg, 2015) that bookmaking; loansharking; money laundering; and fronting businesses, are among the most complex forms of Transnational Organised Crime. For the ORTIA, businesses that import or export undeclared goods to dodge customs duty or taxes are indeed the prime problem.

The variables as outlined in this study largely show that policing epistemology is visible in the social, political and economic spaces. Other epistemological aspects in policing include, but are not limited to: researchers, research institutions and universities who study and archive knowledge on policing; the science and technology fraternity who have the theoretical and practical knowledge on specialist fields such as forensic medicine and pathology, ballistic science, forensic toxicology and the use of technologies and software applications; media who always report on crime and police actions; courts that adjudicate criminal cases; and prosecution bodies who lead evidence on the cases. All of these bodies provide insights as to

whether policing is problematic or apt, and are thus epistemologies in the policing, transnational crime and techno-securitisation nexus.

4.7 CONCLUSION

For the police to efficiently securitise an entry port such as the ORTIA, requires a proper understanding of the dynamics in the policing, transnational crime and techno-securitisation nexus. This requires that the nexus should be explicitly theorised. The theorisation is crucial if police practice is to be philosophically grounded. The absence of an explicit theory for the nexus essentially leads to a random approach to policing at key settings such as borders, borderlines and entry ports. The situation wherein the police rely on a hit-or-miss approach will in all probability not guarantee effectiveness in fighting crime, even where modern technologies are applied. To this end, discussions on epistemology, MIS, crime prevention and crime causation theories using modern and post-modern policing lenses, provides the basic assumptions for the nexus in this study. The assumptions are key in helping to ground policing in the Fourth Industrial Revolution.

CHAPTER 5: TECHNO-SECURITISATION AT INTERNATIONAL AIRPORTS

5.1 INTRODUCTION

Techno-securitisation in this study as already alluded to in section 1.1, generally talks to the use of modern technologies to securitise international airports. According to Pita, Jain, Marecki, Ordóñez, Portway, Tambe, Western, Paruchuri and Kraus (2008:125), securitising national infrastructure such as international airports is a challenge to most police around the world. Problems with securitising airports particularly in Afrika have been widely featured in 1.2.1 and 1.4.2. These include resource constraints (Pita *et al*. 2008:126), poor research (Hübschle, 2010:1), lack of technological skills (Chinsembu & Kasanda, 2012:352), using outdated technologies (Matlala, 2013:129), political meddling (Department of Home Affairs, 2015:22) and poor surveillance (Parliamentary Monitoring Group, 2016). For the ORTIA, corruption features as an extra variable (EyeWitness News, 2017). In July 2017 alone, Police Minister Fikile Mbalula announced that over 40 airport workers and seven police officials were suspended for engaging in corruption and collusion at the ORTIA (City Press, 2017). To curb corruption will essentially require tough vetting during recruitment, including the effective monitoring of staff at all airports.

As correspondingly also noted in 2.3, international airports are key hubs and commercial centers, through which millions of local and foreign passengers' transits daily (Commonwealth of Australia, 2017). This is the reason why such facilities need the best security on offer. A report by the United States Homeland Security Committee showed that systems capabilities, access control to sensitive areas and staff screening are a source of security vulnerabilities at airports globally (Clement, 2019). To this end, Fernandes, Soares, Gomes, Freire and Inácio (2014:113) argue that technology can mitigate security vulnerabilities at airports. This claim underscores the seriousness with which the police should view technologies.

Despite the preceding claim, the World Economic Forum (2017) warns that emerging technologies are increasingly changing the character of securitisation at international airports. This warning is contextualised in view of a widening cast of actors that have increasingly relied on the cyberspace to spread crime. Various sources (Business Tech, 2016; Shahidullah, 2016:317; ABC News, 2017) confirm that cybercrime is common at international airports worldwide, from South Africa to Australia to the United States, that is both in the developing and in the developed countries. To this end, the World Economic Forum (2017) further argued

that cybercrime is changing the nature of threats at airports, which puts more strain on the aviation industry to maintain appropriate levels of security. This is crucial, considering that the number of air commuters globally is expected to double in the next 23 years, from the year 2017 to 2030 (World Economic Forum, 2017).

5.2 TECHNO-SECURITISATION AT AIRPORTS GLOBALLY

The use of security technologies or techno-securitisation at international airports around the world offer greater value by enhancing the fight against transnational crime (Engineering News, 2016). Some of the benefits offered by technologies are outlined in section 1.3.3 and these include the easier flow of information and lower communication costs (Laudon & Laudon, 2004:486; Kotler & Keller, 2006:13; Nissan, 2008:46; Wen, 2009:3029). Of importance is that technology enables the police to have a competitive advantage in their efforts to combat crime (Du Preez, 2009:57; Govender, 2015:130; Engineering News, 2016). For the ORTIA, the zero-tolerance to crime, the appointment of a more senior police officials to manage security at the facility, political support and eradicating of corruption, improving police training, could go a long way in lifting staff morale, which aspects also contribute to promoting competitiveness.

A fundamental problem that inhibits competitiveness lies in how to best allocate scarce technology resources to minimise security risks at airports (Gillen & Morrison, 2015:43). Whilst the issue of technological resources may be problematic for Afrika, due to poverty (Van der Spuy, 2009:251), developed countries do not necessarily exhibit similar challenges. This is because economies in the developed world have the financial resources that they can throw into the problem. An example of this is the $12.67 billion that the United States of America allocated in 2015, to fund the acquisition of technologies to fully capacitate border and entry ports security by 2023 (Security News Desk, 2016). Inherently, money will not solve the security problems at international airports but will make life easier by enabling access to resources that include sophisticated technologies.

Whether developed countries optimise or fail to harness technologies when securitising their international airports is not the focus of the research in this study. What is important in this study is a display of the kind of technological tools used for securitisation at international airports in the developed world. The display is crucial in enabling comparisons with what is on offer in developing countries such as South Africa. Indeed, the United States of America is one developed country whose airports have some of the best technologies on offer. One such

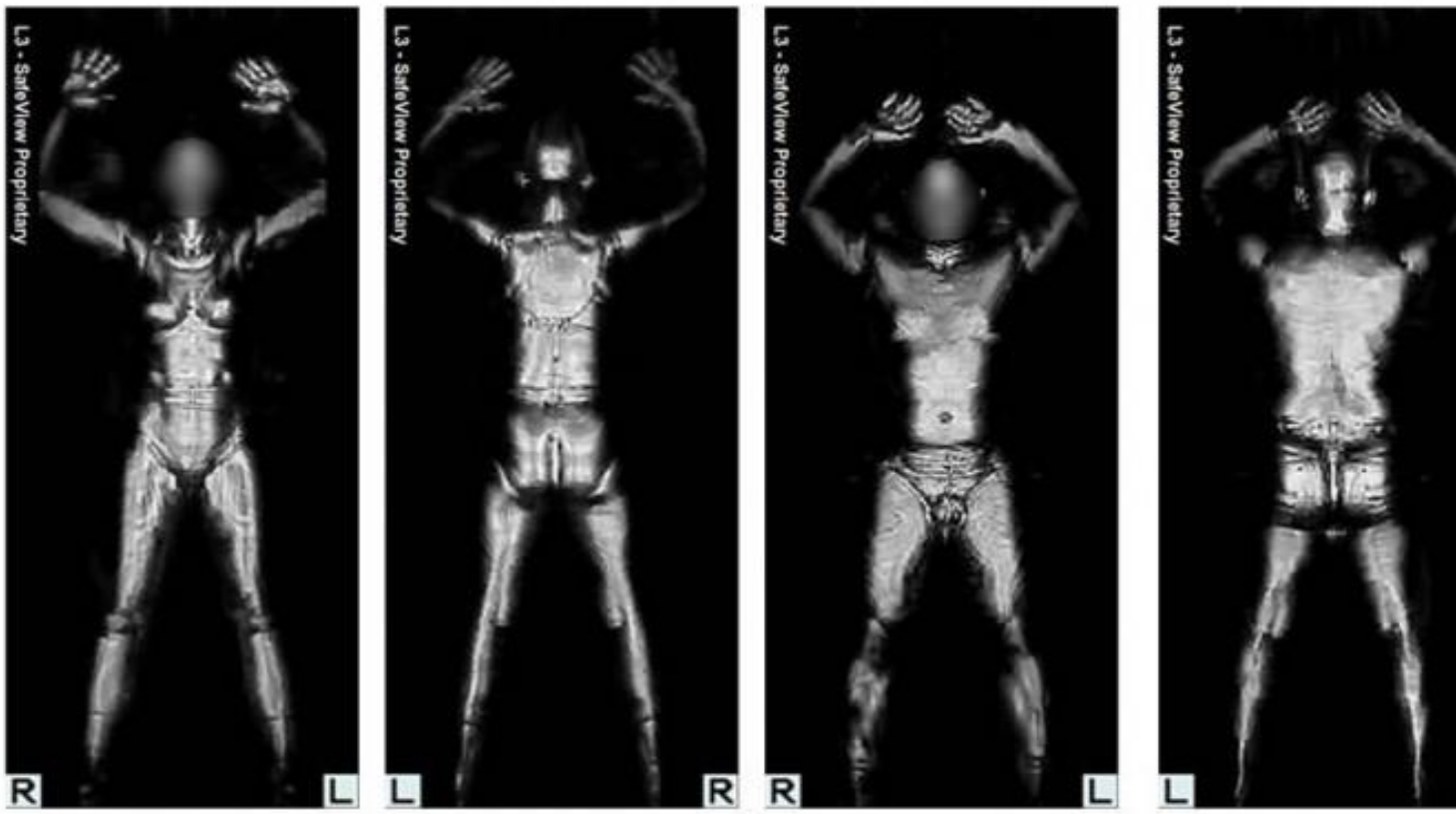
technology is the full-body scanner shown in Figure 6, which technology is screens passengers at checkpoints that lead to boarding gates.

Figure 6: Full-body scanner

Source: USA Today (2016)

The scanner in Figure 6 reveals weapons and explosives concealed under clothing, using X-ray imaging (see Elias, 2012:1; Mowery, Wustrow, Wypych, Singleton, Comfort, Rescorla, Halderman, Shacham & Checkoway, 2014:369 O'Reilly, 2015:1). The technology is hailed for being safe and for giving travellers a choice between being scanned or physical searched (see Doran, Gokhale & Lownes, 2013:1; Mowery et al. 2014:370; O'Reilly, 2015:2). A key facet about the body scanners is that they reveal generic stick figures instead of skeleton-type images, without identifying personal features (O'Reilly, 2015:2). Such capability could curb contraband movements, which could lessen transnational crime. Figure 7 thus shows X-ray images from full-body scanners.

Figure 7: X-ray imaging from the full-body scanner



Source: Anderson (2014)

To increase airport security the United States of America purchased about 250 such body scanners for $45 million, at a cost of about $180 000 per unit (Digital Trends, 2017). Considering the currency exchange rate, affordability could be problematic for many developing countries. South Africa however came close to matching the developed world, as far as installing modern technologies at its airports is concerned. This last claim follows expenditure during the 2010 World Cup (Perry, Chunderduth & Potgieter, 2012; Sinclair & Matlala, 2011; Flight Centre, 2017), wherein state of the art technologies were purchased and installed for use in passenger screening points at ORTIA. The technologies enable the police to screen and detect metallic and non-metallic contraband at airports (Mowery et al. 2014:1).

Although the ORTIA is considered excellent as a facility, the monopoly to decide on security standards is largely held by the West. Powers such as USA and Britain often issue guidelines and prescribe how securitisation at airports around the world should be handled (Anderson, 2014). There are no doubts that both these last-named countries have some of the best airport security records. However, the move to monopolise the airport security space raises questions as to how seriously the developing world should be taking the International Civil Aviation

Organization (ICAO) recommendations. This is the only body tasked with pronouncing regulatory protocols that define standards for security in the aviation industry globally.

Notwithstanding the seemingly dominant positions held by some Western powers, South Africa is one country that also adopted the security guidelines issued by the United States of America and the United Kingdom (Anderson, 2014). This was arguably for professionalism and best practice. Following such adaptations, the question that thus arises is: How long should the developing world continue adopting rules by western powers? The question comes following the argument that at some stage, such dependence will have to cease. The way to end this is by continuing to attract much needed technological skills, improving the training offered to border police staff, including the purchasing of modern security software such as forensic video and photogrammetry.

5.2.1 Forensic video at international airports

Forensic video consists of software used for the scientific analysis or examination, comparison and evaluation of video material to reconstruct events for use as evidence in legal matters (see Huston, Sukthankar, Campbell & Pillai, 2004:20; Grigoras, 2007:136; MotionDSP, 2017). German international airports such as Munich are among some of the facilities that use CCTV surveillance techniques supported by forensic video software, both indoors and outdoors to continuously transmit digital images and check registration, passports, customs areas, lobby, halls, entrances, exits, elevators, stairways and parking areas (Shmakov, 2014:6). Such software could enable the police at ORTIA to identify suspects and also solve crimes that is not necessarily classified as transnational crime.

Forensic video software allows analysts to enhance video imaging from sources that include body cameras and mobile phones (MotionDSP, 2017). Key to police practice and securitisation at international airports is that video software can be used to identify facial features of persons, as well as license plates on motor vehicles, including the make and model of any vessel (see Huston et al. 2017; Grigoras, 2007; Forensic Focus, 2014; Key Forensic Services Limited, 2017; MotionDSP, 2017; Mahr et al. 2021). Such capability is key in connecting specific objects or persons to scenes where crimes were committed.

Forensic video software generally enhances CCTV footage or imaging by also enabling: tracking on the movement of suspects and objects of interest; the transcoding of video images;

calculations and comparisons on heights; facial comparisons and data recovery; as well as image and video authentication (see Huston et al. 2017; Grigoras, 2007; Key Forensic Services Limited, 2017; MotionDSP, 2017; Mahr et al. 2021:3). According to Houck, Crispino and McAdam (2012:118), compared to sketches and photographs, video footage generally provides better perspective on crime scenes. This thus makes the use of video software a cutting-edge practice in forensic surveillance techniques that are supported using modern technology. For facilities such as ORTIA, capabilities facilitated through forensic video software could have a deterring effect on would-be criminals. Figure 8 shows how the software enhances CCTV images on license plates of vehicles.

Figure 8: Forensic video software on license plates

Source: MotionDSP (2017a)

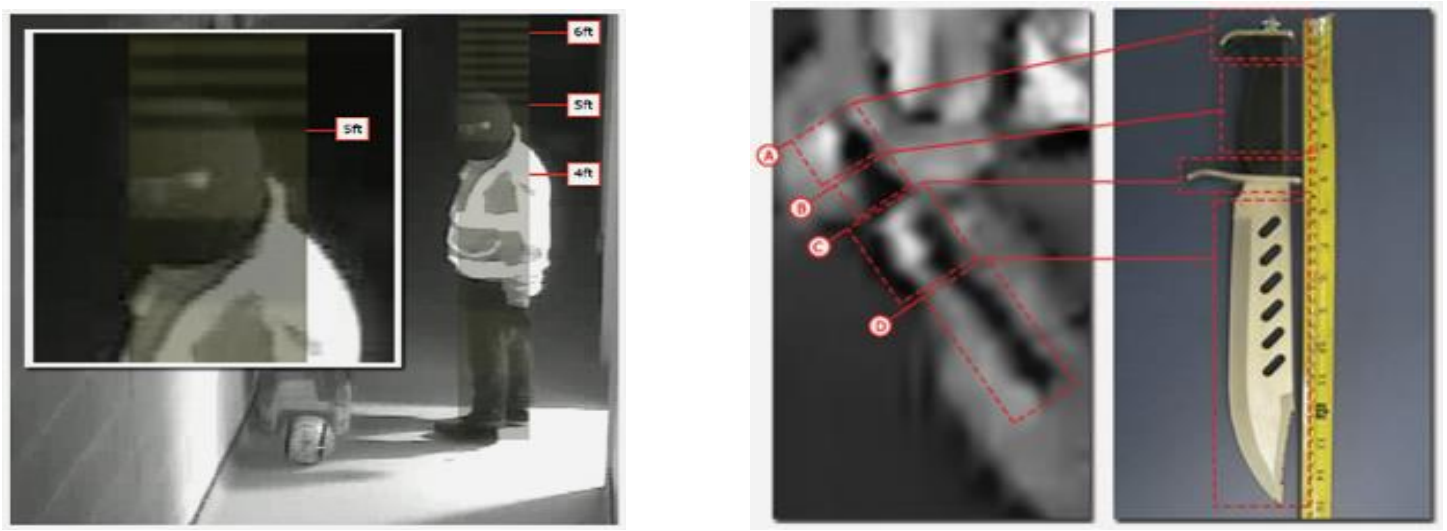
The picture on the left in Figure 8 is the original footage as captured on CCTV camera, whilst the one on the right was refined for clarity, using forensic video software. The capability to clear otherwise blurred footage could enable the police to identify vehicles involved in criminal activities in the immediate vicinity of any airport. For the ORTIA, such capability could have helped identify vehicles used in the robberies that have occurred in the facility over the years.

According to Statistics South Africa (2020), there were about 83 000 cars stolen in South Africa in 2018/2019. These are the same care largely used to commit other crimes such as Robberies. Robberies are however not unusual at the ORTIA. In 2001, armed suspects stole $6.5 million from a Swissair cargo plane and about $10 million from a KLM plane; in March

2006, AK47 armed suspects stole R100 million from a South African Airways plane and in April 2014, an armed gang took off with about R87 million (News24d, 2017). Such incidents requires the police to optimise their Circulation System cited in 1.5, which technology is used to identify stolen motor vehicles.

In addition to just un-blurring pictures, the software is also capable of producing quantitative measurements that can be used to support other types of documentation, such as reports on specific crimes (Mahr et al. 2021:8). For border police at the ORTIA, the reports generated, and the measurements produced using forensic video software, will facilitate the precision and high validity in terms of the evidence that can be gathered and presented to the court, had the software been installed. Likewise, such reports would also have enabled police managers to account properly to Parliament, in terms of how the crimes unfolded and what kind of evidence is at the disposal of investigators. Examples of measurements produced by forensic video software are shown in Figure 9.

Figure 9: Forensic video measurements visuals



Source: Key Forensic Services Limited (2017)

The two visuals shown in Figure 9 shows how forensic video software can enhance features such as the height of criminal suspects, including shapes and length of knives or any other object connected to a crime scene, including the movement of objects and suspects connected to criminal activity. The best-known example of how forensic video was successfully used to track movement in recent times, was the isolation and tracking of the suspect in the 2015 Boston marathon bombing (Forensicon, 2017). Using CCTV as a baseline platform, forensic

video software was applied to follow the movement of the suspect, to a point where it was conclusive that the person identified was the one who placed the explosives and was responsible for the crime (see Geradts & Bijhold, 2000:3; Grigoras, 2007:136; Cable Network News, 2017; Forensicon, 2017; Mahr et al. 2021:1).

Forensic video is also used in two of the world's busiest international airports, O'Hare in Chicago and San Francisco, to manage security and emergencies (Intergraph Corporation, 2017). One key observation about forensic video is that even in the developed world, the police make use of third-party services. For example, private companies such as Bell Canada, Intergraph Technologies and Cognitech are some of the leading organisations that offer the software and related services to the police in the Americas. However, Afrika does not have many companies that offer such services. For South Africa, the only public institution that may have video analysis technology is arguably the South African Broadcasting Corporation (SABC), though the corporation is a public broadcaster and does not use the technology for policing or for forensic purposes. Also, the police can partner with private companies such as Intertel, Cyanre, Forensic Audio lab and Risk Diversion, who have Forensic Video capabilities and can offer training (see Intertel, 2017; Cyanre, 2019; Forensic Audio Lab, 2020; Risk Diversion 2020).

As cited in the discussions herein, forensic video could have gone a long way in helping the police make sense out of the March 2017 robbery at the ORTIA. Success in the case would have however been inhibited by several factors. To cite a few, the fact that the SAPS is actively grappling with high training costs (Matlala, 2013:15), skills exodus (Omar, 2008:34), scarce funds (Matlala, 2013:16), low salaries (Omar, 2008:34), disconnected databases (Matlala, 2013:16) and political meddling (Panyapanya, 2021), which aspects have been outlined in 1.2.1, would still be problematic. These problems mean that the interfaces in policing and technology are dysfunctional, which implies inapt management of transnational crime at ORTIA, something that needs to be discoursed on.

Whilst there is evidence that Brazil is one developing country that has already opened up dialogues on the use of forensic video analysis software at their ports of entry and international airports as early as 2012 (NEC Corporation, 2017), such debates have however not even begun in South Africa. Although there is no evidence as to whether Brazil may have started to implement forensic video at its airports, the fact that there is talk of such initiatives is encouraging for other developing economies. Of concern is that the SAPS being one of the

leading agencies in Afrika, has not even begun to talk about forensic video, especially when considering that transnational crime threatens the economic viability of the ORTIA. The threats are mainly to the actual and projected benefits from the planned developments, which issues are outlined in 2.3.1 and 2.3.2.

5.2.2 Forensic photogrammetry at international airports

Another software application used in police work is forensic photogrammetry. Forensic photogrammetry is the process of determining the geometric properties and distances from two-dimensional (2D) and three-dimensional (3D) photograph images taken from a scene of crime (see Robinson, 2010:400; Houck et al. 2012:332; HG.org, 2017: Omari et al. 2021:939). In simple terms, forensic photogrammetry is the use of software to extract measurements from photographs that depict specific crime scenes, in order to make sense of them and to produce evidence. In airports, photogrammetry can be used to produce precisely measured evidence on contraband and exhibits (Robinson, 2018:42). The software is also used to process photos from underwater crime scenes (Drap et al. 2015:30351). This is key in the accurate capture of underwater crime scenes at sea borders, as well as underwater crime scenes at rivers that constitute the borderlines.

Photogrammetry generally involves the scanning of photographs into digital imagery or sensor (ADAM Technology, 2017). This enables the operator to feed photographs into the software. The photographs are after being scanned, processed through the rectifier, orthophoto projector, comparator and analytical plotter, to produce measurements on the perspective grid, plot extensions and reductions thereto, as well as to mark and locate evidence from a crime scene on a scale diagram (see Brüschweiler, Braun, Dirnhofer & Thali, 2003:130; Houck et al. 2012:335; Omari et al. 2021:948; Robinson, 2018:43).

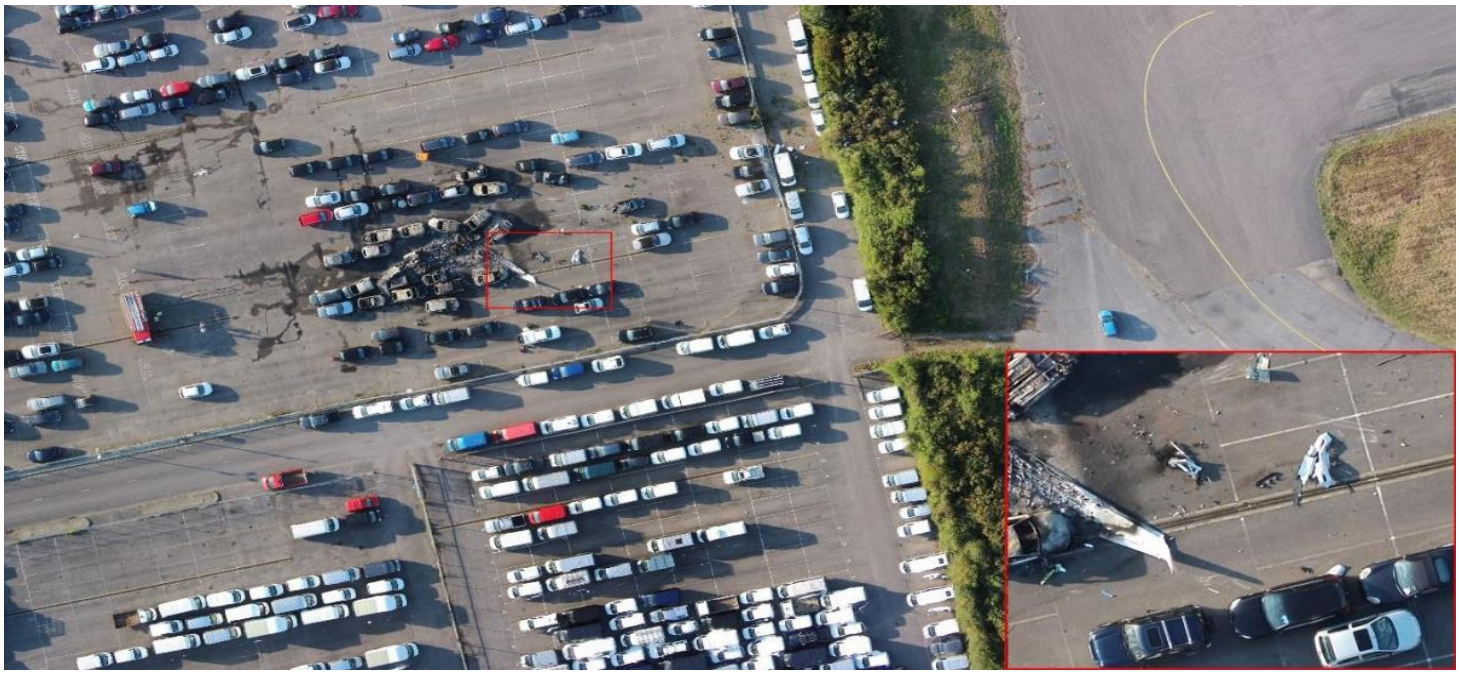
The success of photogrammetric analysis and measurements is however dependent on several key issues. According to Liscio (2017), photogrammetry can produce optimal results provided that: there are many photos of the object to be measured, taken from varying camera angles; the objects in the scene have known reference dimensions and has visible and noticeable features; the size of the object is relative to the entire photograph; the photographs are taken from the same camera, using the same focal length. Figure 10 shows a vehicle that had been shot at, with bullet holes, sizes, angles and distances between the holes marked and ready for photogrammetric measurements.

Figure 10: Photogrammetric product

Source: DCM Technical Services, Inc. (2013)

The use of photogrammetric photographs such as the one in Figure 10 could facilitate an in-depth understanding of the specific details on investigations that involve vehicles as part of the crime. Photogrammetry thus provides visuals that determines in exact terms, the specific features linked with objects pertaining to a crime being investigated. Such exercise is intended to tell a story as to the position of exhibits and how far apart they were, what they looked like after the crime was committed and what the general overview or picture is in terms of the extent of the crime or the damage caused. For Afrika, photogrammetry however remains an underexplored field. To this end, investigators in the United Kingdom are already using drones to take pictures of aircraft accident scenes at airports, in which pictures are processed using forensic photogrammetry software (Medium.com, 2017). Figure 11 depicts a drone taken picture from an aircraft accident scene at Blackbushe airport and processed using photogrammetric software applications.

Figure 11: Photogrammetric impression of an aircraft accident



Source: Medium.com (2017)

The photogrammetrically processed photograph in Figure 11 shows a broader scene of the plane crash outside of an airport. Similarly, the picture shows specific areas of the crash that reveal features such as the position of the wing of the plane and damage caused and is in the smaller box on the photograph. The many benefits linked to the use of photogrammetry include: spending less time on the scene; diagramming the scene as needed; accuracy in accident reconstruction; reduced training costs; less manpower usage; whilst the disadvantages include: spending more time in the office to process photographs; the use of increased lighting; high equipment costs; significant training is required and being less effective on bigger scenes (see Walton, Barrett & Agent, 2005:35; Larsen, Budka & Bennett, 2021:365; Leijonhufvud, 2021:1; Omari et al. 2021:948).

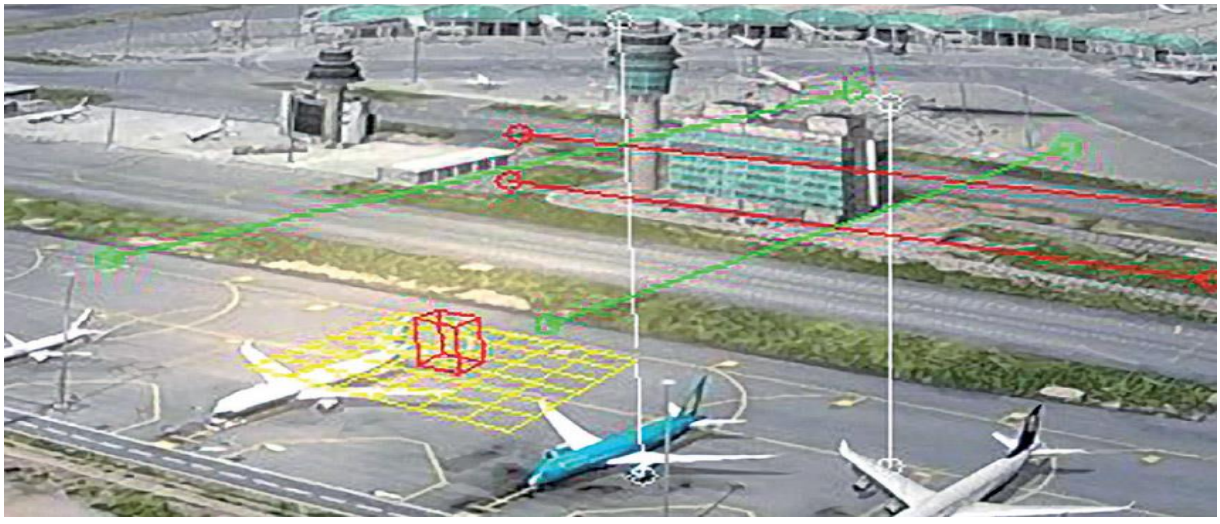
Photogrammetry goes as far back as 1480 when Leonardo da Vinci developed the concept of perspective and projective geometry, with the first photogrammetric instrument designed by German physicist Pulfrish in 1901 (AEROmetrex, 2017). For forensic purposes, photogrammetry can also be used to analyse photos of blood spray patterns on crime scenes; skid mark measurements for accidents; and measuring height, as well as and crush marks from damaged vehicles (Liscio, 2017). A key feature of forensic photogrammetry is that the software expedites the work of police (Chan, Lian & Ko, 2009:1). Lovitt, Rahman and

McDermid (2017:719) add to the narrative about the relating advantages and summarises the following key aspects about the use of photogrammetry:

- The software offers capabilities that enable terrestrial ground surveys
- It enables accurate assessments on data sets (photographs)
- The software facilitates statistical analysis and measurements, with reduced margins for statistical error.

Traditionally, photogrammetric data has always been obtained from aerial photographs produced using precise measurement devices known as analytical stereo plotters (see Gruen, Baltsavias & Henricsson, 2012:77; Petrisor, 2014:33; Nolan, Larsen & Sturm, 2015:1445; Toth, Jozkowa, Koppanyi, Young, & Grejner-Brzezinska, 2016:159; Larsen et al. 2021:365). From this last claim, the police can use photographs taken by drones and generate photogrammetric data. An interesting question in this context is whether photogrammetry could enable the police to establish whether a crime scene had been tampered with prior where the original position of objects would have been, and what the precise measurements of the objects or exhibits would have been. Such data is key, particularly in large settings such as crime scenes at airport runways. Figure 11 is thus an impression of a photogrammetric product that depicts the position of objects in an airport runway scene which involved aircrafts and surrounding terminal building points.

Figure 12: Photogrammetric impression of an airport runway



Source: KiwiSecurity (2017)

The measurements in photogrammetry play a vital role not only in forensic science but also in a diversity of other industries and disciplines. These range from manufacturing and process sectors to healthcare, civil engineering and archaeology (Bogue, 2010:102). However, photogrammetry can only add more value provided crime and accident scenes have not been tampered with prior to the taking of the photographs (see Thali, Braun, Brueschweiler & Dirnhofer, 2003:177; Farid, 2010:2; Fisher & Fisher, 2012:17; Larsen et al. 2021:365). For controlling transnational crime at airports, photogrammetry can be used to measure scenes that involve consignments of contraband in flight bound container shipments and scenes involving foiled aircraft hijackings. The software was introduced in American airports after the September 2001 attacks (see Bogue, 2010:105; Riener-Hofer, Webb & Scheurer, 2014:47; Barone, Di Maggio & Ferrara, 2015:50).

5.2.3 Biometric technologies at international airports

Other technologies used to securitise international airports include but are not limited to the use of biometric devices. Biometric technologies refer to devices used to identify the physiological and/or behavioural characteristics of an individual (see Airports Council International, 2005:6; Marcel, Nixon & Li, 2014:35; LinkedIn Corporation, 2017; Veridium IP Ltd. 2017; Anderez et al. 2021:1). Physiological biometrics measures a part of an individual's anatomy such as the fingerprint, foot or palm prints, face and iris (retinal); whilst behavioural biometrics measure features such as the voice of a person, signature; in both cases, the traits have to be identifiable, completely unique and permanent (see Adey, 2004:507; Airports Council International, 2005:6; Culhane, 2014:41; Marcel et al. 2014:35; LinkedIn Corporation, 2017; Veridium IP Ltd. 2017; Anderez et al. 2021:3). For brevity, the biometric tool's capabilities highlighted herein will not be discussed in detail.

Biometric technologies are generally used at airports in countries that include Australia, Canada, the United States of America, the United Kingdom and the European Union (Culhane, 2014:7). These technologies enable officials to manage passenger flows; strengthen border control and security, and raise terror alerts (see Culhane, 2014:7; Graham, 2016:279; LinkedIn Corporation, 2017). Anwar, Ghany and Elmahdy (2015:529) point out that biometric technologies enable the police to identify the physiological and behavioural characteristics of individuals cost-effectively and accurately. Culhane (2014:41) summarises the various biometric identification technologies as follows:

- **DNA Profiling Systems:** DNA profiling, also known as DNA testing, DNA typing, or genetic fingerprinting is used to identify individuals through their DNA profiles. Each person's DNA profile contains some trait from both parents and each cell in the human body contains a copy of the DNA (LinkedIn Corporation, 2017). DNA profiles are encrypted sets of numbers that reflect a person's DNA makeup, which the DNA biometric system processes in algorithms to ascertain a person's identity (see Schumacher et al. 2006:528; Laird, 2010:191; Kilian et al. 2012:67; Encyclopedia.Com, 2016; Kanokwongnuwut et al. 2021:4). Although DNA profiling cannot be done on airport premises, the system can enable the identification of suspects held by the police, in relation to transnational crime.
- **Ear Recognition Systems:** The human ear has several merits when compared to the face and fingerprints. Unlike other features, the ear can be easily captured from a distance, is relatively stable and does not change much with age. For identification, the Ear Recognition System uses computerised processing to do image segmentation; local feature extraction/matching; holistic feature extraction; and a fusion framework combining local and holistic features (see Daramola & Oluwaninyo, 2011:10; Yuan & Chun Mu, 2012:182; Zhou, Cadavid & Abdel-Mottaleb, 2012:978; Anwar, Ghany & Elmahdy, 2015:529; Alshazly, 2021:2). For real-time identifications at airports, ear recognition can use CCTV as a base.
- **Face Recognition Systems:** Face recognition system is biometric software application that uses algorithms to identify an individual in a digital image by analysing and comparing patterns (see Deng, Hu & Guo, 2012:1864; Wagner et al. 2012:372; Eurotech, 2017; Zhu et al, 2021:1). Facial recognition systems can thus be used for security purposes (Deng et al. 2012) but are increasingly being considered for use in international airports, particularly in the United States (Levantino, 2020). Like any other software, face recognition can similarly also use CCTV to do real-time identifications at airports. Biometric face recognition systems measure the distance between eyes, nose, ears, jaw, size of eyes, mouth as well as other facial expressions (LinkedIn Corporation, 2017).

- **Iris Recognition System**: Iris recognition consist of analysis of a person's retinal signature by combining pattern recognition, computer vision, optics and statistical inference (see Jain, Flynn Ross, 2007:467; Gupta & Mahajan, 2010:34; Alheeti, 2011:1; Salman, 2012:1; Dehkordi & Abu-Bakar, 2015:275; Thakkar, 2016; Techtarget, 2017; Fang et al. 2021:835; IRIS ID, 2024). The system analyses over 200 points of the iris

that include rings, furrows, freckles and the corona (LinkedIn Corporation, 2017). After recording, the system saves it onto a database for use in future comparisons. An important consideration about the human eye is that each person has unique eye features (IRIS ID, 2024). For airports in countries like the United Arab Emirates where the Iris system is already in use (Daugman, 2015:998), this helps the police to track traffickers of illicit drugs and goods.

Other biometric identification technologies include fingerprinting systems such as AFIS, which is already used by ACSA at the ORTIA to control access to restricted areas and by the SAPS, to identify crime suspects, as outlined in 2.4.1 and 2.7.2; the Voice Recognition System, which analyses spoken words (Beal, 2017); the Veins Recognition System also known as vascular biometrics, which is technology that measures a person's unique circulatory system using optical scanning to capture vein images from palms, fingers and eyeballs (Find Biometrics, 2024); and the Footsteps Recognition Systems, which electronically analyses the footsteps of individuals using specially demarcated walk sensing areas (LinkedIn Corporation, 2017).

Compared to the developed world, South Africa is the only Afrikan country whose airports, police and airline are known to be using biometric technologies, which data is corroborated in 1.5 and 2.4.1. To explain, the South African Airways (SAA) recently introduced biometric self-boarding at airports such as the ORTIA, which initiative coincided with Heathrow airport doing the same (Airport-technolody.Com, 2017). Considering the rapid technological developments, there is no doubt that securitisation at the ORTIA requires strong partnerships between airlines, airports and the police. This is also key in enabling cooperation in dealing with transnational crime. However, the use of biometric technologies at ORTIA is limited to uses by the national airline as stated herein, and for controlling access to restricted areas, as cited in 2.4.1.

Another key aspect of biometric technologies is the public's approval of their usage. Dehkordi and Abu-Bakar (2015:275) argue that biometric technologies generally do enjoy public acceptance. It is thus not difficult to postulate that such acceptance also emanates from the use of biometric software that offers improved security at international airports (Daugman, 2015:998). This last claim is even though biometric identification systems and software applications still face several objections based on grounds that include information privacy, physical privacy and religion (LinkedIn Corporation, 2017; Anderez et al. 2021:1). Even so,

those affected cannot deny that biometric technologies have changed how the police manage transnational crime, specifically at international airports.

5.2.4 Merging science, technology and criminalistics

Within police agencies, technologies are also used together with other sciences. Such merger is generally known as forensic science or criminalistics. According to Saferstein (2013:5), criminalistics is forensic science that describes better, the services of a crime laboratory. Some of the services offered in crime laboratories include but are not limited to: the analyses of all sorts of drugs, glass, paint, explosives and soil; the analysis of weapons, ammunition, and gunshot residue; analysis of blood and other bodily fluids, hair, and plants; analysis of handwriting, paper, and ink; recording physical evidence to present to court through photographs; the analysis of bodily fluids for drugs, alcohol and poisons; the processing and examination of the evidence for fingerprints; testing for lies, the examination of voice recordings; and the collection of evidence from crime scenes (see National Research Council, 2009:4; Saferstein, 2013; Quizlet Inc. 2017).

In the context of this study, a key success factor in the effective implementation of criminalistics is the decentralisation of some of the functions traditionally performed by crime laboratories to the field, and that is to international airports. O'Malley (2015:27) agree that the decentralisation of some of the services performed in a laboratory could yield better results and increase the operational efficiency of the police in the field. In practice, decentralisation enables the police to take chemistry, physics and technology applications to the field, even if such field is not a crime scene (Saferstein, 2013:23). For international airports, such exercise is crucial in allowing on-site spot checks, which is fundamentally key in enabling police agencies to effectively combat transnational crime.

Australia is among the leaders in merging science and technology at its airports. Dubbed one of the hardest countries to penetrate in terms of transnational crime, Australian airports such as Sydney use X-ray machines and trained dogs (K9) to detect biological contraband in luggage (Fairfax Media, 2017). The contraband referred to herein, include but is not limited to illegally transported food, undeclared medicines and illegal narcotics. In this study, the use of K9 is considered a detection method and a part of forensic science. Thus, the use of X-ray and K9 epitomises the merging of science and technology in fighting crime at airports. A key feature about airports in Australia is that security checks are non-discriminative, even citizens are exposed thereto (Fairfax Media, 2017).

Another key area where the merging of science and technology is more apparent is in methods used to detect and test for items that may be used in acts of sabotage. Apart from using K9 as detectors, Australian airports further apply random swabs on items of luggage and clothing, which swabs are tested using the Explosive Trace Detection (ETD) scanner (Mail Online, 2017). This technology enables officials to test for explosive and radiation materials on passports and luggage (see Kozole et al. 2011:8596; Takada et al. 2011:2448; Mail Online, 2017; Wasilewski, Gebicki & Kamysz, 2021:1). The only downside to the ETD is that people under medication, paramedics who regularly use medication and luggage items that contain medicine, could cause sensors to go off or raise a false alarm that indicates the detection of explosive materials (Mail Online, 2017).

Explosive detection technologies are also used at airports in countries such as the United States and the United Kingdom. According to Takada et al. (2011:8596), ETD is safe, accurate and have high throughput rates. However, ETD also reacts to substances such as glycerin, which can be used in making explosives, thus confirming the fact that the technology is subject to false hits (Wasilewski et al. 2021:1). The key to discussions herein is that the swabs used with ETD are paper, meaning that the technology relies on sciences that involve the processing and production of paper. This not only attests to the merging of sciences, but also to an MIT approach in securitising airports, which discussion was also outlined in 4.1, albeit briefly. Figure 13 shows what ETD looks like.

Figure 13: Explosive trace detection machine

Source: Mail Online (2017)

Bomb detection is an important part of securitisation at international airports. The science of bomb detection is also known as chromatography (see Harper, Almirall & Furton, 2005:313; Singh, 2007:15; The Conversation, 2017; Wasilewski et al. 2021:1). Figure 13 shows technologically supported chromatography at work. In policing, chromatography would be referred to as forensic chromatography and where technology factors, the science can be referred to as forensic techno-chromatography. Fundamentally, a key aspect of policing is that as both a science and a practice, it can utilise MIT to espouse any other science or discipline. The espousal is done by adding the word forensic as a prefix. Examples include but are not limited to forensic medicine, forensic computing, forensic chemistry, forensic anthropology, as well as forensic toxicology, to cite a few.

Although the methods used to test for explosives and detect drugs (illegal narcotics) are not extensively outlined in this study, it is important to take cognisance of the fact that in some international airports, drug testing, may follow a purely hard science approach that is purely chemistry (Natural News Network, 2017). One such approach is the use of Portable Drug Testing Kits (PDTK). PDTK's apply chemical solutions to unidentified substances to test for drugs such as cocaine, dagga (marijuana or cannabis), ecstasy and heroin, among many others (EZTtestkits.com, 2017). PDTK uses small plastic bags that are color-coded and when chemical solutions are mixed with substance being tested and the colour changes, a positive match on the type of a drug can be verified from the color-coding on the bag, on site (see Haas & Haas, 2013; Koesdjojo et al. 2014:122; DanceSafe, 2017; EZTtestkits.com, 2017; Tomellini, Penney & Brooks, 2017; Ong et al. 2021:3). Among many products, Figure 14 shows one of PDTK types used.

Figure 14: Portable drug testing kit

Source: Natural News Network (2017)

The PDTK in Figure14 was used by the Canadian police at Toronto airport to identify drugs (Natural News Network, 2017). Key to one of the central arguments in this section is that such on-site testing spells a decentralisation of one function that is traditionally performed at a laboratory. Such decentralisation could in addition to enhancing security at ORTI, alleviate some of the challenges faced by SAPS laboratories, which according to Daily Maverick (2012), include: backlogs on reports; untested samples gathering dust at the laboratories; failure of analysts to adhere to correct testing protocols, resulting in acquittals in court; budget cuts, skills exodus and low staff morale. Of concern is that South Africa does not follow the practice of decentralising some of the laboratory functions to its airports. Arguably, decentralisation could mitigate the time taken to get results and the workload of staff at laboratories, which could perhaps also lift staff morale.

The use of chemistry such as PDTK at international airports is however not exclusive of technology. PDTK is used on-site to confirm if a substance is indeed an illicit drug using a smaller sample and once the sample is confirmed, the rest of the quantities from which the sample was drawn are sent to the laboratory for further analysis using advanced technologies (Harper, Powell & Pijl, 2017:52). Thus, a pure chemistry approach will also be extended through a techno-centric approach. Such interfaces talk to MIT, techno-securitisation and are also firmly embedded on the philosophical assumptions in policing.

5.3 TECHNO-SECURITISATION AND PHILOSOPHY

There are no doubts that security warnings at international airports also appeal to the philosophy of policing. The warnings call on the police to protect society, in the context of this study, the passengers and workers at airports. On the same breadth, the use of technologies in securitising international airports, also talks to modern and post-modern policing aspects. In the broader sense, problems at international airports provide an opportunity for the police to contextualise the threats using crime causation theories to gain a deeper understanding of transnational crime at international airports; ground operations in crime prevention theories (modern and post-modern); to apply MIS software; as well as to strengthen efforts to combat transnational or any form of crime.

The existence of transnational crime generally makes securitisation at international airports more complex, particularly when considering the totality of existing threats and their connectedness with organised crime (Pita et al. 2008:125). The threats become even bigger when technology challenges come into play. The lack of technological tools prevents full security coverage at international airports worldwide (Graham, 2013:153). This spells the techno-securitisation blues (challenges) that diminish the police's ability to deal with transnational crime at airports. Techno-securitisation blues as cited in the problem statement disconnect policing as a practice from its philosophical underpinnings.

A worrisome factor about techno-securitisation blues is that the shortfalls allow criminals to exploit gaps in policing. What this last claim means is that criminals will observe police actions, identify weaknesses and execute crime at an opportune moment, when police have let their guard down (see Pita et al. 2008:126; Graham, 2013:154; EyeWitness News, 2017; Hosken, 2017). This was the case with the 2017 robbery at the ORTIA, wherein collusions with insiders such as airport staff and police personnel, coupled with the diversion of technologies such as surveillance cameras (CCTV) from critical areas at the facility, are thought to be at centre of how the crime occurred (EyeWitness News, 2017). How the crime was committed crippled the utilisation of technology in police work.

5.3.1 The Fourth Industrial Revolution: implications for policing

Generally, the use of technologies in police work talks to the Fourth Industrial Revolution. To remain relevant in the 21st century and to philosophically ground the use of technologies thus requires an understanding of the Fourth Industrial Revolution and the implications thereof in police work. The Fourth Industrial Revolution refers to the use of computing power to create artificial intelligence (see Bloem et al. 2014; Schwab, 2017:1; World Economic Forum, 2017; Martinelli, Mina & Moogi, 2021:161) and includes among other things: the creation of self-driving cars, drones, virtual assistants and computer software (Novitskiy & Boyarskaya, 2016:243; Sheridan, 2016:528; Chun, 2021:1), all of which have dawned upon humanity. If optimised, such tools could enable the police to grow their transnational crime-fighting abilities, without putting human staff in harm's way.

The introduction of drones at the turn of the 21st century and self-driving cars in recent times were a figment of the imagination or something linked with science fiction movies in the past. These tools are now real, and the inherent capabilities need to be harnessed to enhance crime combating capabilities at borders, borderlines, and entry ports such as international airports. To this end, self-driving cars fitted with cameras powered with forensic video and biometric software could go a long way, in not only enhancing patrols and surveillance but could also enable identifications on wanted persons and their exact location in the vicinity of airports, in real-time without stretching the human capital.

An interesting innovation in recent times is the unveiling of a concept for a walking car by the South Korean car manufacturing giant Hyundai, at the Consumer Electronics Show in Las Vegas in January 2019. This concept consists of an electric car fitted with robotic legs that can be extended from driving to walking (Hitti, 2019). Although the concept was designed to help emergency workers navigate harsh terrains during natural disasters (Hitti, 2019), the utilisation of such cutting-edge technology is open to a myriad of possibilities. Researchers need only to stretch their imagination on what could such a piece of technology mean for police patrols on those poor roads along borderlines in most Afrikan countries, where the road infrastructure is far worse than in South Africa's borders.

Considering cutting-edge innovation enabled through the Fourth Industrial Revolution, this study postulates that the world and indeed policing happens in exciting times. To contextualise how policing arrived where it is today, it is important to outline what the previous industrial revolutions entailed and what their implications were on policing. The first used water and steam power to mechanise production, the second used electricity to create mass production and the third used electronics and technology to automate processes, whilst the fourth uses the digital revolution and artificial intelligence as an innovation (see Bloem et al. 2014; Schwab, 2017:1; World Economic Forum, 2017; Chun, 2021). For the police, all these revolutions have thus far delivered the tools to effectively combat crime, though success depends on how well a police agency may have integrated tools from each of the industrial revolutions into their strategic and operational framework.

In a nutshell, a key future of the Fourth Industrial Revolution is the use of smart software, artificial intelligence, and robotics (see World Economic Forum, 2017; Chun, 2021; Martinelli, et al. 2021). The results of such capability are the satellite-driven harnessing of ICTs and other technologies using 5th Generation or what is commonly referred to as 5G technology (see Ayub

et al. 2021:2354;Taboda & Shee, 2021:392; Vivekanandan, 2021:403). The use of 5G technology could enable police agencies to establish smart police stations, just like the world already has smart homes. The discussion and analyses on what the Fourth Industrial Revolution can do for the police are dealt with in detail in 7.3.2. This next section thus unpacks the value of industrial revolutions in police work.

5.3.2 The value of industrial revolutions in police work

From the preceding discussion, there is no doubt that policing benefited from all industrial revolutions. The first industrial revolution meant that the police became more mobile as opposed to using ancient transport modes like horses, the second meant that police stations became electrified and could order uniforms (boom in textile), whilst the third implied that the police could use technology to archive and save time and space. The Fourth Industrial Revolution, on the other hand, implies that machines will in the future, take over some of the functionaries normally done by humans. An example of such is the usage of robots to effect arrests, especially where heavily armed criminals are involved.

Like the rest, the Fourth Industrial Revolution also promises to improve the quality of lives around the world (World Economic Forum, 2017), which principle also underpin policing (Andrews & Withey, 2012:34). However, there are significant challenges. One such challenge is that humanity is not yet certain as to how the revolution will unfold (see Bloem et al. 2014; Schwab, 2017; World Economic Forum, 2017; Ayub et al. 2021; Taboda & Shee, 2021; Vivekanandan, 2021). Of certainty is that the revolution has dawned and require clear and adequate responses that are comprehensive enough and technology integrated. For policing, looming uncertainties could have adverse impacts on crime prevention initiatives and on safety and security at critical settings that include airports.

The Fourth Industrial Revolution generally entail that the world stands on the brink of a technological explosion (see Bloem et al. 2014; Schwab, 2017: World Economic Forum, 2017 Taboda & Shee, 2021; Vivekanandan, 2021:403). This revolution has fundamentally already changed the way humanity lives, works and relate to one another, and will continue to do so. For the police, the involvement of stakeholders that include government, other state departments, foreign police agencies, INTERPOL, the business sector, the science and technology fraternity as well as academia, could prove crucial in helping to unpack and make sense of the relating dynamics as the revolution unfolds.

The digital divide refers to the gap between those who have access to technologies/Internet and those who have limited or no access (see van Dijk, 2006:221; Hudson, 2011:46; Schradie, 2011:145; Driver, 2013; Wilson, 2013; Simpson, 2014:45; Store & Join, 2017). Arguably, the developed world has more access than developing economies, expenditure by some developed countries does attest to the claim. For Afrika, poverty (Mazzitelli, 2007:1073); finances (Matlala, 2013:16); using outdated technologies (Ford, 2007:313); lack of frameworks to evaluate technologies used (Matlala, 2013:33); lack of resources and expertise, and poor inter-connectivity among databases (see Brynjolfsson & Hitt, 2000:26; Msutu, 2001; Irish, 2005:10), is problematic. Although Internet connectivity in countries such as South Africa and Nigeria is better and keeps improving, connectivity in much of Afrika thus continues to be a daunting problem.

5.5 CONCLUSION

Techno-securitisation is imperative at international airports worldwide. This is because such facilities are national infrastructure that facilitates the movement of persons and goods. This thus makes safety and security at airports a top priority. To attain the required levels of security, however, requires that policing and airports especially in Afrika should be supported through advanced technologies. Such capacitation could help the police on the continent to re-align practice with the basic assumptions in modern and post-modern policing, thus in the overall with the assumption to protect society as postulated in the philosophy of policing. The re-alignment is also crucial if the police are to effectively manage transnational crime at ORTIA. Success in managing transnational crime at ORTIA is however dependent on the SAPS dealing with some of its challenges. These include dealing with corruption, less-effective monitoring of staff, using outdated technologies, lack of requisite technical skills and the migration of skills from its employ.

CHAPTER 6: THE REGULATION OF SECURITY AT INTERNATIONAL AIRPORTS

6.1 INTRODUCTION

A holistic approach to securitisation at international airports appeals to the concepts: *border security* and *border control.* However, there is a fundamental difference between the two. Border security generally talks to measures intended to secure land, air and water territories, detecting internal and external threats to the territorial integrity of a state through the effective policing of the entry ports, as well as overseeing the legal entry and exits of persons and goods (Mahlangu and Obioha, 2015; Djajić, & Vinogradova, 2019; Jackson, Sørensen, & Møller, 2019; Achermann, 2021:1 Lori & Schilde, 2021:1), whilst border control specifically refers to proactive approaches that seek to do early detection on transnational crime and other illicit activities, to prevent the spread thereof (Mahlangu & Obioha, 2015:107; Achermann, 2021:1; Lori & Schilde, 2021:3). Part of what helps with early detections in law enforcement is the deployment of surveillance technologies at airports, a point already well accentuated throughout discussions in 5.2.1.

The regulation of security at international airports is on the other hand, an issue that talks specifically to *border control*. In addition to proactive measures applied to deal with crime in general or transnational crime in particular, border control also refers to the administrative functions of capacitating law enforcement activities through several frameworks that form the legal basis for the enforcement function (see Mahlangu and Obioha, 2015; Djajić, & Vinogradova, 2019; Jackson, Sørensen, & Møller, 2019; Achermann, 2021; Lori & Schilde, 2021). In essence, border control has to do with the application of laws, policies and other protocols. The concept is thus more of a legal-strategic exercise and serves to legitimise policing in the border and entry port settings.

The inherent regulatory feature linked with border control is essentially intended to regularise the management of transnational crime. To this effect, the regulatory tools in border control can either be national, regional, continental or international precepts that set legal and security standards in borders and entry ports. Thus, a key consideration in the fight against transnational crime is that policing at entry ports could never be optimised without an understanding of aviation security standards. This is because the standards also form an inherent part of the dynamics and challenges that impact on policing at international airports. For the ORTIA, the legal precepts for policing are outlined in 6.5.2.

For the purpose of this study, this chapter outlines the principle issues on territorial integrity and regional borders; shared value in managing borders and entry ports; the regulation of aviation sectors; as well as the regulation of security at international airports, with specific reference to policing at the ORTIA. To elucidate on the issues, the chapter problematises and draws comparisons on challenges in border settings that include the Americas, Afrika and the European Union. The purpose of such problematisation and comparisons is to interrogate best practices in border security and control from other regions around the world, to draw lessons that can help improve security at the ORTIA. Generally, the purpose is to facilitate proper understanding of the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus. This next section opens discussions on issues of territorial integrity and regional borders.

6.2 TERRITORIAL INTEGRITY AND REGIONAL BORDERS

According to Mahlangu and Obioha (2015:107), issues of national security and territorial integrity are concerned with preserving the sovereignty of states. These scholars further argue that the issues on national security and territorial integrity depend largely on the level and quality of border security and control measures put in place. Territorial integrity is a principle that fundamentally forms part of international law. This principle is enshrined in Article 2 of the Charter of the UN, which reaffirms the territorial self-determination of sovereign states with emphasis on equality, peace and security (United Nations, 1945; Huth, 2009:20; Cornelisse, 2010:90; Fazal, 2011:146; Marxsen, 2015:7; Encyclopedia Princetoniensis, 2017; United Nations, 2021a). The charter therefore makes border security the basis for territorial integrity.

In essence, territorial integrity has to do with stability, safety and security at borders and entry ports (see Andreas, 2003:78; Elden, 2005:2083; Salter, 2005:36; Agnew, 2008:175; Andrijasevic & Walters, 2010:977; Seghetti, 2014:157; Walters, 2016:151; Achermann, 2021:1; Lori & Schilde, 2021:2). Territorial integrity could never be realised without the effective management of transnational crime at international airports such as the ORTIA. Therefore, national legislation must align with international protocols, to enable synergy in the way international airports are securitised and controlled the world throughout.

Transnational crime generally presents a unique challenge in border and entry port security worldwide. This is because of the inherent mobility aspect linked with the types of crimes committed. Obama (2010:42) confirms that challenges in border, borderlines and entry port security are mainly due to the ability of transnational crime to transcend across jurisdictions or

into different countries. In essence, transnational crime respects no geographical boundaries. This anomaly is despite the fact that some countries, especially in the developed world, boast some of the best border security systems on offer. The countries include Australia, Canada, the US, the United Kingdom, as well as countries such as Germany and France in the EU.

An important consideration about territorial integrity, border and entry port security is that no positive outcome could be attained in isolation. Border and entry port security is thus something that could only be fully optimised through regional collaborations. For most regions in the world, such collaborations are facilitated through several protocols or regulatory frameworks, some of which are discussed in the ensuing sections in this chapter. For many regions in Afrika, such collaborations however remain elusive. The SADC region in particular is, for example, beset by polarised securitisation. As a point of departure, the sections that follow in this chapter broadly outline the border security challenges and dynamics in various regions around the world, whilst also touching on issues that relate mainly to the philosophy and the politics in border control and security.

6.2.1 Border security in the Americas

The one region whose borders and territorial integrity is of interest in this study is the Americas. This region includes countries such as Canada, the United States of America, Guatemala, El Salvador, Mexico and Honduras to cite a few. Challenges in the Americas include among other things, porous and uncontrolled borders between Guatemala, Mexico, El Salvador and Honduras. To this end, Espach and Haering (2012:3) lament the fact that police in these regions are mostly visible at major highways that cross the borders, including at main entry ports and commercial airports, but never monitor areas such as mountains, jungles and rivers that form part of the borderlines within the region.

Because of the vast borderline areas that are neglected by law enforcement agencies, border security challenges in the Americas essentially include, but are not limited to the following activities: illegal crossings; food smuggling for re-sale; drugs, human and weapons trafficking; terrorist activities; and money laundering (see Bersin, 2016:2; Gonzalez, 2016:1; May, 2017:25; Washington Office on Latin America, 2017; Norio, 2021:8). The challenges within the borders in the Americas are no different to problems in South Africa's borders. Montesh and Basdeo (2012:73) pointed out that South Africa grapples with crimes that threaten the constitutional order of the country, and these include terrorism, illegal migration; the movement

of contraband; and human trafficking. There is no doubt that such challenges also have a knock-on effect on security at airports.

An interesting observation about the Americas in particular, is that even if security at the airports was to be improved, transnational crime will continue to be problematic. Intensifying security at airports and neglecting other border areas simply prompts the displacement of crime from the monitored to the unmonitored areas. This type of knock-on effect is something that has had adverse impacts on many economies in the Americas (see Lyon, 2006:397; Hofmann, 2009:1; Espach & Haering, 2012:7; Bersin, 2016:2; Gonzalez, 2016:1; May, 2017:7; Washington Office on Latin America, 2017; Norio, 2021:38). The extent of the impacts of transnational crime on economies in the Americas is however not the focus of this study. What is essentially of interest is for this study provides a broader context to the problems faced in border security in other world regions.

To add to the security challenges in poorly serviced and unmonitored areas in the border environment in the Americas, Espach and Haering (2012:7) further highlight that borders between Guatemala, Mexico, El Salvador and Honduras lack adequate data on cross-border movements of persons and goods. The one logical explanation for such a predicament is that the region lacks modern technological resources to facilitate the collection and analysis of data on the cross-border movement of goods and persons. Technology serves as an enabling platform for data collection and analysis. In their impact assessment, Chan, Brereton, Legosz and Doran (2001) plainly concluded that technology is an essential tool in enabling data collection and analysis in police work.

6.2.2 Border security in Afrika: philosophy, politics and challenges

Afrika is another region whose borders and entry ports require some serious examination. The border security challenges in Afrika have already been briefly outlined in 1.2.1. To recap, the problems include the least contribution to research outputs on the use of technology in police work, poor infrastructure in the border setting, high training costs, scarce funding, and skills exodus. These are some of the issues that impact on the quality of services by the police.

Enhanced quality in the provision of border security services is largely dependent on the optimal use of sophisticated technologies in police work. For Afrika in particular, the value of technology in police work underscores the need to prepare for migration from modern to post-modern policing. The justification for the migration includes the use of 5G software to integrate

various technical capabilities in a single device, the use of robotics and artificial intelligence in police work, which is technology that virtually interconnects multiple devices and transmits information at high speeds (Qualcomm, 2024). To recap, this section talks to the Fourth Industrial Revolution and how policing and techno-securitisation need to migrate from the Peelian praxis to a post-modern thinking, so as to remain relevant in the contemporary times.

Migration into the fourth industrial revolution is essentially the main reason why this study sought to develop a theory that serves as guiding principles or a philosophy that grounds the police's use of technologies in the post-modern epoch. The post-modern policing theory is conceptualised in 8.2.5. The conceptualisation further culminated in the conceptualisation of the continuum for the policing, transnational crime and techno-securitisation nexus depicted in Figure 15 in 8.3, as well as the Matlala thesis, which is explained in Chapter 10 to create a theory base for the nexus conceptualised in this study.

The development of theory can however not help resolve the security challenges in the border and entry ports settings in Afrika. Theory as postulated in 4.1 only helps the police to philosophically ground strategies and practices that are intended to improve security. However, when theory is non-existent, not understood and/or not conformed to, it remains a rhetoric that can never find coherent expression in practice. For the ORTIA, theory on post-modern policing in particular will help the police understand the values behind why they do what they do, in the execution of their work. To this end, the poor understanding of transnational crime that remains problematic in policing at an airport such as the ORTIA, is also exacerbated not only by the lack of research, but also by the non-conceptualisation of the core values that govern the usage of technology in police work.

In the absence of grounded theory work to conceptualise the post-modern policing philosophy, the police in Afrika whether in the border, airport setting or elsewhere, will always look to benchmark from other world regions, without developing their own approaches that are indigenous and fit for their unique purpose. What this means is that the police in Afrika would not be able to decolonise practices in the post-modern epoch. An example of one such practice that need to be done away with is the classification of travelling Afrikans as migrants and Europeans as tourists (see Però, 2007; Cohen, 2016; Herbert, 2016; Benson & O'Reilly, 2018. Papastergiadis, 2018). For South Africa, failure to deter such notions, attitudes and practices in policing is tantamount to the perpetuation of apartheid, which would be a relapse to how state institutions used to operate pre-1994.

A situation wherein state institutions relapse to discriminative praxis, just as similarly cited in 2.7.1, is a setback for the agenda to decolonise Afrika. To facilitate deeper understanding, the notion of decoloniality is best captured in the writings of Bassey and Oshita (2010:13). These authors explain how borders in Afrika have always been inescapably connected to the politics of transformation, from pre-colonial systems into territorial states that are captured by imperial tutelage. One example of imperial tutelage that requires to be dealt with in order to decolonise police practices at international airports, is the classification of passengers according to race. Australia is a classic example in this regard. Border security at Australian airports purports such abomination through the biased individual searches on mainly black Afrikans, South Americans and Asians, through the use of drug and explosive detection technologies, but will mostly exclude persons of European descend travelling into the land (CBS Reality, 2018).

The classification of travellers at international airports using race as a variable, is essentially a reaffirmation of conformism with supremacist ideals. Worth noting is the argument that the racial classification of travellers may not only be perceived by the public (travellers and citizens) as conformism but also as pure racism in police work. This is politically sensitive for countries such as South Africa, Namibia and Angola, particularly given the colonial apartheid atrocities perpetuated by apartheid South Africa, Germany and Portugal respectively (see Attridge & Jolly, 1998; Africa Report, 2018; Crush & Peberdy, 2018). In fact, no country has a desire to deal with racism, in addition to the problems that include transnational crime in its borders and entry ports such as airports. To this end, the international community has declared all forms of racism and human rights violations as crimes against humanity (see United Nations, 2015; United Nations, 2018; Donnelly & Whelan, 2017). This is irrespective of whether the atrocities are committed by the police who have to deal with security and transnational crime at airports.

6.2.3 The European Union case study

A third region whose border and territorial integrity issues are of interest in this study is the European Union (EU). This economic and political block consists of 28 countries that cover much of Europe (European Union, 2017). Perhaps with the Brexit issue, the number is now down to 27 member states. The EU describes itself as *"[a family of democratic countries, committed to working together for peace and prosperity]"* (BBC News, 2017). This block was formed after World War II, with the sole purpose of fostering economic inter-reliance and improved trade among member states (see Guzzetti, 1995:1; Archick, 2017:1; European Union, 2017). To this end, the EU is premised on values that predominantly include peace

and the eradication of wars as its core political manifesto (see Guzzetti, 1995:1; European Union, 2015:1; Archick, 2017:1; European Union, 2017).

To promote interdependence, Article 1 of the Treaty of the European Union (2012) emphasises integration as its foundational philosophy. The unity fostered relates primarily to the integration of economies, the removal of spatial borders within the block and the shortening of travel times in Europe (see Scharpf, 2010:211; European Union, 2012; Nugent, 2017:111; Evrard, 2021:1). Article 3 of the same treaty pronounces on ensuring the free movement of persons within the block, subject to apt border controls (see Marenin, 2010:1; European Union, 2012; Bigo, 2014:209; Nugent, 2017:360). The movement of persons in the block highlights the centrality of international airports and the importance of enhancing policing and security at entry ports.

Compared to the EU, Afrika lacks behind in creating borderless regions and enabling free movement. The SADC is destabilised by the absence of standardised migration protocols (Nshimbi & Fioramonti, 2014:52). This problem is despite the African Union (AU) having migration policy guidelines. The problems in the SADC are aggravated by two coexisting systems. These are a South Africa-managed bilateral migration policy and aspirations for a region-managed policy (see Williams & Carr, 2006:5; Nshimbi & Fioramonti, 2013:22; Nshimbi & Fioramonti, 2014:52), which opposing issues add very little or no value in terms of strengthening territorial integrity in the region. Such polarity is not in the interest of free movement and economic growth in the region (see Ndhlovu & Ricover, 2009:41; Disenyana, 2013:16; Ndlovu, 2013:54). Without a doubt, this stifles the viability of airports as enablers of movements of persons and goods.

Unlike Afrika, the EU has through the Treaty of the European Union (2012), been able to standardise policy on free movement, thus creating a borderless region. Assertions in the treaty are a declaration of territorial self-determination and reaffirm international airports as enablers of movement in the EU (European Commission, 2017). Core to enabling mobility in the block are issues of security enabled through the effective use of technologies to manage transnational crime. Various sources (Lebeya, 2007:2; United Nations, 2007:11; Streefkerk; van Esch-Bussemakers & Neerincx, 2008:102; Mahlangu & Obioha, 2015:131) reaffirm the notion of technology being key in the effective management of crime, thus also a central aspect in terms of preserving territorial integrity.

Despite the problems, Afrika has seen the birth of the African Continental Free Trade Agreement (AfCFTA). This historic agreement launched in June 2020, came into effect during January 2021. The AfCFTA' s main object is to stimulate GDP growth of 1 to 3%, create 1.2% jobs, enable 33% growth in intra-Afrikan, reduce the continental trade deficit by 50% and increase tariff-free trade across Afrikan markets by 97% (see African Union, 2021; South African Institute of International Affairs, 2021; United Nations, 2021). This move will go a long way not only in increasing trade, but also in making the continent borderless. There is no doubt that international airports will be one of the biggest catalysts that enable the free movement of persons and goods in support of the initiative. This is why security and in particular the techno-securitisation of facilities such as the ORTIA should be prioritised as one specialised area within the broader field of border policing.

6.2.4 A global overview of the challenges in border policing

Eminent writers (Bellanova & Duez, 2016:23; Galis, Tzokas & Tympas, 2016:10; Follis, 2017:1003) have consistently argued that effective border policing does involve the use of modern technologies. To this end, poor services, poor monitoring and lack of data on the cross-border movement of persons and goods in some areas within the border setting, particularly in the Americas as cited in this study, highlights the deep systemic challenges in border policing. The challenges are however not unique to the Americas but are also common in Afrika. Equally, the problems occur in both the developing and developed regions of the world. The problems thus highlight incapacity in dealing with transnational crime and suggest diminished strategic and operational capabilities in border policing.

As already cited in 1.4, border policing also include securitisation at international airports. To this end, a key consideration about airport security is that the inherent activities could never be separated from national security and territorial integrity. This last claim was eloquently echoed by Mahlangu and Obioha (2015:107) who argued that: "*[national security and territorial integrity of a state, especially in maintaining sovereignty, is determined by the level of border security and control measures]".* Similarly, territorial integrity could never be isolated from the role played by legislators who must show political will, by formulating laws that meaningfully enable the border policing functions.

Fundamentally, border security is a function of police agencies. However, despite working systems, border policing in regions such as the EU also faces unprecedented illegal migration from areas such as Syria, Afghanistan and West Afrika; refugees and asylum seekers arrivals; weak internal controls; increased number of travellers and terrorist threats (see Vaughan-Williams, 2015:19; Bigo Walker, 2016:163; The Strategist, 2017). To deal with the issues, Carrera (2007:3) endorses that border controls, checks, surveillances, risk analysis and crime intelligence need to be reinforced. Such measures essentially underscore the value added by technologies at entry ports such as the ORTIA.

In comparison to the EU, the Afrikan continent still has a long way to go in terms of implementing proper controls, checks and analysis within its border settings. Afrika is generally challenged by a myriad of problems that range from using outdated computers (Ford, 2007:313), poor funding (Matlala, 2013:16), disconnected police databases (Matlala, 2013:16), skills exodus in policing (Omar, 2008:34), high training costs (Matlala, 2013:15), low police salaries (Omar, 2008:34), to political meddling in police agencies (Panyapanya, 2016), as well as vast poverty and inequality (Mazzitelli, 2007:1073). So, between Afrika and the EU there exists basic inequalities of the "*haves"* and *"have nots"* To elucidate on the saga of the *'haves'* and *'have nots'* in terms of border security, Bassey and Oshita (2010:4) drew comparisons that describe EU borders as integrated, strong and stable, whilst borders on the Afrikan continent are portrayed as insecure and porous.

Despite the challenges, Carrera (2007:3) is under no illusion that problems in border management in the EU should be further improved through the effective detection and investigation of transnational crime, in cooperation with relevant stakeholders that include border guards, customs officials, the intelligence community, local border police, INTERPOL and the European Police (EUROPOL). To this end, Carrera (2007) further postulates that such inter-agency cooperation is crucial in enhancing coordination and coherence in border security. For ORTIA, such recommendations are ideal particularly because securitisation actors as cited in the problem statement operate in silos. How the EU implemented the recommendations in its borders, entry ports and international airports, should be of interest to South Africa. This is because coordination and coherence is lacking at ORTIA, which is what urged this study to problematise the issues.

In contrast to the EU, South Africa faces different challenges and dynamics. These include inapt border fencing and poor road conditions around borders; the strategic, operational and

techno-securitisation woes; the management and policing challenges. Another challenge for South Africa is funding. To this end, the government conceded that border security in South Africa is costly and needed increased funding (DefenceWeb, 2017a). This was affirmed by calls for a R3.3 billion allocation to the Department of Defence for 2017-2020 (National Treasury, 2017:67), R1 845 992 in 2016/2017, R1 980 004 in 2017/2018 and R2 128 088 in 2018/2019 to the SAPS to securitise borders, borderlines and airports (South African Police Service, 2016:9). Such budget increases will certainly enable shared value in managing borders, borderlines and entry ports, a value that is needed if policing at ORTIA is to align with the Fourth Industrial Revolution.

6.3 SHARED VALUE IN MANAGING BORDERS AND AIRPORTS

Shared value is a management strategy in which stakeholders find opportunities in dealing with social problems (Shared Value Initiative, 2017). Since crime is a social problem (Salem & Lewis, 2016:1), shared value in this context involves funded collaborations to enable security actors to outsmart criminals. For the ORTIA, such efforts should also include partnerships with universities and research institutions, to grow research on policing, transnational crime and techno-securitisation. Efforts in shared value should also include sharing best resource management practices and joint police operations. Shared value as critical as it is to border security, could never succeed without funding, especially funding for modern crime combating/prevention technologies.

The EU is once again the one region that also uses the shared value as a critical success factor in border security and control (see Archick, 2017:1; European Commission, 2017; European Union, 2017). To this end, the region engages in joint operations and shares best management practices between the military, border police and customs services from different member states, including INTERPOL and EUROPOL, as well as other securitisation actors from outside of the continent (European Commission, 2017a). There is no doubt that the move is intended to promote border and airport security. Such initiatives could also however never be fully optimised, not without the application of modern technologies (see Archick, 2017:1; European Commission, 2017; European Union, 2017). Essentially, this last assertion forms part of the central thesis in this study. This is the reason why such discourse is always accentuated throughout the discussions.

To promote shared value in the border and entry port environments, the EU further relies on the observation of principles contained in the Lisbon Treaty and the EU Charter on Fundamental Rights. These protocols articulate on human dignity; freedom; equality; adhering to the rule of law; security and respect for human rights as the underpinning praxis (see European Union, 2009; Craig & De Búrca, 2011; European Union, 2017a; European Union, 2018; Lang, Pistone, Schuch & Staringer, 2018). The protocol serves to deter racialised policing approaches. This next section briefly compares how SADC approaches shared value in the border and airport setting, using the EU as a benchmark.

6.3.1 Comparing the SADC and the European Union

There is no doubt that the EU arguably provides a benchmark on how to optimise shared value in managing regional borders and airports. For the SADC to improve will however require a re-alignment of operations with regional strategic objectives. To this end, the police need to align their approaches with the SADC Protocol on Politics, Defence and Security Cooperation, which emphasises a shared vision to attain peace, security and cooperation in dealing with crime (Southern African Development Community, 2001a). Like the EU, SADC shares values of fostering peace and prosperity, even though promoting economic interdependence in the region remains a fledgling exercise for now.

Other SADC conventions that seek to enable shared value include the Protocol on Science, Technology and Innovation. This accord provides the basic tenets that articulate the establishment and strengthening of institutional mechanisms to effectively manage science, technology and innovation in the region (Southern African Development Community, 2008). There is also the Declaration on Information and Communications Technology, which recognises the need for a coherent regional policy and strategy on Information Communications Technology, to promote sustainable economic growth and technology development, to attain shared value and to bridge the digital divide that the region is exposed to (Southern African Development Community, 2001b). However, implementation and funding inhibit regional (SADC) efforts to attain its strategic goals.

In the context of this study, the key to promoting shared value in borders and entry ports is through fostering police cooperation. Efforts to consolidate such cooperation in the SADC have led to a more careful approach. The approach however caused a limbo that led to several challenges that include highly complex interactions relating to the use of technologies in police work in the region (South African Police Service, 2009:35), which continues to be poorly

understood due to lack of research. Although the interactions are not the subject of discussion in this study, any such challenges will undoubtedly have negative impacts on shared value within the region's borders and entry ports. Compared to the EU, shared value in managing borders and airports in the SADC region is compromised by several policy-related challenges that are summarised below as follows:

- **Policy implementation disparities**: Most SADC member states are not at the same level of preparedness in terms of policy implementation (Saurombe, 2009:101). For example, Swaziland, Malawi, Mozambique, Tanzania and Zimbabwe are generally faced up with a lack of capacity in implementing regional policies (Gastrow, 2001:43). For police agencies in the SADC region, this kind of impasse arguably implies a lack of expertise to interpret and re-align national and regional policies on the utilisation of technologies used to fight transnational crime. This issue implies diminished operational capabilities.

- **Overlapping multiple memberships:** According to Saurombe (2009:102), South Africa, Botswana, the Democratic Republic of Congo (DRC) and Mauritius belong to multiple trade structures such as Common Market for Eastern and Southern Africa (COMESA), World Trade Organization (WTO), Southern African Customs Union (SACU) and Eastern and Southern African Economic Partnership Agreement (ESAEPA). This overburdens countries with commitments and brings about conflicting interests. These conflicting interests arguably imply a lesser financial commitment to fighting transnational crime at international airports, as it also implies that country financial resources are further stretched by membership fees.

- **Lack of reliable information:** Delegates from the Institute of Security Studies and the Secretariat of Southern African Regional Police Chiefs Cooperation Organisation (SARPCCO) confirmed in 2005, how lack of reliable data and research on transnational crime impact on police work in the SADC region, this perpetuated by lack of technology resources, which shortfalls stifles shared value in security operations (Hübschle, 2010:1). To this end, the lack of reliable information in the SADC and Afrika in general, is hindered by problems such as poor infrastructure, which point is adequately postulated in 1.2.1.
- **No centralised databases:** Scholars (Ngoma 2003:25; Lebeya 2007:122; Van der Spuy 2009:247) have visualised the development of a central database for SADC, as a stern challenge in the fight against transnational crime. For police in the region, this spells

technology shortfalls that impact negatively on the reliability of intelligence data shared on criminal activities in the border and airport settings.

The police in the SADC region indeed have a long way to go in optimising shared value. However, while the task is insurmountable, it is arguably not impossible to achieve. For example, collaborations and partnerships with private companies could go a long way in assisting police agencies to optimise shared value, especially in fulfilling the training and techno-securitisation needs needed to effectively combat transnational crime. In elaborating further on the policing issues in the SADC region, scholars (Ngoma, 2003; Lebeya, 2007; Van der Spuy, 2009) noted that the region also has the following problems:

- Lack of coordination, poor management, poor leadership and lack of resources within police agencies, both at national and at regional levels;
- Lack of homogeneity, owing to different political, constitutional and economic policies and programs across the various member-states, which leads to poor planning and different interpretation of statutes among member-state countries.
- The region has also not reached a stage where a single police agency can be formed and has no solid plans to get around any of the hurdles, an issue that renders regional policing a cumbersome exercise. For policing at international airports, such challenges imply non-coherence in the movement of contraband.
- The bureaucracy in organising cross-border operations, which was caused by different laws that regulate participating police, has also inhibited efforts to deal with transnational crime in the region. In the past 17 years, operations held by regional police included: Operation V4 in 1997; Operation Atlantic in July 1998, covering Botswana, South Africa and Namibia; Operation Midas in June 1998, covering Lesotho, Mauritius, South Africa and Swaziland; Operation Stone in April 1998, covering Angola, Botswana and Namibia; and Operation Sesani in April 1999, in Botswana, Tanzania, Malawi, South Africa and Zimbabwe, a problem that has also been perpetuated by the lack of financial resources (Msutu, 2001).

Other problems that impact on shared value in SADC include the non-standardisation of training on the use of technologies in police work and in custom services, including the lack of expert technology operators due to the skills exodus caused by skilled staff leaving the employ of regional police, for better salaries in the private sector (Omar, 2008:35). To address these

intractable issues, the police in the SADC need to increase human resource capacity; re-design posts to become more attractive; offer better salaries and prioritise career development. Omar (2008:35) firmly supports these last recommendations and further adds that the police in the region need to implement policies and create conditions that attract and retain skilled staff with technical expertise. For securitisation at international airports, retaining skilled staff implies having appropriate skills to operate technologies intended to enable the police to fight transnational crime.

6.3.2 Responses to challenges in attaining shared value

For the SADC region to enable or even optimise a concept such as shared value will require concerted efforts in dealing with issues relating to the digital divide in police work. Fuchs and Horak (2008:100) persuasively argue that from a digital perspective, Afrika is generally marginalised. These authors further contextualise that the marginalisation is due to the globalisation processes that have inadvertently excluded many parts of Afrika. This has resulted in police agencies on the continent having lesser access to modern technologies. For the police in the SADC region, lesser access to technology means poor intelligence, poor information-sharing, strategic and operational inefficiencies and poor management of transnational crime within the border, borderline and airport settings.

According to Gastrow (2001:42), one of the ways in which the police in SADC can better attend to problems including the improvement of shared value, is through international assistance. Such assistance could however only be acceptable if donors do not dictate to the recipients thereof or manipulate the economic and political policies of sovereign nations. One example of such manipulation is the US military intervention and the Food for Oil Programme in Iraq. Although this agenda unequivocally resulted in United States forces training Iraqi troops, it equally enabled the US to tailor solutions to Iraqi problems. This was all done in the name of providing food in exchange for oil, to feed the highly industrialised infrastructure of the United States, at the expense of Iraqi resources.

Dictatorship by a foreign power has the propensity to erode the political and national sovereignty of any country that is a recipient of any kind of aid. Throughout the decades, most of the negative impacts linked with foreign aid have in fact been well documented in the literature (see Santos, 1970; Pack & Pack, 1993; Alesina & Weder, 2002; Rajan & Subramanian, 2007; Alemu & Lee, 2015; Niyonkuru, 2016). According to the Jonathan Lea

Network (2019), instead of promoting shared value, some of the impacts brought about by foreign aid include increased corruption; added bureaucracy; growing debt; diminished democracy; culture of dependency; business bankruptcy; less trade and less wealth creation; increased armed conflicts and imperialism. Most of the problems cited herein are already visible in Afrika as cited in 1.5.2, which talks to conflict minerals that has seen the involvement of foreign donors in funding wars to loot resources from Afrika.

Promoting shared value essentially talks to mutual respect among donors and receivers of aid, a principle premised on global citizenship and common values of humaneness. Issues on global citizenship are well articulated in literature (see Morais & Ogden, 2011; Carter, 2013; de Andreotti, 2014), which confirms that "*A global citizen is someone who identifies with being part of an emerging world community and whose actions contribute to building this community's values and practices*". The same goes for donor countries who instead of exploiting, should be assisting poverty-stricken nations, to help them eradicate poverty and enable equal competition in aspects such as techno-securitisation at international airports to help combat transnational crime. This next section essentially reflects on South Africa's approach to shared value in border and airports environment.

6.3.3 The South African case study

To promote shared value, South Africa also follows a multidisciplinary and multi-sectoral approach (Department of Environmental Affairs, 2018). With specific reference to airports, the focus is on collaborations with immigration, customs, the National Prosecuting Authority (NPA), the SAPS and ACSA. Other than the NPA, these last-named actors have already been cited in 1.2. These actors broadly derive their marching orders in terms of techno-securitisation from the National Development Plan (NDP) 2030. This is a government strategic plan that emphasises more on using science and technology to combat crime in South Africa and in particular at international airports, to create safety, sustainability and tangible economic growth (see Department of Transport, 2018; Department of Home Affairs, 2019; The National Planning Commission, 2019).

Although South Africa also supports effective border control using modern technologies (DefenceWeb, 2017), shared value as a management strategy is problematic. The problems that hinder border policing particularly at the ORTIA include disconnected technological databases; poor cooperation and non-sharing of information; as well as the techno-

securitisation blues as outlined in 1.6. Likewise, the problems also include a lack of collaboration with private companies that operate in the technology space. The problems outlined herein gives further credence to the postulation that the way securitisation is handled at the ORTIA follows an approach that does not subscribe to shared value as a management strategy. In terms of disconnected databases alone, such flaw also implies that the policing-technology interfaces are dysfunctional and that such situation will result in poorly managed transnational crime at the ORTIA.

Research by Mahlangu and Obioha (2015:131) further corroborates the fact that modern technologies do add value to the securitisation of borders and airports. The research goes to the extent to also recommend that the types of technologies needed in border settings should include unobtrusive detection tools and scanners, surveillance and reconnaissance tools. The value linked with the use of such technologies in the border setting and the application thereof in securitising international airports has been outlined in 1.3.3. Key to effectively securitising airports such as the ORTIA is a deeper understanding of the policing, transnational crime and techno-securitisation nexus, an aspect which continues to be illusive in the policing of an airport such as the ORTIA.

Though never acknowledged in 2.5.1 as part of the studies to have emerged out of the SADC, research by Mahlangu and Obioha (2015) also forms part of the exclusions as contemplated in this study. This is because despite not having interrogated the policing, transnational crime and techno-securitisation nexus, the research places firm emphasis on the role of the SAPS in border control, techno-securitisation and is concerned with the general application of legal tools that regulate the policing of cross-border movements. Thus, the study is concerned with border security as a concept. Since border security is intertwined with airport security, airport security thus talks to the viability of the aviation industry. This next section gives an analysis of aviation industries in various economies.

6.4 A COMPARATIVE ANALYSIS OF AVIATION SECTORS

Over the past three decades (1990-2020), aviation sectors worldwide have been affected by several drivers. These include increased transnational crime and cyber security threats; technological expansions and innovation; environmental activism; panic from disease outbreaks; the global regulation of noise and emissions; changing weather patterns; and geopolitical instability owing to wars in some world regions (International Air Transport

Association, 2017:8). Whilst the other drivers are documented throughout history, there is no doubt that the imminent threat to aviation is the COVID-19 pandemic. There is no doubt that this virus had a serious impact on aviation, especially from December 2019, throughout 2020 and 2021. However, the impacts are not the focus in this study.

There is no doubt that the other drivers of change in the last three decades referred to herein have also meant that aviation worldwide is directly affected either adversely or otherwise. This is because the drivers as cited herein, are among the variables that fundamentally influence the strength and/or volatility of national economies and thus the global economy itself. Whether there is strength or volatility in economies is an issue that is however dependent on how effective the police securitise aviation sectors worldwide. To this effect, aviation security could never be separated from airport security. The two are part of a homogenous approach intended to attain security at entry ports settings.

For the purpose of this study, the EU is once again displayed as a benchmark case in terms of good aviation practice. The main purpose of the EU as already cited in 6.2, is to oversee cooperation among its member-states. This task is focused primarily on areas that include trade, transport (that is air, land and sea) and employment (see Guzzetti, 1995:1; European Union, 2015:1; Archick, 2017:1; BBC News, 2017; European Union, 2017). To this end, the aviation sector within the EU has proven to be one of the biggest contributors to the European economy, with 900 million air passengers travelling to various international and local destinations each year, making up one-third of the total world market (European Commission, 2017). There is no doubt that the levels of movement of passengers and goods around the EU, particularly makes international airports, attractive to the plethora of threats posed by transnational and organised crime. Such dynamic underscores the importance of the role of police in securitising entry ports.

In comparison to the EU, aviation sectors in Afrika also contribute their bit. According to the International Air Transport Association (IATA), Kenya's aviation industry supported about 620 000 jobs and contributed Sh330 billion ($3.2 billion) to the economy in 2016 (Business Daily, 2017). On the same breath, aviation in Nigeria contributed $10 billion to the country's GDP in 2016 (Proshare, 2016), whilst the sector generated $3 billion in visitor exports to Egypt's economy in 2016 (World Travel and Tourism Council, 2017:1). Thus, a key question about aviation sectors in Afrika is whether airports throughout the continent can be elevated to meet

the required security standards to sustain the economic benefits on offer. Such elevation is without a doubt an issue linked with better policing.

There is no doubt that the surge of the COVID-19 pandemic in late 2019 eroded most of the benefits and that the aviation sector now needs to sustain the little that is on offer during lockdowns and travel restrictions. To sustain the benefits the sector requires enhanced security, particularly at international airports. This could however not be attained without the effective use of technologies, including regional cooperation among police agencies. Unlike Afrika, Europe already had governance agreements in place since the mid-1980s. These included the Schengen agreements (1985-1990), the Treaty establishing the Constitution for Europe in 2004, the Tampere European Council in 1999, the Maastricht Treaty, The Hague Programme of 2004 and the 2009 Lisbon Treaty (see Elsen 2007:13; Keohane 2008:141; Bicchi & Schade, 2021:2). Some of the aviation regulations in Europe date back to 1944 (European Commission, 2017). Such long-standing traditions underscore how fledgling Afrika is, in regulating its aviation sectors.

Besides governance protocols in aviation, police cooperation in Europe also began around 1976 (McLaughlin 1992:481), whilst Afrika only began after the replacement of the Organisation for African Unity (OAU) by the AU in July 2002 (Nmehielle, 2003:414). Such predicament means that even if the police in the SADC were to utilise the most sophisticated of technologies to combat transnational crime at international airports, the inexperience factor will always be a cause for concern. For the aviation sector in Afrika, the inexperience in police cooperation implies a grey area in terms of how far can law enforcement go in terms of preventing the potential losses that can be incurred as a result of transnational crime, something that will also require further research to verify. The ensuing sections examines some of the risks and growth trends in world aviation sectors.

6.4.1 Aviation in Afrika

A major concern about aviation in Afrika is that the industry is at risk of failing to meet the demands for air travel. A study prepared for IATA in 2017, showed that the demand for air travel in Afrika is lower, owing to barriers restricting intra-Afrikan air markets; the slow liberalisation of markets; unfair competition; and non-compliance to safety standards (Norton Rose Fulbright, 2015). To deal with the challenges, the 1999 Yamoussoukro Decision signed by 44 states, resolved that Afrika needs to deregulate its air services, promote regional air markets and open transnational competition (see Rogerson & Kiambo, 2007:509; Barbot,

Costa & Sochirca, 2008:270; Schlumberger, 2010:61; Hartzenberg, 2011:4; Norton Rose Fulbright, 2015; Sanny & Patel, 2021:1). The recommendations can however not materialise if security at airports on the continent remains problematic, with transnational crime threatening any potential and actual gains.

Despite the challenges in Afrika, an audit by the International Civil Aviation Organisation (ICAO) showed that South Africa's aviation grew from 83.83% to 86.71% in 2017 (see Department of Transport, 2017:3; Bizcommunity, 2018; Fin24.com, 2018; Brophy, 2018). The audit focused mainly on standards on safety and security, efficiency and economic sustainability (see 2017:2; South African Civil Aviation Authority, 2017:2; Fin24.com, 2018; Brophy, 2018). These last-mentioned ideals could never be attained, not without the efficient use of technologies to attain effective border control and apt airport security. For the ORTIA, the gains in aviation confirm the facility as a driver of economic growth.

Effectively, the ICAO audit placed South Africa's aviation at position 41 globally and second in Afrika. Had the audit made an adverse finding, South Africa's GDP could have lost about R50 billion contributed by air transport in 2017 (see Department of Transport, 2017:3; South African Civil Aviation Authority, 2017a:15; Fin24.com, 2018; Brophy, 2018). There is no doubt that the audit, which included the vetting of security standards at airports such as the ORTIA, essentially underscores the centrality of the role played by the police, including other securitisation actors within the border and entry ports settings. As already alluded to in 2.3.2, international airports have a central role in connecting airlines to passengers and freight customers. Thus, airports are key to promoting regional air markets and opening transnational competition. Just as the ORTIA and international airports in other Afrikan states are regarded as economic hubs, international airports in EU countries are also increasingly regarded as engines for economic growth. To this end, the economic viability of the ORTIA has already been hypothesised in 2.3.1.

For airports and aviation activities in the EU, the Airports Council International (ACI) estimated a total economic impact of €338 billion (about $398.84 billion) in 2015 (European Commission, 2017). This is a massive figure in comparison to Africa, whose aviation contributed $80 billion in economic activity during 2015 (Traveller24.com, 2017). Reasons for growing disparities are, however, not the subject of inquiry in this study. Of importance is the elucidation of the dynamics and challenges relating to the value added by aviation sectors, which depend on the effective securitisation of airports to thrive.

6.4.2 Growth prospects in aviation

Generally, global aviation saw some recovery after some sluggishness at the start of 2017. A report by IATA showed that African air traffic grew from 3.6% to 7.5% year-on-year in October 2017, this assisted by conditions in the region's two largest economies, which are Nigeria and South Africa (see Africa.com, 2018; Logistics Update Africa, 2018; Maritz Africa, 2018). The performance during October showed some strong revival after hurricane-related disruptions in September, a challenge already alluded to in the opening of this section. To this end, Afrika's total world share in the aviation market in 2017 was 2.2%, whilst the Asia Pacific took 32.9%, Europe 26.4%, Latin America 5.2%, Middle East 9.6% and North America grabbed 23.8% of the proceeds (Logistics Update Africa, 2018).

Given the figures herein, there is no doubt that Afrika has a lot of room for growth and remains a significant player in world aviation. Providing some positive market outlook, various sources (see Boeing, 2017:20; Africa.com, 2018; Maritz Africa, 2018) forecasted real growth prospects for the Afrikan aviation sector, especially from the year 2017 to 2036. One way to attain such feat is through the effective use of technologies to securitise and effectively manage transnational crime at international airports such as ORTIA. To succeed, Afrika must however do away with the internal protectionism that saw a lack of transformation, non-liberalisation and political meddling in aviation (CAPA Centre for Aviation, 2018). To some extent, this is also the same issue that continues to inhibit effective policing at the ORTIA, a point that has already been emphasised in 2.7.3. Of worry is that political patronage could never stimulate growth within the aviation sector.

A key feature about aviation worldwide is that it supports jobs. Details on jobs created at ORTIA are outlined in 2.2. In the overall, aviation supports about 33.7 million jobs in Asia (InterVistas Consulting, Inc, 2015), 6.9 million jobs in Afrika (Traveller24.com, 2017) and 5.5 million jobs in the EU (European Commission, 2017). Such contributions effectively make the aviation sector worldwide a multiplier that enables broader economic activity and airport business is indeed at its core. The economic benefits linked with airports necessitates that policing, techno-securitisation and the effective management of transnational crime should be placed at the highest strategic level. Such a move encourages stakeholders to view airport security as an eminent priority and a vehicle for economic sustainability. In essence, to attain sustainability using international airports as hubs could only be attained using sound regional and national regulatory mechanisms.

6.5 REGULATION OF SECURITY AT INTERNATIONAL AIRPORTS

The regulation of security at international airports is by far one of the toughest tasks. This is because the airport setting keeps changing owing to the dynamics in the way in which crime evolves (see Fooner, 2013:42; Eck & Weisburd, 2015:14; Winterdyk, 2017). By far, the 9/11 attacks in 2001 in the United States were a revelation in terms of how aviation and airport-related crimes can evolve in modern times. To keep abreast with the changes essentially requires sound regulations that will enable the police to respond to the ever-changing security needs. As already cited in 6.1, border control, has to do with the function of enabling policing at international airports through regulatory systems.

Following the 9/11 attacks, the United States of America enacted the Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (Public Law 107-56), commonly known as the USA PATRIOT Act. This law regulates the profiling of persons who can plot terror attacks, including the use of technologies at airports to do such profiling (see United States of America 2001; Griset & Mahan 2003:46; Balkin 2008:10; Wood & Raj, 2021:279). The enactment of such rules is an example of how to manage controls within entry ports.

The key to border control is that the rules and implementation part should be apt to the task. In addition to adequate regulatory protocols, for international airports to meet adequate security standards requires essentially several things. Among the requirements are high levels of technical competence; regular training of police officials who work in the environment; the decentralisation of authority; the identification and redress of errors; reliable funding; reliable information; protection from external interference; and sustained optimal performance (see Frederickson & LaPorte, 2002:33; Balkin, 2008:11; Fooner, 2013:243; Eck & Weisburd, 2015:15; Wood & Raj, 2021:285). There is no doubt that achieving all these goals requires sound legislation and policies to be put into effect.

For Europe, the European Commission has since 2002 implemented common rules in aviation security. The rules were further refined in Regulation (EC) N°300/2008 of the European Parliament, which focuses on procedures to monitor the implementation of the rules (European Union, 2008). These common rules relate to the screening of passengers and baggage areas on aircrafts; access control, surveillance in and around the airports; aircraft security checks; cargo screening, as well as the screening of mail and supplies within all airports (see European

Union, 2008; Mironenko, 2011:239; Kierzkowski & Kisiel, 2015:211; EUbusiness.com, 2018). The EU protocols require members to set up quality control systems, aviation security programs and a single dedicated and competent authority to deal with aviation security (see European Union, 2008; Mironenko, 2011:239; Kierzkowski & Kisiel, 2015:211; Wood & Raj, 2021:286). Such protocols are crucial in the effective management of transnational crime at airports.

Since 2009, additional regulatory tools have been used to supplemented airport security in the EU. For example, whilst Regulation (EC) N°300/2008 is used to regulate the use of security scanners; the movement of liquids, aerosols and gels, the adoption of alternative security measures, and control of local and international air cargo, the Commission implementing Regulation (EC) N° 2015/1998 on the other hand, prescribes measures for the implementation of existing common basic standards on aviation security and similarly the Commission Regulation (EU) N°72/2010 deals with procedures for conducting inspections relating specifically to aviation security (see European Union, 2008; Mironenko, 2011:239; Kierzkowski & Kisiel, 2015:211; EUbusiness.com, 2018).

In comparison to the EU, airports in North America in particular, are also following a standardised approach to the regulation of airport security. Following the 9/11 terror attacks, the Transportation Security Administration and the Canadian Air Transport Security Authority developed rules to improve on the already existing screening standards in North American airports. The improvements include rules that regulate the screening of all checked-in luggage for explosives, and passenger searching using routine measures that include baggage X-rays and metal detector scans; bodily and bag searches; as well as exposure to explosive trace detection in both the United States of America territories and Canada (see Alards-Tomalin, Ansons, Reich, Sakamoto, Davie, Leboe-McGowan, & Leboe-McGowan, 2014:61; Gambrell, 2017; Debate.Org, 2018). This approach affirms the value of technology in the securitisation of international airports.

There is no doubt that the use of X-rays and explosive detection scans underscores the value of techno-securitisation in enhancing safety at all types of entry ports. Of further certainty is also the fact that the existence of technologies highlights the value of refining the technical and technological skills of staff responsible for securitisation at international airports. For the SADC, enhancing security at airports using modern technologies and ICTs could help reignite the slow economic growth in the region (see Ndhlovu & Ricover, 2009:41; Disenyana, 2013:16;

Ndlovu, 2013:54). Unlike the EU and the Americas, SADC as a region however presents different dynamics in international airports security settings.

6.5.1 Air transport in the SADC region

Like other world regions, air transport in SADC relies on a central regional hub, which requires enhanced airport security as an enabler. One such hub is the ORTIA, which enables most air travel in the SADC. To this end, the region uses the Protocol on Transport, Communication and Meteorology, to support a safe, reliable and efficient aviation industry based on ICAO prescripts (Ndhlovu & Ricover, 2009:61). The protocol thus seeks to promote cooperation; airline competitiveness; and a liberalised commercial aviation market in the region (see Southern African Development Community, 1996; Ndhlovu & Ricover, 2009:61; Southern African Development Community, 2012). However, such an ideal could prove difficult to attain without adequate policing at airports.

The SADC Protocol on Transport, Communication and Meteorology also deals with issues that include funding, information management, law enforcement and telecommunications, human resource development, technical standards, institutions, including implementation and monitoring in aviation (Southern African Development Community, 1996), which issues support the shared value management strategy. Despite the prescripts, SADC however continues to face several challenges. The challenges include the fact that: member states subscribe to regulatory standards that are different from ICAO; the African Civil Aviation Commission (ACAC), which promotes policy coherence has no decision-making powers; and there is no regional governing body, which aspect means that strategic and operational frameworks for airport security are not standardised (Southern African Development Community, 2012).

The regulatory challenges in SADC essentially attest to the fact that aviation sectors in SADC are riddled with techno-securitisation blues, polarised operational approaches, legislative constraints and disjointed strategic approaches, just as this study problematised the dynamics and challenges at the ORTIA as cited in 1.6. In addition to the challenge of coexisting migration policies (South Africa and SADC) as cited in 6.2, the problems in SADC also spell lack of research, lack of political will to support airport and aviation security in general, as well as the existence of a silo approach to airport security. It is such problems that prompted the research in this study, to facilitate a clear understanding of the dynamics and challenges that relate to

the policing, transnational crime and techno-securitisation nexus. Although this study is with reference to ORTIA, lessons from the findings can be replicated to other airports in the SADC.

In concise terms, the total sum of the regulatory problems in SADC equals inadequate police practice (operational inefficiency in border police units) at international airports within the region. To deal with the challenges, SADC's Transport Sector Plan component of the Regional Infrastructure Development Master Plan recommended the creation of a single regional coordinating body to oversee policy and implementation of a concerted civil aviation strategy, whose non-establishment continues to disadvantage the region (see Southern African Development Community, 2012; Disenyana, 2013:8; Mahlangu & Obioha, 2015:115: Baporikar, 2016:101; Feng et al. 2021:559). Such recommendations could benefit airport security if they were to be extended to include the establishment of a single police agency for the region, as well as the implementation of a central database for airport security and intelligence. However, the region has to date, failed to harmonise national regulations dealing with airport security (Southern African Development Community, 2012). This next unit confers how South Africa regulates airport security.

6.5.2 The regulation of security at O.R Tambo International Airport

Securitisation at ORTIA follows several protocols. These include national legislation and policies. As a disclaimer, laws and policies discussed in this section do not by any means, represent an exhaustive list of the regulatory framework used in the securitisation of the ORTIA. This limited discussion on the regulatory framework is intended to provide an overview of some of the main regulatory tools that enable securitisation at the facility. The discussion essentially focuses on identifying the regulatory tools, without venturing into legalistic analyses. This is because this study is not in any way within the ambits of a law qualification. Thus, the overview given on the regulation of securitisation aspect seeks only to give a generic picture of tools that mandate the work of police at the ORTIA.

For this study, discussions are focused on prescripts that regulate mainly SAPS operations at the ORTIA. This focus was chosen because other actors, who assist with the security of any kind at the facility, are secondary role players. To this end, the SAPS derives its mandate from the Constitution of the Republic of South Africa (Act 108 of 1996). Section 205(3) of this supreme law charges the SAPS with the duty to combat and investigate crime, maintain public order, protect and secure the inhabitants of the Republic and their property, and uphold and enforce the law (South Africa, 1996). However, this mandate is not only limited to protecting

citizens as already postulated in 2.7. The term “inhabitants” as reflected in the constitution, means all who are within the borders of the Republic. This includes travellers in transit and visitors who use the ORTIA.

Part of the reason why this study focuses mainly on the SAPS is that accountability in terms of securitisation at the ORTIA still rests with this agency. This will only be until a new border policing agency to take over in terms of the Border Management Authority Act (Act 2 of 2020) is established. The ORTIA is classified as a National Key Point (NKP) and in terms of the National Key Points Act (Act 102 of 1980), the SAPS is the only state agency responsible for visible policing at all NKPs, which includes international airports (South Africa, 1980). This is also in line with the supreme law of the land, which empowers the SAPS to do law enforcement (South Africa, 1996). Thus, in the absence of an alternative agency to take responsibility for policing at borders, borderlines and entry ports such as the ORTIA, the SAPS remains responsible for security within these settings.

To deal with transnational crime at the ORTIA, the SAPS relies on legislation that includes the Prevention of Organised Crime Act (Act 121 of 1998), as amended by the Prevention of Organised Crime Act (Act 24 of 1999); the Criminal Law (Forensic Procedure) Amendment Act (Act 6 of 2010); and the Criminal Procedure Act (Act 51 of 1977). These laws codify specific acts that can be classified as transnational and/or organised crime and prescribe the procedures on how the police should generally deal with such cases, respectively (see South Africa, 1977; South Africa, 1998a; South Africa, 1999; South Africa, 2010). There is no doubt that from a law basis, the SAPS is well capacitated to deal with securitisation issues at the ORTIA. Key to such securitisation is the effective implementation of the laws that also capacitate the policing of the entire border setting.

From a policy perspective, policing at the ORTIA derives a mandate from the NDP (2030). This strategic tool advocates for conditions of safety and the use of modern technologies used to combat transnational crime at airports, a fact already alluded to in 6.3.3. On the same breath, the SAPS is mandated by the Information Technology Resource Strategy (ITRS), which stipulate how state institutions should use modern technologies to achieve their core business (see South Africa 2002; Matlala, 2013:1; South African Police Service, 2018). Likewise, the SAPS also derives its mandate to fight crime from the National Crime Prevention Strategy (1996). This is the blueprint for strategic and operational responses to crime in general including responses to transnational crime at ORTIA (see South Africa, 1996a; Naudé, 2000; Newham, 2005; Rauch, 2005; Government of South Africa, 2018).

Other legislation applied include the Firearms Control Act, 2000 (Act No. 60 of 2000, Private Security Industry Regulation Act, 2001 (Act No. 56 of 2001); Explosives Act, 1956 (Act No. 26 of 1956); Independent Police Investigative Directorate Act, 2011 (Act No. 1 of 2011); Protection of Constitutional Democracy Against Terrorist and Related Activities Act, 2004 (Act No. 33 of 2004); Control of Access to Public Premises and Vehicles Act, 1985 (Act No. 53 of 1985); National Strategic Intelligence Act, 1994 (Act No. 39 of 1994); Prevention and Combating of Corrupt Activities Act, 2004 (Act No. 12 of 2004); Immigration Act, 2002 (Act No. 13 of 2002); Counterfeit Goods Act, 1997 (Act No. 37 of 1997); Precious Metals Act, 2005 (Act No. 37 of 2005); Customs and Excise Act, 1966 (Act No. 91 of 1966); and National Road Traffic Act, 1996 (Act No. 93 of 1996). These laws enable the different securitisation actors to deal with transnational crime at ORTIA.

There is no doubt that as and when the new border police agency that is to be formed anytime from 2021 comes into being, many of the powers outlined in the legislation cited herein, will also be conferred to the agency. This is to enable the BMA to effectively carry out its mandate with less legislative constraints. Such feat can be achieved through an amendment act to the South African Police Service Act, to enable the conferring of the powers. This has been common practice in South Africa and examples of this include the conferment of general crime prevention powers to Metropolitan Police Departments. The ensuing section focuses on the regulatory challenges in South Africa's border setting.

6.5.3 Regulation challenges in the South African border setting

Border securitisation generally talks to policing efforts aimed at safeguarding land, air and water territories of a country and includes the protection of locations such as border crossings, airports and seaports (see Mahlangu and Obioha, 2015:107; Alperen, 2017; Brewster, 2018; Wigell, Scholvin, & Aaltola, 2018; Coleman, Heynen, Doshi, Burridge, Heller, Huemer, King, Lakhdar, Leuenberger, Loyd, & Nail, 2019). As already stated in 6.3.3, South Africa follows a multi-sectoral and multi-disciplinary approach to border security. This also includes securitisation at its international airports. Research by Mahlangu and Obioha (2015:129) showed that South Africa's multi-departmental approach to border security has however proven to be ineffective. The findings in this last mentioned study specifically identified challenges that can be summarised as follows:

- The securitisation actors lack clear policy direction with no clear strategic focus, thus rendering current coordination systems in border policing a failure. The disjointed strategic approach issue hypothesised in 1.6 confirms this problem.
- Most SAPS members are unable to identify various border-related crimes. This means that the challenge in how police personnel deal with transnational crime at the ORTIA resides in the need for requisite skills. Deliberations in 1.6 and 8.2.1 did flag issues that relate to the of the (in)adequacy of policing at the ORTIA.
- There is no intensive and focused training on border policing. Panyapanya (2016) confirms that the police need to improve the training given to staff, particularly training on dealing with transnational crime at entry ports such as the ORTIA.
- Generally, the SAPS also lack equipment and infrastructure for personnel working in the border settings. This means that the police at the ORTIA also generally lack technological equipment to enable them to manage transnational crime.

Other challenges in South Africa were the formulation of a single body to manage security at national borders and entry ports. Discussions in 2.6.2 articulate the establishment of such an agency. The one major concern with the establishment of a single agency to tackle border security is the issue raised in 6.5.2. The section highlights legal issues that suggest conformity with constitutional muster. In terms of the Constitution of the Republic of South Africa (Act 108 of 1996) and National Key Points Act (Act 102 of 1980), the SAPS is the only one responsible for policing and securitisation at facilities such as the ORTIA. However, this issue was resolved with the promulgation of the Border Management Authority Act (Act 2 of 2020). Whether this law can deal with the legal issues raised in this study is something that will require monitoring.

6.6 CONCLUSION

A key consideration about combating transnational crime is making a distinction between border security and control. Control t is concerned with powers bestowed upon the police and other actors, whilst security is the end results of effective control. The powers to securitise are contained in legislation and policies. Apart from a lack of a clear policy direction, problems in securitising borders in South Africa have to do with poor training, improper skilling of staff, an limited technologies. Problems relating to technologies in particular, cut across the developing world and all of Afrika. To give more context, the next chapter outlines the dynamics and challenges relating to the police's use of technologies in combating transnational crime at international airports, with a joint focus on the social, legal and ideological dimensions.

CHAPTER 7: ANALYSES AND DISCUSSIONS PART A: DIMENSIONS OF POLICING AT INTERNATIONAL AIRPORTS: THE ORTIA IN CONTEXT

7.1 INTRODUCTION

The dimensions of policing at international airports needs to be explained to enable an understanding of the related intricacies. This will allow police managers to do proper strategic and operational planning. As cited in 1.6.1, the first objective of this study is to describe the dimensions which are the abstract dynamics and challenges relating to the use of technologies in the policing of international airports. It is common course that this objective too, is intended to operationalise the aim of the study. To recap, the aim of the research in this study talks to exploring the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus at the ORTIA. This chapter thus gives reflections on the related dimensions and unpacks the dynamics and challenges that are complex and abstract to individuals who observe policing at international airports from an outside view, that is people not well acquainted with policing at international airports. This is to give broader context on policing at the ORTIA.

Safer to cite that the dynamics and challenges are better understood by actors who are directly involved with law enforcement and have first-hand information on the happenings at the airports. To analyse data, particularly for the first research objective, the researcher used the phenomenographic analytical technique. The technique is explained in 3.3.4 in chapter 3, which deals with the research methodology and methods. In synthesising the first objective of this study, the researcher dissected the data into different components. These are the social, legal, political, and philosophical dimensions. The analysis and discussions in this chapter however follows an integrated, rather than a mechanised approach. The purpose is not to only make sense of the dynamics and challenges but to also lay a logical pathway for the conceptualisation of a theory-base for the policing, transnational crime, and techno-securitisation nexus, which theory-base is dealt with in chapter 8. The analysis and discussions are thus focused on different dimensions that impact on police work entry port settings that include an airport such as ORTIA.

For clarity, the integrated analysis process collapsed issues into three major discussion points that form the analytical categories in the research. These are the socio-legalistic dimensions, the socio-political perspective, and techno-centric dimensions. The socio-legalistic covers discussions that include policing and regulations, technology-based violations at international airports, the ideological implications of the violations and the complexity of policing at airports.

To this end, the socio-political perspective explains transnational crime in the socio-political context and involves discussions that interrogate the political will to enhance policing, as well as creating an enabling environment for policing to thrive, whilst the techno-centric dimension talks to law enforcement technologies in the contemporary, prospects for policing and for Afrika, and the risk factors linked to the Fourth Industrial Revolution. Data analysed and synthesised for the first research objectives came from both literature and empirical sources. Empirical sources refer to individual and expert interviews, whilst data from literature sources is dissected as part of the discussions from 7.3 to 7.4.4. Procedures on how the research participants were selected are explained in 3.3.1. This next section basically discusses the data analysis scheme applied.

7.2 THE DATA ANALYSIS MACHINATIONS

As hypothesised in 3.3.6, data analyses essentially talks to reviewing, sanitising, transfiguring, and giving expositions on the collected data. The goal in data analyses is to unearth valuable information that informs the findings, conclusions, and recommendations in the research (see Creswell & Guetterman, 2019; Azen & Walker, 2021; Chazal & Michel, 2021). These can be used to support decision-making in terms of strategies that inform operations in the use of technologies in border policing, to effectively combat transnational crime at international airports. This is in line with one of the research objectives in 1.6.1, which talks to supporting policing and techno-securitisation to grow operational efficiency in law enforcement, and to grow capacity in dealing with transnational crime at the borders, borderlines, and entry ports.

Generally, data analysis consists of various aspects and tactics. Key to the various analytical tools is the use of the resultant information (output) in science, different businesses, or organisations. Tien et al. (2021:802) argue that in today's business world, data analysis plays a key part in decision-making since it directs decisions to become scientific, which assists organisations and businesses to operate in a more efficient and effective manner. Access to properly analysed data thus enables organisations to plan and coordinate processes efficiently. This is key in aiding management decision-making, which is a key trait of leadership. For the police, leadership must be about a vision to effectively combat transnational crime at ORTIA.

As per discussions in 3.3.6, this study applied the phenomenographic technique to examine the data in this Part A of the analyses. Literature (Han & Ellis, 2019; Björk et al. 2021; Jordan et al. 2021; Shahbaz et al. 2021; Lee, 2023) confirms that the aim in phenomenographic

analysis is generally to identify qualitatively different categories (using keywords extracted from the phrases used by the research participants during the interviews) that signify similarities and disparities in individual experiences. This is to satisfy the qualitative premise that knowledge is constructed based on multiple realities derived from the experiences of persons involved with the phenomenon being studied (see Goodwin, Savage & O'Donovan, 2023; Mayan, 2023; Øien, 2023; Pujol-Tarrés, 2023). This next section examines the categories identified from the data.

7.2.1 Layout of the analytical categories

The analytical categories in this research were constructed drawing from keywords emanating from the phrases used by the interviewees. The categories are socio-legalistic dimensions, socio-political perspective, and techno-centric dimensions. This was to satisfy the phenomenographic analytical technique which as cited in 7.2, is intended to enable the researcher to identify qualitatively divergent categories that signify concurrences and disparities in individual experiences of phenomena. The similarities are captured per keywords in the same column, whilst the differences are in the different categories. Reference is only made to specific keywords, not to phrases. For analyses, the categories are tabled below:

Table 4: The analytical categories: Part A

SOCIO-LEGALISTIC DIMENSIONS	SOCIO-POLITICAL PERSPECTIVE	TECHNO-CENTRIC DIMENSIONS
Search, bribe, smuggle, syndicate, cross-border crime, fake, immigrants, inspect, cargo goods, permits, policing, arrest, convictions, corruption, memorandum, legislation, investigations, undercover, regulate, intelligence, signing memorandums with private companies (Interview 1)	Harmonise, neighbouring countries, porous borders, budget, borderline, collaborations, multidisciplinary, committees, planning, mandates, service delivery, leveraging, political will, strategy, operations, movement (Interview 1)	Digitisation, integration, tests, training, equipment, scanners, infrastructure, identifications, underutilisation, resources, scope, outdated, biometrics, drones, crime prevention technologies, systems, interconnectivity, cameras (Interview 1)
Defence service in borders, border control, immigration, customs and police work, trade, security, organised crime, trafficking, corruption (interview 2)	Political principals, stifling operational creativity, political intimidation, alignment with country's political vision, political meddling, apartheid disparities, racism (Interview 2)	Databases, interconnectivity, advanced passenger information system, electronic profiling, biometric systems, circulation system, body scanners, drug and explosive detection systems, vapour detection, electronic data interface, CCTV cameras diversions, robotics, 4ir (Interview 2)

Border policing, search, wanted persons, arrest, suspects, immigration heat, warrant of arrest, civil claims, case number, industrial action, document verification, law, traffic management, visible policing, patrol, investigation, transnational crime, organised crime, international law, collusion with police, court, fines, complaints, INTERPOL, human rights, seizures, arrest (Interview 3)	Passport verification at embassies, political intervention, multidisciplinary approach, international treaties (Interview 3)	CCTV, technology, systems, electronic heat, circulation system, WhatsApp, X-ray machines, screen points, facial recognition cameras, technological interception (Interview 3)
Constitution, law, security, policing, safety, national key points act, critical infrastructure act, contraband, border management act, transnational crime, search, essential services (Interview 4)	Constitutional mandate of policing, benchmarking with foreign agencies, government collaborations with other countries, government investment, SAPS work with immigration, customs, port health and agriculture department (Interview 4)	Scanners, ticket scanning, technology, technological benchmarking, illegal telephone tapping, leveraging on other stakeholders' technologies, interlinked databases, electronic information sharing (Interview 4)
Policing movements of people and goods, crime prevention, attending complaints, security, arrest, court, prosecutions, handling suspects, courtesy towards individuals, transnational crime, crime intelligence, security clearance, intelligence gathering (Interview 5)	Communication with foreign agencies, INTERPOL, tracking terrorist activities, Generals and Ministers expectations (Interview 5)	Drug detection machines, batteries, cameras, technology, phone, email, social media communication, technological interceptions, CCTV, HD quality, body scanners (Interview 5)
Crime prevention, visible policing, airport policing, foot patrols, organised crime, private security, firearms, arrest, strategy, operations, border management authority (Interview 6)	Dependence of other departments, synergy among departments, departmental mandates, communication between INTERPOL and SAPS, stakeholder egos (Interview 6)	CCTV, two-way radio, X-ray machine, Inkwasi system linked to DHA (Interview 6)
Illegal movement of persons and goods, crime prevention, stop & search, police visibility, interview suspects, tour guiding, policing, interactions on operational requirements, drug mules, suspects, theft, document inspections (Focus Group 1, interviews 7-12)	ACSA restrict police mandate, private security has more powers than the police (Focus Group 1)	CCTV, technology, two-way radios, signal, data, pictures, cameras (Focus Group 1)
Profiling, stop & search, visible policing, patrol airport, illegal foreigners, wanted persons,		

arrest, complaint, identify criminality, investigations, monitor crime, border policing, legislation, border management authority (Focus Group 2, interviews 13-18)	Police training on Ubuntu, respect for human rights, limited police access to restricted areas at the airport, government (Focus Group 2)	Forensic video, CCTV, storing memory, technology, morpho touch, electricity, circulation system (Focus Group 2)

From the categorisation in the table above, the researcher grouped similar keywords to support the qualitatively divergent categories. Although the categories are divergent, together they portray the various dimensions of policing at an international airport such as the ORTIA. Geurs et al. (2023:1) argues that the purpose of categorisation is to explain the world by forming multidimensional typologies that explain the whole. In this research, the whole is the various dimensions that explain policing at the ORTIA in the broader sense. To facilitate an understanding of what categorisation means, this next section thus gives a working definition.

7.3 AN OVERVIEW OF THE CATEGORIES

Categorisation refers to the ability to recognise shared traits or similarities between elements of the experience of the world or phenomena, an activity that includes profiling, segmentation, and the clustering of keywords (see Geurs et al. 2023; Inverardi, Migliarini, & Palmiero, 2023; Rodehau-Noack, 2023). Rodehau-Noack (2023:1) argues that the purpose of categorisation is to explain the world by forming multidimensional typologies that can be integrated into a whole. The whole for this research is the categorisation and classification of keywords that enabled the researcher to organise words and ideas, to simplify and enable an understanding of how the world works. In the context of the research, simplifying the phenomenon being studied. An overview of the categories (7.3.1 to 7.3.3) in the ensuing analyses and discussions is basically intended to give credence to the keywords identified in the analytical categories.

7.3.1 Category 1: socio-legalistic dimensions

Category 1 generally explains the itemised scope of the work done by the police at the ORTIA. The analysis in this section is premised on the interview submissions by experts, police managers and operational staff working at the ORTIA. To recap on the submissions from the interviews, the socio-legalistic dimension talks to the legal issues that impact policing as a social order. The issues include searches, arrests, crime, issuing of permits for cargo, doing intelligence operations on transnational crime, investigations, and signing memoranda for different security actors to collaborate, all of which are regularised through law/policies.

Generally, the socio-legalistic dimension talks to law and regularisation issues in police work. Literature (see Chan, 2001; Roufa, 2016; Mlambo, 2021) summed up the legal role of border police, which constitutional mandate includes in the main, dealing with crime (see also South Africa, 1996). To this end, Interview 1 is quoted as saying "*the police cannot carry out any lawful operation unless such work is legislated and supported by a policy framework".* This is further verified by Interview 4 who stated that *"policing at the airport and in general is regulated in terms of section 205 of the Constitution"* and Interview 6 who said, *"police work at the O.R Tambo International Airport is also regulated by the National Key Points Act of 1980".*

Reliance on legislation from the 1980s was a source of concern for Interview 7 who holds work experience of more than 15 years in the SAPS. The interviewee raised concerns about police tactics that never changed from the time he/she was deployed at the ORTIA. To address the concerns, Focus Group 1 (Interview 7, 8 and 12), as well as Focus Group 2 (Interview 15, 17 and 18) expressed confidence in the multidisciplinary structure that will come with the formation of Border Management Authority (BMA), which is given effect through the Border Management Authority Act of 2020. On the contrary, Focus Group 1 (Interview 9, 10 and 11), and Focus Group 2 (Interview 13, 14 and 16) expressed anxieties over the formation of the BMA. The anxiety was also articulated by Interview 13 who stated that *"as members, we are not confident that the SAPS will have any role to play in border policing after the establishment of the BMA".*

What is comforting about the varying views is that police at ORTIA are alive to the dynamics unfolding in their workspace and are ventilating opinions. This affirms the need for managers to consult workers on the ground before crafting strategic and operational plans. Such an approach facilitates informed decision-making that follows both an upwards-downwards mobility that goes both ways. In essence, when workers feel that their views are considered by management, there is a buy-in and collective ownership of the strategic and operational plans, which is key to workers forming positive attitudes and becoming more productive. Interview 16 (Focus Group 2) expressed some concerns over management not consulting workers on the ground to do environmental scanning before the crafting of strategic and operational plans, something bemoaned as creating disconnections that lead to less effective law enforcement approaches in combating transnational crime at ORTIA. To reiterate, consultations are an imperative of service delivery in the SAPS (see South Africa, 1997), as per discussions in 1.5.1. This next section dissects the socio-political perspective category.

7.3.2 Category 2: socio-political perspective

Category 2 shows an overview of the political interfaces in policing. These include interfaces between political principals and police, interfaces between the police and other government departments, as well as collaborations with foreign police agencies and embassies. The socio-political perspective is generally supported by the need for the state to harmonise operations in border security (i.e. collaborations with foreign police agencies), the need to have clear strategies, points of accountability, allocating budgets for operations, having a multidisciplinary approach to security, and strengthening cooperation with neighbouring countries to effectively deal with transnational crime, hence the political will to establish a single agency in the BMA.

The initiatives herein need determination from political principals, that is before police agencies can be resourced. One phrase to have transpired during the interviews, a phrase that supports the socio-political dimension category is: "*before the police can leverage on technology to combat transnational crime, there must be political will, government has committed and must carry through"* (Interview 1). The issue of government carrying through with undertakings was lamented by Interview 15 (Focus Group 2), who opined that *"budgetary constraints are problematic as they restrict the quality of training and allocation of resources in the SAPS".*

What the lamentation implies is that political principals should start taking the resourcing of police seriously. The historical budget cuts (since 1994) are not reflective of a democratic government that is serious about protecting the country from high crime rates. In comparison to before 1994, it is a well-documented issue that the apartheid police were greatly resourced to perpetuate atrocities against enemies of the then regime. The budget cuts begs the question as to whether there is political will to have the people of South Africa enjoy high levels of security in a democratic era, a much politically debated issue that is without real commitment.

Like in literature (Rauch & Van der Spuy, 2006; Fuchs & Horak, 2008; Matlala, 2013; Mlambo, 2021), the lack of resources is equally lamented by Focus Group 1 (Interview 7, 8, 9, 10, 11 and 12). There was consensus among the research participants that border police at ORTIA lack basic resources that include technologies such as morpho touch (biometric), two-way radios, vehicles, and a general lack of manpower. The resources are key to fighting transnational crime.

In reality, the lack of manpower result in increased workloads on staff, fatigue, and occupational stress, which may bring about unintended consequences such as suicide, high absenteeism, and low staff morale, which manpower is also lowered by retirements, deaths by natural or other causes, resignations for better prospects, dismissals from misconduct or incarcerations for criminal acts (Interview 1; Interview 2; Interview 6; Focus Group 1, Interview 7, 8 and 9; Focus Group 2, Interview 16). The level of impacts referred to herein will however require further research to confirm or give scientific validity and/or credence. To continue the analyses and discussions, this next section focuses attention on category 3.

7.3.3 Category 3: techno-centric dimensions

Category 3 generally talks to interfaces between police work and crime fighting technologies. Submissions made by 2 experts (Interview 1 & Interview 2) showed deliberate confirmation of the techno-centric dimension as a category in this research. This is evident in the use of words such as digitisation, tests, crime prevention technologies by Interview 1; Interview 2; and Interview 3. The use of the words attests to the fact that technological infrastructure is key as it is used to do suspect or false travel documents identifications, to scan for goods and luggage at airports and to do surveillance. During the interactions, one participant unequivocally stated that "*today you cannot police without technology, it must be an integral part of law enforcement*" (Interview 1). According to Interview 2 *"digitisation is key to effective modern policing"* a view supported by Interview 3, who advocates for policing at the ORTIA to transition into 4IR mode. Digitisation is also advocated in literature (Chan, 2001; Ford, 2007; Gottschalk, 2007; Omar, 2008; Hübschle,2010; Byrne & Marx, 2011; Matlala, 2013; Mlambo, 2021; Wang et al. 2021).

Although the analysis in Part A is premised mainly on submissions by experts, other research participants also had much to say about what technology is doing for law enforcement. Thus, the value of technology in police work was also confirmed by the phrase *"technology is important in policing".* This phrase was the golden threat throughout the interviews phase and in this instance, it came from Interview 3, 4, 5 and 6, Focus Group 1 (Interview 7, 8, 9, 10, 11 & 12) as well as in Focus Group 2 (Interviews, 13, 14, 15, 16, 17 & 18). Every time the researcher mentioned the word technology, the key word from most of the submissions was *"important".* However, Focus Group 2 (Interviews 13-18) were unanimous in expressing the view that the SAPS has failed to equip staff with adequate modern technologies. The main argument with this group was that staff do not have technologies at all. The group maintains

that radios are sometimes not functional, and that the ORTIA usually loses signal particularly during loadshedding. This inhibits real-time communication among police officials. Whether the airport as a national key point should be exempted from loadshedding should be a contemporary debate. However, this debate will not be explored further in this research to keep to the scope.

7.4 DIVERGENT VIEWS

Despite the overwhelming concurrence by most of the research participants, that is on the value being added by using technologies in police work and in combating transnational crime at international airports such as the ORTIA, some obvious divergent perspectives were displayed by the research participants. These related mainly to the subjective views of the research participants, in terms of how they experience the happenings or the use of different law enforcement or security technologies at the ORTIA. The differences are captured below:

Table 5: Divergent views

VIEW A	VIEW B
"Policing in the 4ir requires a new philosophy. This is one of the reasons why the police are not taking technology seriously. The police need to match strategies and operations to philosophy" (Interview 1)	*"In terms of 4ir, comparing the SAPS to other countries is difficult as South Africa is still a developing country wherein policing still needs a human touch to balance technology and human interactions"* (Interview 2)
"*When it comes to violations using technologies, police at the airport play by the book and do not do violations"* (Interview 4)	*"Violations such as the police diverting CCTV to help criminals at the O.R Tambo probably do exist"* (Interview 2)
"Some members have not received the aviation policing course; despite being stationed at O.R Tambo for a number of undisclosed years" Focus Group 1 (Interviewee 8)	*"All members receive induction training on how different areas of the airport works. For example, restricted areas, learning to deal with runways, taxi ways, jet blasts, speed limits, foreign objects, and debris that may damage aircraft engines"* (Interview 5)
"The border police section do book morpho touch and I think we are ok with technology and the problem is with CCTV when there is no electricity or morpho touch goes offline due to load shedding" Focus Group 2 (Interviewee 15)	*"In simple terms, where technologies are concerned, its zero because cameras are good to combat crime but we as police officials on the ground, we have no technology. Yes, we do have a CCTV room manned by a few police members and another one belongs to ACSA who have full access and the police are limited"* Focus Group 1 (Interviewee 7)

It is not surprising that law enforcement experts would somewhat differ about the approach in embracing the Fourth Industrial Revolution (4IR). Whilst Interview 1 emphasises on the need for a new policing philosophy to cater for the revolution, Interview 2 takes a rather cautious approach, given that South Africa is still a developing country. The arguments presented by both sides bear some level of reasoned problematisation. Although Interview 1 argues that the absence of a new philosophy "*is one of the reasons why the police are not taking technology seriously",* it may be detrimental to follow a rushed knee-jerk approach in doing a full-scale implementation of 4IR technologies in policing. This is why Interview 2 argued that: "*In terms of 4IR, comparing the SAPS to other countries is difficult as South Africa is a developing country wherein policing still needs a human touch to balance technologies and human interactions".*

Interview 1 further argued that "*the police need to match strategies and operations to philosophy".* This is a fair argument given that policing has been underpinned by the Peelian praxis that has lost meaning in the context of the 4IR. Further discussions on the Peelian philosophy are dealt with in chapter 8. What is important is that having a policing philosophy that is aligned with the 4IR could lay ethical principles that the police should follow when using technologies. This can serve as a deterrent to abuses of technologies at international airports. Although Interview 1 is convinced that "*when it comes to violations using technologies, police at the airport play by the book and do not do violations",* Interview 2 confirmed that *"violations such as the police diverting CCTV to help criminals at the O.R Tambo do exist".* The one explanation for these two divergent views is that it may be that one party may not be aware of such violations.

For the police to use technologies in an ethical manner requires training. The training must focus on philosophical aspects that cover ethics as guided by the principles (to be developed), as well as the operational policing aspects. To this end, Interview 5 attests that *"all members receive induction training on how different areas of the airport works, for example, restricted areas, learning to deal with runways, taxi ways, jet blasts, speed limits, foreign objects, and debris that may damage aircraft engines".* In the SAPS, this has however, been disputed by

Interview 8 (Focus Group 1), who submitted that "*some members have not received the aviation policing course; despite being stationed at O.R Tambo for some undisclosed years".*

It is important to note that Interview 5 is in management whilst Interviewee 8 is operational personnel. What this means is that it is plausible that police managers at the ORTIA struggle with proper audits of staff attendance of training. Such shortfall goes with poor skills audit systems by the human Resource Department. This is something that can result in the placement of personnel without adequate skills in critical areas of the airport or the misplacement of such skills to where they are not needed. Understanding that the SAPS has the largest contingent of personnel to manage, when compared to other state departments, it is equally important to properly manage skills, to fully optimise operations at a national key point such as the ORTIA.

For the police to optimise their operations, they need to be supported by modern technologies. From the interviews done with operational personnel, there seem to be differences in how the police at the ORTIA are technologically resourced. For example, Focus Group 2 (Interviewee 15) stated that *"the border police section do book out morpho touch and I think we are ok with technology and the problem is with CCTV. when there is no electricity or morpho touch goes offline due to load shedding*". On the other hand, Focus Group 1 (Interviewee 7) stated the opposite. This research participant made utterances that *"in simple terms, where technologies are concerned, it's zero because cameras are good to combat crime but we as police officials on the ground, we have no technology. Yes, we do have a CCTV room manned by a few police members and another one belongs to ACSA, who have full access and the police are limited"*.

From the divergent views, this research adduces several explanations. It may be that the one participant who argues that there is no technological support is not exposed to a unit at the ORTIA, that would normally require specific technologies in the execution of its daily tasks. There is also a possibility that the staff member is not formally trained in operating specific technology. What is disconcerting though is that the staff member seemed to be speaking from a position of not having seen policing technologies being deployed other than the obvious CCTV, two-way radios and computers. Although this is not plausible, it may be that the participant was expressing a view that talks to how limited the SAPS at the ORTIA is, in terms of technological resources. The lack of technology resources in police work is also highlighted in literature (see Brynjolfsson & Hitt, 2000; Omar, 2008; Matlala, 2013; Gillen & Morrison, 2015; Mlambo 2021).

7.4.1 A philosophical context to the views

The divergent views displayed by the research participants above generally attest to the fact that the researcher was constructing reality using anti-positivist lenses. As cited in 3.2, in the anti-positivist school of thought, social reality is multiple or relative and is interrogated by drawing from the perceptions, experiences and beliefs of those involved directly with phenomena being studied, by following interpretivism, naturalism or negativism to generate theories/hypotheses that can be tested using positivist methods and uses relatively smaller samples to contextualise to specific cases. In the context of the research conducted, the case in question is the ORTIA.

To be exact, the views displayed also show the subjectivity and how multiple realities are created in this research. Subjectivity is the logic in the qualitative approach applied in the research in this study. As cited in 3.2 and 3.2.1, qualitative research is a subjective and naturalistic inquiry that seeks to unearth in-depth knowledge of social phenomena in natural settings, to enable an understanding of why things happen the way they do, by drawing from the experiences and meanings attached by humans to the events around them. The fact that experts and police officials who use technologies to combat transnational crime at the ORTIA were interviewed (experts in their field of expertise and police in their field of operations or where they work) thus attests to the soundness of the methodology espoused in the research conducted in this study.

Essentially, the categories and divergent views identified from the data in this research, point to alignment with the paradigmatic assumptions in this study. As cited in 3.2.2, these include ontological, epistemological, hermeneutical, rhetorical, and methodological assumptions. To this effect, ontology talks to the laws, policies, strategies, and philosophies that govern policing, epistemology talks about using the police and experts involved with the use of technologies in the border as sources of the knowledge that informed this study, the hermeneutic talks to how the participants subjectively make sense of realities in their work, the rhetoric talks to the language used by the participants, which is lingo that is generally used by police officials. The lingo was apparent in the use of terminology such as "*Roger"* (I hear, or I understand) or "*Negative*" (I do not agree or did not capture what is asked), and methodological assumptions refers to principles that guide the selection and use of specific policing tactics at airports. The assumptions are borrowed from Social Science Research Methodology truisms and are used

to give a philosophical context to the data collected to inform the research in this study. This next section outlines the complexity of contemporary policing at airports with a focus on ORTIA.

7.4.2 The complexity of contemporary policing at international airports

From the preceding discussion, it is important to make analyses of the complexities in contemporary policing. This is because policing, being a complex task, practically overlaps traditional institutional and jurisdictional distinctions between public-private and criminal-policing spheres, an issue already hypothesised in 4.2.3. A simple rationalisation of the assertions herein relates to the police balancing the internal protocols with public-political expectations, whilst at the same time having to use technologies to fight transnational crime at international airports. This should be done in a way that is observant of the rule of law and respectful of the fundamental rights of all persons using such facilities whether for work or transit. On close examination, the assertions herein imply that police can never be wholly apolitical. It is thus reasonable to posit that the police represent a consensus between state power and society's wishes. This makes policing at the ORTIA an inescapably political function, hence the political bureaucraticism that the SAPS had to grapple with, which point is accentuated in 1.6, 2.1 and 2.7.3. From an empirical outlook, Panyapanya (2021) highlighted this political bureaucraticism.

7.4.3 The politicisation of police

Despite not being able to escape politicisation, it is of the essence that the police at the ORTIA should never engage in seemingly conflicted skirmishes. This implies that the police should at least not allow things to get to a point where the public perceives them to be having connections with or acting in pursuit of the agenda of a specific political party. Key to this last postulation is that if the police fail to manage such perceptions, such commission or omission could cast aspersions on their moral authority to hold power in communities. For the SAPS, this can only lead to problems of bad image, lack of trust in the police, tense police-community relations, and many other potential challenges. At all times, the police need to make means to avert political gaming. For travellers using the ORTIA, a less politicised police reassures safe passage. This is a key ingredient in promoting tourism, an industry enabled mainly by air transportation, and a feature that thus underscores the centrality of international airports as important economic hubs.

The over-politicisation of police is because of different political moods in specific countries. Politicians usually instigate the moods to leverage the power that the police wield in society. They use police power to wage political battles. This dislocates policing from its ontology or core values. Where the police use technologies to securitise airports, politicisation arguably makes it difficult to conceptualise and locate the policing, transnational crime, and techno-securitisation nexus in broader philosophical terms. What this means is that political influence blurs the lines to a point that the police may not comprehend the reasons why they need to use technologies, which is to combat crime, and not to serve political interests. Without a doubt, state interference can shift focus from policing and its inherent philosophical premise to dislocate it into the political arena. Such a shift carries the risk of police negating their core function of being servants to the people. This suggests a wrongful socialisation of police organisations.

For lack of a better phrase, the over-politicisation of police organisations also leads to moral bankruptcy and philosophical corruptibility, where politicians and police managers are co-conspirators. Both become cabals that are accomplices in compromising law enforcement. The compromises postulated herein will include the misuse of crime-combating technologies by the police. For subordinate staff at the ORTIA, such degeneration could promote the acceptance of bribes, thus enabling crime syndicates to push contraband with impunity without fear of arrest. The same fear was expressed as follows during data collection*: "syndicates have an understanding of how police operate in terms of shift changes, they know exactly who to bribe and when the person will be on duty"* (Interview 1). For crime syndicates to be privy to such information is something that can seriously compromise the economic viability of the ORTIA. Police corruption is also wailed by Panyapanya (2021), Hennop et al (2021) and Mlambo (2021).

7.4.4 Overviews on the economic viability of the ORTIA

Discussions on the economic viability of the ORTIA are dealt with in 2.3.1. The economic viability and the envisioned benefits as outlined in 2.3.2 are thus valid reasons as to why law enforcement actors should optimise the use of technologies to enhance security at the facility. According to interview 1, *"the use of technology can help in stopping fugitives from leaving the country*". Such capability should also be used to restrict the in and out movement of contraband. Safety at the airport ensures economic viability in any country, because

contrabanding has that *domino* effect into other serious economic crimes like fraud, counterfeiting and tax evasion.

Whilst law enforcement as a task requires service delivery and honoring the wishes of society, distinguishing between the police being employees of the state and servants of society also creates dilemmas, particularly for inexperienced and/or subordinate staff at lower ranks. Dale (1994:22) was in fact profound to argue that such dilemma signifies conflict between placing much focus on bureaucracy than on servicing societal interests. For the SAPS, such conflict led to political bureaucraticism in border policing. This issue is problematised in 1.6, 2.6.1 and 2.7.3. The sections talk about bizarre appointments, the displacement of skills and poor service delivery in the South African border security management, respectively. These issues feature among the reasons that prompted this study whose intent is to explore efficiency in the management of transnational crime at the ORTIA. Therefore, the point of departure is the theorisation of the policing, transnational crime, and techno-securitisation nexus. This next section outlines transnational crime at international airports from a socio-political view.

7.5 TRANSNATIONAL CRIME AT INTERNATIONAL AIRPORTS

Discussions on the socio-political category in this research also cover by default, the discussions on the techno-centric dimensions. This is because the techno-centric dimension encompasses the use of technologies in police work and is something that cannot be dissociated from social life or the politics in general. For example, technology has changed how people interact by bringing in impersonal interactions, but have equally bridged the distance barriers, by making communication faster and less costly. To this end, politicking is on the impersonal and intrusive nature of technologies, such as how the police use surveillance devices to collect data on persons of interest, data that may be private, be it criminal, violent or of an inappropriate nature.

Despite how the police use technologies, the lawful nature of the usage thereof can determine how successful their operations can be in combating transnational crime at international airports such as the ORTIA. One of the important considerations about combating transnational crime is that the police can leverage technology to collect data that can help them understand and contextualise how transnational crime happens and who does it. This study attempts to make sense of transnational crime drawing from the literature discussed and interview submissions.

A thought-provoking aspect about transnational crime as postulated in most literature cited in 1.2.2, is the characteristic nature of criminal activities that transcend across multiple jurisdictions. On close analysis, this study posits that transnational crime appears to be four-fold. The first category consists in **contrabanding**: that is the illicit movement of goods using airports as transit points. The goods can be legal freights conferred illegally or moving illicit goods that include narcotics, pouched animal parts and many other substances. Interview 1 confirms that crime syndicates often use international airports such as ORTIA to smuggle counterfeits and narcotics from neighbouring countries, with the help of contacts in the country.

The second category of transnational crime consists of **cyber-criminal** activities**.** This category relates to the provisioning of illicit services and activities that rely on electronic platforms to facilitate crimes such as fraud, racketeering, money laundering and corruption. These crimes are with the intent to collapse private companies, state-owned enterprises, airlines, including security and intelligence agencies. Cybercrime thus consist of electronic cross-border transactions or movements. Essentially, cybercrime underscores how technologies can become central in organised criminal activities. Although cyber criminality is not discussed in this study, literature in 1.2.2 shows that criminals can also use technologies to subvert organisations including law enforcement agencies, whilst research participants (Interview 1, 2 & 4) confirm that technology can facilitate crime from a distance and beyond national borders.

The third category of transnational crime relates to crimes that threaten **individual security**. These are human trafficking for sale into slavery, prostitution, and child labour, using airports as transit points. According to Interview 1, crime syndicates use land, sea, and airports to traffic humans from across the length and breadth of the globe. For land ports, the syndicates use neighboring countries, whilst seaports and international airports are used for trafficking that is beyond the seas. What is worrisome is that this illicit exercise is used to sell people into servitude, prostitution and sometimes child soldiering and there are well documented stories on the atrocities, particularly in Eastern Europe (the Balkans) and on the Afrikan continent itself.

The fourth category is crimes that threaten the **state, peace, and security.** These include terrorism, espionage, and genocides. A worrisome aspect about espionage is that it can facilitate the electronic flow of highly sensitive information in collaboration with crime syndicates across jurisdictions. Such flow has the propensity to collapse states, push

propaganda that can fuel ethnic conflicts and wars that can lead to genocides and disorientate the public from socio-political factualities. The same phenomena in the form of industrial espionage could compromise police agencies, airlines, airport companies, private security, and the military, with the intent to create fertile grounds for transnational criminality. Although there is no submission from research participants on this issue, literature in 1.2.3 showed that when state security collapses, that is when Transnational Organised Crime happens. An example of the closest country to South Africa, which is on the brink of collapse is Mozambique. The insurgencies by Islamist extremists in the northern part of the country, which attacks began in mid-2018, bear testimony to the imminent dangers, something that can overflow to its neighboring countries.

7.5.1 Mitigating the threats

To deal with the insurgencies will require the deployment of military technologies, most of which are cited in 1.4.2. Technology is arguably the main catalyst in enabling the third and fourth transnational crime categories cited herein. Typical examples of such catalysis include but are not limited to using cellphones, conventional cameras, and video footage to transmit information about victims of human trafficking, sending emails to transmit information about the victims to the potential or targeted buyers, using such technologies to communicate planned routes for trafficking, dates of delivery, as well as negotiating and making payments arrangements. What this implies is that globalisation and advancements in technology, though unavoidable, do carry disadvantages. Of importance is that these challenges require exploration and to be properly understood. This is with the view to creating adequate diagnosis and responses to the problem.

There is similarly no doubt that terror and organised crime syndicates can use the same technologies to destabilise national security in any country. What is more worrisome in this regard is that as the world is galvanising into the Fourth Industrial Revolution, criminals could in future also use robotics or cyborgs with smart software and complex algorithms to do the abductions and escorting in human trafficking, as well as armed attacks on states. This study gives credence to this last assertion 7.5.1, which explains prospects for policing and argues for the evolution of crime-fighting machinery that will soon happen. The same machines purported to be future crime fighters can easily become future crime tools. Once again, international airports will become key transit points to move such machines from one country

to the other. Also, such machines can be used to contraband to avoid the arrests of human criminal elements.

From analyses and discussions in this section, destabilising border control and security appears to be central to flourishing transnational crime at airports and technology can be central in such illicit activities. In this context, it is logical to posit that crime syndicates will do all in their power to corrupt border security stakeholders, including attempts to subvert technological systems put in place to enhance security at facilities such as the ORTIA. Examples of such destabilisation manifest in the jamming of CCTV at the facility. The move to destabilise will thus not exclude hacking into security systems at airports to create a malfunction. From a social perspective, such moves will also not exclude using unsuspecting elderly travelers and naïve youth as mules for peddling contraband, whilst having created malfunctions in the body scanners at international airports. The use of innocent travellers for contrabanding is a direct attack on the moral fibre of society and hits at the very heart of why police find it difficult to arrest kingpins in crime networks.

7.5.2 The socio-economic impacts

The complexity of transnational crime as a socio-political problem is that the impacts thereof have direct implications on ordinary law-abiding citizens and businesses. The types of impacts that transnational crime has on private businesses, for example, has ripple effects that can collapse huge conglomerates. The collapses can lead to large-scale job losses with dire social consequences. In the context of aviation as an industry, the effects may compromise airline companies, airport companies such as the ACSA and other stakeholders in the value chain.

For poor nations in the under-developed world, unemployment leads to the perpetuation of the generational poverty, generally experienced in most Afrikan countries, owing to colonialism and continued deprivation. For the developed world, the impacts of unemployment may not necessarily be the same, when compared to the developing and the under-developed world. This is because most developed countries such as the United States of America, Canada, Germany, Australia, and Switzerland have the financial resources to cater for large-scale social programs intended to curtail poverty and the impacts caused by large-scale unemployment. When compared to South Africa's R9 billion which prioritised vaccines, the 2021 cash injection that runs into trillions of dollars to resuscitate the US economy and save jobs during COVID-19, is a clear example of the financial muscle wielded by developed nations (see Bloomberg,

2023; Government Communication and Information System, 2023; Reuters, 2023). Part of the cash injection was also to resuscitate the aviation industry in the country (Reuters, 2023).

Unemployment explicitly leads to poverty and growing inequality. It is not a secret that Afrika is not equal to Europe or North America. Moreover, South Africa owing to a colonial and apartheid past is the most unequal society in the world. This is according to the gene-coefficient whose measures do not form part of this study. As cited in 1.2.1, unemployment, poverty and inequality are the three key ingredients that breed criminality. This is because the trio produce despair and hunger. Such challenges serve as strong motivators for individuals to resort to crime for survival. Though not the only, the trio also feature among the main causal factors in transnational crime.

To deal with transnational crime requires sophistication. It is unthinkable that any perceived sophistication could exclude the police's use of modern technologies at airports such as the ORTIA. To properly understand and problematise issues relating to the use of crime-combating technologies therefore requires explorations using lenses that are intensely fixated on the policing, transnational crime and techno-securitisation nexus in contemporary policing. The ensuing section unpacks policing and the use of technologies in the contemporary context.

7.6 POLICING AND TECHNOLOGIES IN THE CONTEMPORARY

In this study, the contemporary epoch refers to policing in the Fourth Industrial Revolution. As a basis point, 5.3.1 briefly articulated on the implications of this revolution on police work. The reality of the situation is that the Fourth Industrial Revolution is here and has brought about innovations that enabled technologies as the world knew them, to become smarter, more efficient and more attractive to markets. It is for this reason that in Interview 1 the participant said: *"today you cannot police without technology. Technology must be an integral part. Old policing was paper based, and paper gets lost. It is difficult to keep records with paper. Digitisation makes record-keeping on criminals easy"*. This is because of the inherent smart software, robotics and artificial intelligence, which are essentially the key defining features of this revolution. For policing, the inherent innovations enabled applications of various crime-combating technologies to expand beyond what was perceived as some wild imagination a little over 50 years ago, when artificial intelligence was thought to be some fictitious displays inside the minds of technocrats. Policing in contemporary times boasts of being more technocratic in comparison to about 30 years ago. In the last 3 decades, policing has largely embedded itself as a practice in the utilisation of high-tech tools that include mainly ICTs, computers and biometric tools. This

suggests that in the period referred to, policing operated largely in Third Industrial Revolution mode, with little emphasis on artificial intelligence-driven machines and robotics. In the past decade, police agencies in developed economies such as the United States of America, Germany and England have increasingly made gradual shifts to enter the space of artificial intelligence. Some of the artificial intelligence powered technologies applied include forensic video as cited in 5.2.1, forensic photogrammetry as noted in 5.2.2, and biometric technologies as posited in 5.2.3 of this study.

A key consideration about the 4IRis that the inherent artificial intelligence and robotics have enabled the police in recent times, to use electronics to coordinate functions that were traditionally and physically performed by humans. What this means is that: the police are now able to use CCTV footage to trace the movement of criminal suspects in real time, instead of having detectives or uniformed police give chase on foot or in vehicles, as well as apply tools such as photogrammetry to sketch scenes of crime, as posited in 5.2.1. Prospects are that artificial intelligence will in future enable CCTV technology, forensic photogrammetry and biometric technologies to combine in a single device. Such innovation will simultaneously utilise combined features of multiple applications to produce a single report that encompasses: (i) technical specifications on drawings, pictures and measurements on a crime scene, (ii) whilst also revealing the identity of the suspect using ear, voice, retinal or facial recognition biometric features, (iii) drawing from real-time single video footage on an incident of crime. The next section gives narrations on what policing can expect in the Fourth Industrial Revolution.

7.6.1 Prospects for policing

As already cited in 5.3.1, a key future of the Fourth Industrial Revolution is the use of smart software, artificial intelligence and robotics. These aspects are confirmed in literature (World Economic Forum, 2017; Chun, 2021; Martinelli, et al. 2021) in the same section of the study. The same literature further confirms that 5G technology which is satellite-driven, is used for harnessing ICTs and other technologies. What came out of the interactions in the empirical phase of the research was: *"it is important for various crime prevention technologies to be integrated"* (Interview 1), which is a key feature in 5G. However, the key question to raise is what does 5G technology mean for policing, since such technology is already used in the so-called smart homes. Smart homes are houses fitted with devices that are inter linked. In a smart home, devises such as CCTV are powered by biometric software that can identify persons whilst they approach the door.

The inherent biometric feature can identify the person by name (provided the technology is programmed as such) or indicate that an unknown person is approaching. The technology then sends a voice message through the hi-fi to alert the owner or inhabitants of the house. The owner (or person authorised to interact with the technology) can then use voice instruction to direct that the technology should open the door or not. Thus, the technology also uses built-in Voice Recognition Systems (VRS) referred to in 5.2.3. Essentially, the 5G technology can integrate any biometric feature that includes IRIS, ear, and facial recognition to assist with security in the home.

An interesting development is that in late 2021, the independent Communications Authority of South Africa (ICASA) released some 5G spectrum to telecommunications companies. What this means is that although the state has not yet created 5G infrastructure across the country, such services can be purchased from private companies. For law enforcement, this means that they can in future use drones that are fitted with cameras that have biometric identification capabilities, cameras that are fitted with forensic video that can follow suspects, cameras that are also fitted with photogrammetry software that can plot pictures and do measurements on the crime scenes. Just as 5G capability enables smart homes, it can also enable smart policing, which concept requires further research as it locates policing in the context of the Fourth Industrial Revolution.

The smart homes briefly highlighted herein are a typical example of Fourth Industrial Revolution technologies and some of the inherent capabilities. The question is, can the world have smart policing powered by 5G technology? This study hypothesises that such capability is imminent. What this means is that smart police operations are upon us. A smart police station will consist in a 5G powered facility that uses forensic video to monitor the movement of police and persons entering the police station for whatever reason; a forensic video system that can identify persons on site; voice prompts that can greet, call a person by name and welcome them to the police station; voice prompts that can enquire what the business of the visitor is at the police station; voice prompts that can direct a person to the relevant office for assistance; as well as the integration of technology that can create an electronic queuing system at the police station. Government departments like SARS and the banks are already making use of electronic queuing. Such technologies can also be used at police facilities at any international airport.

For other police operations, 5G technology means that the use of wristwatches and cellphones as homing devices to assist the police to locate persons in distress owing to criminal attacks is looming. Homing is technology mostly used by the military to lock a missile onto a selected target. The missile will ignore all the other targets until it is either destroyed or destroys the selected target (see Blazick, 2019; Center for the National Interest, 2023; Stack Exchange Inc, 2023). For smart policing, homing capabilities can improve response times to victims of crime. The police's response time can improve with knowledge of the victim's location in real time. Thus, the Fourth Industrial Revolution will soon give assurance to members of the public that their cell phones or wristwatches will be used as some panic button to activate police assistance.

Apart from sending human police to respond to victims of crime, smart policing can also make use of drones. Equally, the drones will be fitted with cameras that bear forensic video, biometric capabilities and photogrammetric features that are explained herein and in 5.2.2. As already cited in this section, with 5G software features, a drone can identify the victim of crime using biometrics, identify and track the suspect(s) using biometrics and forensic video, take photographs of the scene and plot the measurements for evidence using forensic video and forensic photogrammetry. All these activities using drones can be monitored in real time while human police prepare to attend to the scene or do other higher cognitive roles. This will better prepare the police to respond in that they will have real time data on the level of danger at the scene(s).

Whilst the world is still digesting what the 4IR has in store for policing, some technologies are already available in the market and that the police can use to find transnational crime in the contemporary. For example, a complainant or victim of crime may not need to visit a police station for such services. The police can use Microsoft Teams, Google Meet or Zoom for the interview. When done reporting a crime, the police can email the document to the person to affix their electronic signature and send it back to the police. Equally, the police can use the same platforms to administer an oath to any person. However, using these platforms requires licensing. It is thus important for Afrika to start developing its software applications. For the police, it may not be safe to use external platforms.

The Fourth Industrial Revolution is yet to unravel what humanity and the police will come to experience as a huge cultural shock. Indications are that the revolution will change police work and police-community interactions forever. It is thus not far-fetched to posit that prospects for

policing in the Fourth Industrial Revolution imply that robots and drones will be doing patrols. The drones will serve as the eyes in the sky. Such an approach will upon introduction, exert shock waves that signify a departure from traditional policing, which as cited in 7.4.1 is in the main, characterised by physical human interactions. The departure will entail man transiting into interfaces with machines. As such, the Fourth Industrial Revolution ushers in a new dawn wherein interactions in policing no longer involve intimate human interactions. How the public will react to such changes could open new research avenues in policing and other spaces.

As already hypothesised 7.5, the Fourth Industrial Revolution became part of operations in police work a little over 50 years ago (since 1969/1970) when the police started using bomb disposal robots (see Rachman, 1983; Lisle, 2020; Verdict Media Limited, 2023). However, the world at the time did not take note because, the Fourth Industrial Revolution as a prodigy had not yet been conceptualised. There is little evidence to show that scientists of that time hardly ever entertained the thought of a new industrial revolution, as the world was still comfortably basking in the use of technologies in the Third Industrial Revolution. For policing, the utilisation of body cameras for example is still in recent times, seen as a measure for increasing police accountability and one of the hands-on ways of lessening police brutality. What if such tools were to be infused with biometric identification features as argued in this study? What if body cameras were suddenly able to do facial, ear, retinal and voice recognition, all in one footage?

These last two questions are not only thought-provoking but are key in sensitising police managers on what the future holds for policing. The future is the full digitisation of policing in the context of the Fourth Industrial Revolution. This study posits that the prime benefit from this industrial revolution is how what seems to be some imagination in 2021, will be transformed into reality soon. To this end, the Fourth Industrial Revolution also implies that **Robocop** can no longer be thought of as some entertainment character in a movie. **Robocop** is a Hollywood blockbuster movie wherein a police official killed in the line of duty is turned into some half-human and half-machine crime fighter machine or cyborg (The guardian, 2023). An interesting feature of the introduction of crime-fighter machines is that they could lower human fatalities in the line of duty, which is a necessary consideration in the occupational safety of police.

Though innovations such as **Robocop** were inevitable in the Fourth Industrial Revolution, the humane part of introducing such crime-fighting machines should as a matter of principle, not include using half-human and half-machine arrangements, like the one in the movies. A movie

such as **i-Robot** where 100% machines or cyborgs are deployed to assume human functions is likely to be the case with crime fighter machines (Ebert Digital LLC, 2023). Such exercise should in this 21st century, enable humans to focus more on higher cognitive functions such as coding robots to align them to operations, as opposed to basic manual police labour. However, issues of ethics and accountability will unequivocally have to take high priority in the programming of police cyborgs, to guard against the illicit and abusive usage of such machines and other tools.

Although the Fourth Industrial Revolution promises unimaginable benefits for smart policing, it is not without well-documented hazards. For international airports, the dawn of this revolution also implies that criminal syndicates will also explore the use of robots in enabling transnational crime. To this end, the argument that criminals are also using technology to advance their illicit agenda cannot be overly emphasised. Key to this argument is the fear that the police may become symbols without substance or mere window dressers, should criminals outsmart them in terms of deploying intelligent technologies to perpetuate transnational crime activities at facilities such as international airports. Essentially, the fear expressed is muddled with ideological undertones whose analyses are dealt with in 7.3, 7.3.1, 7.3.2. The undertones referred to are equally responsible for making policing at airports to be complex, which postulations are made in 7.3.3.

Despite policing being a complex exercise, the Fourth Industrial Revolution does denote the dawn of cutting-edge innovations in police practice. The Elevate concept as cited in 5.3.1 for example attest to the innovations and impending transformation in police patrols. This concept means that horizons will be broadened from vehicles that can switch from driving to walking, to cars that can fly and double as boats and/or submarines, including self-driving patrol vehicles. Cars that can fly have already launched. This innovation was done by Uber in 2020 (see USA Today, 2023).

To elucidate on the future of the type of futuristic cars or any form of vessel, the innovations have already been seen in some of the famous fictions such as the 1977 James Bond movie titled: **The Spy Who Loved Me.** This movie exhibits a sports car that can operate as a submarine underwater (Bond Lifestyle, 2023). Similarly, a movie such as **XXX: The return of Xander Cage** exhibits motorbikes that can drive on land and water (Men's Journal, 2023), is something that can also enhance police patrols at rivers and sea borders to promote the fight against transnational crime. Such ideas could greatly assist Afrika with its unique border and borderline terrains. Implied is those new technologies bear hope in addressing police efficiency in Afrika.

7.6.2 Prospects for Afrika

For Afrika, with borderlines and entry ports mostly characterised by bad gravel roads, vessels purported in the Fourth Industrial Revolution will enable patrols that are necessary for the prevention and detection of transnational crime. Although the continent grapples with poor infrastructure and scarce financial resources to enable it to deploy cutting-edge technological interventions at its entry ports such as international airports, there are good stories to tell. Securitisation at airports in South Africa for example, relies on electronic and computerised checks on passports and boarding passes, as well as the use of biometric machines to identify criminal suspects. Similarly, the police at Marsa Alam Airport (Egypt) use explosive detection technologies (see Al-Marsi Al-Youm, 2023), whilst the police in Kenya use a CCTV surveillance system that can do facial and movement recognition in the city centres (see Biometrics Research Group, Inc, 2023). Of relevance is that the technology enables the police to expand the tracking and identification of suspects beyond the perimeters of the airport itself. As part of benchmarking, introducing such technologies will enhance the quality of security at airports.

There is no doubt that most crime-combating technologies applied in most Afrikan countries fall within the category of Third Industrial Revolution gadgets, since most do not feature artificial intelligence, smart software, robotics and 5G. Admittedly, Afrika continues to lack behind in many respects, technological advancement and prowess included. Some Afrikan countries grapple with the Second Industrial Revolution. Countries such as South Sudan and Central African Republic where people survive on less than $2 a day, are examples (see PaanLuel Wël Media Ltd. 2023). Such poverty implies that it will also be difficult for police to afford smart technologies. It is thus important for the better-equipped developing Afrika to strengthen technological platforms and assist the police in the less privileged nations. This is because Afrika's success in articulating into the Fourth Industrial Revolution is dependent on countries assisting one another. For the police, this is a matter of leveraging on interdependencies with agencies in sister countries. Such approach is legitimised by an ancient Afrikan proverb that reads: "*help me during the flood, and I will help you during the drought*". What the proverb means is that poor countries once assisted, may also contribute to better off countries in the future. Example of contributions may include innovation in the deployment of technologies.

Afrika being behind however does not mean that the continent cannot show leadership in policing. Examples are the biometrics powered CCTV used by Kenyan police and the police robot deployed during the enforcement of COVID-19 regulations. This claim is key in sensitising

police agencies to keep abreast of the developments in crime prevention and the fight against transnational crime at international airports. There is no doubt that the developments as postulated in this study compels the police particularly in Afrika, to utilise sophisticated technologies in crime prevention.

Despite the challenges, Afrika continues to show the potential to emerge as a global trendsetter, capable of re-aligning police practice to fit in with the Fourth Industrial Revolution. To this effect, Tunisia was the first to introduce a crime-fighting robot. This follows the April 2020 media announcement by the county's Interior Ministry to send a police robot to patrol the streets of the capital during the Covid-19 lockdown. Also known as PGuard or **Robocop,** the robot is remote controlled and fitted with infrared and thermal imaging cameras (see The Guardian, 2023a). The technology boasts lighting, audio and alarm features. This machine though vessel-like and not a cyborg, talked to suspected violators of the lockdown, demanded their identification and made them aware of the active violations. The machine created in 2015, also does security patrols. Of importance is that the machine has already began to alter traditional interfaces in police work. Such a machine could be useful in doing security patrols and checking passports at the airports. The checks could expedite the movement of queues for passengers transiting through airports.

Prospects for Afrika can and will in future, benchmark on what Tunisia has already started in terms of crime fighting technology. Innovations such as the PGuard can, in addition, do crime prevention patrols inside airports. Such services will in addition to on-the-spot verifications on travel documents, also identify suspects wanted for transnational and other criminal activities. If the technology links to local police and INTERPOL databases, this should increase its efficiency. The linkage should enable the crosschecking of identifications on suspects sought for crime, including international suspects sought for crimes against humanity, crimes such as terrorism, genocide and war crimes, classified as the Transnational Organised Crime cited in 1.2.3. This will free up time to enable the police to focus more on roles such as observing suspicious behaviours, something that a robot/machine is not encoded to do or not attuned to decide on.

There is no doubt that as the world galvanises into the Fourth Industrial Revolution, machines such as the one deployed by Tunisia will be re-configured to create police cyborgs. Such crime-fighters can be fitted with forensic video, biometric and photogrammetric, gunfire, arresting and many other capabilities. Prospects for the deployment of machines to make arrests and engage in the exchange of gunfire could greatly assist police personnel. For the SAPS, this is something

that can assist in crimes such as robbery. The media has widely reported on such incidents at the ORTIA. Theoretically, the deployment of crime-fighter technologies could help affirm Afrika's relevance in breaking new ground in policing. This is something that the rest of the world can use as a benchmark. Professionally, technology innovations could help Afrika's police to claim a spot among world leading entities and be seen as followers or symbols with no substance.

7.6.3 Risk factors linked to policing in the Fourth Industrial Revolution

From a scientific view, the artificial intelligence, robotics and smart software brought about by cutting-edge innovations, indeed present prospects that are beyond laypersons' imaginations. However, the inherent innovations also carry serious risks. This is because of the chronic possibility of technical malfunctions that can interfere with the programming of algorithms, resulting in fatal results. Such possibility as noted in 1.2 and 2.2.1, talks about how globalisation and advancements in technology have increased the endangerment of public safety. This reality was evident in the 1969 movie **Westworld.** The film is about faulty androids in an amusement park, that went on a spree killing human patrons in the park (The Guardian, 2023b). Inferred from this is that 4IR is no panacea for all problems in current policing. Mistakes will always be part of this new prodigy. What is key is for countries to have apt skills to arrest the mistakes.

Fundamentally, the Fourth Industrial Revolution imply exercising high levels of security in safeguarding the programming of the crime fighting machines. From a technical view, this will essentially require highly complicated algorithms whose constitution is outside the scope of this study and way beyond my skillsets and understanding as a social scientist. Of importance is that in addition to the technical needs, the programming of the machines that can perform human functions requires high levels of accountability, secrecy, integrity, and strong political will. For international airports, if a machine was to misbehave owing to programming emanating from unethical practices or technical errors, this could seriously jeopardise travellers and aircraft safety. This too is a classic example of how artificial intelligence can create fear when misused.

As already cited in 5.3.1, artificial intelligence implies that the police can fully operationalise technologies to perform functions traditionally performed by humans. Although the benefits of such exercise include removing human beings from harms-way if one considers bomb disposal robots or using **Robocop** to attend to robbers that shoot at police with high calibre gun power, the other side is that this could mean declined employment for human personnel. For South Africa, where poverty, unemployment and inequality are serious historical and systemic challenges, embracing the Fourth Industrial Revolution though inevitable, presents a socio-

political paradox. The test stems from how the state will balance embracing the Fourth Industrial Revolution with eradicating poverty, unemployment and inequality, when the use of machines will inevitably reduce employment from the economy and plunge them deeper into poverty.

South Africa is no exception to both the negative and positive impacts of the Fourth Industrial Revolution. For the ORTIA, plans to create over 3000 jobs from the envisioned revamping as contemplated in 2.3.2 could be thwarted by the implications of the Fourth Industrial Revolution, especially when considering that machines can be deployed to do the construction work, cleaning services, piloting the planes, as well as servicing passengers as part of the cabin crew. Similarly, the introduction of police cyborgs will also lower employment prospects for police personnel, effectively taking away the status of the SAPS as one of the biggest mass employers in the South African public sector. What is important is the integration of robots to complement specific police tasks done by human police and to have live technical teams to intervene in cases of technical malfunctions. The one positive with robots is that their presence can mitigate manpower shortages in police agencies. This means that the SAPS needs to start focusing on re-skilling personnel in 4IR (software development, robotics and Artificial Intelligence). This is the conundrum which government may have to deal with. In fact, the re-skilling of society to create more technicians, coders and other technological skills may be the answer for the future.

7.7 CONCLUSION

For South Africa, embracing the 4IR is imperative. Messages on embracing technologies are something that has been reiterated year-on-year by South African Presidents, from Nelson Mandela, Thabo Mbeki, Kgalema Motlanthe and Jacob Zuma, to the incumbent Cyril Ramaphosa. It will be interesting to see how the government moving into the future, will tackle the social conundrum in terms of promoting the use of artificial intelligence technologies and robotics in crime prevention versus saving jobs, eradicating poverty and humanising law enforcement. Though discussions on embracing the 4IR and maintaining the social balance in humanising law enforcement, reducing unemployment and eradicating inequality seems interesting to pursue, these are however not the focus in this study, which premised on policing at the ORTIA. The issues will nonetheless require further research to properly interrogate and problematise. The ensuing chapter outlines the complex contradictory issues relating to the philosophy of policing.

CHAPTER 8: ANALYSES AND DISCUSSIONS PART B: THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS

8.1 INTRODUCTION

The dawn of the Fourth Industrial Revolution unequivocally heralded a re-look at the philosophy of policing as conceptualised by Sir Robert Peel in 1829. This is among other things, necessitated by the fact that policing has changed so much since Peel. Policing as a science and a practice, generally acclaims him as the father of modern policing. His work is to date, recognised as the universal metaphysics in policing. Peel conjectured a set of 9 principles which policing continue to hail as the ontological, epistemological, hermeneutic, axiological, methodological and rhetorical praxes, much to the alienation of metaphysical praxes in other jurisdictions from around the world.

The alienation consequently gave birth to politics on Afrikanisation and decoloniality in policing. These politics and the introduction of technologies in police work, further necessitated a re-look at the philosophy of policing and the relevance of Peel's work in the contemporary, particularly in Afrika. This long-overdue debate is further necessitated by the fact that the Peelian ideology is largely premised on western-centric assumptions. The issue of grandstanding the Peelian ideology as a universal authority, constitutes in the thinking of the researcher in this study, colonial arrogance.

Since Peel conjectured his philosophy, policing scholars have over the last 194 years, that is 1829 to 2023, (un)consciously neglected discoursing on a new philosophy of policing, one that incorporates the use of technologies, and can resonate with Afrika and other parts of the world, the west included. The Peelian era (1788-1850) was in the First Industrial Revolution (1760's to about 1820-1840), when the mode of transport was largely horses. Policing first introduced technologies during the Third Industrial Revolution, at the fall of the 1960's, in 1969 to be precise. What this implies is that Peel's work was sometime towards the end of the First Industrial Revolution.

Fast forward to the dawn of the 21st century, policing began to rapidly galvanise into the Fourth Industrial Revolution. This entailed the use of artificial intelligence, smart software and 5G powered crime combating technologies. Examples include CCTV with forensic video that can

track live movements of suspects[1], the use a robot to enforce COVID-19 in Tunisia, including the use of modern software technologies such as photogrammetry and biometrics, to cite a few. Despite the strides, no policing philosophy has been abstracted to update or replace Peels work, except for operational models postulated in the mid-late 20th century. These include crime analysis and crime reduction, situational crime prevention, and crime prevention through environmental design, that all endorse the use of technologies in police work.

Historically, crime-combating technologies were introduced in police operations some 140 years after the Peelian code was formed (1829-1969). The issue that this study now needs to quiz, is whether Peel's work is relevant in contemporary policing or law enforcement. This issue is topical, considering that the world is rapidly galvanising into the Fourth Industrial Revolution, where cryptocurrency, gamification, smart tools powered by 5G technology, artificial intelligence, robotics and smart software is the new norm, a norm in which police work will involve less human-to-human interactions.

To facilitate analyses and discussions, this chapter abstracts Post-Modern Policing as an alternative to the Peelian convention. The rationale for this is firstly because the world and policing have phenomenally changed since 1829. Secondly, the dawn of the new revolution necessitates that there be a new philosophy for policing. This chapter thus interrogates the political and scientific relevance of the Peelian principles, to lay the foundation for a new philosophy that paves the way for the conceptualisation of the policing, transnational crime and techno-securitisation nexus, which denotes causal relations in traditional policing, technology and crime. As such, the chapter seeks to de-provincialise Europe and reposition Afrika and other jurisdictions at the centre of episteme in police science, by using grounded theory to analyse data sets.

8.2 GROUNDED THEORY

The grounded theory analytical technique was espoused to examine the second research objective in this study. To recap, the objective relates to theorising the policing, transnational crime, and techno-securitisation nexus. This objective is intended to address the research

[1] Forensic Video CCTV (powered by smart software that can analyse and restore evidence) was used to track the suspect's movement in the 2013 London marathon bombing. The suspect Dzhokhar Anzorovich Tsarnaev, an American terrorist of Chechen-Avar descent, was eventually arrested and sentenced to life imprisonment in 2015 for the murder of 13 people and injuring dozens in the event. In 2022, the British Supreme Court overturned the sentence to death, which ruling re-instated the death penalty which had been abolished at the time. Whether such retrospective application of the law is justifiable, or fair is for legal scholars to grapple with.

problem and respond to parts of the research question. The research question is contextualised *inter alia*, in aspects of the problem statement that talk to inadequate policing and techno-securitisation blues. Grounded theory is a set of systematic inductive approaches used in qualitative research, to interrogate existing theories or develop new ones (Corbin, 2021; Mohajan & Mohajan, 2022; Pérez et al. 2022; Brandhorst, 2023; Navas & Yagüe, 2023; Zhang et al. 2023).

8.2.1 Steps followed

In applying grounded theory, this study used the steps as conceptualised by Creswell and Guetterman (2019). The following are the steps pursued in analysing data sets:

- **Step 1: Deciding on whether grounded theory is apt in addressing the research problem or question**: The question in this study is: What are the dynamics and challenges relating to the interfaces in police work, transnational crime, and the use of technologies at the ORTIA? The analyses and discussions in chapter 7 addressed the dynamics relating to the question, whilst the next chapter addresses the challenges. What this chapter addresses is the analyses and discussions on the interfaces between police work, transnational crime, and technologies. The intention is to conceptualise the policing, transnational crime, and techno-securitisation nexus. This conceptualisation is preceded by the conceptualisation of the Post-Modern Policing philosophy. The intention is to align the policing philosophy with the Fourth Industrial Revolution. According to Creswell and Guetterman (2019:453), grounded theory is used when there are existing theories that were formed for a group of interest to the researcher or the study, which theories need to be updated or replaced. The group of interest herein is police officials and subject experts.
- **Step 2: Identifying the process to be studied**: The process being examined in this study is the work of police and how they use technologies to securitise and combat transnational crime at the ORTIA. The study sought to examine the intrinsic interfaces between police work and technology at the facility. Creswell and Guetterman (2019:542) confirms that researchers need to identify a tentative process that logically flow from the research problem and question, to initiate a scientific study. The process being studied essentially enabled the abstraction of the policing, transnational crime and techno-securitisation nexus.

- **Step 3: Seeking approval for the study**: The researcher obtained permission from the SAPS, appended hereto as Annexure C. Similarly, the researcher obtained ethical clearance approval, appended as Annexure B from UNISA, prior to commencing with the data collection phase. According to Creswell and Guetterman (2019:229), seeking approval for a study talks to ethics in research. These authors argue that permissions should be sought from institutional review boards and individuals who will partake in the research. Institutional boards in this study refers to the university and the SAPS. The researcher also sought consent from the research participants. A proforma of the consent form is attached hereto as Annexure D. The names and details of the participants do not appear on the form, this to maintain anonymity and to keep the participant's identities confidential, as outlined in chapter 3, the ethical considerations.

- **Step 4: Theoretical sampling:** According to Creswell and Guetterman (2019:230), theoretical sampling is the process of recruiting research participants that are involved with, of have been involved with the process being studied. These authors opine that engaging in such exercise help researchers to develop well founded theories. In this study, persons sourced to participate in the study include experts in border policing, police managers and police personnel involved with daily policing of ORTIA. The personnel use, among other tactics to combat transnational crime, different technologies. For full explanations, the sampling procedures are outlined in chapter 3 of this study.

- **Step 5: Data coding:** Creswell and Guetterman (2019:453) argue that coding data occurs during data collection to determine what data to collect next. These authors give guidance on the process which they note starts with open coding categories and using comparative analysis of the categories, axial coding, and the generation of a coding paradigm, until data is saturated. The process is according to Creswell and Guetterman (2019), intended to identify causal conditions, intervening and contextual groupings, as well as strategies and consequences. Coding processes are thus outlined from sections 8.3. to 8.6.

- **Step 6: Selective coding and theory development:** According to Creswell and Guetterman (2019:453), selective coding is the development of theory. This step also involves the interconnection of the analytical categories and refining the axial coding, to present the final output that is a model or a framework. The output is the modeling of the

Post-Modern policing philosophy, as well as the policing, transnational crime, and techno-securitisation nexus.

- **Step 7: Theory validation:** This step involves the validation of the research findings by checking if data collected is reliable. As outlined in 3.4.4, this step was fulfilled through member checking wherein the researcher confirmed the accuracy and credibility of the data with the research participants. Creswell and Guetterman (2019:454) agree that member checking is one of the ways used to validate research findings and the reliability of the data collected. Similarly, the researcher also checked with individuals who have expertise in border policing and the use of technologies in combating transnational crime, individuals who were not part of the sample. This was to ensure triangulation in validating the theories generated and to thus confirm the reliability of the data. Details on how triangulation was executed are outlined in 3.4.2 of this study.

- **Step 8: Writing the research report:** This project is testimony of adherence to the final step in the process of grounded theory analysis. The entire research report therefore denotes the researcher's abstraction of the interfaces between policing, transnational crime, and technologies, particularly at the ORTIA. The report addresses all the research objectives, in response to the research question which is dissected in detail in the problem statement outlined in 1.6.

8.2.2 The coding process

Grounded theory analyses generally follow processes that involves open coding, axial coding, and selective coding. Open coding happens when researchers identify conceptual or analytical categories from data that was collected or even prior to the data collection phase, and breaking the data down into specific codes for examination; axial coding refers to putting data together after open coding; whilst selective coding deals with selecting the core category, relating it to the other conceptual categories through discussions, validating the relationships through member-checking, and creating new theories/concepts (see Grounded Theory Online, 2016; Alhassan et al. 2023; Creswell & Guetterman; 2019; Fischer & Guzel, 2023).

In the research conducted, the open and axial coding processes were done simultaneously. Literature (Alhassan et al. 2023; Creswell & Guetterman; 2019; Fischer & Guzel, 2023) supports flexible approaches in doing qualitative data analysis, including in grounded theory.

The processes are captured in the analytical categories Table 6 in this section. Equally, the ensuing sections (8.2-8.4) outline selective coding. Selective coding forms the core of discussions in this chapter and is used to relate the analytical categories to the main category, which is philosophy. This enabled the conceptualisation of the policing, transnational crime, and techno-securitisation nexus.

In conceptualising the analytical categories, the researcher identified policing, transnational crime, technology, and philosophy (main category) as the keywords. The keywords are supported by the interview number from whence they were extracted or derived. In the process, the categories were substantiated until the data was saturated. Creswell and Guetterman (2019:452) support the use of data to a point of saturation. The table on analytical categories point out clearly where saturation was reached in each of the categories. The following are thus the analytical categories:

Table 6: The analytical categories: Part B

Policing	Transnational crime	Technology	Philosophy
Search, combating cross-border crime, dealing with illegal immigrants, inspections of cargo goods and permits, arrest, intelligence (Interview 1)	Human trafficking, smuggling through land ports and international airports, drug and counterfeits smuggling, evading custom duty (Interview 1)	Digitisation, integration, tests, scanners, infrastructure, biometrics, drones, crime prevention technologies, cameras (Interview 1)	Policing in the 4ir requires a new philosophy to align to strategy and operations (Interview 1)
Defence service in borders, border control, immigration policing, dealing with organised crime, trafficking, and corruption (interview 2)	Trafficking of stolen vehicle across borders, drug trafficking, trafficking of women and children, trafficking of firearms, corrupting officials on both side of the border (Interview 2)	Databases, interconnectivity, advanced passenger information system, electronic profiling, biometric systems, circulation system, body scanners, drug and explosive detection systems, vapour detection, electronic data interface, CCTV cameras diversions, robotics, 4ir (Interview 2)	Training should be concentrated on respect for human rights and the Batho Pele principles (Interview 2)
Border policing, search, arrest wanted persons or suspects, immigration heat, executing warrant of arrest, registering cases, document verification, traffic management, visible policing, patrol, investigation of transnational crime, public	Smuggling of Rhino horns, food, machines, Abalone, Cray fish, crabs, narcotics, and explosives used in cash in transit heists, trafficking seeds, soil samples, nuclear materials, medicines by individuals or syndicates (Interview 3)	CCTV, technology, systems, electronic heat, circulation system, WhatsApp, X-ray machines, screen points, facial recognition cameras, technological interception (Interview 3)	We are too cautious about human rights, but training and the use of technology does not include African philosophies (Interview 3)

complaints, protecting human rights, seizures (Interview 3)			
Security, policing, safety of national key points and critical infrastructure, intercepting contraband, combating transnational crime, search, essential services (Interview 4)	Drug, firearms, and human trafficking using the ORTIA as a transit, contraband in compartments, swallowed, or in luggage bags (Interview 4)	Scanners, ticket scanning, technology, technological benchmarking, illegal telephone tapping, leveraging on other stakeholders' technologies, interlinked databases, electronic information sharing (Interview 4)	Training include Ubuntu and respect for human rights, treating people with humility and respect and teaches police to redress wrongs as part of Batho Pele (Interview 4)
Policing movements of people and goods, crime prevention, attending complaints, arrest, security, handling suspects, courtesy towards individuals, fighting transnational crime, security clearance, intelligence gathering (Interview 5)	Drug mules and swallowers, rhino horns smuggling to Asia, counterfeit products mainly from India at cargo section, trafficking of medication, traveling terror suspects seeking to hide in SA, smuggling of weapons without permits (Interview 5)	Drug detection machines, batteries, cameras, technology, phone, email, social media communication, technological interceptions, CCTV, HD quality, body scanners (Interview 5)	It is difficult to instill principles because of work pressures and being understaffed. But we encourage members to be as humane as possible. Our philosophy is linked to Ubuntu and Batho Pele principles (Interview 5)
Crime prevention, visible policing, airport policing, foot patrols, organised crime, private security, firearms, arrest (Interview 6)	Drug mules, human trafficking, travelling on fake documents, counterfeits smuggling, (Interview 6)	CCTV, two-way radio, X-ray machine, Inkwasi system linked to DHA (Interview 6)	Training does embed Ubuntu. ACSA offer workshops on customer service. Our service delivery mandate in our crime prevention strategies aimed at solving problems. This is supported by our technology strategy (Interview 6)
Policing Illegal movement of persons and goods, crime prevention, stop & search, interview suspects, document inspections (Focus Group 1, interviews 7-12)	People entering the country illegally, using no, or fraudulent documentation or bribery, smuggle people by hiding them in airline toilets, illegal immigration, collusion with immigration officers (Focus Group 1, Interviews 7-12)	CCTV, technology, two-way radios, signal, data, pictures, cameras (Focus Group 1)	**Data saturated**
Profiling, stop & search, visible policing, patrol, arrest, investigate, crime control (Focus Group 2, interviews 13-18)	**Data saturated**	Forensic video, CCTV, storing memory, technology, morpho touch, electricity, circulation system (Focus Group 2)	

An important aspect in the coding process also relates to outlining the style of coding or the coding paradigm. This research uses four columns. The vertical arrangements shows submissions made by each research participant/focus groups on each of the categories, whilst the horizontal classification show keywords or phrases used. In this study, the four categories were identified because they also are a common thread in literature cited in the conceptual chapters. Whilst policing and technology (socio-legalistic and techno-securitisation dimensions) flow from the categories in chapter 7, transnational crime and philosophy categories were added to the mix in this chapter.

The mix in the categories essentially attest to some level of coherence between the phenomenographic analysis used in chapter 7 and 9 of this study, and the grounded theory analytical technique used in this chapter. The exception is that in grounded theory, there are no analyses on differing or cohering statements. This mix is in line with the qualitative analysis traits that allow flexibility. Various authors (Azen & Walker, 2021; Creswell & Guetterman, 2019; Alhassan et al. 2023) confirm that in qualitative research, there is no wrong or right way of analysing data, what's key is if data can yield inductive inferences. The next sections talks to selective coding and discussions.

8.3 SELECTIVE CODING

Selective coding is central in grounded theory. The step involves the selection of a single category that forms the core concept[1]. In operationalising grounded theory, literature (Alhassan et al. 2023; Creswell & Guetterman; 2019; Fischer & Guzel, 2023) guides that researchers should relate other categories to the main and produce theory on phenomena being studied. In this study, the key category is *philosophy.* This category is synergised with the *policing*, *transnational crime,* and *technology* categories. The output was thus the abstraction of the Post-Modern Policing philosophy, and the policing, transnational crime, and techno-securitisation nexus. To depart, the ensuing sections thus analyses and discourses on selective coding by initiating Post-Modern Policing for abstraction as a philosophy.

[1] Philosophy was selected as the main category because the abstraction of the policing, transnational crime, and techno-securitisation nexus must be preceded by underpinning principles or philosophy.

8.3.1 The genesis of Post-Modern Policing

Post-modern policing is a concept coined in this study as a new philosophy that resonate with contemporary policing in the Fourth Industrial Revolution epoch. The philosophy was necessitated by reasons already postulated in this chapter. Suffice to mention that the research participants in this study also highlighted the need for a new philosophy, one that resonate with the use of technology in contemporary policing, a philosophy that can be universalised and be inclusive of all world jurisdictions. The following are some of the phrases extracted from the interviews in support of this view:

- "*Yes, policing in the 4ir requires a new philosophy. This is one of the reasons why the police are not taking technology seriously*[1]*. They want to follow old traditional methods that are less effective in today's digitised policing, in a world where the criminals also use technology to outsmart the police*" [2] (Interview 1).
- "*The police must focus on fresh principles that promote the use of technology*[3]*, respect for human rights and high levels of service delivery*" (Interview 2).
- "*The police need to work following Ubuntu principles as a guide*"[4] (Interview 6).

[1] Taking technology seriously may be a sentiment that emanates to some of the resource and budget constraints. This does not necessarily mean that the SAPS do not take technology seriously. It is nonetheless the research participants view and not that of the researcher in this study.

[2] Apart from the traditional methods excluding the use of technologies in the context given by the Interviewee, less effective could also mean that policing is poor because it does not inculcate indigenous philosophies.

[3] Principles that promote the use of technology in police work affirm the need to discourse on and formulate a new philosophy that resonate with the 4ir, given that the revolution is characterised by modern software, robotics, 5G powered techs and artificial intelligence among many other traits.

[4] Ubuntu is an Afrikan philosophy. Taking note that Afrika in this chapter is spelled with a "k", as its aboriginals always did and still do, the spelling talks to the broader politics of Afrikanisation and decoloniality, policing included. Africa with a "c" is considered by the researcher to be a colonial adulteration. Such supremacist ideals affected not only Afrika, but the Americas, India, and Australasia, to exclude their indigenous philosophies from episteme, philosophies such as Ubuntu (see Madhubuti, 2020; McGaughy, 2020; Matlala & Rammala, 2022). Loosely translated, Ubuntu means humaneness and cannot be restricted to Afrika because where there's humanity, this philosophy is applicable. The assertion that police officials should be guided by Ubuntu in how they dispense of their functions, affirms that the philosophy can be universalised to other world jurisdictions, east to west, and north to south. Humanness by implication, should resonate with upholding the rule of law in the use of technologies to combat transnational crime. This interview phrase thus talks to repositioning Afrika and indigenous aboriginal philosophies from other parts of the world at the center of episteme in police science, without necessarily excluding knowledge from the west. For example, the researcher acknowledges crime prevention models such as crime analysis and reduction, situational crime prevention, and crime prevention through environmental design, as precursors to the post-modern policing philosophy abstracted in this study. All these models were postulated by scholars from western jurisdictions or descent. In the ideal where there is no supremacist and colonial dominion, epistemic inclusivity thrives.

Key features in philosophy generally include the ontological, epistemological, hermeneutic, axiological, methodological and rhetorical assumptions[1]. In the abstraction of the Post-Modern philosophy of policing and the policing, transnational crime and techno-securitisation nexus, ontology refers to the core values that underpin the science/practice; and epistemology is sources from whence policing derives knowledge. The hermeneutics relate to ways of making sense; whilst axiology talks to acknowledgements that policing and crime happens in multiple subjective and diverse world jurisdictions, whose episteme need to be accommodated to enable universalisation. Methodological refers to methods used in the approach to policing in various world jurisdictions, which methods need to be contextualised to local cultures, customs and traditions; whilst rhetorical is police jargon utilised in different territories.

The rhetorical assumptions are not discoursed in detail in this study as this is in the linguistics domain. What this chapter focuses on is all the other assumptions, to relate the *policing*, *transnational crime* and *technology* categories to the core category that is *philosophy*. The core category resonate with the ontology and epistemology, whilst policing as a practice that applies technologies to combat crime is contextualised in the hermeneutics, axiological and methodological assumptions. To unpack the interrelations between the main category (*philosophy*) and the other categories in this study, this next section thus outlines the values or principles in Post-Modern policing.

8.3.2 Principles in Post-Modern Policing

This study sought to postulate Post-Modern Policing as an all-encompassing praxis that locates policing and/or police practice in the Fourth Industrial Revolution. This philosophy is conceptualised drawing from generic principles that inform police practice and leaves room for different systems from across the globe to inculcate their own knowledge systems into the philosophy. The philosophy is thus inductively theorised to locate the use of technology in policing and related sciences. Additional clarity on the drive for abstracting this new philosophy is penned in footnote 2, in 8.3.1.

From literature in 4.2.3, some of the principles accentuated as underpinning policing include being service-oriented; problem-solving; embracing the rule of law; oversight; good governance; techno-centrism; courtesy, value for money and peace-making. Some of the

[1] The philosophical assumptions in this study are adopted from Social Science Research Methodology.

concepts are adopted from the *Batho Pele* principles[1], which is a South African framework for public service delivery that include policing as a public service. These principles were also affirmed by the research participants who stated as follows:

- Apart from the fact that Interview 1-6 and the Interviews in the Focus Groups (see category 1 in Table 6) describing in detail the type of services/functions performed by the police, Interview 4 submits that "*to improve efficiency and quality of service delivery[2], the police must optimise the technologies they have and embrace new ones*"[3]. The value added by technology in police work was a generally agreeable notion from all the interviews conducted in this study. Also, literature in this study's conceptual chapters attest to the benefits offered. Among these is the capability to breach spatial barriers and remove humans out of harm's way. For the police, the safety of personnel or staff is imperative.

- Interview 1 stressed that *"if the police are to win the war against transnational crime, I cannot see how that will happen, unless they embrace sophisticated technologies".* However, Interview 6 is of the view that: "*we must not overemphasise technology because criminals are clever, we still need good policemen and women on the ground, to catch these criminals*". The same concerns surfaced with the argument that: "*Although technology helps humans, it must not replace the bobby on the beat, because humans need other humans to police them. A machine is just a machine, tool* (Interview 6).

- In paraphrasing Interview 7, 9 and 10 in Focus Group 1, the key submission is that the police are governed by the constitution and other legislation to dispense of their functions. Interview 7 argues that *"non-adherence to the constitution means the police are not adhering to the rule of law, as the constitution is supreme law, and all actions have to pass constitutional muster*". This was substantiated by an element of adherence to international law wherein the argument correctly positions the SAPS in the international

[1] See South Africa, 1997. The principles are consultation, service standards, redress, access (to services), courtesy, information, openness, and transparency, as well as value for money. There is no doubt that these principles can be universalised to any democracy, without being contextualised to a solitary world jurisdiction.

[2] The research participant equates operational efficiency to high quality police service delivery, to which the researcher agrees. Without police efficiency, the element of safety and security is generally diminished.

[3] In the context of the 4ir, embracing new technologies imply moving into the robotics, artificial intelligence, 5G, smart software, gamification, and cryptocurrency among others. Cryptocurrency is the new currency and is here to stay. This will be the new way of allocating budgets in the 4ir, budgets that can be used to purchase new technologies. On the other hand, the police can use gamification as a new way to do image building campaigns, share information on crime prevention with the public and to do social responsibility campaigns. Gamification refers to the addition of electronic game-like traits to communicate messages. This can be central in communication with the youth, especially on crime prevention, because the youth are the most susceptible.

community. To this end, Interview 1 explained that: *"The SAPS is a member of Interpol and signatory to UN statutes that prohibit the police from use of inhumane and cruel tactics, like to extract information out of crime suspects by torture and assault. As such, the police are not only bound by the constitution on their acts, they must also respect what international law says*" (Interview 1).

- When interpreting the sentiments expressed in the empirical phase (data collection interviews and literature sources), governance came out as one of the pillars in managing police agencies. One research participant stated that: *"As a manager, I cannot see how a police agency can successfully combat crime if the law, standing orders, strategic and operational plans are not followed or executed to the latter. By the way, as managers, we must account to parliament on the work of the agency on an annual basis and we don't want to be found wanting"* (Interview 6). Accountability was further substantiated by Interview 3 who pointed out as follows: "*The budget to run police operations comes from government. This is taxpayers' money; we must account for how we spend. The public deserves better value on their monies. Yes, we do pay tax as police, but our taxes do not pay the salaries of people working in the private sector. Theirs pay our salaries and fund our daily police operations"*

- When quizzed on the value they attach to their work both Focus Group I (Interview 7-12) and Focus Group 2 (Interview 13-18) came out very strongly to say that they sleep well knowing that they have provided peace and security to travellers, workers, and businesses at the ORTIA by combating localised and transnational crime. Interview 18 did not mince any words when emphasising as follows: *"there can be no peace when crime is high. Our job as police officials, I mean when we fight crime at the airport, makes us peace officers. If you don't make peace for the public, then you're in the wrong space"*

Other principles in Post-Modern Policing include openness, accountability, respect for human rights as cited in 4.2.2 and 7.2.1, respectively; as well as community-centeredness and non-racialism[1] as cited in 7.2.2. Community-centeredness affirms the centrality of Afrikan and other indigenous epistemologies and/or knowledge systems in the philosophy of policing. This allows space for indigenised hermeneutics in the philosophy and dispels the myth that western

[1] Community-centeredness and racialism are implied in agencies that subscribe to the democratic and community policing principles that are cited in 4.2.2 of this study (see South African Police Service, 2001; South Africa, 1996; Calland & Pienaar, 2016).

systems are the only ones qualified to shape thought process and knowledge creation in the space, or in the police's use of technologies to manage transnational crime at international airports for that matter.

The fact that technology is key in promoting operational efficiencies in combating transnational crime, underscores techno-centrism as a central principle in policing metaphysics. From a philosophical context, techno-centrism not only serves as a principle, but is also a practical approach to dealing with crime. This implies that technology not only informs policing from a philosophical perspective but influences strategic and operational approaches. Implied is that techno-centrism traverses from the ontological to the epistemological, hermeneutic, axiological, and methodological assumptions[1]. These paxes necessitates the abstraction of a new philosophy to accommodate the use of technology in police work, in the Fourth Industrial Revolution.

To simplify the preceding postulation in relation to epistemology, technology does influence the operational direction in policing, which makes it a source of knowledge. In terms of hermeneutics, the introduction of technologies does influence new way of thinking about the approach to combating crime. Equally, the lack of technological resources and budget constraints faced by the SAPS, exemplify the axiological assumptions, whilst technology itself satisfies the methodological assumptions because the use thereof talks to pragmatism in fighting criminality/transnational crime.

The conceptualisation of a philosophy of policing is not something that a few can claim as a privilege or birthright, or as something that can or should be used to repress systems that are not of western origin. As argued in this study, the hermeneutic aspect in any philosophy makes room for indegenisation. This is what makes the philosophy of *Ubuntu* as cited in 4.2.4 and the *Batho-Pele* principles of consultation, service standards, access, courtesy, information,

[1] Because communities are not only a source of information on crime, they also shape the way in which the police make sense of crime, the language they use, and the methods applied. This makes community centeredness to traverse from epistemological, to hermeneutic, rhetorical, and methodological assumptions. For example, communities may refer to groups of shared knowledge, practice, or culture. It is inconceivable that the police can hope to succeed in fighting crime when (1) they do not rely on local communities and informers therein to give information on crime (in the context of an airport, travellers, workers, employes and other stakeholders); (2) that the police do not make sense of how crime happens without considering the unique circumstances of a particular community and how it wants to be serviced; (3) that in their approach, the police do not consider practical constraints impacting on their work; and (4) that the police can operate in a specific community and not know the language (rhetorical assumptions) or understand and respect the culture. Knowing and speaking languages that communities understand or speak, and knowing as well as respecting the cultures, speaks to an ethnographic approach in policing and affirms epistemological, rhetorical, and hermeneutic norms.

openness, transparency, and redress, that are noted in 1.5.1, to be proper hermeneutics as part of the philosophy of policing. In fact, any system in Afrika has a place in the philosophy of policing. To this end, Afrikan scholars also have a right to contribute to episteme on the use of technology in policing, and to coin such knowledge from Afrikan and not western views[1].

The issue about hermeneutics plainly makes the national setting in any country central to the epistemological question in the philosophy of policing. This last assertion was deliberated on in detail, when dealing with discussions and analyses on the Peelian praxis in 7.3.2. To this end, both the hermeneutic question in 7.3.1 and the question on episteme locates communities at the centre of epistemology in the philosophy of policing. What this confirms is that thought processes, knowledge creation and principles of interpretation in philosophy, best resonate with a people when they represent and draw from local communities or systems. Also implied is that the police should as postulated in 1.1; always seek opinions from the public, about the way they use technologies in preventing crime or transnational crime[2]. Such a move reaffirms communities as key in epistemology that shapes episteme and practice in policing.

Other generally accepted sources of knowledge that form part of the ontology and epistemology in the philosophy of policing not only include policing as a practice and technology as a tool of trade; but crime, its trends and patterns; legislation; policies; foreign and other police agencies[3]; and other organisations[4] that are not necessarily police but have an interest in policing, also form part of the philosophical assumptions in policing. These are all aspects that can be used as points of reference to diagnose pragmatic problems, appraise

[1] The rights of Afrikan scholars are not in any way advocated over the rights of scholars from other jurisdictions. They too have the same rights. In this postulation, the researcher is merely advocating pan-Afrikanism, the right of Afrikans to identify problems in their own continent, and to solve them by themselves. This invalidates western solutions for the so-called "Africa", wherein scholars approach problems on the continent premised on western thought processes. This mindset is decried by Frantz Fanon in the work titled: "*Black Skins, White Masks"* (Fanon, 2016). Black skins, white masks is tantamount to what the researcher terms as coconutism.

[2] Not that the public is expected to guide the police on the actual operation or navigation of the technology itself. The public should be afforded the opportunity to ventilate on principles such as respect for individual privacies, human dignity, and bodily integrity to cite a few, in the police's use of various technological tools.

[3] In the context of South Africa, other agencies will mean the Metropolitan Police Departments and the Border Management Authority (BMA), regularised in terms of the South Africa Police Service Act (Act 68 of 1995) and Border Management Authority Act (Act 2 of 2020). Although the Metropolitan Police are not part of the SAPS, they work in close corporation to combat crime. The BMA was just launched on 1 April 2023. It is expected that the agency will have service level agreements with the SAPS, in terms of border policing. There is therefore no way that the BMA can process suspects into the criminal justice system for detention, crime investigations, prosecutions, court processes and incarcerations after conviction, except through assistance by the SAPS.

[4] Other organisations in the context of South Africa refer to NPO's such as Corruption Watch, the Helen Suzman Foundation, the Social Justice Coalition, universities, the Institute for Security Studies, and unions like South African Police Union (SAPU) and the Policing, Prisons Civil Rights Union (POPCRU).

police performance and benchmark on best practice[1]. Research participants agree that police performance needs to be appraised because this is an element of accountability (Interview 1-6; Focus Group 1, Interviews, 7-12).

Technology is one of those tools that can be a good measure of whether policing as a service is efficient or not. This next section places the Peelian code under scrutiny since the code does not inculcate the use of technology in police work and therefore not congruent with 21st century policing in the Fourth Industrial Revolution epoch. The section unpacks the ontological quagmire created by the Peelian assumptions, whose code is the epitome of the phrase: "*today's solutions are tomorrow's problems*". In this study, today means 1829 when Peel theorised, and tomorrow is the 21st century, an era where policing is techno-centric and is expected to enhance economic activities.

What the argument by the researcher stresses is that whilst the abstracted Post-Modern Policing philosophy may be relevant in the 21st century and the Fourth Industrial Revolution, a new policing philosophy may need to be abstracted to align with the next unknown Fifth Industrial Revolution[2]. Peel's code is problematic for policing in the 21st century, and equally, Post-Modern Policing may also fall short in congruency, in terms of the yet to be known Fifth Industrial Revolution Of importance is that episteme is built from old and existing knowledge, on a need basis. This next section critically analyses the Peelian code, to assess its relevance.

8.3.3 The Peelian code under the microscope

The principles that underpin the Peelian praxis are outlined in 4.2.1. This section focuses on detailed analyses of the principles. Sir Robert Peel's work is described in various literature sources (see Jenkins, 1998; Evans, 2006; Gash, 2011). In literature, he is described as a Baronet, recognised as a Fellow of the Royal Society for his inputs in natural knowledge. He was a British conservative politician who served as Prime Minister (1834-1835 and 1841-1846) and is regarded as the father of British policing following his founding of the British Metropolitan Police Service in 1829. The researcher in this study argues against the universalisation of the Peelian praxes. This is because from discourse presented herein, Peel's approach in abstracting the modern policing principles is clearly premised on western philosophical

[1] Appraising police performance affirms accountability as a principle in the philosophy of policing.

[2] Although the 5th Industrial Revolution has not yet been clarified as a prodigy, it could involve space travel. Developed nations are already looking into migrating humanity from earth to other planets, due to global warming, to ensure human survival. Thus, the revolution may give birth to space and inter-galaxy policing. These are all issues showcased in movies and with global warming and explorations of the moon and other planets.

precepts, to the exclusion of ontological, epistemological, hermeneutic, rhetorical, axiological, and methodological assumptions in other parts of the world. What follows are expositions on the scientific, political, and pragmatic relevance of Peel's code in today's policing.

- **Principle 1:** *"The basic mission for which the police exist is to prevent crime and disorder."* In contemporary times, where most of Afrika is fully democratising, the basic mission of the police goes far beyond preventing crime and disorder. In democracies, the police are the custodians of democracy. It is such custodianship that gave rise to concepts such as Democratic Policing, which broadens the basic mission of the police, to include accountability, respect for human rights and observing the rule of law, as cited in 4.2.2. The mission thus extends to restoring and safeguarding the dignity of all persons. To this effect, the basic mission of the SAPS for example, also includes investigating crime and protecting all inhabitants of the republic, a point already made in 4.2.3. The protection extends to non-citizen travelers at the ORTIA, whom the police often assist with other non-crime prevention related enquiries. This was confirmed by research participants who indicated that sometimes they serve as tour guides for travellers at the facility (Focus Group 2: Interview 13, 17 & 18). Such interventions affirms the centrality of policing in promoting economic activity in any country. Consequently, this study postulates that the first Peelian principle is limited in as far as its resonance as the overarching rule for the basic mission for which the police exist. This implies that the principle is no longer in touch with 21st century policing under democratic dispensations.

- **Principle 2:** *"The ability of the police to perform their duties is dependent upon public approval of police actions."* Permission for the use of modern technologies in contemporary police work is for example, not the prerogative of the public, but rather a regulatory, strategic, and operational issue. Public approval is generally for the existence of and the way in which the police treat the public. It cannot for example be sought for intelligence gathering activities, some of which are intrusive in nature and may seem cruel or unlawful in the eyes of the public. To this end, the public do not have to approve/disapprove of any police actions if such actions are within the ambits of the law. Focus Group 1, Interview 8, 9 and 12 indicated that passengers at the airport do not approve on body and luggage searches, but the police do it nonetheless, because the law allows it, based on reasonable suspicion. For the ORTIA, various legislation that

regulate police actions are noted in 2.7. To hypothesise that the ability to perform is dependent on public approval is myopic and flawed.

- **Principle 3**: *"The police must secure the willing cooperation of the public in voluntary observance of the law to be able to secure and maintain the respect of the public."* The fact of the matter is that policing has evolved so much since the days of Robert Peel, and so did societies. Apart from technology not having formed part of the conceptualisation as postulated in 4.2.1, the Peelian convention failed to consider the political and social context in which policing in different societies happened[1] during its conceptual stages. For example, in 1829 when the convention was conceptualised, most Afrikans were under repressive colonial rule (later apartheid in South Africa)[2], a point cited in 4.2.2.

The main issue about the Peelian praxis or convention is that the third principle generally seems to have been oblivious to the unjust socio-political happenings of the time (around

[1] In terms of voluntary respect for the rule of law, societies who are in the processes of decolonisation display unique traits. Essentially, the formerly oppressed communities in post-colonial societies are also likely to ignore the rule of law. South Africa is one such society. To qualify this, in 2020 during the Covid-19 lockdown in South Africa, most people from historically black townships did not voluntarily adhere to the call to remain indoors. Although one could argue that part of the reason for the defiance is the fact that blacks have been under a sustained generational poverty lockdown imposed by colonial-apartheid, the historical generational pain of disrespect by the racist colonial police as cited in 2.7.1, is also a factor. The resistance subsequently required the police/army to act. This resulted in some people being arrested, with some openly brutalised, some killed.

[2] It is common course that repressed societies have never willingly cooperated with the police. Neither did they respect colonial police, nor did they voluntarily observe the rule of law. They feared the police but broke the law in resistance to what was politically perceived to be despotic regimes. In 1829, this was the case in most of Afrika. The ramifications of policing during the time was that police were colonial symbols that in the eyes of communities, lacked epistemological substance. As such, their existence and actions could not bear enough moral authority to command respect. This argument puts the validity of the third Peelian value into question, particularly when using the lenses of the then societies under colonial rule. Generally, the one common characteristic in repressed societies is non-observance of the law. This is active resistance wherein transitional justice which may involve crime, is the order of the day. Other forms of resistance in suppressed societies would have been passive. An example of such, is how black communities in apartheid South Africa viewed the police as an illegitimate brutal state organ, an issue highlighted in 2.7.1 and in 4.2.2. This led to black communities having very little or no respect for the police. In fact, in the mid 1980's, police were murdered for political reasons, this as part of retribution for being in the employ of the brutal apartheid regime. It is thus inconceivable that colonial police could secure the willing cooperation and respect of the oppressed African societies. In this context, the third Peelian principle was essentially conceptualised in total disregard of situations in Africa, its people, and her politics. Although discussions and analyses herein do not talk to policing at international airports or the use of technology in policing, the events during the 2020 lockdown in South Africa for example, attest to how formerly oppressed masses will not respect the rule of law, particularly if policing tactics will continue to be premised on western-centric tower of ivory postures that uses brutal ways to enforce laws in a democratic dispensation. Of importance in this study is that during the lockdown, crime in South Africa was significantly low, this owing to a partial shutdown of the economy. However, this does not imply zero transnational crime, an aspect that decries the last Peelian principle interrogated in the latter part of this section. The fact that government had allowed the movement of some essential and non-essential goods in and out of the country including repatriation flights, opens possibilities for the movement of contraband. Likewise, transnational crime activities such as money laundering and cyber criminality enabled by technologies will constantly be a problem.

1829). Apart from the deliberate ignorance, the world seems to accept the convention as an overarching philosophy, without checking as to whether the principles resonate with policing in Afrika, Australasia or parts of the Americas that has policing formed on colonial foundations[1], characterised by the brutalisation of the aboriginals in conquered nations[2], to affirm a western supremacist dominion agenda. This raises questions as to the political intentions of universalising Peel's code as metaphysics in policing when the code is confined to narrow western colonial ideals[3].

- **Principle 4:** *"The degree of co-operation of the public that can be secured diminishes proportionately to the necessity of the use of physical force*." What is worrying is that this principle comes across as a correlational statement. Apart from not talking to the use of technology in policing, it also raises issues on whether there has been studies done to validate such a claim; What methodologies were used to confirm such hypothesis? and whether the validity of the research instrument used to measure this correlational relationship was ever tested[4]. As a rule, the coining of a principle that is a metaphysical authority cannot be reduced to some thumb-sucking exercise. Also, the principle comes across as a threat to the public. "The degree of co-operation of the public that can be secured diminishes proportionately to the necessity of the use of physical force" means that when the police use less physical force, the public will cooperate more. Equally, the

[1] Police in the USA continue to kill young black males and in South Africa, deaths at the hands of police include in the main, black people in impoverished areas. The facts are well documented in local and international.

[2] Colonial powers disregarded all that is Afrika, her systems, people, traditions, cultures, including her ways of interpretation, and focused on illicit access to her enormous natural resources. Thus, the scramble for Africa was not only for her resources, but also for her intellectual capital, in the context of this study, the eradication of Indigenous African knowledge Systems that informed policing and the maintenance of law and order in different communities. In fact, western systems make police officials in "Africa" spelled with "c" and considered by the researcher in this study to be colonial adulteration from the "k" spelling used by the aboriginals, to be well-trained slaves. The abuse of the formerly oppressed blacks in South Arica is, as I would argue, at the behest of the colonial master who is in intellectual format and compels the police to think and act in a brutal fashion.

[3] To this day, policing in the so called "Africa" (spelled with a "k") seems to be comfortable with the deprivation of its intellectual capital. Colonial privilege is perhaps the best explanation why contemporary policing remains comfortable with the Peelian ideology as the overarching metaphysical authority. Key questions to be asked on Peel's code are: How could police at the time (in 1829) secure the willing cooperation and voluntary observance of the law from the colonised Afrikan masses? Was the principle conceptualised in recognition of only white societies in Europe or white settlers throughout the Afrikan continent? Was the principle talking to the rich, middle class, enslaved or impoverished communities on hungry stomachs? Fundamentally, the third principle appears to have been conceptualised based on operations in some small Constabulary in a small community, not even for a national setting, but for somewhere in a small town somewhere in England. The question that thus becomes central is: How did Peelian Principle 3 form part of a metaphysical authority in policing, when there are so many questions relating to its socio-political and hermeneutical origins and relevance?

[4] Interview 1 argued that any approach in police work needs to be scientifically driven. Interviews 4 and 5 attest thereto and further submit that policing that is not research-driven is like fighting crime when one is blind-folded (paraphrased). The blindfolded phenomenon is synthesised as the Misty Waves Effect in 8.4.1.

principle advocates for the use of force by the police and to reduce it at a later stage to secure cooperation from the public. This is like saying to a child, if you are naughty, I will give you 10 strokes on the back. But, if you behave, I will reduce the strokes to 8, then to 6, then to 4, until you stop the naughty. In democracies, the police use force only when it is necessary, not to get cooperation from the public[1].

- **Principle 5:** *"The police seek and preserve public favor not by catering for the public opinion but by constantly demonstrating absolute impartial service to the law."* Like the others, this principle is also problematic in many ways**.** The principle ignores public opinion, and this is in contradiction of principle 7, which advocates for sound police-community relations. How can quality policing be attained if the police do not cater for public opinions? The public as primary customers must have a say in how they want to be serviced, especially in democracies. Disregarding public opinions at the ORTIA would for example, damage the image of the SAPS. How do police ignore public opinions without raising suspicions and attracting bad perceptions around themselves? In democracies, theories such as Community Policing and Democratic Policing encourage police to engage in dialogue and to collaborate with all communities, to enhance the fight against crime. This is known as Partnership Policing[2].

From a philosophical perspective, the researcher in this study fundamentally agrees with the Peelian Principles 6, 7 and 8. The principles respectively advocate for the observance of strict rules that govern the police's use of force[3], in the context of this study, adherence where technologies are applied to ensure the effective securitisation of facilities such international airports; the value of strong police-community relations as a means to effectively fight crime, including transnational crime cited in category 2 in Table 6; and non-interference with criminal justice processes outside of the police's domain. This talks to non-encroachment with

[1] In South Africa, the police can use force in private defense and in defense of necessity, to protect themselves, others, or property based on reasonableness and other prescripts as contemplated in sec 36 of the Constitution (Act 108 of 1996). It is unconstitutional to use force, then reduce it to coerce cooperation.

[2] The supposition in Principle 5 is an antithesis to what contemporary literature (Hornberger, 2013:599; California State University, 2016; West Yorkshire Police, 2017) in 4.2.3 is advocating in terms of building police-community relations. How do police build partnerships with communities when they disregard public opinions? This can never enable the police to make sense of the role of the community in blowing the whistle on crime. As such, the principle casts aspersions on Community Policing, which caters for public opinion as postulated in 4.2.1 and on the use of Community Policing and Sector Forums, that are a platform for enabling public opinions in policing.

[3] Observing Principle 8 is necessary to avoid plunging countries into police states, where people are brutalised, like in apartheid South Africa, a trait that can scare off people from visiting the country. This could impact on the status of ORTIA as an economic hub that facilitates air travel and tourism as cited in 2.3.1. A police state can only breed corruption as cited in 2.4.1, which could escalate transnational crime incidences at the ORTIA.

prosecutions, corrections (prisons) and court processes in observance of the rules on administrative and procedural justice[1].

- **Principle 9:** *"The test of police efficiency is the absence of crime and disorder, not the visible evidence of police action in dealing with it." This is just as problematic. Measuring efficiency based* on the absence of crime and disorder is not feasible. Crime is as old as humanity and cannot be 100% eradicated. Today, the test for efficiency is in the measures used to gradually reduce crime, the operative word being "reduce" or keeping it under control. Crime is omni-present in the sociological, political, and economic contexts. For the SAPS, the test for efficiency thus reside in how technologies are optimised to manage all forms of crime, in all settings, including the use of such and other tools to manage transnational crime and enhance safety at the ORTIA. According to Interview 6 "*crime is a perpetual phenomenon that requires technology to bring under control"*. This was agreed to by other participants who argued that crime was the reason why police are employed (Interview 5; Interview 6; Focus Group 2, Interview 18). To add, Interview 3 stated *that "crime is a necessary evil that we need to live with, you cannot get rid of it. If you do, there will be no need for criminal law, and insurance companies will lose clients. People will lose employment".*

The phrasing of Principle 9 attests to postulations (Peelian) that were before concepts such as cybercrime, which is not always visible to the naked eye. The principle does not cater for contemporary methodologies that use statistical analysis to check whether crime is increasing/decreasing as a measure for efficiency, or investigations that have led to the arrest and successful prosecutions and conviction of criminal suspects in court. Like Principle 4, this principle is also hypothetical and raises serious concerns relating to the methodology used. For this reason, the researcher argues that the Peelian code is outdated for contemporary policing in the Fourth Industrial Revolution. Out of the nine Peelian principles, six are arguably not consistent with contemporary policing. Statistically, this translates into 66.66%, round off to 67% irrelevance. Considering this last conjecture, an issue that now needs attention is a witting move to de-Eurocentricise, recentre Afrika[2], and universalise police episteme.

[1] Administrative justice is law that regulate decisions and actions of public service institutions and servants. In South Africa, this is governed by the Promotion of Administrative Justice Act (Act 3 of 2000). Procedural justice talks to fairness in dispute resolution and the allocation of resources. Considering that criminal court proceeding are by their nature, a dispute between the police and the suspect they arrested, court proceedings can thus not be biased in favor of either party, neither can the police influence the presiding officer. In South Africa, procedural justice is in addition to Act 3 of 2000, regulated through the Criminal Procedure Act (Act 51 of 1977).

[2] The recentering talks to accommodating other indigenous knowledge systems from other world jurisdictions.

8.4 THE CONCEPTUALISATION OF THE NEXUS

Following the conceptualisation of the Post-Modern policing philosophy and in-depth analyses and discussions on the Peelian code, this section conceptualises the policing, transnational crime, and techno-securitisation nexus. This is part of the selective coding process espoused in the grounded theory analytical approach. *Discussions on Post-Modern Policing were a necessary basis and precursor for the conceptualisation of the policing, transnational crime, and techno-securitisation nexus.*

The level of transnational crime in South African international airports evolves continually and calls for concern. This amoeboid trait is largely due to globalisation and technology as already postulated in 1.2; 2.2.1; 2.2.3; 7.2.5 and 7.3.7. Interview 1 submits that whilst policing in the 4ir requires a new philosophy, technological advancements meant that *"criminals also use technology to outsmart police*". In a world that has become a global village where connectivity is fast, criminals also adapt and use the same technologies to their advantage. This is the other side of the Fourth Industrial Revolution and talks to the visible advantages and disadvantages thereof[1].

As part of the central thesis statement in this study, the use of new and advanced technologies by both the police and criminals epitomises the policing, transnational crime, and techno-securitisation nexus. Keeping a balance in the continuum is key in the efficient management of transnational crime. To attain a balance essentially requires of the SAPS to monitor criminal activities that happen online, guard against encrypted criminal communication channels, and always improve on technological innovations. As postulated throughout the conceptual chapters in this study, balancing in the nexus also require of the police to use readily available cheaper drone technologies, a point cited in 2.4.2 and in 4.3.1; use forensic video as noted in 5.2.1; artificial intelligence and many other smart technologies that can be applied in attaining the balance needed for effective techno-securitisation. Figure 15 below is therefore an abstraction of the policing, transnational crime, and techno-securitisation nexus.

[1] Technological advancements require the optimisation of techno-securitisation. This means that the SAPS need to up their game in how they use technologies in the management of transnational crime at the ORTIA. Failure to adapt would mean that criminals could have unhindered chances to plunge the facility and the entire country into the chaos emanating from uncontrollable transnational crime. The fact that crime syndicates also have the capacity to acquire new technologies to further their illicit activities is a reality that cannot be ignored.

Figure 15: The policing, transnational crime, and techno-securitisation continuum

Source: Author conceptualisation

Figure 15 is the researcher's abstraction of the interplay between policing, crime, and technology. The continuum implies that the interfaces between the three constructs is linear. This means that the effective management of crime depends on effective traditional policing and optimising technologies. The inward pointing arrows shows the inter-dependency of the constructs. In the researcher's own imagination, should either arrow on either side of the continuum break, this would cause the continuum to lose its balance and skew, meaning that transnational crime would escalate. This would occur if the shortfalls unearthed by the research in this study were not dealt with. As part of the abstraction, the key constructs that form the policing, transnational crime, and techno-securitisation nexus are thus further inferred in the ensuing section.

8.4.1 Key constructs in the nexus

Since the dawn of democracy in 1994, there has been a decline in state sponsorship for policing, including customs and border control in South Africa, owing to competing state responsibilities[1] (Interview 6). This resulted in transnational crime in the form of the movement of contraband becoming a major problem (Interview 2). The problem manifested in porous borders (Interview 1), poor securitisation, and lack of modern technologies at international airports such as the ORTIA (Interview 5), caused by scarce funding (Interview 3). It is no secret that prior to 1994, the police were allocated much bigger budgets to maintain the apartheid legacies, as argued in chapters 4-6.

The issue of scarce funding is problematic because it negatively affects police strategies and operations intended to promote the fight against transnational crime. Even if this study was to conceptualise theories to help make sense of the interfaces between policing, crime, and

[1] The responsibility involve spending on social programs to mitigate poverty, inequality, and unemployment.

technology, this would remain a theory-base that can never help police operations, not if funding remains a problem. Despite the problems, the researcher felt compelled to continue with the conceptualisation of other aspects of the nexus, to add to episteme in policing. The following are some of the aspects:

- **The management of transnational crime:** Figure 15 in 8.5, is an indication of the tranquility needed to signify the effective management of transnational crime. What this study infers from the continuum (Figure 15) is that if both the inward facing arrows on either side of the continuum are not broken, this denotes that the traditional policing tactics and technologies applied balance the equation and transnational crime is curbed to the bare minimum that is possible[1]. Unlike the Peelian supposition in 7.3.2, the nexus affirms that crime cannot completely disappear, but can rather be curbed to the minimum possible. The attainment of this kind of tranquility is thus titled the *Placid Phase*.
- **Challenges in police work:** For the SAPS, the shortfalls are abridged in 1.6 and detailed in chapter 9. They include strategic and operational issues, legal and philosophical issues. The problems spell inadequate policing at borders that include international airports. Other problems include political bureaucratisation as cited in 2.7.3[2]. What this study infers is that if the police do not address the issues cited herein, or any other policing-related problems, the arrow on the left of the continuum in Figure 15, will be broken. This means that the continuum will skew, and this will be an indication that they will find it difficult to manage transnational crime. The skewing will happen even when the police have state of the art technology, for as long as internal problems (strategic and/or operational) or managerial issues are not dealt with in apt way[3]. For the ORTIA, this means compromised security. This phase is referred to as *Policing Woes*.
- **Technological despairs in policing:** Issues relating to the technological challenges in the SAPS also feature in 1.6. These include minimal connectivity of databases used by different securitisation actors, using outdated technologies, poor intelligence, and lack of standardised procedures[4] to store and process data. Other problems include lack of technological resources and technological expertise, which issues were ventilated in 1.3.3. In the same way as the policing woes, this study hypothesises that if the police do

[1] The bare minimum decries the Peelian code that seems to suggest that crime can be eradicated *in toto*.
[2] Political bureaucratism in the context of this study was mitigated by the establishment of the BMA.
[3] An example of the problem is the corruption that is rife at the ORTIA (Interview 3, 4 & 6).
[4] The hope is that the establishment of the BMA will bring about synergy between securitisation actors, which may assist in the standardisation of processes in the entire South African border environment.

not deal with the technology-related challenges, then the arrow on the right of the continuum will break. The result of this will be poor management of transnational crime at the ORTIA. This phase is therefore abstracted as *Techno-securitisation blues*.

- **Research in police work:** The use of technology in police work in Afrika is a relatively under researched domain, a surmise made in 1.6 and in 2.5.2. In this study, this perceived lack of research is deliberately termed the *Misty Waves Effect*. Without research, the police will not understand crime or technologies and will be working without scientific direction, blind folded so to phrase it[1]. They will know there is transnational crime out there, but will not understand the trends, patterns or who is responsible for such crime and how such crime manifests, and how or which technologies to use. For the ORTIA, research is key in enabling the police to optimise the scarce technological resources they have. This study infers that lack of research obscures in part or *in toto*, the entire continuum. When this happens, the police will not know which arrow in the continuum may have broken, with no explanation on the upsurges in crime.
- **The intensification of crime:** As cited in 6.4, the aviation sector globally is experiencing increases in transnational crime. Poor management of transnational crime, unattended policing and technological challenges, and the lack of research mentioned herein, are some of the problems. Category 2 in Table 6 highlights that the ORTIA too is no exception to transnational crime. In this study, the intensification of transnational crime is termed the *Balloon Effect.* In the context of the continuum in Figure 15, the analogy for the intensification is that of a helium balloon, which will continue to rise into the air if not arrested in time. The intensification/ballooning of transnational crime occurs when both policing and technology arrows on either side of the continuum are broken[2].
- **Uncontrollable crime:** Transnational crime is sometimes referred to as Transnational Organised Crime, which is harmful to economies, basic human rights, and state security. If transnational crime can intensify, the domino effect emanating from such situation could

[1] The concept follows a literal analogy of a person standing along a misty beach. What this implies is that if there is lack of research on any aspect of policing that includes research on technologies used or on police practice or any form of crime, police agencies will experience the *misty waves* effect. To explain, a person standing on the beach when it is misty knows that there is the sea with waves out there. However, the mist obscures the view to a point that the person will not know how high the tide is or what the waves frequencies are. Without research, police will be like the person on a misty beach.

[2] This also happens when policing, technology and transnational crime are not adequately researched and understood, which talks to the misty waves effect above. The lack of research was overwhelmingly decried by most of the research participants interviews to inform the research conducted.

collapse governments, as cited in 1.2.3. In the context of the continuum in Figure 15, the situation wherein crime reaches a stage where it is uncontrollable and/or collapses the state, is termed the *Big Blast*. In the same way that a helium balloon will take to the skies when unleashed, it will at some point explode when it reaches a certain altitude[1].

The constructs inferred herein form the basis for the policing, transnational crime and techno-securitisation nexus. This is however not an exhaustive list of the interplays between the constructs in the continuum but should suffice for this study[2]. I suspect future studies may identify and interrogate more constructs. Thus, other interfaces on the continuum in Figure 15 and on the nexus can be inferred based on future empirical evidence. For example, policing as a construct will generally entail interactions with communities (travellers and employees at ORTIA in this study), the intelligence community, private companies (security companies and NGO's), the military, immigration services (DHA), customs service (SARS), INTERPOL, MPD's and many other stakeholders in the value chain. The partnerships enable joint problem-solving and in the main, joint efforts in fighting transnational crime at ORTIA, which assertions are already supported in 1.2; 1.3; 1.4.1; 4.2; 4.2.1; 4.2.3; 4.2.4; 4.6; 5.2.3 and 6.2.4.

What if border police must in future, deal with space travel, where travellers from other planets may have to be quarantined before being cleared for entry? What type of technologies will be required for this? Do we have such technologies? What type of vegetation or soil deposits will they bring? What radiation is there in foreign planets and can earth withstand such elements? These are all questions that may need to be interrogated once the Fifth Industrial Revolution dawns upon mankind and police work.

Transnational crime as a construct on the other hand, spells out more worrying interplays. These include organised crime syndicates getting involved in and forming alliances with

[1] High altitude has atmospheric pressure that balloons cannot resist or withstand. In this study, the explosion phase or *the big blast* mean that transnational crime has reached uncontrollable proportions or stages. This eventuality can be caused by lack of research on the constructs in the continuum in Figure 15, including the collapse of the policing and the techno-securitisation blues arrows. The researcher is however not oblivious to the fact that crime can reach epic proportions if syndicates are assisted by corrupt police and politicians. No matter how dedicated the police can be, corruption has a way of making criminals more powerful than police.

[2] This supports the notion that episteme is built on what others have done before, the same way that Post-Modern Policing was built on critical analyses of the Peelian code and crime prevention models conceptualised by scholars of western descent. This approach promotes inclusivity in the universalisation of not only episteme, but pedagogy as well. These traits enable police training that is indigenous and culture-sensitive in approach.

terrorist groups. The *modus operandi* involves using criminal financial gains to collapse economies and governments, a point cited in 1.2.2 and 1.2.3; as well as corrupting personnel in police ranks, to turn a blind eye on crime, which claims are supported in 1.4.1, 2.7.1 and 2.7.2. A worrying factor about illicit financial gains, is the illicit flows of monies across countries. This is the kind of transnational crime that may also use international airports as a transit point to move hard cash in and out of the country, but typically uses technologies. For Afrika, illicit flows perpetuate poverty.

The reality of the situation is that in the main, the illicit outflows of finances is also perpetuated by multinational conglomerates who are licenced to do business on the Afrikan continent. Yet, the west is the biggest beneficiary from Afrikan resources, and such businesses are not considered to be organised crime establishments. This is because of the foreign colonial jurisprudences in most African legal systems. Colonial decays in law[1] have spread to transnational crime not only affecting states and systems, but also lay persons. To this end, interfaces in transnational crime are not only limited to crime syndicates but also spread to using willing and/or unsuspecting individuals to facilitate the movement of contraband[2], an issue discoursed in 1.2.2.

The last construct in the nexus in Figure 15 that is *technology*, also presents its own sets of dynamics. Among these is criminals accessing technologies to further their illicit activities, a point accentuated in 2.2.1, 2.3.1 and 4.1. In this regard, the interplays also include corrupting police and making them share classified electronic strategic and operational information with crime syndicates, syndicate members using technologies to disseminate such data among their members or sharing with other criminal establishments, and syndicates spending illicit profits to develop advanced technological capabilities to outsmart the police, a point posited in detail in 2.2.1.

There is no doubt that the interplays in the continuum have created dynamics and challenges that are receptive for thriving transnational crime. If the conditions are studied and properly understood, the same can be turned around and be used to plan and execute plans for the effective management of crime. This is the core reason why this study endeavored on into the use of technology in police work. Moreover, this was the reason that made it crucial for the

[1] Foreign jurisprudence is referred to as colonial decays because it does not respect or recognise Afrikan jurisprudence, cultures, traditions, and ways of thinking and doing business.

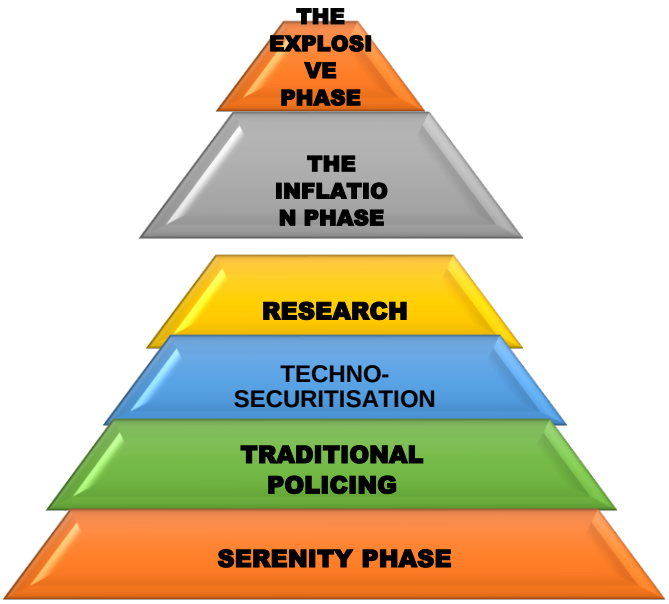
[2] Examples include unsuspecting drug mules who are given parcels to deliver in another country. The aged, youth and younger children often fall victim.

research to conceptualise a taxonomy that can help police managers to plot problematic phases and areas of interest on a standard catalogue. This subsequent section essentially provides classifications on the phases linked with the interplays in the continuum as depicted in Figure 15.

8.4.2 Classifications in the nexus

Literature (see Alhassan et al. 2023; Creswell & Guetterman; 2019; Fischer & Guzel, 2023) promotes classifications on the constructs from grounded theory analyses. Classifications thus enable the creation of hierarchies. The hierarchies are referred to as taxonomies. Loosely translated, taxonomies talk to the description, naming and the classification of things into levels, for the purpose of facilitating the dissemination of information and easier comprehension. Whilst the naming and descriptions for the taxonomy in this study is already dealt with in the preceding section, the relating classifications are dealt with in this section. For lack of a better word or concept, classifications on the continuum is termed the *Matlala taxonomy*, shown in Figure 16:

Figure 16: The Matlala taxonomy



Source: Author conceptualisation

The taxonomy in Figure 16 above talks mainly to discussions in 8.4.1. Indeed, classifications in the taxonomy are limited only to helping police management to focus on sets of challenges as per category, as opposed to being all over the show and following a polarised approach to problem identification and solving. To this effect, the serenity or placid phase means that both traditional policing tactics and technologies are being applied optimally and that crime is properly managed, kept to the minimum.

The researcher posits that when a police agency finds itself in the serenity phase, the most important thing to be doing is studying the success factors and replicating them consistently throughout the various policing environments and operations. In the context of this study, a key with the success factor is to constantly monitor and evaluate the use of various crime combating technologies. From the onset, this study stressed in 1.1, monitoring and evaluation of policing technologies as imperative.

Regarding traditional policing, techno-securitisation, and the inflation phase (when transnational crime escalates or the balloon effect), the key is to always keep doing research on policing, incidences of crime and their fluctuations (rates and patterns), and on the impact of technologies. Thus, research is not just an isolated phase but is a critical element that cuts across all phases of the taxonomy. The taxonomy can thus help scholars and the police to focus research or problem identification. For police managers, the focus facilitated helps with strategic and operational decision-making.

8.5 CONCLUSION

This chapter questions the relevance of the Peelian praxis, which in the contemporary epoch is considered the metaphysical authority for policing, the world throughout. To this end, the study questions the compatibility of this praxis in the context of the Fourth Industrial Revolution, when history confirms that the Peelian code is from the First Industrial Revolution, prior to the existence of technologies in police work. Aspects questioned relate to the relevance of the philosophical assumptions in the code. This gave birth to the Post-Modern policing philosophy and the abstraction of the policing, transnational crime and techno-securitisation nexus, in line with 21st century policing. The next chapter thus discourses pragmatic issues in the SAPS at the ORTIA.

CHAPTER 9: ANALYSES AND DISCUSSIONS PART C: FACTORS THAT HINDER POLICING AT THE O.R TAMBO INTERNATIONAL AIRPORT

9.1 INTRODUCTION

Top-performing organisations worldwide always seek new ways to improve operations. One way to do this is by digitising systems and processes. This is a global trend aimed at reducing costs and aligning business processes to the Fourth Industrial Revolution. Leveraging on technologies could thus help the police with such alignment and to cut operational and related costs. An example is the replacement of staff with technology to cut the wage bill. For the police, technology will not only reduce costs, but can also remove humans from harm's way. This is typified in using remote controlled robots with artificial intelligence to dispose of bombs.

Technology is also key in enabling accurate diagnosis and prognosis on problems in operations. The same goes for police agencies, whose proper diagnosis and prognosis on problems can be facilitated through research on the use of crime combating technologies, a feat yet to be achieved in the SAPS. Digitisation could thus only yield optimal results if organisations properly problematise their environments. This is one of the reasons why this study sought to problematise the policing, transnational crime, and techno-securitisation nexus at the ORTIA.

Proper problematisation on operational settings and technologies is key not only in helping the police to cut down on operational costs but is also key in enhancing public safety. In the context of the ORTIA, the safety of employees, airlines and travelers is paramount. The cost-reduction benefits offered through the use of technologies in policing have already been accentuated in 1.3.3. For the SAPS being one of the largest employers in the public sector, with a huge salary bill and high training costs as cited in 1.2.1, the duty to buy new technologies and obligations such as paying for litigations caused by its staff members, underscores the need to cut on costs wherever possible. The (non)prioritisation of this by the SAPS is a matter for future research.

To further help the SAPS and its management make sense of, and aptly problematise the settings in which they operate, this chapter focuses on analyses and discussions of the third research objective. The objective talks to identifying factors that hinder policing at the ORTIA and the conceptualisation of a framework for police efficiency. This chapter thus looks into

how knowledge, practice and regulations can be better synergised to improve police efficiency in the service of the people. The analysis is discussed in the interfaces of conceptual categories. Data in this chapter is thus synthesised using the qualitative conventional content analysis technique.

9.2 QUALITATIVE CONVENTIONAL CONTENT ANALYSIS

Qualitative conventional content analysis starts with a clear research question (see Luo, 2019; Shah et al. 2023; Swiatek, 2023). The question in this study is: What are the dynamics and challenges relating to the interfaces in police work, transnational crime, and the use of technologies at the ORTIA? This question essentially talks to dealing with challenges that impact on police efficiency. To support a conceptual framework for police efficiency, this last question thus begs a further question, which is: What are the building blocks of police efficiency? In doing qualitative conventional content analyses, the study espoused the steps advised by Luo (2019). The following are the steps and how they were operationalised during the research:

- **Selecting content to analyse:** According to Luo (2019), this step involves the selection of texts to be analysed based on the research question. The question in this study has already been cited herein. Following the data collection phase, the researcher conducted interviews, recorded and transcribed them. Based on the question in this study, the researcher opted to analyse content in the interview transcripts. The researcher refrained from selecting research participants as units of analysis because in qualitative research, such approach amounts to the objectification of humans, which is unethical. Past unethical conduct wherein German Nazi medical researchers in World War II era atrociously experimented on human beings, led to qualitative researchers taking a cautious approach and refraining from referring to research participants as units of analysis or subjects (see Terre Blanche; Durrheim; & Painter, 2006; Schmaltz, 2023; Stahnisch, 2023). The transcripts were included for analyses because they contained text that reflected the experiences and views of persons directly or indirectly involved with the use of technologies in combating transnational crime. These are experts in border security, police managers and police officials involved with border policing at the ORTIA.
- **Defining units and categories for analysis:** In this step, researchers need to determine the level at which texts will be analysed. According to Luo (2019), this exercise involves selections on how the units of meanings and categories will be coded. The research

clustered concepts (keywords) from the interviews and grouped these into categories (themes). The concepts are evidenced against the interview(s) where they appear. Where more than one interviewee uttered/agreed on a specific issue, the quote is kept in square brackets to indicate the paraphrasing to capture the essence of the submissions.

- **Developing rules for coding:** The rules for coding in this research involved the identification of specific keywords that are used consistently throughout each of the interviews. These words (concepts) are clustered to form categories. Also, the frequency of the concepts is tabulated to emphasise the value attached thereto. For brevity and saturation, the frequencies on words were drawn only from the purposive sample. This is in line with- the qualitative research traits that allows for flexibility and pragmatism (Luo, 2019; Azen & Walker, 2021; Creswell & Guetterman, 2019; Alhassan et al. 2023). To recap, the purposive sample is two border security experts and four police managers. The level of experience among the purposive sample is also outlined for trustworthiness.
- **Coding text according to the rules:** Coding in this study was manual and did not use computer programs such as QSR NVivo, Diction or Atlas.ti, due to financial constraints. Albeit time consuming, the manual coding is evidenced in 9.2.1 and categorised in Table 7, to fulfil the requirements for trustworthiness in the research. Literature (Creswell & Guetterman, 2019; Luo, 2019; Shah et al. 2023; Swiatek, 2023) confirms that following coding rules builds-in trustworthiness into research. The referencing of interviews and literature sources used also attest to compliance with trustworthiness in this study.
- **Analysing the results and drawing conclusions:** The study discussed and analysed the coded data. This enabled the researcher to interpret the results and draw inductive inferences, in line with the anti-positivist paradigm espoused in the research conducted. The findings, conclusions and recommendations are interpolated in the next chapter 10.

9.2.1 The coding process

Coding involves the process wherein researchers identify and assign codes, keywords, or concepts for classification purposes (Creswell & Guetterman, 2019. Luo, 2019; Shah et al. 2023; Swiatek, 2023). As cited in 9.2, coding herein involved the identification of keywords used consistently in the interviews and the frequency of their uses. The keywords are *research; benchmarking; training; intelligence; technology; cooperation; management; people; legislation; policy; strategy;* and *regulation.* These keywords were clustered into conceptual or analytical categories. This section identifies the codes, categories and frequencies in the study. Although there are more interview phrases that can be ascribed to each code, the research

used a maximum of 3 phrases for each code, to comply with the triangulation requirements. The following is how the codes that were identified during the data collection phase are evidenced:

- **Research:** is evidenced by the following phrases:

"The SAPS needs to prioritise research on technologies" (Interview 1)

"If you take technology and research serious, transnational crime would go down" (Interview 3)

"My view is that the SAPS does not follow a research approach" (Interview 6)

- **Benchmarking:** is evidenced by the following phrases:

"As organisations, police need to benchmark on others best practice (Interview 2*)*

"*Our technology is the best on the continent, but we still need to learn from what other police on the continent and around the world have and what they do"* (Interview 12, Focus Group 2)

"The SAPS does benchmark on technologies, for example Interpol and others" (Interview 5)

- **Training:** is evidenced by the following phrases:

"[We receive basic training for six months, but border police training is not enough, its 2 weeks only, for lots of work]" (Interview, 8, 9, 10, Focus Group 1; Interview 13, 15, 16, Focus Group 2)

- **Intelligence:** is evidenced by the following phrases:

"*Without intelligence, state-of-the-art technology is useless"* (Interview 7, Focus Group 1)

"*If intelligence was good, we could prevent transnational crime"* (Interview 9, Focus Group 1)

"*When you give managers intel on the ground, they don't listen"* (Interview 14, Focus Group 2)

- **Technology:** is evidenced by the following phrases:

"Yes, technology is important in police work" (Interview 1)

"Without technology, the police will not succeed in fighting crime" (Interview 3)

"How do you fight crime with old technologies in this day and age" (Interview 4)

- **Cooperation:** is evidenced by the following phrases:

"Without the cooperation of the police in SADC, we will not win" (Interview 2)

"Regional police cooperation is key in fighting transnational crime" (Interview 5)

"We need to cooperate with private ICT business to up our game" (Interview 6)

- **Management:** is evidenced by the following phrases:

"Management needs to listen to us from the ground" (Interview 8, Focus Group 1)

"*Management does not give enough support to us"* (Interview 10, Focus Group 1)

"Here if you are not in management, you don't have a say" (Interview 11, Focus Group 2)

- **People:** is evidenced by the following phrases:

***"**Police service delivery is people focused. It uses the Batho Pele principles which means people first"* (Interview 9, Focus Group 1)

"When fighting cross border crime, remember that suspects are people too (Interview 3)

"Some of the criminals are linked to police here at the airport" (Interview 14, Focus Group 1)

- **Legislation:** is evidenced by the following phrases:

"The police can never act unless there is legislation giving them powers" (interview 6)

"Legislation gives police powers, but the scope of work is huge" (Interview 12, Focus Group 1)

"Without proper laws, we cannot fight crime effectively" (Interview 13, Focus Group 2)

- **Policy:** is evidenced by the following phrases:

"*The police cannot carry out any lawful operation unless such work is legislated and supported by a policy framework"* (Interview 1)

"I don't think managers in the SAPS fully understand their technology strategy, maybe I am wrong, it is the lack of resources issue" (Interview 2)

"Policy is not cast in stone, managers need to be innovative around technology" (Interview 4)

- **Strategy:** is evidenced by the following phrases:

"We have a good strategy for border policing at the airport, what is problematic is the resources and lack of personnel, in the midst of huge operations" (Interview, 4)

"Strategy in the SAPS is not a problem, the operationalisation is" (Interview 5)

"The strategic focus of the SAPS at the airport is to fight transnational and other crimes using the little technology resources we have" (Interview 6)

- **Regulation:** is evidenced by the following phrases:

"Policing at the airport and in general is regulated in terms of section 205, paragraph 2 of the Constitution" and Interview 6 who said, *"police work at the O.R Tambo International Airport is also regulated by the National Key Points Act of 1980"* (Interview 4)

"When there are strikes at the airport, we have to do crowd management which is regulated by the gatherings act, but we are not trained for that" (Interview 12, Focus Group 1)

"Police regulations allows us to search passengers" (Interview 15, Focus Group 2)

"We police the airport, but we are not clued up with ICAO regulations that talk to aviation security internationally" (Interview 16, Focus Group 2)

For deeper analyses and discussions, the codes are mooted in the sections 9.3 to 9.4. The codes identified herein are thus clustered into analytical categories, tabulated below as follows:

Table 7: The analytical categories: Part C

Episteme	Practice	Governance
Research	Technology	Legislation
Benchmarking	Cooperation	Policy
Training	Management	Strategy
Intelligence	People	Authority

The category *episteme,* consist in research, benchmarking, and intelligence. *Episteme* refers to knowledge or science. Thus, doing research, benchmarking, training, and intelligence gathering all have to do with science, the acquisition of knowledge or skills acquisition/transfer. The second category *practice* articulates in technology, cooperation, management, and people. This is because these keywords are operative in nature and in policing, these impact on people. The police are people, and they deal with people in the execution of their work. Off course, the third category *governance,* talks to regulatory tools that manifest in legislation, policies, and strategic plans that give police the authority to fight crime.

To give further credence to the analytical categories, the research outlines the level of experience and status of each of the research participants. This was done to justify their selection into the purposive sample for this study. To recap, purposive sampling talks to the selection of research participants based on the researcher's knowledge and judgement of their skills and level of experience, in alignment with the qualitative research approach (see Robinson, 2014; Althumiri, Basyouni, BinDhim & Alqahtani, 2021; Andrade, 2021; Ktistakis, Pavlovic & Fontaras, 2021; Naseri, 2021; Susanti, 2021). The following is therefore the profile:

Table 8: Profile of the purposive sample

Interview number	Designation	Years of experience
1	Border security expert	34
2	Border security expert	36
3	SAPS senior management	30

4	SAPS middle management	25
5	SAPS middle management	22
6	SAPS entry level management	18
	Subtotal (work experience)	**165**

For brevity, the research contextualised the frequency of the codes to the purposive sample only. This implies that only 6 out of the 8 interviews conducted were used. The reason is that the total number of research participants in the study was 18. Two out of the 8 interviews were focus groups that had 6 participants each. Thus, including all 8 interviews with 18 research participants would have proven cumbersome and pointless. This is because by the time the focus group interviews were initiated, data had already saturated and there was regurgitation. The following are the frequencies in terms of how often the words were used in the interviews:

Table 9: Frequency of the codes

Code	Interviews frequency		Total
Research	Interview 1-	**13**	**104**
	Interview 2-	**23**	
	Interview 3-	**14**	
	Interview 4-	**16**	
	Interview 5-	**14**	
	Interview 6-	**24**	
Benchmarking	Interview 1-	**7**	**51**
	Interview 2-	**14**	
	Interview 3-	**9**	
	Interview 4-	**10**	
	Interview 5-	**6**	
	Interview 6-	**5**	
Training	Interview 1-	**17**	**122**
	Interview 2-	**19**	
	Interview 3-	**22**	
	Interview 4-	**15**	
	Interview 5-	**14**	
	Interview 6-	**21**	
Intelligence	Interview 1-	**12**	**69**
	Interview 2-	**14**	
	Interview 3-	**13**	
	Interview 4-	**6**	
	Interview 5-	**13**	
	Interview 6-	**11**	
Technology	Interview 1-	**23**	**130**
	Interview 2-	**21**	
	Interview 3-	**17**	
	Interview 4-	**24**	
	Interview 5-	**30**	
	Interview 6-	**15**	
Cooperation	Interview 1-	**6**	**44**
	Interview 2-	**13**	
	Interview 3-	**5**	
	Interview 4-	**6**	
	Interview 5-	**6**	

	Interview 6-	8	
Management	Interview 1-	8	36
	Interview 2-	8	
	Interview 3-	6	
	Interview 4-	2	
	Interview 5-	9	
	Interview 6-	3	
People	Interview 1-	13	34
	Interview 2-	2	
	Interview 3-	3	
	Interview 4-	6	
	Interview 5-	7	
	Interview 6-	3	
Legislation	Interview 1-	13	42
	Interview 2-	6	
	Interview 3-	8	
	Interview 4-	3	
	Interview 5-	7	
	Interview 6-	5	
Policy	Interview 1-	6	63
	Interview 2-	7	
	Interview 3-	4	
	Interview 4-	13	
	Interview 5-	15	
	Interview 6-	18	
Strategy	Interview 1-	13	59
	Interview 2-	11	
	Interview 3-	8	
	Interview 4-	8	
	Interview 5-	14	
	Interview 6-	5	
Authority	Interview 1-	7	63
	Interview 2-	5	
	Interview 3-	13	
	Interview 4-	14	
	Interview 5-	16	
	Interview 6-	8	
	Sub total		**695 (Cumulative frequency)**

The 695 cumulative frequencies on the use of the keywords is indicative of the strong sense that research participants showed on the subject matter that was investigated. For the purpose of this study, keywords that show 50 and above reflect a strong emphasis on the operationalisation of the word itself, whilst those below 50 indicate less emphasis with specific context. To explain, cooperation scored 44. A plausible explanation is that matters of police cooperation often start at a political level and then cascade to the strategic level which is the SAPS General ranks. Police personnel at ORTIA are often not involved with such matters.

With management scoring 36, the synthesis is that there is generally a lack of capacity in management within the SAPS. This is reflected in the lack of support that is articulated by some of the interview participants. People on the other hand scored 34. This was captured in chapter 7, which alluded to the colonial foundations of policing in South Africa, a foundation that does not take people or at least some races, to be at the center of police service delivery.

It is also not farfetched to hypothesise that legislation which scored 42, is considered more important than people. Off course, a plausible explanation as to why legislation scored less than 50 is that members of the SAPS at the ORTIA need more training on regulatory tools. This includes training on policies, especially international protocols, local and regional protocols, and training on strategic, operations, and risk management, to minimise factors that affect police efficiency.

9.2.2 Factors that impact on policing at the ORTIA

From the analytical categories in Table 7, the keywords or codes identified point out to specific factors that impact on policing at the ORTIA. Good or bad, the impact factors will have to be managed to maximise the police's ability and potential to effectively manage transnational crime. In summary, the police have to leverage on the success factors and improve on weaknesses. For brevity, this section tabulates the impact factors for policing at the ORTIA, drawing from the submission made by the research participants, being persons directly involved with the use of technology to combat transnational crime at the facility. The following are therefore the factors:

Table 10: Impact factors

Factors	References
Strategy	*"Government need to legislate to enable the crafting of an effective border security strategy, we cannot go on as if the SAPS will do the job, it can't, look at what first world countries. The function is not with national police , but separate entities"* (Interview 1) *"Every month we have a joint seating to plan strategies on how to deal with transnational crime at the airport*" (Interview 3) "*Here at the airport, we work well with stakeholders such as customs, ACSA, EMPD and home affairs" (*Interview 4) *"our guys at high level sit with stakeholders and we receive their plans to implement on the ground"* (Interview 6)
Operations	*"I have been here for the past 15 years. Day in, day out, I get to do the same thing, in the same areas in the airport"* (Interview 6, Focus Group 1) *"All we ever do is to walk around the airport every day, like the real bobby on the beat*" (Interview 9, Focus Group 1) "Doing the same thing daily just condemns my creativity" (Interview 16, Focus Group 2)

	"We rely on ACSA for example, to retrieve CCTV footage on some crimes. They however take time to respond and by the time they do, a complainant is already gone, and we cant even trace the suspect" (Interview 12, Focus Group 1) *"Private security at the airport have more powers than the police. They even tell the police what to do and they sometimes don't cooperate with us. You have to first report to an officer to report to their management before they can do what they are supposed to do"* (Interview 15, Focus Group 2)
Managerial support	*""Management needs to listen to us from the ground"* (Interview 8, Focus Group 1) "*Management does not give enough support to us"* (Interview 10, Focus Group 1) *"Here if you are not in management, you don't have a say"* (Interview 11, Focus Group 2)
Resources	*"[sometimes we lack basic resources such as morpho touch, two-way radios and vehicles to do patrol on the airside]"* (Focus Group 1; Focus Group 2) *"the budgetary restrictions are really killing us in terms of resources"* (Interview 3) *"How can we win over crime when we are using outdated technologies from donkey years ago. I am using the same old since I came 10 years ago?"* (Interview 8, Focus Group 1) *"They must just give us the resources to do our work"* (Interview 14, Focus Group 2) *"We don't have much technology as the police. Most of the equipment like CCTV, body scanners belong to ACSA and are operated by private security. If we can at least get bomb and drug detection machines because for now we are assisted by sniffer dogs that are not always there. We don't even have training on hand-held body scanners, but we do physical searches to the body"* (Interview 14, Focus Group 2) *"The work here at the airport is very broad. We as police cannot handle it by ourselves because we lack manpower, we are very few. Sometimes someone books off sick, resigns, retires, or dies, and one person has to do work that is normally done by 3 or 4 police officials*" (Interview 16, Focus Group 2)
Integrity issues	*"syndicates have an understanding of how police operate in terms of shift changes, they know exactly who to bribe and when the person will be on duty"* (Interview 1). *"Police do divert CCTV to help criminals at the O.R Tambo probably do exist"* (Interview 2) *"Like in other public service institution, there are also rotten apples here at border police"* (Interview 5) *"I've seen a lot of corruption being committed by security here at the airport. But my gut tells me some of our members are involved. I am saying this because we have members who are arrested and suspended. You can say they are guilty because they are still presumed innocent. But there is no smoke without fire"* (Interview 8, Focus Group 1) *"Some colleagues do strange things. Its sad when you see them getting fired from the job"* (Interview 11, Focus Group 1) "We know who the naughty guys are. But not one has the guts to report them" (Interview 13, Focus Group 2)
Staff capacitation	*"We get 6 months basic training at police college. Then we are posted here at the airport. Afterwards, we receive a 2 weeks training in border policing, sometimes a further advanced course which is also short in duration*" (Interview 9, Focus Group 1) "Some members have been here for more than 5 years from college, and they have not received training in border policing" (Interview 13, Focus Group 2) *"Budgetary constraints are problematic because they restrict the quality of training and allocation of resources in the SAPS"* (Interview 15, Focus Group 2)

Research	*"The SAPS is not exactly research-driven. They don't realise that intelligence gathering or investigations is just another name for research. Now, why not research on management, on the use of technologies, on staff morale. I mean using an internal component as opposed to relying on academic students, whose dissertations they don't even read"* (Interview 1) *"We do have a research component. But they only do approvals for research, for like when you want to do research in the SAPS, internally we don't do research"* (Interview 3) "*Planning of operations in the SAPS rely on the experience of managers. No one does research for example on technologies. We look at what other agencies are doing around the world, if it works, we copycat, we don't check if it will work for us"* (Interview 5)

9.3 SYNTHESIS OF THE DATA

Police efficiency is a fluid and subjective matter that requires contextualisation to a specific case. What happens in another context within the same police agency with similar challenges, may not necessarily require a one size fits all solution. The policing problems in the land, water and airport borders require careful inspections and to be understood in their different contexts. This applies even when the problem may be common, for example, lack of technologies. Whilst it may be critical to equip land and maritime (sea/rivers) borders with drones to do patrols, airports are no-fly zones, and such technologies pose risks to commercial cargo and passenger planes. This is not just a national standard, but a standard also prescribed in the ICAO regulatory tools.

Dealing with transnational crime at a facility such as the ORTIA has in the main, always been the primary responsibility of different security agencies. Off course, leading in this role was the SAPS, supported by other actors that are cited in 1.2. To recap, the securitisation actors include the SSA whose mandate is to facilitate not only national security, but also to provide intelligence support on matters that fall within the jurisdiction of the SAPS, matters that for example involve transnational crime. There is also the DHA that does immigration control, ACSA security that deals with access controls at the facility, SARS customs services, and the EMPD officers that deal with traffic and outer perimeter security at the facility. As of 2023, the BMA took a leading role in the space, much to the relief of the SAPS whose mandate is too broad. The involvement of multidisciplinary actors in borders underscores the value of operational synergy at the ORTIA.

As already cited herein, analyses and discussions in the third research objectives adopted qualitative conventional content analysis to make sense of the collected data. The technique

focuses primarily on studying phenomena where theory is limited and draws codes from data sets (see Hsieh & Shannon, 2005; Luo, 2019; Shah et al. 2023; Swiatek, 2023). In this context, research on the use of crime combating technologies in the South African and Afrikan context is lacking, hence the codes in 9.2.1 were generated from empirical data sets, drawn from the interviews conducted. The interviewees responded to questions that relate to practical challenges, research and to technology-related challenges encountered by police at the ORTIA. All the interviewees are managers and subordinate staff involved with security at the facility. This ensuing section deals with analyses on practice-related challenges in the SAPS.

9.3.1 Practical challenges faced by the SAPS

Sources (Omar, 2008; Matlala, 2013; Panyapanya, 2021) cited in 1.2.1, have postulated that the SAPS generally grapple with high training costs, skills exodus, scarce funding, low salaries, and political play (see also Table 10). Political play was broadly dealt with in 1.5, 1.6, 2.1, 2.3, 2.7.2 and 2.7.3. To this effect, the enactment of legislation and establishment of the BMA eliminated the political bureaucratism that was at play. Not that there can never be pollical play in the police. The SAPS are headed by a Minister who is a political principal. And so, the police can never be completely apolitical. What the sentiments herein are is that the establishment of the BMA has purged the political play seen between the SAPS and institutions such as the DHA.

The political play cited herein imply that policing in South Africa was generally constrained and that policing at the ORTIA was no exception. Such a problem also raised several questions as to whether the SAPS are properly managing transnational crime, and whether they and other securitisation actors were properly deploying the diverse technologies at their disposal. Indeed, the questions raised also raises in all probability, the question as to whether the South African aviation sector including the airlines using the facility are safe, and whether that safety element contributes to the sustainability of the sector. Although sustainability issues are not the focus in this study, aviation in South Africa seems to be struggling, due to economic and many other factors that the researcher has purposely shirked from discussing the intricacies thereof. The 2020 COVID-19 lockdown has by far added to the woes suffered by aviation sectors worldwide.

The lockdown on the other hand imply that most criminal networks also had to slow down on contrabanding, especially networks that rely heavily on aviation transport and airports as transit

points. Similarly, the lockdown also placed police officials in harm's way. This is because the police are classified as frontline workers and had to physically deal with transnational crime amid the possibility of contracting the COVID-19 virus. As fate would have it, there were media reports on police who contracted the virus, with some having succumbed. Although the issue of police having contracted COVID-19 does not form part of the research in this study, losing police officials is detrimental to the fight against transnational crime at a facility such as ORTIA.

Losing police officials is not only detrimental to the fight against crime but also endangers the aviation sector. Part of what raises the doubts around aviation safety is the fact that the greater part of the annual SAPS crime statistics are generic and display mostly common law offences such as Murder, Assault, Robbery, Theft, and others. However, there is no clear account of figures on transnational crime per entry port, other than a few seizures of illicit goods and arrests made. This last claim is given credence by data in Table 1 (see1.5.2), which generically outlines police success at entry ports. To convince the world about the safety and sustainability of aviation, SAPS crime statistics will have to show clear successes per entry port. Such an approach is important in convincing the world that the ORTIA is one of the safest options for travel through the country and that the police are winning in the fight against transnational crime at the facility.

The real reason for underscoring the safety and sustainability of the aviation sector is that contraband that comes through the ORTIA is ferried by the airlines that use the facility as a transit point. Interview 1 confirmed that *"airlines and their crews are either complicit or participating in transnational crime".* What is not known is whether the airline crew is coerced or bribed into participating in the illicit transportation of contrabands at the facility. That is a matter for future research. What is also not known is whether personnel at the ORTIA including the police and other securitisation actors are not corrupted to conceal and actively participate in the movement of contraband, also a matter for future research. To this end, it is also not known if ACSA personnel who monitor CCTV are not tempering with the technology, either in the form of delaying live footage or deleting footage that shows the movement of contraband at the facility. These are all the questions that require to be explored if the police are to win the fight against transnational crime. These are the issues that point to the *misty waves* effect in 8.4.1.

Judging against the backdrop of the statistics in Table 1, which figures are presented using the same pattern year after year, it is plausible to postulate that SAPS reporting on transnational

crime at entry ports is flawed. Table 10 refers to statements around operations, statements that point out some of the flaws. To validate this last assertion is the fact that figures in Table 1 show arrests/seizures made in 2014-2015. These figures do not correlate with the types of illicit activities at the ORTIA, and the question is why. This critical aspect is also for future research.

The illicit or transnational crime activities at the ORTIA include the trafficking of human organs, women and children, musical instruments, medicines, rhino horns, tiger skins/skeletons, firearms, and precious stones (see 2.4) to cite a few. It cannot be that in 2014-2015 (see Table 1), the ORTIA never experienced the kind of illicit activities referred to herein and that there was never a single seizure or arrest on any of these aspects. The way in which police statistics are presented thus raises a level of uneasiness. This stems from the fact that statistics are critical business intelligence that can aid the crafting of strategies and targeted operational plans. When reporting on statistics is off tangent, there is no way that the police can attain operational efficiency in dealing with transnational crime. Likewise, being off tangent means that the police at facilities such as the ORTIA lack capacity operational planning and in terms of unearthing the dark figure (undetected incidents) in transnational crime. The ability to unearth the dark figure is key in helping the police avoid the *misty waves* effect that is theorised in 8.4.1 in this study.

The discussions herein are however not intended to downplay the work done by the SAPS at the ORTIA. Their responses to transnational crime (see 1.5.1) and success at entry ports (see 1.5.2) cannot go unnoticed, despite apparent shortfalls. The value added by the SAPS's usage of automated and traditional intelligence techniques and criminal investigations (see1.5), collaborations with, and the technological support provided by INTERPOL (see 1.3.1 and 1.3.2) as well as cooperation with other securitisation (see 1.2) attest to an SAPS that is dedicated to winning the fight against transnational crime at the ORTIA. What is important is for the SAPS to address the shortfalls that have been identified in this study. The shortfalls are summarised in 1.6, which section outlines the problem statement that informs the research in this project. Though the shortfalls in 1.6 are abstract, the aim in this section is to elucidate on the issues.

Another practical constraint relates to how the SAPS tends to use inadequately skilled personnel from police stations to deal with transnational crime in the border, borderline and

entry ports setting. Govender (2015) confirmed this last assertion in 1.2.2. To explain this constraint further, the SAPS generally detaches personnel from stations to assist with duties at border posts and entry ports such as international airports. This periodic or temporary arrangement is common in the SAPS and is intended to bridge the staff shortages at specific entry ports, which shortages are caused by the skills exodus emanating from the low salaries and scarce funding. To this end, SAPS personnel detached for such duties often receive relatively short-term and abridged crush courses. The type of short duration training given is arguably insufficient to equip detached staff to effectively deal with transnational crime at facilities such as the ORTIA.

Despite the SAPS grappling with challenges, the length and breadth of the country's borders is also problematic. South Africa shares borders with Botswana, Lesotho, Zimbabwe, Namibia, Swaziland (now the Kingdom of Eswatini), and Mozambique. The land surface is 1 219 090 km^2, there are 9 provinces and a total of 3 500km in land borders. Each borderline shared with neighboring countries has several entry ports that require enough staff and effective policing. This is exacerbated by 4 international airports, the ORTIA, King Shaka, Lanseria and Cape Town. A worrying factor about the extent of the border setting in South Africa is in fact the scope of the workload presented, when staff shortages, skills exodus and poor funding continue to constrain crime combating operations. The same sentiment is shared in Interview 16, Focus Group 2. The interviewee stated as follows: *"The work here at the airport is very broad. We as police cannot handle it by ourselves because we lack manpower, we are very few. Sometimes someone books off sick, resigns, retires, or dies, and one person has to do work that is normally done by 3 or 4 police officials*"

Including the 4 international airports cited herein, South Africa has about 32 airports in total. As hypothesised in 1.4.1, smaller airports have no border control capacity. *"*. This implies that smaller airports are possibly used as alternative trafficking outlets as the police have no visible footprint or presence in such facilities. The kind of illicit activities that might occur at such facilities include- *"the distribution of counterfeit goods and other contraband trafficked from across our borders*" (Interview 3). Such problems are caused mainly by lack of resources, poor information management and poor crime intelligence, a point postulated in 1.5. Interview 1 decried this lack of capacity and ascribed it to "*a near impossible to action and very broad mandate of the SAPS".*

Another practical constraint relates to the increasing annual passenger volumes at the ORTIA. This problem was interrogated in 2.2 and is worsened by the high police-population ratio that becomes unstable, particularly during peak periods such as during holiday seasons. With 63 million plus as the official population figures, the arrival of visitors that transit through the ORTIA and undocumented migrants presents operational constraints for the police, who are stretched for resources and continue to lose staff due to a myriad of reasons that are cited in Table 10.

From the postulations in 2.4.2, the constraints encountered are further complicated by travelers with diplomatic immunity, who may possibly aid the movement of contraband, this because of being exempted from searches at international airports. In the participants words: *"some diplomats, Ambassadors and foreign dignitaries do crime because they have immunity from being searched by the police at the airport"* (Interview 3). To this end, the June 2021 media reports on the expulsion of some Malawi and Lesotho diplomats from South Africa attest to how diplomatic privileges can be abused to promote transnational crime. Those implicated were found guilty of bringing alcohol into the country without paying duty. Such contraband would then be sold to bars or pubs around the country. The lack of intelligence and unavailability of judicial officers who can issue out search warrants where diplomats are suspected of contrabanding, essentially hinders SAPS efforts to amply manage transnational crime at an international airport such as the ORTIA.

Other practical problems that generally hinder policing in South Africa are dealt with in 2.7.3. These include bureaucracy and the accompanying red tape. In fact, bureaucracy only becomes problematic if the accompanying red tape interferes with the provision of services. Inherently, bureaucracy is about governance and should not be applied to create bottlenecks in any policing system and its inherent approaches. Despite bureaucracy being problematised, this study found no evidence of it having interfered with the securitisation function of the SAPS, except for some areas at ORTIA, where the police are restricted access. This was confirmed during the Focus Group interviews wherein participants raised dissatisfaction about how police movements at the airport are restricted and private security contracted to ACSA has far more access than them.

As cited in 1.2 and 1.6, the issue on restrictions or access control in the airport vicinity is an inter-agency problem created by the overlapping roles of multidisciplinary securitisation actors at the facility. This is the same actors that worked in silos with polarised operational tactics as cited in 1.6, an issue that is responsible for hindering the successful management of

transnational crime at the ORTIA. Only the future can tell if the BMA will eliminate the silos. Future research will thus tell if security actors in the borders continue to work in silos, as was the case before Act 2 of 2020 became law and birthed a single enforcement agency in the BMA.

9.3.2 Research in the SAPS

Generally, research on policing in Afrika is lacking. This is worrisome, more so when the world is spurring into the Fourth Industrial Revolution where smart software and robotics will become the future of police practice as postulated in 7.3.2 (see also Table 10 under key word research). Research (Zeleza, 2002; Fuchs & Horak, 2008; Matlala, 2013) cited in 2.5 shows that the deficiencies include lack of frameworks to assess the effectiveness of crime combating technologies, bottlenecks created by political decisions as cited in 7.2.1, poor funding and the global digital divide or digital apartheid cited in this study. The SAPS is equally beset by similar problems. Interview 1 confirmed that the SAPS is not exactly a research-driven organisation (see Table 10). For the ORTIA, such challenges imply inapt approaches to managing transnational crime. This is because the lack of research means that there is little or no monitoring and evaluation on the use of crime combating technologies and thus the value added to the operational efficiency of the police remains something that is covert/obscured.

Over the past several decades, law enforcement agencies have introduced various technologies to help them improve their operational efficiency. Although technologies are generally introduced to help in the fight against crime, the lack of research on crime combating technologies generally carries the *misty waves* effect that is referred to in 8.4.2. For the SAPS, building research capacity on crime combating tools will build a strong knowledgebase that can be utilised to support and inform strategic and/or operational plans. To this end, partnering with universities and research institutes could as cited in 1.1 and 1.6, go a long way in enabling managers to enhance the fight against transnational crime at a key airport such as the ORTIA.

Studies aimed at exploring on the use of technologies in police work in Afrika are as postulated in 1.1, constrained by poor research capacities, due to political and economic reasons. The problems imply that most police in Afrika do not properly understand the complex interactions between practice and technologies. This is the reason why this research sought to theorise the policing, transnational crime, and techno-securitisation nexus, using the ORTIA as a case study.

The nexus however generally applies to fighting all types of crimes and applies to all situations where the police use technologies to achieve their goals and is not limited to transnational crime.

Essentially, the research deficiencies raised in the discussions herein also raise issues on how the police in Afrika can improve their operations if they have no proper understanding of some of the tools of trade. To show the extent of the problem, scholars such as Msutu, 2001; Rauch and Van der Spuy, 2006; Van der Spuy and Rontsch, 2008; and Van der Spuy, 2009, have researched widely on police culture, cooperation, community policing, crime prevention, police reform, terrorism, and organised crime (see 1.1). Similarly, literature (George, 2003; Minnaar, 2004; Steinberg, 2005a; Steinberg, 2005b; Geldenhuys, 2016) in 2.5.2 also shows that many scholars have explored on border security and control, but no studies on policing technologies.

Without research, the police will not be able to identify challenges linked the use of technologies in their work. For the SAPS at ORTIA, such predicament can only mean that no one will be able to provide solutions to issues relating to the use of technologies. One can only suggest solutions after a proper diagnosis (research) of the problems relating to the use of technologies in police work. Research is thus not only central the economic viability of the ORTIA but will also benefit regional police agencies and airports in the neighbouring SADC, if they benchmark thereon.

The SAPS is arguably among the best technologically resourced agencies on the Afrikan continent, and perhaps one of the best among the developing nations. This was confirmed in the assertion: *"We have some of the best technologies on offer in the continent"* (Interview 3). However, an overwhelming aspect about the lack of research on the use of policing technologies is that Afrika is ranked last in the world. This last assertion is made in 1.2.1 and generally include research in all disciplines wherein Afrika contributes only 2% to world research outputs. For the SAPS, part of the problem lies in not having a fully capacitated research unit (see Table 10). This shortfall can be remedied through collaborations with higher education and research institutions, a point that has already accentuated in 1.2.2; 1.5; 1.6; 2.5; 2.6 and in 2.6.2. To further interrogate the issues, this next section gives analyses of the technology-related challenges in the SAPS.

9.3.3 The technology issues in the SAPS

One of the main problems in the SAPS is the use of outdated machines (see Table 10). An example is the Automated Fingerprint Identification System (AFIS) currently used. The SAPS commissioned this biometric technology in 2002 and nothing much has been done to update the

technology. This is according to Interview 6 where it was stated that *"our AFIS is old and I don't know what to do with it, It is either slow or losses network during loadshedding*". Other technology problems are caused by the SAPS's failure to employ current state-of-the-art crime combating technologies such as the forensic video and photogrammetry, which technologies are outlined in 5.2.1 and 5.2.2. The problem with the non-introduction of new technologies though, is caused by poor funding as accentuated in this study and the fact that Afrika and the SAPS are falling behind, in addressing issues relating to policing in the Fourth Industrial Revolution.

The problems identified herein could easily plunge the country into uncontrollable crime as cited in 8.4.1, or into the so-called *explosive phase* conceptualised in Figure 16, outlined in 8.4.2. This is because crime syndicates are moving at high pace, always looking to use new technologies to out-Fox the police. If Afrika and the SAPS continue to use outdated technologies, where will the continent be when policing globally fully adapts to the robotics, smart software and self-driven vehicles that are hypothesised in 7.3.2. The veracity of the situation is that policing in Afrika now needs to expeditiously improve on its technological infrastructures, as in yesterday.

Other problems at ORTIA are intensified by the fact that SAPS databases are not connected to other securitisation actors' databases. Thus, even if the SAPS was to research transnational crime at the facility, the efforts would be dependent on other securitisation actors sharing the information they have. Non-access to such data could result in the police planning operations based on incomplete business intelligence, with dire consequences. For the police, access to data from other actors could also mean time delays. Time is of the essence to police agencies who are information driven. This underscores the need to have memoranda of cooperation on information sharing and to streamline workflows with other securitisation actors. It is thus an imperative that the SAPS should foster sound relations with the newly formed BMA.

Problems relating to policing at the ORTIA, although complex, are however not insurmountable. Part of what is problematic about the effective management of transnational crime at the facility is the lack of political will by continental and regional powers in terms of driving towards the establishment of an AU or SADC police agency. Although the issue is constrained by politics around funding, territorial sovereignty and regulations as noted in 2.6.2, research (Hübschle, 2010) shows that most SADC countries also lack centralised databases where data on crime types, *modus operandi* and criminal syndicates can be uploaded. This last argument is presented in 1.3.2 to highlight the need to grow cross border collaborations among police and

to emphasise the need to enhance their technological capabilities. For Afrika, such approach is key to grounding police practice in the Post-Modern Policing philosophy that is theorised in 8.2 and 8.2.4.

Apart from the last-mentioned grounding, Post-Modern Policing is also key in facilitating an understanding of the complex interfaces between technology and police practice. These are the same interfaces that are hypothesised to be poorly understood particularly within police agencies on the Afrikan continent, a point also emphasised in 1.3.3. Such lack of understanding raises a number of questions that relate to- how police managers will optimally inculcate crime combating technologies when they have no proper comprehension of their worth? and how can they know how best to deploy modern technologies, when there is poor understanding on the practice related interfaces? Worrisome about this is the reality that Afrika and South Africa in particular, remains behind and will play catch-up in terms of policing in the Fourth Industrial Revolution. The police in Afrika still need to play catch-up with the Third Industrial Revolution.

In today's world, the prevalence of technology in police work is increasing much faster compared to about 3-4 decades ago. This is a key success factor in fighting crime. Contemporary police are increasingly using vehicle cameras, body cameras, social media, phone tracking technologies, and vehicle tracking systems, to cite a few. Although these technologies remain largely in the Third Industrial Revolution, they are an key building base and a starting point in galvanising into the Fourth Industrial Revolution. Worrisome to this is the fact is that even in terms of the Third Industrial Revolution the police in Afrika remain far behind. Many are trapped in the Second Industrial Revolution. The catch-up will be difficult for poor countries such as the Central African Republic (CAR), Mozambique, Lesotho, Swaziland, Sudan, and South Sudan, to name a few. Mozambique has been grappling with terrorism since 2021, something that can also exacerbate transnational crime into its neighbours and bring about instability in the SADC.

The Fourth Industrial Revolution as already postulated, implies the use of law enforcement androids, armed drones with biometric identification capabilities, flying and walking cars, as well as bikes that can drive on land and on water. For the ORTIA, some of the technologies currently used are outlined in chapter 5. These include Third Industrial Revolution tool such as metal detectors, CCTV, body scanners and two-way radios. Airports in the developed world

however have already started using Fourth Industrial Revolution technologies. These include among others, forensic video and photogrammetry, a point captured in detail in 5.2.2.

The point with the assertions above is that the use of technologies in police work is expected to increase much faster in the next decade or so. Therefore, strong links between crime combating strategies and modern technologies are also expected to be distinct. Fundamentally, how will the Afrikan continent survive if there is poor understanding of the interfaces between technology and police practice? This thorny question was also part of the motivation for the conceptualisation of the policing, transnational crime, and techno-securitisation nexus. This is the same nexus that is expressed through the continuum that is depicted in Figure 15. The continuum was hence conceptualised to facilitate an understanding of the interfaces, between policing, transnational crime, and technology, as well as the relating dynamics and challenges.

In terms of technologies, the key issue with an entry port such as ORTIA is that the relating dynamics and challenges have the propensity to cause poor co-ordination during crime combating operations, a point cited in 1.3.3. This kind of situation is worsened by securitisation actors that are operating in silos, a point made in 1.6. For example, with ACSA running its own C3 center with advanced CCTV technology, alarm monitors and other Third Industrial Revolution technologies as cited in 1.3.3, the fact that such center is not connected with SAPS operations room essentially confirms the polarised operational approach that is cited in 1.6. It is thus left up to the BMA to foster close relations with other security actors, to eliminate silos.

Arrangements on relations can be described using the analogy of tiny sticks. If one has several such sticks, it is easier to break them one-by-one. Yet, if all the sticks are clustered into one bunch, it is not easy to break them, not when they are a collective. Without some clear-cut efforts to deal with the polarity and employing new technologies, success in managing transnational crime at ORTIA remains a pipeline dream. Such re-alignment needs more resources and the commitment of all actors, coupled with strong political will. The analogy of tiny sticks being clustered gave birth to discussions on re-aligning policing at ORTIA.

9.4 RE-ALIGNING POLICING AT THE ORTIA

In comparison to its SADC neighbors, South Africa is a more promising hub for growing transnational crime. This is because of the magnitude of its economy and prospects for success in peddling contraband owing to poor securitisation at its entry ports and

specifically at the international airports. These last assertions are made against the backdrop of the type of transnational crime that continues to unfold at ORTIA as outlined in 2.4. In fact, SAPS successes at entry ports as stipulated in Table 1 in 1.5.2 are only a tip of the iceberg, especially when logic dictates that there is always the dark figure (unknown cases) in relation to transnational crime at such facilities. The dark figure basically denotes the *misty waves* effect that is noted in 8.4.1 and ties up with the research issues that are flagged in 9.2.2. What the SAPS need to be doing is to strive to attain the *placid phase* that is posited in 8.4.1. To recap, this phase implies a balance between traditional policing tactics and the use of sophisticated technologies to tackle transnational crime at the ORTIA.

Transnational crime hinders sustainable development and sidetracks achievements on Sustainable Development Goals (SDG's). South Africa is already behind owing to high crime, poverty, and vast inequalities in its society. Although the SDGs are not the focus in this study, transnational crime degrades an already challenged SAPS. To clarify, weaknesses in the SAPS are contextualised based on the issues problematised throughout this study and in this chapter. As a disclaimer, the researcher does not imply that the SAPS is a failed agency, but rather claims that the dynamics relating to policing and techno-securitisation do present a myriad of issues that need stern efforts and resolution. These should focus on improving the management and techno-securitisation facets at the ORTIA.

Transnational crime is as such that the inherent proceeds enable crime syndicates to also bribe police officials to turn a blind eye on contrabanding (see Table 10). This makes the entire border setting to be corruption prone, which assertion is made in 1.4.1. From analyses in this study, proceeds from transnational crime are further hypothesised to be a vehicle that enable criminals to neutralise courts, pay off or intimidate politicians, journalists and to engage business leaders in unlawful and unethical acts. Cumulatively, transnational crime can rip at the very fabric of society, undermine the legitimacy of the state (see 1.2.3), murder and bury legitimate economic activity, endanger public security, and fuel insurgency. Mozambique is a classic example of how unabated crime can fuel insurgency. This last claim is given credence by suppositions on Transnational Organised Crime, as cited in 1.2.3. Such credence is also endorsed by the *big blast* theorem that is theorised in 8.4.1.

Despite efforts to combat transnational crime at airports, police operations will however be unsuccessful if the efforts are not backed up by political will, sound budgeting and allocation of resources. Lack of support for policing at all types of airports could thus plunge any country into a weak and failed state, wherein transnational crime becomes uncontrollable, something that could give rise to upsurges in arms trafficking and terrorism, which situation is outlined in 8.4.1 as uncontrollable crime and is linked to the so-called *explosive phase* that is depicted and further explained in 8.4.3. To prevent the situation wherein policing at the ORTIA plunges the entire country into the *explosive phase* will therefore require the identification and problematisation of the bottlenecks caused by the management and regulatory constraints relating to policing at the facility. This next section outlines the management issues whilst the latter problematises the dynamics on the regulatory issues.

9.4.1 The management dynamics at the ORTIA

Improved management dynamics are key to operational success in any organisation. In policing, this also translates to improvements in the management of transnational crime at airports. For the ORTIA, management dynamics are however clouded by the fact that SAPS management seems to be grappling with not being in total control of some of the activities that are central to the effective management of transnational crime at the facility. One such example is cited in 2.7.2. The section outlines how police managers are not in control of some of the systems that are useful in fighting transnational crime. The systems refer to technological platforms in the custody of other securitisation actors, which databases are not connected to SAPS systems.

Other problems at the ORTIA have to do with an integrated management plan to increase security at the facility, optimising resources, faster response times to transnational crime incidents, as well as improving cooperation among the various securitisation actors. These problems are cogently dealt with in 2.6 and are exacerbated by the political bureaucratism explained 1.6, 2.1 and 2.7.3, the lack of technology resources as hypothesised in 1.3.3, as well as the lack of monitoring and evaluation mechanisms as postulated in 2.6. Although this study acknowledges that plans to integrate the management and policing at the ORTIA have been in the pipeline since 2009 as noted in 2.6, 2009, the plan came to life in 2020 through the BMA. This can only imply that the wheels in putting in place stern plans to effectively manage

transnational crime at the ORTIA had begun to turn. The success of the BMA since inception are however not interrogated in this study.

Additional problems in the management of the border, borderlines and entry ports environment relate to issues highlighted by Panyapanya (2016) in 2.7.2. To recap, the issues involve the fact that inter-agency management meetings to plan security operations are not regularised by any formal document; securitisation actors use different strategic approaches; including the fact that power dynamics are more in favour private security. This is an antithesis of what police managers have submitted during the interviews (see Table 10). On close examination of the contradictions, I am convinced that the management of transnational crime at the ORTIA is something that was left to chance, with the hope that things will work out. It is probable that police managers may have concealed some information in this regard or were genuinely of the impression that all is well because of not knowing better, since the SAPS is not much of a research-driven organisation. This next section looks at the building blocks of efficiency in policing at the ORTIA.

9.4.2 A framework for police efficiency

Effective management is key to optimal efficiency. The work of managers is to re-align and streamline workflows. Above all, the work of a manager is to identify and solve problems, in the context of policing, the identification of bottlenecks that hinder operational efficiency. Attaining this requires a methodical/scientific approach, one that is based on a specific model. Since there is a plethora of management models, this study draws from the analytical categories in Table 7 to conceptualise a framework that is relevant to policing and technologies in the border environment. With this reference to empirical data, the envisioned framework draws from the episteme, practice, governance, and people analytical categories and conceptualises as follows:

- **Episteme:** The word episteme is synonymous with knowledge. The police cannot perform efficiently unless there is requisite knowledge. Knowledge thus relates to the cognitive function of having the basic knowledge as a tool that enables one to align business actions and decisions, drawing from information acquired. To this end, knowledge is acquired through research, benchmarking, training, and intelligence. These are the codes used to build the category episteme in Table 7. To explain further, research imparts problem identification, analytical, synthesis and problem-solving skills. These are critical skill sets

that all modern organisations, police agencies included, need to operate in an efficient way. Secondly, benchmarking talks to a systematic process wherein businesses learn from each other's best practice to improve their operations. This too is a form of knowledge acquisition. Thirdly, training is a necessary and ongoing process aimed at improving the on-the-job knowledge, practical skills, and competencies of personnel, to enhance performance so as to attain the organisational strategic and operational objectives. Lastly, intelligence in the context of this study, not only refers to crime intelligence gathering which is one of the core functions that is central to effectiveness in combating transnational crime, but also to business intelligence (BI). The prodigy that is BI refers to procedural and technical infrastructure that enables the collection, storage, and analyses on data from organisational activities. In police agencies, such data enables managers to see where things have gone wrong and to craft improvement plans to fine tune business operations.

- **Practice:** This component of the framework consist in technology, cooperation, management, and people. The link between episteme and practice as components is BI which talks to technical infrastructure, which in essence is technology. The value of technology cannot be overly emphasised and its role in enhancing operations has been dealt with extensively in this study. As for the other aspects that form this component, cooperation both internally and externally is key to operational success. The police could never win the fight against transnational crime if staff and management do not cooperate, if they do not foster good cooperative relations with other state institutions, and if they do not collaborate with police from other countries. Another key component is management. Management is a stand-alone discipline and practice and as such requires specialised expertise. Effective management is key in identifying guiding talent with the organisation, crafting strategies, controlling, and coordinating operations, monitoring, and evaluating performance, as well as identifying and solving problems. An effective manager is one who possesses skill sets that are described in the episteme component of this framework.
- **Governance:** Governance refers to regulatory tools such as legislation, policies, treaties, strategic plans, memoranda, and other legal agreements. The regulation aspects have been dealt with extensively in chapter 6 of this study. What is important is that without adherence to governance protocols, there can never be control and organising. This will also impact negatively on planning and leadership. This is why control, organising, planning and leadership are universally recognised as the basic principles of management. For police agencies, these principles must be extended to people (staff), technical

infrastructure, operations, processes, workflows, in a nutshell, to any aspect/business of the organisation.

- **People:** Policing as an order happens within a social context. It inherently consist in actions carried out by humans and impact on other humans that are being policed. Even when technologies are deployed to fulfil specific policing functions, they operate at the instructions of human police. Machines do not have the cognitive abilities endowed to humans, they are programmed by humans to perform functions limited to the programming. As such, human beings are at the centre of policing. This is why policing needs to be grounded in philosophies that advocate humaneness. Issues related to the philosophical grounding of police have been dealt with extensively in chapter 8. Thus, policing could never attain justice and fairness if their success in operation is in disregard of human rights.

The constructs in the framework that is conceptualised herein takes readers to the opening paragraph in this study (see 1.1), wherein Mlambo (2021) opines that whilst technologies are crucial to securitisation in the border setting, machines alone will not solve transnational crime. This last-named author argues that solving transnational crime could only be attained if there was integration between humans, infrastructure, and technology. For the ORTIA, such integration is unstable. This is due to a myriad of challenges, the main of which are accentuated in Table 10.

9.5 CONCLUSION

South Africa indeed required a single border law enforcement agency in the BMA. This was necessary to alleviate the operational burden borne by the SAPS. Thus, the establishment of the BMA came at the right time, when the need to alleviate the SAPS from some of its broader mandate was creating a lot of public discomfort in the ability of the police to effectively securitise national borders that include international airports. Border securitisation requires not only an agency dedicated solely to this task, but proper technological resourcing, collaborative and multidisciplinary approaches, financial resourcing, proper management, and strong political will. Technological resourcing is key in aligning policing in the Fourth Industrial Revolution context. Such move however requires methodical approaches to (i) strategic management (governance), (ii) operations management, (iii) risk management (problem identification and solving), and (iv) people management, that is managing staff and the public.

CHAPTER 10: FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

10.1 INTRODUCTION

The task of a researcher is to develop episteme or to add to existing knowledge. This is done through systematic or scientific ways of collecting, analysing, and interpreting data to produce new meanings, based on the research question or the subject matter being interrogated. Thus, the task of a researcher is to explain the research results or findings within the context of the subject matter or the case under investigation, and to make inferences and recommendations linked to the research findings. In research, explaining the results means explaining phenomena in ways that lay persons would not have. In other words, explaining the unobvious. This helps with what this study refers to as a nose-dive approach, or targeted problem identification. The approach thus directs/dictates that resolution efforts should be aligned to the identified problems.

This chapter outlines summaries on the main research findings and makes conclusions based thereon. Similarly, the chapter also makes recommendations on the findings and proposes areas for future research. Research findings are generally the results/outcomes of the study, or the investigations conducted**.** They reflect the synthesis or interpretations on analysed data sets. The conclusions in research on the other hand, talk to logical explanations on the implications of the research findings. Recommendations are just as the word suggests. These are proposals on what needs to be done to solve the problems identified or investigated through the research.

The purpose in outlining the research findings, conclusions, and recommendations is to address the research aim and objectives, as well as to provide answers to the research question. To recap, the question in this study is: What are the dynamics and challenges relating to the interfaces in police work, transnational crime, and the use of technologies at the ORTIA? In addressing the research question herein, the study used the research aim as the overarching systematic/scientific strategic approach. The aim is to explore the dynamics and challenges relating to the policing, transnational crime and techno-securitisation nexus at ORTIA.

10.2 SUMMARY: FINDINGS, CONCLUSIONS, RECOMMENDATIONS

To operationalise the aim of the study, the research invoked specific action items. These are the research objectives. As cited in 1.6.1, the objectives in this study are: (1) to describe the dimensions of policing at international airports, with specific contextualisation to the ORTIA; (2)

to theorise the policing, transnational crime and techno-securitisation nexus; (3) to uncover factors that hinder the operational efficiency of the police at the ORTIA and develop a conceptual framework for police efficiency, as well as; (4) to make recommendations to the management of the SAPS, on how to improve the operational efficiency of the police, including their use of technologies in the fight against transnational crime at borders, borderlines and at the entry ports. The following is the summary of findings that the research showed per research objective:

10.2.1 Research objective 1

As already cited, the first research objective is to describe the dimensions of policing at international airports, with specific contextualisation to the ORTIA. The dimensions of policing in the border, borderlines, and entry port settings that include airports were largely extrapolated in the conceptual chapters in this study. Chapter 7 dealt with analyses and discussions on the same subject matter. The chapter is titled: dimensions of policing at international airports: the O.R Tambo International Airport in context. This chapter gave an exposition of the dimensions. What is extrapolated below is a summary of the main findings. These are as follows:

- Policing at international airports and at the ORTIA is vast and follows a multidisciplinary approach, with several actors simultaneously playing specific different securitisation roles.
- The roles of the various securitisation actors involve enforcement, the management and application of technologies, immigration control, access control, traffic control, law enforcement, airport perimeters security, safeguarding property, passengers, and aircrafts, as well as revenue collection. The enforcement involves patrols, searches, arrests, seizures, investigations, and fines. This list is, however, not exhaustive as there is more.
- The jurisdiction of each of the securitisation actors is determined by international and national governance protocols (laws, policies, and legal agreements) in the aviation sector.
- Securitisation actors are also regulated through national legislation such as the Constitution of the Republic of South Africa (Act 108 of 1996), laws governing the criminal procedure, organised crime, corruption, national key points, private security, police, road traffic, tax, immigration, and many others.
- Securitisation actors are also regulated by different policies that relate to their work. For example, the SAPS has its national instruction on border policing and its technology strategy, the metro police have their traffic regulations, private security have their access

control and technology policies, the DHA have their immigration control strategies, ACSA has facilities management and licensing policies, SARS has customs and excise policies.

- All actors play different roles- from security, enforcement, access control, intelligence, facilities management, licensing, to revenue collection, public, property and airline safety.

Given the findings which describes the dimensions of policing at international airports in general, it is not far-fetched to conclude that policing at the ORTIA comprises complex networks of securitisation actors. The complexity is further created by a myriad of international and national regulatory protocols, and the various policies/strategies that are relevant to the different security stakeholders. Given these complex dynamics, what is key is for all stakeholders to have the will power to engage, collaborate, and align workflows to deal with transnational crime at the ORTIA. Based on the conclusions herein, the following are therefore the recommendations of the study:

- Securitisation actors need to strengthen relations and deal with attitudinal issues among their staff at operational level. This is one of the concerns raised during the interviews, wherein the police felt undermined by other stakeholders or their staff members.
- The actors need to have service level agreements that address bottlenecks such as workflows, jurisdiction, information sharing and the time it takes to exchange information. Such agreements will not only contribute to effective securitisation and the curbing of contrabanding but could grow the image of the airport/ the country. The spin-off benefits is collective organisation, increased revenue from excise duties, and increased tourism.
- Actors need to have a marketing drive to explain their specific role in the securitisation of the airport. Social media advertising could for example enable passengers to direct complaints or enquiries to relevant departments. This will save time on referrals. Also, marketing will clear up most of the complexities in the workings of actors as the public will have an idea of the role of each stakeholder. This shows being organised and thus orderly.

10.2.2 Research objective 2

The second objective is to theorise the policing, transnational crime and techno-securitisation nexus. Analyses and discussions on this objective are in chapter 8. The chapter postulates the policing, transnational crime, and techno-securitisation continuum in Figure 15, which characterises the nexus. Chapter 8 further argues for the conceptualisation of the philosophy of Post-modern policing to ensure that policing in the 21st century resonates with a philosophy that

is aligned to the use of crime combating technologies and aligns with law enforcement in the Fourth Industrial Revolution. The following are therefore the principles in Post-modern policing:

- **Governance:** Talks to observing the rule of law and managing operations in line with policies, even where crime combating technologies are used. This principle accentuates the centrality of national jurisdictions that have a right to indigenous laws, unlike relying on foreign laws imposed by coloniality. Although many of the former colonies continue to rely on jurisprudence imposed by former colonisers (South Africa is one example), the espousal of philosophies such as Ubuntu in policing does accommodate indegenisation. Ubuntu may not be legislation but remains a way of life for Afrikans and if policing was to fully embody the philosophy, the issue of foreign jurisprudence would be less traumatic.
- **Inclusivity:** Inclusivity relates to police agencies taking communities being served into confidence and allowing them to part take and have a say in crime prevention and the dispensation of services. From a philosophical viewpoint, inclusivity means policing that draws from its epistemological grounding, that communities within which they operate. This principle thus resonate with Community Policing. Likewise, inclusivity also means that philosophies should accommodate episteme from across the globe, not just the west.
- **Accountability:** Accountability refers to police agencies taking responsibility for their actions. This means giving honest and accurate information to the public and to political principals, as well as making admissions and amends where things have gone wrong. Police culture in South Africa is generally protective. Judging by senior management reports to Parliament, the SAPS displays is not being fully open about their weaknesses.
- **Transformation:** Technologies are transformative tools. This principle talks to more than the police implementing technologies to change their operational approaches, but also talks to police that benchmark on best practices by other agencies, foreign and local. Transformation is an omnipresent feature and that is indisputable. A police agency that does not evolve with technology with its rapid changes, runs the risk of falling behind. Catching up may not be too late as falling behind may mean uncontrollable crime, which as stated in this research, could threaten state security and freedoms enjoyed by society.
- **Integrity:** Integrity talks to police that do right things or abides by the law, even when no one is looking. Thus, integrity requires of police officials to be independent and honest people that do not require to be monitored at an individual level, for them to do right. Essentially, integrity as a value cannot be divorced from governance and accountability.

- **Techno-centrism:** This principle refers to police agencies that are driven by digitisation and digitalisation of processes and operations, police that are concerned with the perpetual upgrading of technological infrastructures, the introduction of robotics, artificial intelligence, as well as smart software, to align with the industrial revolution of their times. Techno-centrism as a principle thus position technology-hinged crime prevention strategies in Post-modern policing, models such as crime prevention through environmental design and situational crime prevention as cited in chapter 4 (see 4.3).
- **Internationalisation:** Internationalisation talks to a policing philosophy that is accommodative of the ontological, epistemological, hermeneutic, rhetorical, and methodological assumptions from jurisdictions across the globe. This is a philosophy that respects and accommodates indigenous philosophies such as Ubuntu, recognises that policing draws knowledge from local communities, that the ways of reason differ per jurisdiction and this should be respected, and that each jurisdiction has its own language of policing and ways of dispensing of services. This is unlike the colonial Peelian praxis that for over 195 years, has failed to respect the boundaries in philosophical assumptions.
- **Collaboration:** Collaborations speak to inter and intra agency working together. To successfully combat any form of crime, the police need to work with other departments in the public and private sectors. Since transnational crime is across jurisdiction, this principle advocates that foreign police should work together to deal with problems.
- **Ethno-sensitivity:** This principle talks to police that are sensitive to the different cultures within their operational environment. Thus, respect for a people's culture even where the police use technologies to do their work is imperative. This principle essentially advocates for a people-centred approach to law enforcement, something also captured by Peel.
- **Research-driven:** Research helps with the adequate diagnosis and prognosis on policing and/or technology problems. The police are information-driven and information intensive organisations. Without being research-driven, prospects on optimising technologies in the fight against crime become slim, so does keeping public safety. Research-driven also means using business intelligence to inform operations. Example, crime statistics is a reliable source that can inform the deployment of policing resources.

To recap on the objective, Figure 15 is again displayed to capture the conceptualised nexus.

The continuum is best captured in the constructs that are hypothesise in 8.4.1. From the construct, a thesis was conceptualised to capture the continuum and the policing, transnational crime, and techno-securitisation nexus, that is the interfaces between policing, crime and technologies. For lack of a better word, the conceptualisation is termed the Matlala thesis and is named after the researcher in this study. The Matlala thesis is thus presented as follows;

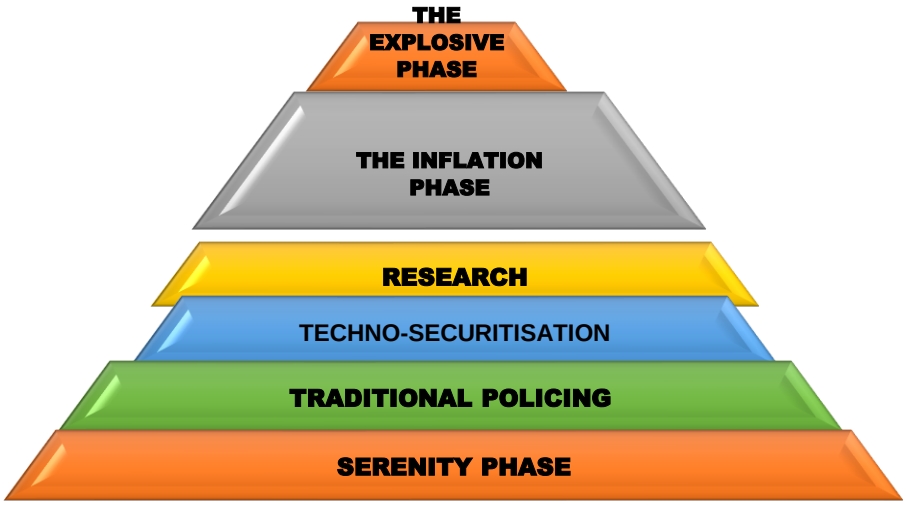
Table 11: The Matlala thesis

Theorem 1: The placid phase
Theorem 2: Policing woes
Theorem 3: Techno-securitisation blues
Theorem 4: Misty waves
Theorem 5: The balloon effect
Theorem 6: The big blast

Source: Author conceptualisation

The thesis above is the embodiment of the ten principles in Post-modern policing philosophy. As such, the thesis operationalises the philosophy. Of importance is that the philosophy is all encompassing (internationalisation) and not biased towards one dominant epistemology, as is the case with the Peelian praxis, with its colonial and supremacist assumptions. The conceptual thesis above was grouped into a taxonomy. As cited in 8.4.2, grounded theory analyses does promote classifications on the analytical constructs in the study. The constructs

in this study were thus arranged into a taxonomy. Once again for lack of a better word, the taxonomy is termed the Matlala taxonomy. Figure 16 shows classifications in the taxonomy.



Source: Author conceptualisation

For the taxonomy above to be understood in the operational context, the research further developed a risk assessment table. The purpose of the taxonomy is to enable police managers to plot problematic areas. For example, if after assessment, police managers are of the view that traditional policing tactic or techno-securitisation is problematic, then they are able to indicate on the taxonomy. A mere mark with a pin should suffice. What then follows is a nose-dive investigation (research) to diagnose the problem. Part of diagnosis is risk assessment. Table 12 below is intended to help police managers to determine the level of risk on a problem.

Table 12: Operational risk assessment table

Risk indicator	Description	Risk measure	Intervention	Responsibility	Outcomes
Example:	*Example:*	*Example:*	*Example:*	*Example:*	*Example:*
(1) Techno-securitisation	Lack of portable fingerprint devices at roadblocks at airport	**2:** Many wanted suspects evade arrest as there is limited fingerprints scanning	Invite personnel from stations in the district. All personnel should be able to operate morpho touch and each station to provide at least 2 machines.	Colonel Jet Fuel the operational Commander	Roadblock held at ORTIA precinct on 2024-01-15. A total of 72 arrests for various offences were made. Of these, 47 were identified using morpho touch.
(2) Policing woes	Border police members at ORTIA lack of customer care skills	**3:** there is high number of reports on members being rude to passengers.	Engage ACSA to facilitate customer care training for border police	Brigadier Boeing Aerospace the station commander to engage ACSA CEO	ACSA 3-day workshop from 01 Feb-03 Feb 2024 attended successfully attended by 78 border police members

Source: Author conceptualisation

The table above is an example of the risks identified. To properly diagnose the risk, the table uses a colour coded method. This method is thus exemplified in Table 13 below as follows:

Table 13: Risk scale indicator

1-	**Low/minimal-**	green color coding
2-	**Moderate-**	amber color coding
3-	**High-**	blue color coding
4-	**Critical-**	red color coding

Source: Author conceptualisation

The green in the scale indicator shows low risk, the amber is moderate risk, whilst the blue is high risk, and the red signifies critical stages in the identified risk. Why the colour coding? The level of risk is generally a good indicator on the urgency with which a risk should be addressed, as well as the amount of time and resources that need to be allocated in the interventions. This approach, if espoused, will not only save time, money, and other resources, but will ensure that police managers are methodical and scientific in their approach to problem-solving. Also, the approach will ensure that decision-making by police managers is not some thumb-sucking exercise. The ensuing section outlines research findings that relate to research objective 3.

10.2.3 Research objective 3

The third research objective in this study is to uncover the factors that hinder the operational efficiency of the police at the ORTIA and to develop a conceptual framework for police efficiency. This research objective has two parts, the identification of factors that hinder the operational efficiency of the police and secondly, the development of a conceptual framework. The research first deals with the factors that hinder the operational efficiency of the police at ORTIA as follows:

- **Lack of resources**: border police at ORTIA lack basic technologies such as morpho touch (fingerprint technology) and vehicles for patrols around the vicinity and airside of the airport.

- **Poor connectivity**: the police experience lack of connectivity on technologies such as two-way radios and morpho touch, especially during loadshedding.

- **Lack of manpower**: the scope of police operations at the airport is huge and cannot be handled by the current staff member numbers. This is caused by among other things, sick leave, suspensions, dismissals, transfers, deaths, resignations and retirements.

- **Loss of expertise**: this is a generic problem in the SAPS. However, the police at ORTIA lose experienced and technically-savvy personnel due to the reasons captured above, including better prospects from outside the employ of the SAPS.

- **Poor training:** training for border police is only 2 weeks and some staff members work without being trained for protracted periods, for years.

- **Operational monotony:** the police at ORTIA do the same work in the same areas over-and-over. This is protracted over years.

- **Non-consultative managerial approach**: management at ORTIA does not consult ground workers for ideas, they merely issue out instructions on what is to be done.
- **Non-scientific approach:** generally, the SAPS does not rely on research that much. The same goes for management at the ORTIA who rely on experience, which is empirical, but fails to nose-dive into a myriad of problems in the ever-changing environment at the airport.

In as much as some research participants alluded to corruption and technology-based violations by the police at ORTIA, the study concludes that these issues were not substantiated and there was no literature to confirm the issues either. Corruption is undeniably a problem in the SAPS, but there was no evidence in relation to police at ORTIA. Understandably, no research participant could give details on who is corrupt, or on suspension for technology-based or any other form of crime because this would amount to a violation of the law on the protection of personal information. This is besides the protectionism culture in police agencies.

From the findings herein, it is clear that the police at the ORTIA are beset by a myriad of challenges that need to be addressed. To improve the operational efficiency in terms of dealing with transnational crime at the ORTIA, the following are the recommendations in this study:

- **Increase the pool of resources**: the SAPS should increase the number vehicles and morpho touch machines for policing at ORTIA. Although this is a finance issue, the vehicles are key in various operational activities that include patrols in the airside and around the vicinity of the airport, whilst morpho touch is key in terms of the on-the-spot identification

of wanted suspects trying to flee the country using the airport as a transit point. Equally, police managers at the ORTIA should strengthen on vehicle and technological tools inspections. This will ensure that the resources are adequately serviced and operational.

- **Ensure connectivity**: the issue of loadshedding (periodic electricity cuts) falls outside of the SAPS mandate. The SAPS can at a national level, partner with ACSA to engage ESKOM (power utility) on exempting the ORTIA from loadshedding. By law, the ORTIA is a national key point. Like the Union Buildings (Presidential offices) which is also a national key point that is exempted from loadshedding, the ORTIA should also enjoy the same.
- **Increase manpower**: border policing is a specialised task. To mitigate manpower shortages, the SAPS should introduce a monthly allowance for border police. This is in line with allowances that are paid to specialised units such as Public Order Police and the Special Task Force. Such feat will help with staff retentions and attract more into ORTIA.
- **Increase the pool expertise**: although for the ORTIA, the monthly allowance can help retain and attract more personnel, increasing the pool of expertise talks more the Local Criminal Record Centre and Crime Intelligence Unit of the SAPS, which supports police at the ORTIA. The support includes providing intelligence on transnational crime, as well as the recruitment of forensic and technology experts. To this end, the SAPS should structure better remuneration packages to attract technology and forensic experts. In addition, the SAPS should (1) form a detective unit dedicated to investigations on transnational crime in the border, borderlines and entry port setting; (2) engage the department of Justice and Constitutional Development and the National Prosecution Authority on the formation of specialised courts and specialised prosecution teams, to focus on crimes in the border, borderlines and entry ports settings. This will assist in expediting prosecutions and in dealing with obtaining court orders to search passengers/suspects with diplomatic status.

- **Poor training:** the SAPS should consider training of about 2 years for candidates who are interested in border policing. The training can involve basic policing strategies in the border and entry ports environment, as well as training in becoming expert operators on technologies used. For example, borderline patrol staff need to know how to operate drones and marine border personnel need to know how to operate a remote-controlled mini submarine to investigate if contraband has not been dropped off to the bottom of the ocean. Training should equally consist in 50% theory and half the time to be practicals in the field. For example, in the 2 years, 12 months is for theory and 12 months is for practice. To

mitigate skills exodus, staff who graduate from training should be contractually bound to serve in border police for a minimum of 5 years before they can take transfers. The exception to the rule is if a staff member is promoted outside of the border police units. In fact, the introduction of allowances and training suggested justifies the contractual binding.

- **Rotational deployment of staff: Operational monotony:** managers at ORTIA should consider duty rosters that enable staff to be redeployed in areas that they normally don't work in. The change can be on a 3 months basis. This kind of rotation will help in removing the operational monotony that result in staff getting bored with doing the same thing day-in-day-out for years. Boredom breeds an idle mind that may not be productive at the expense of operations. Posting staff in the same areas for a protracted period allows criminals to make acquaintance with staff and could mark the genesis of corrupt relations.

- **Consultative management**: management at ORTIA should consult ground workers on the ground for ideas, instead of merely issuing out instructions on what is to be done. Relying on experience though necessary, is tantamount to using outdated empirical sources for decision-making. Staff on the ground are active and current empirical sources. A consultative approach will enable police managers to appear as bossy, but rather as leaders. A leader is not Mr./Mrs. know it all but listens to other voices and alternative views.

- **Fostering scientific approaches:** managers and staff at the ORTIA should get into a culture of research (not necessarily academic research) to help them identify problems in the operational environment. This should not be difficult as the police are taught on how to investigate crime, which is tantamount to research. Equally, the police at ORTIA should not shy away from reading theses/dissertations and articles from scholarly journals when researching on specific problems. The culture of reading will broaden the knowledge base of staff and help in understanding and adapting to the changing environment in the border settings. Equally, enrolling for studies at institutions of higher learning could also help.

Part of fostering scientific approaches in police operations is adopting models and frameworks developed by scholars. For example, in terms of the management of technologies, the MIS and management models cited in 4.4.1 could be of use to police managers and staff. There is also vast literature on leadership, strategic, operations and risk management which the police can read up on. Although the recommendation to read may not be fully realised as it speaks to individual choices, for managers this is a potent tool. Aquiring information through reading

allows individuals to become more knowledgeble and to capacitate others. To help the police improve on their operational efficiency, this study conceptualised a framework. The framework is outlined in detail in 9.4.2. Figure 17 is a visual depition of the framework for police efficiency.

Figure 17: A framework for police efficiency

Source: Author conceptualisation

The framework depicted above does not preclude police officials to invoke any other framework or model but was merely conceptualised to be contextualised to police operations. There are tried and tested models in operations management and these can also assist the police to enhance their operational efficiency. The framework herein is intended to make it easy for the police to comprehend the environment in which they operate and to give alternatives on how to approach operations, especially in the border, borderlines, and entry port settings. Next is a summary on the general recommendations, as well as recommendations for future research.

10.3 GENERAL RECOMMENDATIONS: THE NOW AND THE FUTURE

Research becomes futile if there are no proposals for improvements. This is why the fourth research objective is to make recommendations to the management of the SAPS, on how to improve the operational efficiency of the police, including their use of technologies in the fight against transnational crime at the ORTIA. This objective has already been fulfilled throughout

the recommendations in this chapter. To contribute more, these are the generic recommendations:

- **Training:** in addition to the training proposed for border police, the SAPS should consider post basic training to includes the strategic, operations and risk management for managers. Such training should be pre-requisite to appointment into managerial positions. Equally, the SAPS should recognise academic qualifications and certificates as pre-requisites.

- **Monitoring, evaluation and reporting on operations:** the SAPS should introduce a culture of audits on operations. This means that components should set operational targets and be audited against the targets. The audit process will enable systematic reporting and the drawing of improvement plans to remedy the identified operational challenges. Also, auditing will enable periodic reporting on progress made. The approach will essentially enable the SAPS to be systematic/scientific in operations management.

- **Philosophical grounding**: basic training in the SAPS should inculcate curricula on Afrikan philosophies such as Post-modern policing, Ubuntu and Pan-Afrikanism. Principles in these philosophies should also be infused into the key performance areas of staff, to ensure that performance management is ideologically/philosophically aligned.

- **Service level agreements**: although the establishment of the BMA has alleviated most of the burden borne by the SAPS, the SAPS should pursue such agreements with the BMA. Despite the existence of the BMA in the border settings, there is no way that the SAPS will not have a role to play. For example, the BMA will still need the services of the SAPS to formally process arrested persons into the criminal justice system, they will still rely on the SAPS crime intelligence for information on transnational crime, they will still rely on police databases to check for wanted persons and for accessing INTERPOL services, as the SAPS is the only member, and the BMA will have to go through them.

- **Formalised research unit:** instead of having a research unit that deals with administration in approvals for students doing research, the SAPS should restructure its research unit and hire qualified researchers to conduct research for the organisation. This should help with driving the agency towards becoming a research-driven organisation.

10.3.1 Recommendations for future research

Having dealt with general proposals, the following are recommendations for future research:

- Research on various technologies and their impact on police operations
- Research to test the veracity of the Matlala thesis postulated in this study
- Research to test the framework for police efficiency hypothesised in this study
- Research on risk and operations management in the police
- Research on auditing police operations
- Research on assessing the quality of police strategies
- Research on the philosophical grounding of police in South Africa
- Research on Management Information System in the police
- Research on the remodeling of border policing in South Africa
- Research on regional border police models/strategies on the continent
- Research on the epistemological relevance of existing policing philosophies
- Research on the resourcing of border police

10.3.2 Reflections on the problem statement

The problem statement cited in 1.6.1 in this study identified 8 key aspects as the approach to interrogating the research question. These are lack of research; inadequate policing; techno-securitisation blues; political bureaucratism; polarised operational approaches; silo approaches; legislative constraints; and disjointed strategic approaches. Based on the findings, reflections on the problem statement in 1.6 of this study therefore are as follows:

- **Lack of research:** the research shows that indeed the SAPS needs to remodel its research component. This will redirect the organisation to become more research driven.

- **Inadequate policing:** the operational constraints identified in this study talk to issues of adequacy. To correct, the SAPS first needs to introspect on the adequacy of tactics used.

- **Techno-securitisation blues:** the research is clear on what needs to be done to deal with the technology challenges identified in this study and to align with the current industrial era.

- **Political bureaucratism:** the research shows that prior to the establishment of the BMA, there was indeed political arm wrestling. Whether this is the case (after the establishment), is a matter for future research. What is important is that the once blurred operational/roles lines in the securitisation of borders, borderlines, and entry ports, have now been cleared.
- **Polarised operational approaches:** the political bureaucraticism witnessed in the management and securitisation at entry ports indeed created polarity. This was caused by the many securitisation actors that failed to adequately communicate around operations at the ORTIA. Non-cordial relations and belittling among ground workers from various securitisation actors also contributed to polarised operational approaches. Whether the situation has improved with the introduction of the BMA is also a matter for future research.

- **Silo approaches:** the research shows that securitisation actors at ORTIA continue to work in silos. This is why this study makes recommendations on service level agreements.

- **Legislative constraints:** the findings showed no evidence on legislative constraints. If anything, the enactment of the Border Management Authority Act (Act 2 of 2020), brought more legal certainty around the securitisation roles in borders, borderlines, and entry ports.

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- **Disjointed strategic approaches:** the research showed no evidence on disconnections. In fact, evidence points to inter departmental senior management that always engaged at a strategic level. This is the platform where the political arm wrestling was happening.

10.4 CONCLUSION

The introduction of the BMA brought about much need relief in terms of the operational burden borne by the SAPS in the border settings. The vast mandate coupled with a myriad if challenges cited herein impacted badly on border management, control, and security. The lack of technological resources in particular meant police inefficiency in combating transnational crime. For the ORTIA, the challenges risk degrading the facility as a premier transit point not just in the country, region, or continent, but globally. The recommendations herein, though targeted at the SAPS, are tranferable to agencies such as the BMA, should they experience similar problems.

LIST OF REFERENCES

AARTO Facts. 2011. SALGA proves that municipalities view traffic fines as taxation. From: http://www.aartofacts.co.za/news/category/Metro-Police.aspx?page=2 (Accessed 25 October 2016).

Abadie, A. 2021. Using synthetic controls: Feasibility, data requirements, and methodological aspects. *Journal of Economic Literature*, *59*(2), pp.391-425.

Abadie, R; Fisher, C; Dombrowski, K. 2021. Privacy, Confidentiality and Anonymity: Understandings from People Who Inject Drugs Enrolled in a Study of Social Networks and HIV Risk. *Journal of empirical research on human research ethics: JERHRE*, *16*(3), p.304.

ABC News. 2017. Passport computer software failure at airports causes delays for international travellers. From: http://www.abc.net.au/news/2017-05-22/passport-computer-software-failure-at-airports-causes-delays/8546320 (Accessed 3 Jul. 17).

Abrahams, L. & Newton-Reid, L. 2008. E-governance for Social and Local Economic Development: Gauteng City Region Perspective. *Link Public Policy, Paper* 9.

Abubakre, M; Faik, I; & Mkansi, M. 2021. Digital entrepreneurship and indigenous value systems: An Ubuntu perspective. *Information Systems Journal*, *31*(6), pp.838-862.

Achermann, C. 2021. Shaping migration at the border: the entangled rationalities of border control practices. *Comparative Migration Studies*, *9*(1), pp.1-17.

Adam, R. 2005. *Mobile Technology has Potential to Greatly Improve the Effectiveness of The WA Police*. From: http://www.fujitsu.com/downloads/SVC/fs/casestudies/australia-police-service.pdf (Accessed 29 September 2014).

ADAM Technology. 2017. *How does photogrammetry work?* From: http://www.adamtech.com.au/Blog/?p=102 (Accessed 2 June 2017).

Adams, M.A; Kayira, J; Gruber, J.S; Idemudia, U; Tegegne, Y.T; Nantogmah Attah, A; Tuokuu, F.X.D; & Ansong, M. 2021. Good governance practices in Ghana's FLEGT voluntary partnership agreement process: an application of Q methodology. *Journal of Environmental Policy & Planning*, *23*(1), pp.1-15.

Adey, P. 2004. Secured and sorted mobilities: Examples from the airport. *Surveillance & Society* 1(4): 500-519.

AEROmetrex. 2017. A brief history of aerial photogrammetry. From: http://www.aerometrex.com.au/blog/?p=203 (Accessed 11 August 2017).

Africa.com. 2018. Solving the challenges of aviation in Africa-Interview with Hassan El-Houry. From: https://www.africa.com/hassan-el-houry-resolving-the-challenges-of-aviation-in-africa/ (Accessed 25 January 2018).

Africa Report. 2018. *The wind of change- An Africa perspective.* Johannesburg: Cushman & Wakefield.

African Union. 2015. African Union Police Strategic Support Group Technical Planning Session, Addis Ababa.

African Union. 2021. Thirteenth extraordinary session of the AfCFTA. From: https://au.int/en/pressreleases/20201205/thirteenth-extraordinary-session-afcfta-assembly-union-adopts-decision-start (Accessed 2 January 2021).

Agnew, J. 2008. Borders on the mind: re-framing border thinking. *Ethics & Global Politics*, *1*(4), pp.175-191.

Airports Company South Africa. 2014. Integrated report 2014: Embracing forward thinking. Pretoria: Government printer.

Airports Company South Africa. 2015. Integrated report 2015: Driving new frontiers for sustainable growth. Pretoria: Government printer.

Airports Council International. 2005. *The application of biometrics at airports: Position paper.* Geneva: ACI.

Airport-technology.Com. 2017. Airport security systems put the spotlight on passenger data. From: http://www.airport-technology.com/features/featureairport-security-systems-spotlight-passenger-data/ (Accessed 5 July 2017).

Akokpari, J.K., 2000. Globalisation and migration in Africa. *African Sociological Review/Revue Africaine de Sociologie*, *4*(2), pp.72-92.

Alards-Tomalin, D; Ansons, T.L; Reich, T.C; Sakamoto, Y; Davie, R; Leboe-McGowan, J.P; & Leboe-McGowan, L.C. 2014. Airport security measures and their influence on enplanement intentions: Responses from leisure travelers attending a Canadian University. *Journal of Air Transport Management*, *37*, pp.60-68.

Albanese, J.S. 2009. Transnational crime. From: http://www.oxfordbibliographies.com/view/document/obo-9780195396607/obo-9780195396607-0024.xml (Accessed 1 December 2016).

Alemu, A.M; & Lee, J.S. 2015. Foreign aid on economic growth in Africa: A comparison of low and middle-income countries. *South African Journal of Economic and Management Sciences*, *18*(4), pp.449-462.

Alesina, A; & Weder, B. 2002. Do corrupt governments receive less foreign aid?. *American Economic Review*, *92*(4), pp.1126-1137.

Alhassan, I; Sammon, D; Daly, M; Wibisono, A; Kasraian, L; Nagle, T; Heavin, C; Dennehy, D; Zamani, E; & Qaffas, A. 2023. The use of open, axial and selective coding techniques: A literature analysis of research.

Alheeti, K.M.A. 2011. Biometric iris recognition based on hybrid technique. *International Journal on Soft Computing (IJSC) Vol.2, No.4, November.*

Al-Marsi Al-Youm. 2023. Marsa Alam Airport installs explosive detection system at cost of LE60 million. From: Marsa Alam Airport installs explosive detection system at cost of LE60 million - Egypt Independent (Accessed 18 September 2023).

Ali, M.U; & Nicholson-Crotty, S. 2021. Examining the accountability-performance link: The case of citizen oversight of police. *Public Performance & Management Review*, *44*(3), pp.523-559.

Allen, D.K; Karanasios, S; & Norman, A. 2014. Information sharing and interoperability: the case of major incident management. *European Journal of Information Systems*, *23*(4), pp.418-432.

Alperen, M.J. 2017. *Foundations of homeland security: Law and policy*. John Wiley & Sons.

Alshazly, H; Linse, C; Barth, E; Idris, S.A; & Martinetz, T., 2021. Towards explainable ear recognition systems using deep residual networks. *IEEE Access*, *9*, pp.122254-122273.

Altikriti, S. 2021. Toward Integrated Processual Theories of Crime: Assessing the Developmental Effects of Executive Function, Self-Control, and Decision-Making on Offending. *Criminal Justice and Behavior*, *48*(2), pp.215-233.

Althumiri, N.A; Basyouni, M.H; BinDhim, N.F; & Alqahtani, S.A., 2021. Levels and associations of weight misperception with healthy lifestyle among adults in Saudi Arabia. *Obesity Facts*, *14*(6), pp.586-592.

American Health Information Management Association. 2017. Data quality management model (2015 Update). From: http://bok.ahima.org/doc?oid=107773#.WRBOwme7qxA (Accessed 8 May 2017).

Amir, N; McCarthy, H.J; & Tong, A. 2021. Qualitative Research in Nephrology: An Introduction to Methods and Critical Appraisal. *Kidney360*, *2*(4), pp.737-741

Anatolii, K; Svitlana, K; Viktor, S; Rostyslav, P; & Mykhailo, N. 2021. Characteristics of transnational organized criminal groups and features of the investigation of their criminal activities. *Journal of Legal, Ethical and Regulatory Issues*, *24*(4), pp.1-8.

Ancient Egypt Online. 2017. Egypt under Roman rule. From: http://www.ancient-egypt-online.com/romans.html (Accessed 31 January 2017).

Anderson, A.C. 2011. *The Uneasy Reality: Undocumented Workers in the United States and Rural Peasant Workers in China*. From: http://www.law.unc.edu/documents/journals/articles/1010.pdf (Accessed 9 November 2012).

Anderson, S. 2014. Is South African airport security safe enough by international standards? From: https://www.thesouthafrican.com/is-south-african-airport-security-safe-enough-by-international-standards/ (Accessed 30 May 2017).

Andrade, C. 2021. The inconvenient truth about convenience and purposive samples. *Indian Journal of Psychological Medicine*, *43*(1), pp.86-88.

Anderson, L., Bates, L. and Schaefer, L., 2023. Design and development of a digital intervention for crime prevention: a road safety intervention targeting young driver non-compliance. *Safer communities*, *22*(1), pp.56-71.

Andreas, P. 2003. Redrawing the line: Borders and security in the twenty-first century. *International security*, *28*(2), pp.78-111.

Andrews, F.M & Withey, S.B. 2012. *Social indicators of well-being: Americans' perceptions of life quality*. Springer Science & Business Media.

Andrijasevic, R; & Walters, W. 2010. The International Organization for Migration and the international government of borders. *Environment and Planning D: Society and Space*, *28*(6), pp.977-999.

Anwar, A.S; Ghany, K.K.A; & Elmahdy, H. 2015. Human ear recognition using geometrical features extraction. *Procedia Computer Science*, *65*, pp.529-537.

Anderez, D.O; Kanjo, E; Amnwar, A; Johnson, S; & Lucy, D. 2021. The Rise of Technology in Crime Prevention: Opportunities, Challenges and Practitioners Perspectives. *arXiv preprint arXiv:2102.04204*.

Apleni, M. 2015. An overview of the new immigration laws and regulations and their implication. *Presentation to Parliamentary Portfolio Committee on Home Affairs*, *23*.

Archick, K. 2017. The European Union: Questions and answers. Congressional Research service.

Armitage, R., 2014. Crime prevention through environmental design. In *Encyclopedia of criminology and criminal justice* (pp. 720-731). Springer New York.

Armond, A.C.V; Gordijn, B; Lewis, J; Hosseini, M; Bodnár, J.K; Holm, S; & Kakuk, P. 2021. A scoping review of the literature featuring research ethics and research integrity cases. *BMC medical ethics*, *22*(1), pp.1-14.

Asiedu, E; Karlan, D; Lambon-Quayefio, M.P; & Udry, C.R. 2021. *A Call for structured ethics Appendices in social science papers* (No. w28393). National Bureau of Economic Research.

Atkinson, D. 2007. *Taking to the Streets: Has Developmental Local Government Failed in South Africa?* State of the Nation South Africa 2007. Cape Town: Human Sciences Research Council Press.

Attridge, D; & Jolly, R. eds. 1998. *Writing South Africa: literature, apartheid, and democracy, 1970-1995*. Cambridge University Press.

Ayub, M.F; Mahmood, K; Kumari, S; & Sangaiah, A.K. 2021. Lightweight authentication protocol for e-health clouds in IoT-based applications through 5G technology. *Digital Communications and Networks*, *7*(2), pp.235-244.

Azen, R; & Walker, C.M. 2021. *Categorical data analysis for the behavioral and social sciences*. Routledge.

Babbie, E. 1995. *The Practice of Social Research.* 7th Edition. Belmont, California: Wadsworth.

Babuta, A; & Oswald, M. 2021. Machine learning predictive algorithms and the policing of future crimes: Governance and oversight. In *Predictive Policing and Artificial Intelligence* (pp. 214-236). Routledge.

Barbot, C; Costa, Á; & Sochirca, E. 2008. Airlines performance in the new market context: A comparative productivity and efficiency analysis. *Journal of Air Transport Management*, *14*(5), pp.270-274.

Baker, B. 2008. *Multi-Choice Policing in Africa*. Stockholm: Nordiska Afrikainstitutet, Uppsala 2008.

Bakewell, O., 2008. 'Keeping them in their place': the ambivalent relationship between development and migration in Africa. *Third world quarterly*, *29*(7), pp.1341-1358.

Balkin, J.M. 2008. The Constitution in the National Surveillance State. *Minnesota Law Review, Vol. 93, No. 1. Yale Law School, Public Law Working Paper No. 168.*

Baporikar, N. 2016. Infrastructure Development as a Catalyst for Social-Economic Advancement. *International Journal of System Dynamics Applications (IJSDA)*, *5*(4), pp.101-113.

Barolsky, V & Pillay, S. 2009. A Call for Comparative Thinking: Crime Citizenship and Security in the Global South. *South African Crime Quarterly, 27 March, pp 15-21. Institute of Security Studies.*

Barone, P.M; Di Maggio, R.M. & Ferrara, C. 2015. Forensic geo-archaeology in Italy: materials for a standardisation. *International Journal of Archaeology. Special Issue: Archaeological Sciences*, *3*(1-1), pp.45-56.

Bassey, C.O; & Oshita, O.O. eds. 2010. *Governance and border security in Africa*. African Books Collective.

Baumgart, A; Craig, J.C; & Tong, A. 2021. Qualitative Research in CKD: How to Appraise and Interpret the Evidence. *American Journal of Kidney Diseases*, *77*(4), pp.538-541.

Bayley, D.H; Perito, R; & Perito, R. 2010. *The police in war: Fighting insurgency, terrorism, and violent crime*. Boulder, CO: Lynne Rienner Publishers.

BBC News. 2017. Profile: European Union. From: http://www.bbc.com/news/world-europe-18788906 (Accessed 02 November 2017).

Beal, V. 2017. Voice recognition. From: http://www.webopedia.com/TERM/V/voice_recognition.html (Accessed 8 June 2017).

Beare, M. 2013. *Transnational organized crime*. Ashgate.

Beerbaum, D. 2021. Applying Agile Methodology to regulatory compliance projects in the financial industry: A case study research. *Applying Agile Methodology to Regulatory Compliance Projects in the Financial Industry: A Case Study Research (April 26, 2021)*.

Beebe, J.R. 2015. *Advances in experimental epistemology*. Bloomsbury Publishing.

Bellanova, R; & Duez, D. 2016. The Making (Sense) of EUROSUR: How to Control the Sea Borders? In *EU Borders and Shifting Internal Security* (pp. 23-44). Springer International Publishing.

Benson, M; & O'Reilly, K. 2018. Introduction. In *Lifestyle Migration and Colonial Traces in Malaysia and Panama* (pp. 1-39). Palgrave Macmillan, London.

Bernasco, W; & Block, R. 2011. Robberies in Chicago: A block-level analysis of the influence of crime generators, crime attractors, and offender anchor points. *Journal of Research in Crime and Delinquency*, *48*(1), pp.33-57.

Berning, J; & Montesh, M., 2012. Countering corruption in South Africa: The rise and fall of the Scorpions and Hawks. *South African Crime Quarterly*, *39*, pp.3-10.

Bersin, A.D. 2016. Written testimony of Alan D. Bersin: Assistant Secretary for International Affairs and Chief Diplomatic Office of Policy: U.S Homeland Security before the House Committee on Foreign Affairs Subcommittee on the western hemisphere on "Potential Terrorist Threats: Border Security Challenges in Latin America and the Caribbean" March 22, 2016.

Bezuidenhout, C; & Kempen, A. 2021. Historical and Current Dilemmas in South Africa that Challenge Proficient Police Service Delivery. *Enhancing Police Service Delivery: Global Perspectives and Contemporary Policy Implications*, pp.259-279.

Bicchi, F; & Schade, D. 2021. Whither European diplomacy? Long-term trends and the impact of the Lisbon Treaty. *Cooperation and Conflict*, p.00108367211000791.

Bigo, D. 2014. The (in) securitization practices of the three universes of EU border control: Military/Navy–border guards/police–database analysts. *Security Dialogue*, *45*(3), pp.209-225.

Bigo, D. & Walker, R.B.J. 2016. *Europe's 21st century challenge: delivering liberty*. Routledge.

Bio. 2016. Oliver Tambo biography. From: http://www.biography.com/people/oliver-tambo-9501703#synopsis (Accessed 20 December 2016).

Biometrics Research Group, Inc. 2023. Kenyan police launch facial recognition on urban CCTV network. From: Kenyan police launch facial recognition on urban CCTV network | Biometric Update (Accessed 18 September 2023).

Birdi, K; Griffiths, K; Turgoose, C; Alsina, V; Andrei, D; Băban, A; Bayerl, P.S; Bisogni, F; Chirică, S; Costanzo, P; & Fernández, C. 2021. Factors influencing cross-border knowledge sharing by police organisations: an integration of ten European case studies. *Police Practice and Research*, *22*(1), pp.3-22.

Bizcommunity. 2018. ICAO 2017 preliminary audit results – statement. From: http://www.bizcommunity.com/Article/196/583/162239.html (Accessed 23 January 2018).

Bjerkan, K.Y; Ryghaug, M; & Skjølsvold, T.M. 2021. Actors in energy transitions. Transformative potentials at the intersection between Norwegian port and transport systems. *Energy Research & Social Science*, *72*, p.101868.

Björk, J; Stenfors, T; Juth, N; & Gunnarsson, A.B. 2021. Personal responsibility for health? A phenomenographic analysis of general practitioners' conceptions. *Scandinavian Journal of Primary Health Care*, pp.1-10.

Blaikie, N. 2018. Confounding issues related to determining sample size in qualitative research. *International Journal of Social Research Methodology*, *21*(5), pp.635-641.

Blazick, F. 2019. In the era of electronic warfare, bring back pigeons. From: In the Era of Electronic Warfare, Bring Back Pigeons (warontherocks.com) (Accessed 18 September 2023).

Blersch, R; Franchuk, N; Lucas, M; Nord, C; Varsanyi, S; & Bonnell, T. 2021. Causal Analysis as a Bridge Between Qualitative and Quantitative Research.

Block, L. 2008. Combating Organized Crime in Europe: Practicalities of Police Cooperation. *Oxford Journals, Law, Policing, Vol. 2, No. 1, pp 74-81*. Oxford University Press.

Blogspot. 2011. Management information system. From: http://deepread.blogspot.co.za/2011/06/mis-and-decision-making-concepts.html (Accessed 8 May 2017).

Bloem, J; Van Doorn, M; Duivestein, S; Excoffier, D; Maas, R; & Van Ommeren, E. 2014. The Fourth Industrial Revolution. *Sogeti VINT*.

Boeing. 2017. *Current market outlook 2017-2036.* Seattle, WA: Boeing.

Bogue, R. 2010. Three-dimensional measurements: a review of technologies and applications. *Sensor Review*, *30*(2), pp.102-106.

Bloomberg. 2023. U.S.'s $795 Billion Rescue Saved Jobs. No One's Sure How Many. From: U.S.'s $795 Billion Rescue Saved Jobs. No One's Sure How Many - Bloomberg (Accessed 18 September 2023).

Bloss, W. 2007. Escalating US police surveillance after 9/11: An examination of causes and effects. *Surveillance & Society*, *4*(3).

Bombała, B., 2021. The Question of Management Science Paradigms. *Agathos: An International Review of the Humanities & Social Sciences*, *12*(1).

Bond Lifestyle. 2023. Underwater car like in the Spy who Loved Me now a reality. From: Underwater car like in The Spy Who Loved Me now a reality | Bond Lifestyle (jamesbondlifestyle.com) (Accessed 18 September 2023).

Book, E. 2021. CPTED turns 50: A review of the principles of crime prevention through environmental design. *Campus Security Report*, *18*(5), pp.1-5

Bordbar, F; Salehzadeh, R; Cousin, C; Griffin, D.J; & Jalili, N. 2021. Analyzing Human-Robot Trust in Police Work Using a Teleoperated Communicative Robot. In *2021 30th IEEE International Conference on Robot & Human Interactive Communication (RO-MAN)* (pp. 919-924). IEEE.

Border Management Authority. 2023. Border guards rack up first successes. From: Border Guards Rack up First Successes – BMA (Accessed 26 February 2024)

Boudon, R., 2009. Rational choice theory. *Social Theory*, p.179.

Bowers, K.J. & Johnson, S.D. 2003. Measuring the geographical displacement and diffusion of benefit effects of crime prevention activity. *Journal of Quantitative Criminology*, *19*(3), pp.275-301.

Boyer, A; & Farzaneh, F. 2021. Towards an Ethic of Robotics. *Journal of Organizational Psychology*, *21*(3), pp.84-100.

Bradford, B. 2014. Policing and social identity: Procedural justice, inclusion and cooperation between police and public. *Policing and society*, *24*(1), pp.22-43.

Bradford, B; Huq, A; Jackson, J; & Roberts, B. 2014. What price fairness when security is at stake? Police legitimacy in South Africa. *Regulation & governance*, *8*(2), pp.246-268.

Brady, H. 2007. *The EU and the Fight Against Organised Crime.* London: Centre for European Reform.

Bragagnolo, S; Anquetil, N; Ducasse, S; Seriai, A; & Derras, M. 2021. Software Migration: A Theoretical Framework (A Grounded Theory approach on Systematic Literature Review). *Empirical Software Engineering*.

Brandhorst, J.K; Compton, C; Solon, K; Huyler, D; McGill, C.M; & Barnhart, L. 2023. What Can Grounded Theory do for Human Resource Development? An Approach for Post-Pandemic Research and Beyond. *Human Resource Development Review*, p.15344843221149309.

Braun, V; & Clarke, V. 2021. To saturate or not to saturate? Questioning data saturation as a useful concept for thematic analysis and sample-size rationales. *Qualitative research in sport, exercise and health*, *13*(2), pp.201-216.

Brewer, J.D; Wilford, R; Guelke, A; Hume, I; & Moxon-Browne, E. 2016. *The police, public order and the state: policing in Great Britain, Northern Ireland, the Irish Republic, the USA, Israel, South Africa and China*. Springer.

Brewster, D. ed. 2018. *India and China at Sea: Competition for Naval Dominance in the Indian Ocean*. Oxford University Press.

Breyl, M. 2021. Triangulating Neanderthal cognition: a tale of not seeing the forest for the trees. *Wiley Interdisciplinary Reviews: Cognitive Science*, *12*(2), p.e1545.

Broadbent, B. 2021. 404-error. *The British Educational Research Association Annual Conference, Heriot Watt University, Edinburgh, September 3-6.*

Broadhurst, R. 2006. Development the Global Law Enforcement of Cyber Crime. *Policing*: *An International Journal of Police Strategies and Management,* 29, no. 2, pp. 408-433.

Brogden, M. & Shearing, C.D., 2005. *Policing for a new South Africa*. Routledge.

Brophy, S. 2018. South Africa leads aviation safety in Africa-ICAO. From: http://www.traveller24.com/News/Flights/south-africa-leads-aviation-safety-in-africa-icao-20170522 (Accessed 25 January 2018).

Bruce, D. & Nield, R. 2005. The police that we want: A handbook for oversight of police in South Africa. Johannesburg. Centre for the Study of Violence and Reconciliation.

Brüschweiler, W; Braun, M; Dirnhofer, R; & Thali, M. J. 2003. Analysis of patterned injuries and injury-causing instruments with forensic 3D/CAD supported photogrammetry (FPHG): an instruction manual for the documentation process. *Forensic science international*, *132*(2), 130-138.

Brayne, S; & Christin, A. 2021. Technologies of crime prediction: The reception of algorithms in policing and criminal courts. *Social Problems*, *68*(3), pp.608-624.

Brynjolfsson, E. & Hitt, L.M. 2000. Beyond Computation: Information Technology, Organizational Transformation and Business Performance. *Journal of Economic Perspective, Vol. 14, No. 4, pp 23-48.*

Brynjolfsson, S.Y. & Yang, S. 1996. Information Technology and Productivity: A Review of the Literature. *Advances in Computers, Academic Press, Vol. 43, pp 179-214*.

Buchanan-Clarke, S. 2021. Strengthening South Africa's response to the threat of international terrorism. *South African Journal of International Affairs*, pp.1-16.

Buetow, S; & Zawaly, K. 2021. Rethinking researcher bias in health research. *Journal of Evaluation in Clinical Practice*.

BUI, M.L. 2021. Corporate Reputation and Accountability of Corporate Environmental Responsibility: Theoretical Triangulation and Conflicting Accountabilities. *The Journal of Asian Finance, Economics and Business*, *8*(8), pp.21-28.

Bullock, K. 2014. Introduction. In *Citizens, Community and Crime Control*. Palgrave Macmillan UK.

Bulmer, M.I. ed. 2021. *Social science and social policy*. Routledge.

Burger, J. 2015. Saps fingerprint database failing to boost crime forensics. *Radio interview on 702 Live*. From: http://www.702.co.za/articles/4649/saps-fingerprint-database-failing-to-boost-crime-forensics (Accessed 25 October 2016).

Bush, M.D. & Dodson, K.D. 2014. Police officers as peace officers: A philosophical and theoretical examination of policing from a peacemaking approach. *Journal of Theoretical & Philosophical Criminology*, *6* (3), pp.194-205.

Business Daily. 2017. IATA says Kenya's aviation industry supports 620,000 jobs. From: https://www.businessdailyafrica.com/corporate/companies/Kenya-aviation-industry-supports-620-000-jobs/4003102-3980024-ylro5yz/index.html (Accessed 21 December 2017).

Business Day Live. 2016. New plans for OR Tambo International. From: http://www.bdlive.co.za/business/transport/2013/02/10/new-plans-for-or-tambo-international-airport (Accessed 11 May 2016).

Business Dictionary. 2017. Management Information System (MIS). From: http://www.businessdictionary.com/definition/management-information-system-MIS.html (Accessed 17 April 2017).

Business Tech. 2016. Beware this criminal activity at OR Tambo Airport. From: https://businesstech.co.za/news/media/133236/beware-this-criminal-activity-at-or-tambo-airport/ (Accessed 3 July 2017).

Bwalya, K, J. & Healy, M. 2010. Harnessing e-Government Adoption in the SADC Region: A Conceptual Underpinning. *Electronic Journal of e-Government 8, no. 1*, pp 23-32.

Byrne, J. & Marx, G. 2011. Technological innovation in crime prevention and policing: A review of the research on implementation and impact. *Journal of Police Studies*, *20*(3), pp.17-40.

Cable Network News. 2017. Tsarnaev trial: New surveillance footage revealed. From: http://edition.cnn.com/2015/03/09/us/boston-marathon-bombing-trial/index.html (Accessed 2 June 2017).

California State University. 2016. Community Oriented Policing & Problem Solving. From: http://www.csueastbay.edu/af/departments/upd/police-services/copps.html (Accessed 13 March 2017).

Calland, R. & Pienaar, G. 2016. Guarding the guardians: South Africa's chapter nine institutions.

CAPA Cetre for Aviation. 2018. Africa Outlook: Profitability and growth remain bleak until internal protectionism is removed. From: https://centreforaviation.com/insights/airline-leader/prospects-for-profitability-and-growth-will-remain-bleak-for-the-african-airline-sector-263044 (Accessed 25 January 2018).

Caparini, M & Osland, K.M. 2014. As police roles grow in UN peace operations, clearer guidelines needed. From: https://theglobalobservatory.org/2014/03/as-un-police-become-part-of-peacebuilding-clearer-guidelines-are-needed/ (Accessed 22 March 2017).

Carrera, S. 2007. The EU border management strategy: FRONTEX and the challenges of irregular immigration in the Canary Islands.

Cassidy, B; Fenton, S; Fletcher, D.M; Koch, D; Stewart, M; Watzlaf, V; & Willner, S. 1998. Practice brief: Data quality management model. *American Health Information Management Association*.

Carter, A. 2013. *The political theory of global citizenship*. Routledge.

Casula, M; Rangarajan, N; & Shields, P. 2021. The potential of working hypotheses for deductive exploratory research. *Quality & Quantity*, *55*(5), pp.1703-1725.

CBS Reality. 2018. Border security. [TV programme]. 01 July.

Cebeci, U. 2009. Fuzzy AHP-based decision support system for selecting ERP systems in textile industry by using balanced scorecard. *Expert Systems with Applications*, *36*(5), pp.8900-8909.

Center for the National Interest. 2023. How Active Radar Homing Missiles Changed Warfare Forever. From: How Active Radar Homing Missiles Changed Warfare Forever | The National Interest (Accessed 18 September 2023).

Chan, J.B.L. 2001. The technological game: How information technology is transforming police practice. *Criminology and Criminal Justice*, *1*(2), pp.139-159.

Chan, C.Y; Lian, T; & Ko, J. 2009. *Expedited Crash Investigation: With Use of Technologies for Documentation and Processing*. California PATH Program, Institute of Transportation Studies, University of California at Berkeley.

Chan, J; Brereton, D; Legosz, M; & Doran, S. 2001. E-policing: The impact of information technology on police practices. *Brisbane: Criminal Justice Commission*.

Chen, W; & Zhang, J. 2024. Elevating Security Operations: The Role of AI-Driven Automation in Enhancing SOC Efficiency and Efficacy. *Journal of Artificial Intelligence and Machine Learning in Management*, *8*(2), pp.1-13.

Chappell, D. & Evans, J. 1999. The role, preparation and performance of civilian police in United Nations peacekeeping operations. In *Criminal law forum* (Vol. 10, No. 2, pp. 171-271, June). Kluwer Academic Publishers.

Charo, A.M. 2021. Role of Maritime Policies and Strategies in Shaping the Maritime Security Threats in Kenya. *African Journal of Empirical Research*, *2*(1), pp.115-131.

Chavis, K., 2021. Transformative Policing Technologies: Balancing Public Safety, Privacy, and Community Consent in Vulnerable Communities in the United States. *Policing: A Journal of Policy and Practice*, *15*(1), pp.425-439.

Chazal, F; & Michel, B. 2021. An introduction to topological data analysis: fundamental and practical aspects for data scientists. *Frontiers in Artificial Intelligence*, *4*.

Chikwanha, A.B. 2010. Can Practice make Perfect? Security and the 2010 World Cup. *South African Crime Quarterly, 27 March, pp 9-14. Institute of Security Studies.*

Chinn, M.D & Fairlie, R.W. 2006. The Determinants of the Global Digital Divide: A Cross-Country Analysis of Computer and Internet Penetration. *Oxford Papers, 16 of 44.*

Chinsembu, K.C & Kasanda, C.D. 2012. The Evolution of Science and Technology Policy Dialogue in Post-Colonial Africa. *Educational Research, Vol. 3 (4): 351-356, April.*

Chun, H. 2021. A Study on the Utilization of Drone Education in the Fourth Industrial Revolution. In *Journal of Physics: Conference Series* (Vol. 1875, No. 1, p. 012017). IOP Publishing.

City Press. 2017. Mbalula's no-nonsense plan to beef up security at OR Tambo airport. From: http://city-press.news24.com/News/mbalulas-no-nonsense-plan-to-beef-up-security-at-or-tambo-airport-20170721 (Accessed 6 August 6, 2017).

Clark, M., 2005. The importance of a new philosophy to the post-modern policing environment. *Policing: An International Journal of Police Strategies & Management*, *28*(4), pp.642-653.

Clarke, R.V., 1980. Situational crime prevention: Theory and practice. *Brit. J. Criminology*, *20*, p.136.

Clarke, R.V. 1995. Situational crime prevention. *Crime and justice*, pp.91-150.

Clarke, R.V., 1995. Situational crime prevention. *Crime and justice*, *19*, pp.91-150.

Clarke, R.V., 2009. Situational crime prevention: Theoretical background and current practice. In *Handbook on crime and deviance* (pp. 259-276). New York, NY: Springer New York.

Clement, R.N., 2019. *Airport Security and TSA: A Case study Analysis* (Doctoral dissertation, Northcentral University).

Clunan, A.L., 2022. 15. US and International Responses to Terrorist Financing. In *Terrorism financing and state responses* (pp. 260-281). Stanford University Press.

Cockayne, J. & Pfister, D.R. 2008. *Peace Operations and Organised Crime.* Geneva Papers. Centre for Security Policy. International Peace Institute.

Cohen, G. 2021. In Pursuit of Police Ethics: An Analysis of Ethics Content in State-Mandated Basic Police Training Curricula. *Public Integrity*, pp.1-14.

Cohen, R. 2016. *Migration and its enemies: global capital, migrant labour and the nation-state*. Routledge.

Coleman, M; Heynen, N; Doshi, S; Burridge, A; Heller, C; Huemer, M; King, N; Lakhdar, M; Leuenberger, C; Loyd, J.M; & Nail, T. 2019. *Open Borders: In Defense of Free Movement* (Vol. 41). University of Georgia Press.

Colton, K.W. 1979. The impact and use of computer technology by the police. *Vol. 22 (1), January*.

Comras, V., 2022. 7. Al Qaeda Finances and Funding to Affiliated Groups. In *Terrorism Financing and State Responses* (pp. 115-133). Stanford University Press.

Corbin, J. 2021. Strauss's Grounded Theory. In *Developing Grounded Theory* (pp. 25-44). Routledge.

Cordella, A. & Iannacci, F. 2010. Information systems in the public sector: The e-Government enactment framework. *The Journal of Strategic Information Systems*, *19*(1), pp.52-66.

Cordner, G. 2014. Community policing. *The Oxford handbook of police and policing*, pp.148-171.

Cornelisse, G. 2010. *Immigration detention and human rights: rethinking territorial sovereignty* (Vol. 19). Brill.

Cornish, D.B. & Clarke, R.V. eds. 2014. *The reasoning criminal: Rational choice perspectives on offending*. Transaction Publishers.

Council of Europe. 2017. Police abuse – a serious threat to the rule of law. From: http://www.coe.int/da/web/commissioner/-/police-abuse-a-serious-threat-to-the-rule-of-l-1 (Accessed 13 March 2017).

Cousins, J. 2021. *Policing the Aerotropolis: A Model for Securing the Nation's Large Airports* (Doctoral dissertation, Monterey, CA; Naval Postgraduate School).

Cozens, P.M., 2002. Sustainable urban development and crime prevention through environmental design for the British city. Towards an effective urban environmentalism for the 21st century. *Cities*, *19*(2), pp.129-137.

Craig, P; & De Búrca, G. 2011. *EU law: text, cases, and materials*. Oxford University Press.

Creswell, J. W; & Guetterman, T. C. 2019. *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (6th ed.). Boston: Pearson.

Crick, J.M. 2021. Qualitative research in marketing: what can academics do better? *Journal of Strategic Marketing*, *29*(5), pp.390-429.

Cropf, R. A; Bagwell, T.C. 2016. Ethical issues and citizen rights in the era of digital government surveillance. Hershey, PA: IGI Global.

Crush, J; & Peberdy, S. 2018. Criminal tendencies: immigrants and illegality in South Africa.

Culhane, M. 2014. Survey of Technologies for the Airport Border of the Future.

Cullin, J.M. 2021. What is normal body weight? Perceptions around "average" and "healthy" body weight among adolescents in Indiana. *American Journal of Human Biology*, *33*(5), p.e23654.

Chun Tie, Y; Birks, M; & Francis, K. 2019. Grounded theory research: A design framework for novice researchers. *SAGE open medicine*, *7*, p.2050312118822927.

Cyanre. 2019. Digital forensics. From: https://www.cyanre.co.za/ (Accessed 29 December 2020).

Daily Maverick. 2012. SA forensics: What are the dead telling us? From: https://www.dailymaverick.co.za/article/2012-07-04-sa-forensics-what-are-the-dead-telling-us/#.WZAaI2e7qxA (Accessed 13 August 2017).

Dalal, R.S. 2006. Chipping away at the constitution: The increasing use of RFID chips could lead to an erosion of privacy rights. *BUL Rev.*, *86*, p.485.

DanceSafe. 2017. Testing kits instructions. From: https://dancesafe.org/testing-kit-instructions/ (Accessed 11 August 2017).

Das, M. 2015. The curious case of technology and crime prevention: The Indian perspective. *International Journal of Technology Enhancements and Emerging Engineering Research, Vol 3, Issue 04, pp 9-22.*

Daugman, J. 2015. Iris recognition at airports and border crossings. *Encyclopedia of Biometrics*, pp.998-1004.

Dale, A. 1994. A philosophy of policing. *The Police Journal*, *67*(1), pp.19-25.

Dale, R. 1999. Specifying Globalization Effects on National Policy: A Focus on the Mechanisms. *J. EDUCATION POLICY, 1999, Volume 14, No. 1, 1-17*. From: http://pdfserve.informaworld.com/329817_751308860_713807427.pdf (Accessed 24 June 2009).

Daramola, S.A; & Oluwaninyo, D. 2011. Automatic Ear Recognition System using Back Propagation Neural Network. *image*, *9*, p.10.

DCM Technical Services, Inc. 2013. Forensics-Photogrammetry. From: http://www.dcmtechservices.com/forensics/photogrammetry.htm (Accessed 2 June 2017).

de Andreotti, V.O. 2014. Soft versus critical global citizenship education. In *Development education in policy and practice* (pp. 21-31). Palgrave Macmillan, London.

Debate.Org. 2018. Are US airport security regulations for flying too strict? From: http://www.debate.org/opinions/are-us-airport-security-regulations-for-flying-too-strict (Accessed 6 February 2018).

DefenceWeb. 2017. Protecting South Africa's borders. From: http://www.defenceweb.co.za/index.php?option=com_content&view=article&id=48490&catid=74&Itemid=30 (Accessed 31 October 2017).

DefenceWeb. 2017a. Border Management Authority, Defence Review need larger budget. From: http://www.defenceweb.co.za/index.php?option=com_content&view=article&id=49634:border-management-authority-defence-review-need-larger-budget&catid=87:border-security&Itemid=188 (Accessed 28 Dec. 17).

Dehkordi, A. B; & Abu-Bakar, S. A. 2015. A Review OF IRIS RECOGNITION SYSTEM.

Deng, W; Hu, J & Guo, J. 2012. Extended SRC: Under sampled face recognition via intraclass variant dictionary. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *34*(9), pp.1864-1870.

Denzin, N.K & Lincoln, Y.S. 1994. *Handbook of Qualitative Research.* Thousand Oaks, Ca: Sage Publications.

Department of Environmental Affairs. 2018. Statement by the DDG, Mr. Ishaam Abader, on behalf of Minister Edna Molewa as South Africa marks World Wildlife Day at OR Tambo International Airport. From: https://www.environment.gov.za/mediarelease/southafricamarksworldwildlifedayatORTamboInternationalAirport (Accessed 26 October 2018).

Department of Home Affairs. 2016. Statement by Home Affairs Minister Malusi Gigaba during the inspection of the pilot project on biometric capturing at ports of entry: OR Tambo International Airport. From: http://www.dha.gov.za/index.php/statements-speeches/721-statement-by-home-affairs-minister-malusi-gigaba-during-the-inspection-of-the-pilot-project-on-biometric-capturing-at-ports-of-entry-or-tambo-international-airport (Accessed 11 May 2016).

Department of Home Affairs. 2019. An overview of the new immigration laws and regulations and their implications, by Home Affairs Director-General Mkuseli Apleni, at the information session for Members of Parliament: Parliament, 23 April 2015. From: http://www.dha.gov.za/index.php/statementsspeeches/600-overview-of-the-new-immigration-laws-and-regulations-and-their-implications-by-home-affairs-director-generalmkuseli-apleni (Accessed 3 January 2019).

Department of Home Affairs. 2021. Statement by Home Affairs Director-General Mkuseli Apleni on plans for the festive period, including extension of office hours, Home Affairs Ministry, Hatfield, 02 December 2015. From: http://www.dha.gov.za/index.php/statements-speeches/708-statement-by-home-affairs-director-general-mkuseli-apleni-on-plans-for-the-festive-period-including-extension-of-office-hours-home-affairs-ministry-hatfield-02-december-2015 (Accessed 20 July 2021).

Department of Home Affairs. 2022. Minister Motsoaledi unveils BMA Border Guard and welcomes new recruits. From: http://www.dha.gov.za/index.php/statements-speeches/1572-minister-motsoaledi-unveils-bma-border-guard-and-welcomes-new-recruits#:~:text=The%20Minister%20of%20Home%20Affairs%2C%20Dr%20Aaron%20Motsoaledi%2C,Limpopo%20on%20Thursday%2014%20July%202022%2C%20at%2010h00. (Accessed 12 August 2022).

Department of International Relations and Cooperation. 2003. International Police Organisation (Interpol). From : http://www.dirco.gov.za/foreign/Multilateral/inter/interpol.htm (Accessed 1 December 2016).

Department of Transport. 2017. Minister of Transport, Mr. Joe Maswanganyi, statement on the occasion of the announcement of the ICAO 2017 preliminary audit results held at OR Tambo International Airport, 22 May 2017.

Department of Transport. 2018. Transport. From: https://www.gov.za/about-sa/transport (Accessed 3 January 2019).

De Wet, C. 2015. The policing of school violence in the Western Cape, South Africa. *Child Abuse Research in South Africa*, *16*(1), pp.55-63.

Diaz-Bone, R. 2021. Economics of Convention Meets Canguilhem. *Historical Social Research/Historische Sozialforschung*, *46*(1), pp.285-311.

Dictionary.com. 2017. Epistemology. From: http://www.dictionary.com/browse/epistemology (Accessed 4 May 2017).

Dictionary.com, LLC. 2021. Methodology. From: https://www.dictionary.com/browse/methodology (Accessed 09 September 2021).

Digital Trends. 2017. TSA to yank controversial 'naked' full-body scanners out of airports. From: https://www.digitaltrends.com/home/tsa-will-finally-remove-controversial-naked-full-body-scanners/ (Accessed 30 May 2017).

Disenyana, T. 2013. Towards EAC, COMESA and SADC Free Trade Area.

Djajić, S; & Vinogradova, A. 2019. Immigration policies and the choice between documented and undocumented migration. *Economica*, *86*(341), pp.201-228.

Donnelly, J; & Whelan, D.J. 2017. *International human rights*. Hachette UK.

Doran, D; Gokhale, S; & Lownes, N. 2013. Analytic Model of Screening Times at Airport Security Checkpoints. *Transportation Research Record: Journal of the Transportation Research Board*, (2400), pp.1-8.

Dougherty, M.V. 2021. The use of confidentiality and anonymity protections as a cover for fraudulent fieldwork data. *Research Ethics*, p.17470161211018257.

Drap, P; Merad, D; Hijazi, B; Gaoua, L; Nawaf, M.M; Saccone, M; Chemisky, B; Seinturier, J; Sourisseau, J.C; Gambin, T; & Castro, F. 2015. Underwater photogrammetry and object modeling: a case study of Xlendi Wreck in Malta. *Sensors*, *15*(12), pp.30351-30384.

Driver, B.V. 2013. The digital divide. From: https://smarties2013.wordpress.com/2013/04/28/the-digital-divide/ (Accessed 17 May 2017).

Dube, K. and Nhamo, G., 2021. Private Sector Sustainable Development Goals' Localisation: Case of Kruger Mpumalanga International Airport, South Africa. In *Sustainable Development Goals for Society Vol. 2: Food security, energy, climate action and biodiversity* (pp. 177-189). Cham: Springer International Publishing.

Du Preez, J. 2009. *Assessing the m-Government Readiness within the Provincial Government Western Cape.* Stellenbosch: Stellenbosch University.

Ebbe, O.N. ed. 2013. *Comparative and international criminal justice systems: Policing, judiciary, and corrections*. CRC Press.

Ebert Digital LLC. 2023. 'I, Robot' misses Asimov's complexity. From: I, Robot movie review & film summary (2004) | Roger Ebert (Accessed 18 September 2023).

Eck, J.E; & Weisburd, D.L. 2015. Crime places in crime theory. *Crime Prevention Studies, 4 (pp. 1-33)*

Egbert, S; & Leese. 2021. *Criminal Futures: Predictive Policing and Everyday Police Work* (p. 242). Taylor & Francis.

Elden, S. 2005. Territorial integrity and the war on terror. *Environment and Planning A*, *37*(12), pp.2083-2104.

Elias, B. 2012. September. Airport Body Scanners: The Role of Advanced Imaging Technology in Airline Passenger Screening. Congressional Research Service, Library of Congress.

Elliott, R; & Timulak, L. 2021. *Essentials of descriptive-interpretive qualitative research: A generic approach*. American Psychological Association.

Ellingson, L.L. 2009. *Engaging crystallization in qualitative research: An introduction*. Sage.

Ellison, G. 2007. A blueprint for democratic policing anywhere in the world? Police reform, political transition, and conflict resolution in Northern Ireland. *Police Quarterly*, *10*(3), pp.243-269.

Elsen, C. 2007. From Maastricht to the Hague: The Politics of Judicial and Police Cooperation. *European Criminal Justice.* Trier: ERA.

Enago Academy. 2021. Dealing with bias in academic research. From: https://www.enago.com/academy/dealing-with-bias-in-academic-research/ (Accessed 10 November 2021).

eNCA. 2016. Week in One. [TV programme]. 15 May.

eNCA. 2016a. SA 'actress' appears in court #DrugBust. From: https://www.enca.com/south-africa/pics-sa-actress-appears-court-drugbust (Accessed 11 May 2016).

eNCA. 2016b. OR Tambo to be transformed into R300 billion aerotropolis. From: https://www.enca.com/money/or-tambo-be-transformed-r300-billion-aerotropolis (Accessed 11 May 2016).

Encyclopedia Britannica, Inc. 2017. The history of policing in the west. From: https://global.britannica.com/topic/police/The-history-of-policing-in-the-West#toc260917 (Accessed 19 January 2017).

Encyclopedia.Com. 2016. DNA fingerprint. From: http://www.encyclopedia.com/science-and-technology/biology-and-genetics/genetics-and-genetic-engineering/dna-fingerprinting (Accessed 6 June 2017).

Encyclopedia Princetoniensis, 2017. Territorial integrity. From: https://pesd.princeton.edu/?q=node/271 (Accessed 27 December 2017).

Engineering News. 2016a. Aerotropolis concept advantageous for the economy. http://www.engineeringnews.co.za/article/implementation-of-aerotropolis-concept-advantageous-for-economy-2016-01-22 (Accessed 11 May 2016).

Engineering News. 2016b. Biometric technology improves airport security. From: http://www.engineeringnews.co.za/article/biometric-technology-improves-airport-security-2007-11-02 (Accessed 19 October 2016).

Enslin, P & Horsthemke, K. 2004. Can Ubuntu provide a Model for Citizenship Education in African Democracies? *Comparative Education,* Vol. 40, No. 4, Special Issue (29): Philosophy, Education and Comparative Education (November), pp 545-558.

Ertmera, P.A & Ottenbreit-Leftwich, A.T. 2010. Teacher Technology Change: How Knowledge, Confidence, Beliefs, and Culture Intersect. *Journal of Research on Technology in Education, 42:3, 255-284.*

Erasmus, G. 2020. New Border Management for South Africa amidst unresolved systemic Issues. From: https://www.tralac.org/news/article/14393 (Accessed 05 October 2020).

Espach, R; & Haering, D. 2012. *Border insecurity in central America's northern triangle.* Washington D.C, Washington: Migration Policy Institute.

Eti, S. 2021. The use of quantitative methods in investment decisions: a literature review. *Research Anthology on Personal Finance and Improving Financial Literacy*, pp.1-20.

EUbusiness.com. 2018. Common EU Regulations in the field of civil aviation security. From: https://www.eubusiness.com/topics/transport/civil-aviation-security/ (Accessed 6 February 2018)

European Commission. 2017. Airports. From: https://ec.europa.eu/transport/modes/air/airports_en (Accessed 30 October 2017).

European Commission. 2017a. Borders and security. From: https://ec.europa.eu/info/strategy/borders-and-security_en (Accessed 29 December 2017).

European Union. 2008. Regulation (EC) N°300/2008 of the European Parliament. European Union.

European Union. 2009. The Treaty of Lisbon. European Union.

European Union. 2012. *Treaty of the European Union.* European Union.

European Union. 2015. *Territorial integrity of states: Emergency resolution adopted at the EPP congress, Madrid (Spain), 21-22 October 2015.* Madrid: European Peoples Party.

European Union, 2017. The EU in brief. From: https://europa.eu/european-union/about-eu/eu-in-brief_en (Accessed 30 October 2017).

European Union. 2017a. European Charter on Fundamental Rights. European Union.

European Union. 2018. Goals and values of the EU. From: https://europa.eu/european-union/about-eu/eu-in-brief_en (Accessed 26 October 2018).

Eurotech. 2017. Face recognition devices. From: https://www.eurotech.com/en/products/devices/face+recognition+systems (Accessed 8 June 2017).

Evans, E.J. 2006. *Sir Robert Peel: statesmanship, power, and party*. Routledge.

Evrard, E. 2021. Reading European borderlands under the perspective of legal geography and spatial justice. *European Planning Studies*, pp.1-17.

Ewald, A. 2012. Civil Death: The Ideological Paradox of Criminal Disenfranchisement Law in the United States.

Ewers, R; Bloomer, M.J; & Hutchinson, A. 2021. An exploration of the reliability and usability of two delirium screening tools in an Australian intensive care unit: A pilot study. *Intensive and Critical Care Nursing*, *62*, p.102919.

EyeWitness News. 2015. SAPS gets seat on INTERPOL committee. From: http://ewn.co.za/2015/11/06/Saps-get-one-Interpol-seat (Accessed 1 December 2016).

EyeWitness News. 2016. Stowaway dies falling from Jhb flight to London. From: http://ewn.co.za/2015/06/19/Stowaway-dies-falling-from-flight-from-Jhb-to-London (Accessed 11 May 2016).

EyeWitness News. 2017. Investigators question how gang bypassed security at O.R Tambo Airport. From: http://ewn.co.za/2017/03/08/investigators-question-how-gang-bypassed-security-at-or-tambo-airport (Accessed 29 May 2017).

EZTtestkits.com. 2017. Drug purity and cutting agents. From: https://www.eztestkits.com/en/drug-purity-and-cutting-agents/ (Accessed 11 August 2017).

Fadhillah, A; Zebua, Y; & Prayoga, Y. 2021. Analysis of Information Quality, Trust and Satisfaction on Customer Participation (Case Study on Customer Online Shop Shopee in Rantauprapat). *Budapest International Research and Critics Institute-Journal (BIRCI-Journal) Vol*, *4*(2), pp.3039-3051.

Fairfax Media. 2017. Is Australian airport security sensibly cautious or overly neurotic? From: http://www.traveller.com.au/is-australian-airport-security-sensibly-cautious-or-overly-neurotic-13qgkm (Accessed 9 Aug. 17).

Falamarzi, I.A.A.M; & Siam, M.R. 2021. Critical factors of crisis escalation between customers and front-line security besides moderation of organizational culture at Dubai International Airport. *International Journal of Entrepreneurship*, *25*, pp.1-13.

Falode, A.J. 2021. Guns, Arms Trade and Transnational Crime in Africa. *The Palgrave Handbook of Small Arms and Conflicts in Africa*, p.411.

Fang, M; Damer, N; Kirchbuchner, F; & Kuijper, A. 2021. January. Demographic bias in presentation attack detection of iris recognition systems. In *2020 28th European Signal Processing Conference (EUSIPCO)* (pp. 835-839). IEEE.

Fanon, F. 2016. Black skin, white masks. In *Social Theory Re-Wired* (pp. 394-401). Routledge.

Farid, H. 2010. A 3-D photo forensic analysis of the Lee Harvey Oswald backyard photo. *Hanover, NH*.

Faull, A. 2010. 'When I see them, I feel like beating them': Corruption and the South African Police Service. *South African Crime Quarterly*, *34*, pp.33-40.

Fazal, T.M. 2011. *State death: the politics and geography of conquest, occupation, and annexation*. Princeton University Press.

Federal office for migration. 2012. *Final report of the "Integrated Border Management" strategy group.* Bern-Wabern: Federal Office for Migration.

Fellows, R.F; & Liu, A.M. 2021. *Research methods for construction*. John Wiley & Sons.

Feng, Y; Chen, H; & Ahn, H.Y.A. 2021. How consumers react to woke advertising: methodological triangulation based on social media data and self-report data. *Journal of Research in Interactive Marketing*.

Feng, C; Wanyan, X; Liu, S; Chen, H; & Zhuang, D. 2021. An approach to situation awareness (SA) assessment in flight simulation: SA dynamic circulation (SADC) model. *Human Factors and Ergonomics in Manufacturing & Service Industries*.

Fennelly, L. & Crowe, T. 2013. *Crime prevention through environmental design*. Elsevier.

Fernandez, G.A. 2014. Waking up from Wonderland: Warrantless Searches through Modern Technology. *Crit*, *7*, p.12.

Fernandes, D.A; Soares, L.F; Gomes, J.V; Freire, M.M; & Inácio, P.R. 2014. Security issues in cloud environments: a survey. *International Journal of Information Security*, *13*(2), pp.113-170.

Fernandez, A.V; & Zahavi, D. 2021. Can we train basic empathy? A phenomenological proposal. *Nurse Education Today*, *98*.

Fin24.com. 2018. Civil aviation audit puts SA tops in Africa. From: https://www.fin24.com/Companies/Industrial/civil-aviation-audit-puts-sa-tops-in-africa-20170522 (Accessed 23 January 2018).

Find Biometrics. 2024. Applications . From: Applications (findbiometrics.com) (Accessed 7 June 2024).

Findley, M.G; Kikuta, K; & Denly, M. 2021. External Validity. *Annual Review of Political Science*, *24*, pp.365-393.

Finn, R.L; Wright, D; & Friedewald, M. 2013. Seven types of privacy. In *European data protection: coming of age* (pp. 3-32). Springer Netherlands.

Fischer, E; & Guzel, G.T. 2023. The case for qualitative research. *Journal of Consumer Psychology*, *33*(1), pp.259-272.

Fisher, B.A. & Fisher, D.R. 2012. *Techniques of crime scene investigation*. crc Press.

Fisher, D; Maimon, D; & Berenblum, T. 2021. Examining the crime prevention claims of crime prevention through environmental design on system-trespassing behaviors: a randomized experiment. *Security Journal*, pp.1-23.

Flight Centre. 2017. OR Tambo launches smart security checkpoint. From: http://www.flightcentre.co.za/business-travel/travel-desk/or-tambo-launches-smart-security-checkpoint (Accessed 30 May 2017).

Follis, K.S. 2017. Vision and transterritory: the borders of Europe. *Science, Technology, & Human Values*, *42*(6), pp.1003-1030.

Fooner, M. 2013. *Interpol: issues in world crime and international criminal justice*. Springer.

Ford, D.M. 2007. Technologizing Africa: On the Bumpy Information Highway. *Computers and Composition 24: pp 302–316.*

Forensic Audio Lab. 2020. Lawyers & private investigators get your audio evidence ready. From: http://www.forensicaudiolab.co.za/ (Accessed 29 December 2020).

Forensic Focus. 2014. The complete workflow of forensic image and video analysis. From: https://articles.forensicfocus.com/2014/07/28/the-complete-workflow-of-forensic-image-and-video-analysis/ (Accessed 1 June 2017).

Forensicon. 2017. Boston marathon bombing- Using video forensics. From: https://www.forensicon.com/forensicon-news/digital-video-photo-forensics-boston-marathon-bombers/ (Accessed 10 August 2017).

Fortin, F; Delle Donne, J; & Knop, J. 2021. The Use of Social Media in Intelligence and Its Impact on Police Work. In *Policing in an Age of Reform* (pp. 213-231). Palgrave Macmillan, Cham.

Fox, W. & Meyer, I.H. 1995. *Public administration dictionary.* [S.l.]: Juta.

Francis, A. 2021. *Business mathematics and statistics*. Thomson.

FractalDesign. 2016. O.R Tambo airport. From: http://ortambo-airport.com/airport/bio.php (Accessed 29 April 2016).

Frazier, A; & Gonzales, J.E. 2021. Studying sequential processes of criminal defendant decision-making using a choose-your-own-adventure research paradigm. *Psychology, Crime & Law*, pp.1-28.

Frederickson, H.G; & LaPorte, T.R. 2002. Airport security, high reliability, and the problem of rationality. *Public Administration Review*, *62*(s1), pp.33-43.

Freedom Outpost. 2017. 7 examples of police state technology that arised in 2014 to infringe our rights. From: http://freedomoutpost.com/7-examples-police-state-technology-arised-2014-infringe-rights/ (Accessed 17 May 2017).

Freitas, F.F; Gonçalves, J; Morais, A.P; & Pasechnik, R. 2021. Phenomenology of vector-like leptons with Deep Learning at the Large Hadron Collider. *Journal of High Energy Physics*, *2021*(1), pp.1-61.

Frost, N. 2021. *Qualitative Research Methods in Psychology: Combining Core Approaches 2e*. McGraw-Hill Education (UK).

Fuchs, C & Horak, E. 2008. Africa and the Digital Divide. *Telematics and Informatics 25 (2008) 99–116.* ELSEVIER.

Galeotti, M. 2005. *Global Crime Today: the Changing Face of Organized Crime.* New York, NY: Routledge.

Galis, V; Tzokas, S; & Tympas, A. 2016. Bodies folded in migrant crypts: Dis/ability and the material culture of border-crossing. *Societies*, *6*(2), p.10.

Gallupe, O. & Baron, S.W. 2014. Morality, self-control, deterrence, and drug use: Street youths and situational action theory. *Crime & Delinquency*, *60*(2), pp.284-305.

Gambrell, J. 2017. Passengers could face longer queues for check-in or boarding international flights to America thanks to new rules. From: http://www.independent.co.uk/travel/news-and-advice/travel-new-security-measures-airport-us-flights-latest-trump-administration-a8020266.html (Accessed 6 February 2018).

Gash, N. 2011. *Sir Robert Peel: The Life of Sir Robert Peel after 1830*. Faber & Faber.

Gastrow, P. 2000. Organised Crime in the SADC Region: Police Perceptions. European Union: Open Society Initiative for Southern Africa.

Gastrow, P. 2001. The SADC Region: A Common Market for Criminals. *Africa Security Review, Vol 10, No. 4.*

Gastrow, P. 2013. Transnational organised crime. *Institute for Security Studies Policy Brief 46, October.*

Gauteng Tourism Authority. 2016. OR Tambo International Airport. From: http://www.gauteng.net/attractions/or_tambo_international_airport/ (Accessed 5 May 2016).

Geldenhuys, K. 2016. Policing Lanseria Airport. *Servamus Community-based Safety and Security Magazine*, *109*(2), pp.48-51.

Geldenhuys, K. 2022. Drug mules Pawns to international drug syndicates. *Servamus Community-based Safety and Security Magazine*, *115*(6), pp.18-21.

George R. Tourist's perceptions of safety and security while visiting Cape Town. Tourism Management. 2003 Oct 31;24(5):575-85.

Geradts, Z; & Bijhold, J. 2000. Forensic video investigation. In *Multimedia Video-Based Surveillance Systems* (pp. 3-12). Springer US.

Getty Images. 2016. O.R Tambo. From: http://www.gettyimages.com/photos/oliver-tambo?excludenudity=true&sort=mostpopular&mediatype=photography&phrase=oliver%20tambo&family=editorial#license (Accessed 9 November 2016).

Geurs, K; Grigolon, A; Münzel, K; Gkiotsalitis, K; Duran-Rodas, D; Büttner, B; Kirchberger, C; Pappers, J; Martinez Ramirez, L; Graf, A; & Hansel, J. 2023. The Smarthubs integration ladder: a conceptual model for the categorisation of shared mobility hubs. *Transport Reviews*, pp.1-28.

Ghaffar, Z; Alshahrani, A; Fayaz, M; Alghamdi, A.M; & Gwak, J. 2021. A Topical Review on Machine Learning, Software Defined Networking, Internet of Things Applications: Research Limitations and Challenges. *Electronics*, *10*(8), p.880.

Ghosh, C. 2010. Types of management information systems. From: http://lecture-notes-forstudents.blogspot.co.za/2010/03/types-of-management-information-systems.html (Accessed 9 May 2017).

Gigerenzer, G. & Gaissmaier, W. 2011. Heuristic decision making. *Annual review of psychology*, *62*, pp.451-482.

Gillen, D. & Morrison, W.G. 2015. Aviation security: Costing, pricing, finance and performance. *Journal of Air Transport Management*, *48*, pp.1-12.

Global Education Magazine. 2017. South Africa is one of the most unequal societies in the world: http://www.globaleducationmagazine.com/south-africa-unequal-societies-world/ (Accessed 3 January 2017).

Glöckner, A. & Betsch, T. 2008. Modeling option and strategy choices with connectionist networks: Towards an integrative model of automatic and deliberate decision making.

Goldsmith, A. 2005. Police Reform and the Problem of Trust. *Theoretical criminology* 9, no. 4: 443-470.

Gonzalez, J. 2016. Testimony of Deputy Assistant Secretary of State Juan Gonzalez before the House Foreign Affairs Subcommittee on the Western Hemisphere March 22, 2016.

Goodwin, J., Savage, E. and O'Donovan, A., 2023. Using the draw and tell method with adolescents as part of an interpretive descriptive study. *Qualitative Research Journal*, *23*(3), pp.273-286.

Gottschalk, P. 2007. *Knowledge Management Systems in Law enforcement: Technologies and Techniques.* London: IDEA Group.

Govender, D. 2015. A Conceptual Analysis of Strategies to Combat Organised Crime in South Africa. *Insight on Africa*, *7*(2), pp.120-136.

Govender, D., 2017. Policing in South Africa: Is decolonisation the answer to democratic policing. *College of Law: University of South Africa*.

Government Communication and Information System. 2021. Home Affairs officials arrest for fraud. From: https://www.sanews.gov.za/south-africa/home-affairs-officials-arrest-fraud (Accessed 4 September 2021).

Government Communication and Information System. 2023. R9 billion injection for Covid-19 vaccine programme. From: R9 billion cash injection for COVID-19 vaccine programme | SAnews (Accessed 18 September 2023).

Government Communication and Information System. 2024. BMA to safeguard SA's borders. From: BMA to safeguard SA's borders | SAnews (Accessed 26 February 2024)

Government of South Africa. 2018. National Crime Prevention Strategy: Summary. From: https://www.gov.za/documents/national-crime-prevention-strategy-summary (Accessed 4 January 2019).

Government of South Africa. 2020. Border Management Authority Act 2 of 2020 (English/Sepedi). From: https://www.gov.za/documents/border-management-authority-act-2-2020-english-sepedi-21-jul-2020-0000?gclid=Cj0KCQjw5eX7BRDQARIsAMhYLP-yrzORBTp4Jl7k3RtAxJZBR2Y2B5YLzd8E54Y3sRrWW5zITe2IU20aAmrLEALw_wcB (Accessed 05 October 2020)

Government of South Africa. 2020a. Justice, crime Prevention and Security Cluster. From: https://www.gov.za/about-government/justice-crime-prevention-and-security-cluster (Accessed 28 December 2020).

Government of South Africa. 2020b. Border Management Authority Act 2 of 2020 (English/Sepedi). From: https://www.gov.za/documents/border-management-authority-act-2-2020-english-sepedi-21-jul-2020-0000?gclid=Cj0KCQjw5eX7BRDQARIsAMhYLP-yrzORBTp4Jl7k3RtAxJZBR2Y2B5YLzd8E54Y3sRrWW5zITe2IU20aAmrLEALw_wcB (Accessed 05 October 2020)

Government of South Africa. 2024. Minister Malusi Gigaba welcomes SARS staff seconded to Border Management Agency. From: Minister Malusi Gigaba welcomes SARS staff seconded to Border Management Agency | South African Government (www.gov.za) (Accessed 7 June 2024).

Government of South Africa. 2024a. Justice, Crime Prevention and Security (JCPS) Cluster briefing statement on the State of the Nation Address (SoNA). From: Justice, Crime Prevention and Security (JCPS) Cluster briefing statement on the State of the Nation Address (SoNA) | South African Government (www.gov.za) (Accessed 7 June 2024).

Government Technical Advisory Centre. 2015. The performance and expenditure reviews. From: https://www.gtac.gov.za/ (Accessed 15 November 2016).

Graham, A. 2013. *Managing Airports 4th edition: An international perspective*. Routledge.

Graham, A. 2016. Airport management and performance. *Air Transport Management: An International Perspective*.

Grazia, V; & Molinari, L. 2021. School climate multidimensionality and measurement: a systematic literature review. *Research Papers in Education*, *36*(5), pp.561-587.

Greater Manchester Police. Crime Prevention Through Environmental Design. From: http://designforsecurity.org/about/crime-prevention-through-environmental-design (Accessed 11 April 2017).

Green, D.P. & Fox, J. 2007. Rational choice theory. *Social Science Methodology.* Sage Publications.

Greene, J.R. 2014. The Upside and Downside of the 'Police Science' Epistemic Community. *Policing*, *8*(4), pp.379-392.

Greenland, S. 2021. Dealing with the Inevitable Deficiencies of Bias Analysis–and All Analyses. *American Journal of Epidemiology*.

Grigoras, C. 2007. Applications of ENF criterion in forensic audio, video, computer and telecommunication analysis. *Forensic science international*, *167*(2), pp.136-145.

Griset, P.L; & Mahan, S. 2003. *Terrorism in Perspective.* Thousand Oak, Ca: Sage.

Grounded Theory Online. 2016. What is grounded theory? From: http://www.groundedtheoryonline.com/what-is-grounded-theory/ (Accessed 31 October 2016).

Gruen, A; Baltsavias, E; & Henricsson, O. eds. 2012. *Automatic extraction of man-made objects from aerial and space images (II)*. Birkhäuser.

Guerette, R.T. & Bowers, K.J. 2009. Assessing the extent of crime displacement and diffusion of benefits: A review of situational crime prevention evaluations. *Criminology*, *47*(4), pp.1331-1368.

Guerette, R.T; Johnson, S.D; & Bowers, K. 2016. Situational crime prevention. *Advancing Criminology and Criminal Justice Policy*, p.104.

Guignon, C. 2021. 14 Truth in Interpretation: A Hermeneutic Approach. In *Is there a single right interpretation?* (pp. 264-284). Penn State University Press.

Guisasola, J; Campos, E; Zuza, K; & Zavala, G. 2023. Phenomenographic approach to understanding students' learning in physics education. *Physical Review Physics Education Research*, *19*(2), p.020602.

Gungubele, M. 2015. *Making Ekurhuleni into a GCR aerotropolis- Investment opportunities*. Paper presented by councilor Mondli Gungubele, Executive Mayor of Ekurhuleni at the Gauteng infrastructure conference, 16-17 July (2015).

Gupta, N, K, R & Mahajan, S. 2010. Iris recognition system. *(IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 1, No. 1.*

Guzzetti, L. 1995. *A brief history of European Union research policy*. Brussels: European Commission

Gwardyński, R; & Zboina, J. 2021. Cross-border Police Operations in Poland: A Case Study. *European Research Studies Journal*, *24*(3B), pp.412-420.

Haas, J. & Haas, D. 2013. *Color coded swipe for portable explosive or drug detection system*. U.S. Patent 8,590,791. Chemspectra, Inc.

Hajli, N; Shirazi, F; Tajvidi, M; & Huda, N. 2021. Towards an understanding of privacy management architecture in big data: an experimental research. *British Journal of Management*, *32*(2), pp.548-565.

Haken, J., 2011. Transnational crime in the developing world. *Global financial integrity*, *12*(11).

Hall, S; Critcher, C; Jefferson, T; Clarke, J; & Roberts, B. 2013. *Policing the crisis: Mugging, the state and law and order*. Palgrave Macmillan.

Halpern, N; & Mwesiumo, D. 2021. Airport service quality and passenger satisfaction: The impact of service failure on the likelihood of promoting an airport online. *Research in Transportation Business & Management*, p.100667.

Halpern, N; Mwesiumo, D; Suau-Sanchez, P; Budd, T; & Bråthen, S. 2021. Ready for digital transformation? The effect of organisational readiness, innovation, airport size and ownership on digital change at airports. *Journal of Air Transport Management*, *90*.

Han, F; & Ellis, R.A. 2019. Using phenomenography to tackle key challenges in science education. *Frontiers in psychology*, *10*.

Han, W.G; Swart, A; Marinovic, A.B; Eggink, D; Reimerink, J; Wijsman, L.A; van der Veer, B; van den Brink, S; van den Brandt, A.M; Brouwer, F; & Hoogerwerf, M. 2021. SARS-CoV-2 RNA and antibody dynamics in a Dutch household study with dense sampling frame. *medRxiv*.

Hansohm, D; Breytenbach, W; Hartzenberg, T & McCarthy, C. 2005. *Monitoring Regional Integration in Southern Africa Yearbook (ed)*. Vol 5. Windhoek: Namibian Economic Policy Research Unit and the Konrad-Adenauer-Stiftung.

Harron, J.R; & Mason, L. 2021. Creating Virtual Spaces: Using extended reality and transformative technologies to prepare teachers to thrive in an ever-changing world. *What Teacher Educators Should Have Learned from 2020*, p.213.

Harper, R.J; Almirall, J.R; & Furton, K.G. 2005. Identification of dominant odor chemicals emanating from explosives for use in developing optimal training aid combinations and mimics for canine detection. *Talanta*, *67*(2), pp.313-327.

Harper, L; Powell, J; & Pijl, E. M. 2017. An overview of forensic drug testing methods and their suitability for harm reduction point-of-care services. *Harm Reduction Journal*, *14*(1), 52.

Harvey, L. 2015. Beyond member-checking: A dialogic approach to the research interview. *International Journal of Research & Method in Education*, *38*(1), pp.23-38.

Hartzenberg, T. 2011. Regional integration in Africa. WTO Staff Working Paper, No. ERSD-2011-14.

Hays, D.G; & McKibben, W.B. 2021. Promoting rigorous research: Generalizability and qualitative research. *Journal of Counseling & Development*, *99*(2), pp.178-188.

Hayes, N. 2021. *Doing Psychological Research, 2e*. McGraw-Hill Education (UK).

Herbert, M. 2016. At the edge-trends and routes of North African clandestine migrants. *Institute for Security Studies Papers*, *2016*(298), pp.1-28.

Hennop, E; Jefferson, C & McLean, A.E. 2001. *The challenge to control South Africa's borders and borderline (No.57).* Institute of Security Studies.

HG.org. 2017. Photogrammetry in forensics introduction. From: https://www.hg.org/article.asp?id=5220 (Accessed 2 June 2017).

Hildebrandt, S. 2021. Books, bones and bodies: The relevance of the history of anatomy in Nazi Germany for medical education today. *The Anatomical Record*.

Hirschi, T. 2002. *Causes of delinquency*. Transaction publishers.

Hitti, A. 2019. Hyundai unveils walking concept car Elevate. From: https://www.dezeen.com/2019/01/08/walking-car-concept-hyundai-elevate/ (Accessed 09 May 2019).

Hofmann, K. 2009. The Impact of Organized Crime on Democratic Governance–Focus on Latin America and the Caribbean. *FES Briefing Paper*, *13*, pp.1-9.

Hofstee, E. 2006. *Constructing a Good Dissertation: A Practical Guide to Finishing a Masters, MBS or PhD on Schedule.* Johannesburg: EPE.

Hoft, J. 2021. Anonymity and Confidentiality. *The Encyclopedia of Research Methods in Criminology and Criminal Justice*, *1*, pp.223-227.

Holden, J.T; & Rodenberg, R.M. 2015. The sports bribery act: a law and economics approach. *N. Ky. L. Rev.*, *42*, p.453.

Holmes, E; To, G; & Johnsrude, I.S. 2021. How Long Does It Take for a Voice to Become Familiar? Speech Intelligibility and Voice Recognition Are Differentially Sensitive to Voice Training. *Psychological Science*, p.0956797621991137.

Holocaust Encyclopedia. 2021. Nazi medical experiments. From: https://encyclopedia.ushmm.org/content/en/article/nazi-medical-experiments (Accessed 07 November 2021).

Hornberger, J., 2013. From general to commissioner to general—On the popular state of policing in South Africa. *Law & Social Inquiry*, *38*(3), pp.598-614.

Hosken, G. 2017. Police quizzed over $15 million O R Tambo International Airport heist. From: http://www.timeslive.co.za/local/2017/03/08/Police-quizzed-over-15m-OR-Tambo-International-Airport-heist (Accessed 29 May 2017).

Houck, M.M; Crispino, F; & McAdam, T. 2012. *The science of crime scenes.* San Diego, CA: Elsevier.

Hsieh, H.F; & Shannon, S.E. 2005. Three approaches to qualitative content analysis. *Qualitative health research*, *15*(9), pp.1277-1288.

Hübschle, A. 2010. Organised Crime in Southern Africa: First Annual Review." *ISS Special Report* 9.

Hudson, H.T. 2011. The Digital Divide. *Instructor*, *121*(2), pp.46-50.

Hughes, V. & Love, P.E.D. 2004. Towards Cyber-Centric Management of Policing: Back to the Future with Information and Communication Technology. *Industrial Management & Data Systems, Vol 104 (7),* Joondalup, Australia: Emerald.

Huhta, J.M; Di Nota, P.M; Nyman, M; Pietilä, E; & Ropo, E. 2021. Universal police behaviours during critical incidents and their connection to personality: A preliminary study. *Nordic Journal of Studies in Policing*, *8*(01), pp.1-18.

Human Rights Watch. 2017. “This crooked system” Police abuse and reform in Pakistan. From: https://www.hrw.org/report/2016/09/25/crooked-system/police-abuse-and-reform-pakistan (Accessed 13 May 2017).

Hunt, K; Agarwal, P; & Zhuang, J. 2021. Technology adoption for airport security: Modeling public disclosure and secrecy in an attacker-defender game. *Reliability Engineering & System Safety*, *207*.

Huston, L; Sukthankar, R; Campbell, J; & Pillai, P. 2004. October. Forensic video reconstruction. In *Proceedings of the ACM 2nd international workshop on Video surveillance & sensor networks* (pp. 20-28). ACM.

Huth, P.K. 2009. *Standing your ground: Territorial disputes and international conflict*. University of Michigan Press.

Hyman, M; Sartore, L; & Young, L.J. 2021. Capture–Recapture Estimation of Characteristics of US Local Food Farms Using a Web-Scraped List Frame. *Journal of Survey Statistics and Methodology*.

Igwe, P.A; Hack-Polay, D; Mendy, J; Fuller, T; & Lock, D. 2021. Improving higher education standards through reengineering in West African universities–A case study of Nigeria. *Studies in Higher Education*, *46*(8), pp.1635-1648.

IMCOSA. 2015. Home affairs arrests. From: http://imcosa.co.za/news/144-home-affairs-arrests.html (Accessed 11 May 2016).

Independent Online. 2021. Hawks arrest 23 police officers implicated in corruption at OR Tambo airport. From: https://www.iol.co.za/news/hawks-arrest-23-police-officers-implicated-in-corruption-at-or-tambo-airport-26b1421a-db5e-4a9e-ab4e-4850f7ea465b (Accessed 4 September 2021).

Independent Police Investigative Directorate. 2013. Independent Police Investigative Directorate (IPID) Strategic Plan 2013 -2018.

Intergraph Corporation. 2017. Homepage. From: https://www2.landgate.wa.gov.au/web/guest/intergraph-corporation (Accessed 2 June 2017).

International Air Transport Association. 2017. Future of the airline industry 2035. Montreal, Canada: International Air Transport Association.

Intertel. 2017. Video forensics. From: https://www.intertel.co.za/services/video-forensics (Accessed 29 December 2020).

INTERPOL. 2008. *INTERPOL's Forensic Report on FARC Computers and Hardware Seized by Colombia.* May. Lyon, France: ICPO-INTERPOL.

INTERPOL. 2015. *INTERPOL contribution to the United Nations General Assembly Special Session (UNGASS) on the world drug problem*. Geneva: United Nations.

INTERPOL. 2021. What is Interpol? From: https://www.interpol.int/en/Who-we-are/What-is-INTERPOL (Accessed 23 August 2021).

INTERPOL. 2021a. Frontline database access. From: https://www.interpol.int/en/How-we-work/Border-management/Frontline-database-access (Accessed 23 August 2021).

INTERPOL. 2021b. Maritime piracy boosted by INTERPOL and NATO framework on information sharing. From: https://www.interpol.int/en/News-and-Events/News/2012/Maritime-piracy-investigations-boosted-by-INTERPOL-and-NATO-framework-on-information-sharing (Accessed 23 August 23, 2021).

INTERPOL. 2024. How INTERPOL supports South Africa to tackle international crime . From: South Africa (interpol.int) (Accessed 7 June 2024).

InterVistas Consulting, Inc. 2015. *Final report: Asia Pacific commercial air transport: Current and future economic benefits*. Vancouver, Canada: International Air Transport Association.

Inverardi, P; Migliarini, P; & Palmiero, M. 2023. Systematic review on privacy categorisation. *Computer Science Review*, *49*, p.100574.

Investopedia. 2017. Rational Choice Theory: What is it in Economics

Irish, J. 2005. Illicit Trafficking of Vehicles Across Beit Bridge Border Post. *ISS Paper 109, June.* Pretoria: ISS Publications.

IRIS ID. 2024. Iris Recognition from IRIS ID. Leading the World of Identity Authentication. From: Home - Iris ID (Accessed 7 June 2024).

Isaac, S.S. 2009. *Criminal Law (Forensic Procedures) Amendment Bill* [B2-2009]: *A Comparative Analysis.* Cape Town: Parliament of the Republic of South Africa.

Jackson, R; Sørensen, G; & Møller, J. 2019. *Introduction to international relations: theories and approaches*. Oxford University Press, USA.

Jacobson, N. 2009. A taxonomy of dignity: a grounded theory study. *BMC International health and human rights*, *9*(1), pp.1-9.

Jain, A; Flynn, P; & Ross, A.A. eds. 2007. *Handbook of biometrics*. Springer Science & Business Media.

Jain, M; Pita, J; Tambe, M; Ordónez, F; Paruchuri, P; & Kraus, S. 2008. Bayesian Stackelberg games and their application for security at Los Angeles International Airport. *ACM SIGecom Exchanges*, *7*(2), p.10.

Jakobi, A.P; & Kandt, J. 2021. European Union networking against transnational crime. In *Global Networks and European Actors* (pp. 197-212). Routledge.

Jia, W; Gao, J; Xia, W; Zhao, Y; Min, H; & Lu, J.T. 2021. A performance evaluation of classic convolutional neural networks for 2D and 3D palmprint and palm vein recognition. *International Journal of Automation and Computing*, *18*(1), pp.18-44.

Jonathan Lea Network. 2019. Why foreign aid is harmful. From: https://www.jonathanlea.net/2015/why-foreign-aid-is-harmful/ (Accessed 3 January 2019).

Jordan, L.S; Walsdorf, A.A; Roche, K.M; & Falusi, O.O. 2021. "I am affected in all the ways…": A phenomenographic analysis of Latinx adolescents' perceptions of family separations at the border. *Cultural Diversity and Ethnic Minority Psychology*.

Jardim, L; Pranto, S; Ruivo, P; & Oliveira, T. 2021. What are the main drivers of Blockchain Adoption within Supply Chain?–an exploratory research. *Procedia Computer Science*, *181*, pp.495-502.

Jenkins, T., 1998. *Sir Robert Peel*. Bloomsbury Publishing.

Jones, A.H.M., 1986. *The later Roman Empire, 284-602: a social economic and administrative survey* (Vol. 2). Taylor & Francis.

Jones, M., 2009. Governance, integrity, and the police organization. *Policing: An International Journal of Police Strategies & Management*, *32*(2), pp.338-350.

Joubert, C. 2010. *Applied law for police officials. 3rd Edition.* Cape Town: Juta & Company, Ltd.

Justice, Crime Prevention and Security Cluster. 2012. Justice, Crime Prevention and Security (JCPS) Cluster media briefing, 12 March 2014.

Kamau, W.C. 2006. *Kenya & the War on Terrorism*. Review of African Political Economy No. 107:133-162. ROAPE Publications Ltd.

Kanokwongnuwut, P; Martin, B; Taylor, D; Kirkbride, K.P; & Linacre, A. 2021. How many cells are required for successful DNA profiling? *Forensic Science International: Genetics*, *51*, p.102453.

Karstedt, S; Nyseth Brehm, H; & Frizzell, L.C. 2021. Genocide, Mass Atrocity, and Theories of Crime: Unlocking Criminology's Potential. *Annual Review of Criminology*, *4*, pp.75-97.

Kasim, K.O. 2021. An Investigation of Factors that Influence Passengers' Intentions to Use Biometric Technologies at Airports. Dissertation Submitted to the College of Aviation in partial fulfilment of the Requirements for the Degree of Doctor of Philosophy in Aviation. Embry-Riddle Aeronautical University.

Karsten, L & Illa, H. 2005. *Ubuntu as a key African management concept: contextual background and practical insights for knowledge application*. Journal of Managerial Psychology, Vol. 20, No. 27, 607-620. Emerald.

Katutwa, N & Kunaka, C. 2002. The Practical Value of Legislation in Combating Organised Crime. *African Security Review, 11:1, 17-24, DOI*:

Käufer, S; & Chemero, A. 2021. *Phenomenology: an introduction*. John Wiley & Sons.

Kazdin, A.E. 2021. *Research design in clinical psychology*. Cambridge University Press.

Kearns, T.B. 1998. Technology and the right to privacy: the convergence of surveillance and information privacy concerns. *Wm. & Mary Bill Rts. J.*, *7*, p.975.

Kelling, G.L; Whetstone, T; Brodeur, J; Walsh, W.F & Banton, M.P. 2017. Police law enforcement. Encyclopedia Britannica, Inc. From: https://global.britannica.com/topic/police (Accessed 19 January 2017).

Kelly, A; Tymms, K; Fallon, K; Sumpton, D; Tugwell, P; Tunnicliffe, D; & Tong, A. 2021. Qualitative research in rheumatology: an overview of methods and contributions to practice and policy. *The Journal of Rheumatology*, *48*(1), pp.6-15.

Kempen, A. 2017. The SAPS rewards excellence on National Police Day. *Servamus Community-based Safety and Security Magazine*, *110*(3), pp.48-63.

Keohane, D. 2008. The Absent Friend: EU foreign policy and counterterrorism. *JCMS, Vol. 46, No. 1, 125-146.* Oxford: Blackwell.

Kemp, S. 2021. Digital 2021: South Africa. From: https://datareportal.com/reports/digital-2021-south-africa#:~:text=The%20number%20of%20internet%20users%20in%20South%20Africa,South%20Africa%20stood%20at%2064.0%25%20in%20January%202021. (Accessed 23 August 2021).

Key Forensic Services Limited. 2017. Forensic video and image analysis services. From: https://www.keyforensic.co.uk/digital-forensics.aspx (Accessed 1 June 2017).

Khaldi, Y; Benzaoui, A; Ouahabi, A; Jacques, S; & Taleb-Ahmed, A. 2021. Ear Recognition Based on Deep Unsupervised Active Learning. *IEEE Sensors Journal*.

Khan, A; Richardson, J; & Izhar, M. 2021. Awareness about plagiarism and the effectiveness of library literacy programme towards its deterrence: a perspective of postgraduate resident doctors. *Global Knowledge, Memory and Communication*.

Khoza, S. 2009. The human organ trade-the South African Tragedy. *Medical law seminar, vol. 2, No. 2, December, SAJBL.*

Kiatkoski Kim, M; Watkin Lui, F; Ah Mat, L; Cadet-James, Y; Bainbridge, R; & McCalman, J. 2021. Indigenous leadership in research in Australia. *Journal of Higher Education Policy and Management*, *43*(4), pp.353-368.

Kierzkowski, A; & Kisiel, T. 2015. Functional readiness of the security control system at an airport with single-report streams. In *Theory and Engineering of Complex Systems and Dependability* (pp. 211-221). Springer, Cham.

Kilian, A; Wenzl, P; Huttner, E; Carling, J; Xia, L; Blois, H; Caig, V; Heller-Uszynska, K; Jaccoud, D; Hopper, C; & Aschenbrenner-Kilian, M. 2012. Diversity arrays technology: a generic genome profiling technology on open platforms. *Data Production and Analysis in Population Genomics: Methods and Protocols*, pp.67-89.

King, O. 2021. Two sets of qualitative research reporting guidelines: An analysis of the shortfalls. *Research in Nursing & Health*.

KiwiSecurity. 2017. KiwiSecurity is participating in numerous research projects to expand its technological lead. From: https://www.kiwisecurity.com/research-focal-points/ (Accessed 9 August 2017).

Klaaren, J. & Ramji, J., 2001. Inside illegality: migration policing in South Africa after apartheid. *Africa today*, *48*(3), pp.35-47.

Klippin, J. & Harrison, K. 2003. *The Future for Policing and Crime Prevention in SADC.* Montreal: International Crime Prevention Centre.

Klykken, F.H. 2021. Implementing continuous consent in qualitative research. *Qualitative Research*, p.14687941211014366.

Koesdjojo, M.T; Wu, Y; Boonloed, A; Dunfield, E.M; & Remcho, V.T. 2014. Low-cost, high-speed identification of counterfeit antimalarial drugs on paper. *Talanta*, *130*, pp.122-127.

Køster, A; & Fernandez, A.V. 2021. Investigating modes of being in the world: an introduction to Phenomenologically grounded qualitative research. *Phenomenology and the Cognitive Sciences*, pp.1-21.

Koper, C.S; Lum, C; & Willis, J.J. 2014. Optimizing the use of technology in policing: Results and implications from a multi-site study of the social, organizational, and behavioral aspects of implementing police technologies. *Policing*, p.pau015.

Koslicki, W.M; Lytle, D.J; Willits, D.W; & Brooks, R. 2021.Rhetoric without reality or effective policing strategy? An analysis of the relationship between community policing and police fatal force. *Journal of criminal justice*, *72*(C).

Kotler, P. & Keller, K.L. 2006. *Marketing management.* 12th Edition. Upper Saddle River, New Jersey: Pearson Prentice Hall.

Kozole, J; Stairs, J.R; Cho, I; Harper, J.D; Lukow, S.R; Lareau, R.T; DeBono, R; & Kuja, F. 2011. Interfacing an ion mobility spectrometry based explosive trace detector to a triple quadrupole mass spectrometer. *Analytical chemistry*, *83*(22), pp.8596-8603.

Ktistakis, M.A; Pavlovic, J; & Fontaras, G. 2021. Sampling Approaches for Road Vehicle Fuel Consumption Monitoring. *Report EUR*, *30420*.

Kumatongo, B; & Muzata, K.K. 2021. Research Paradigms and Designs with their Application in Education. *Journal of Lexicography and Terminology (Online ISSN 2664-0899. Print ISSN 2517-9306).*, *5*(1), pp.16-32.

Laird, P.W. 2010. Principles and challenges of genome-wide DNA methylation analysis. *Nature Reviews Genetics*, *11*(3), pp.191-203.

Lamont, C. 2021. *Research methods in international relations*. Sage.

Lamoreaux, D.J; & Sulkowski, M.L. 2021. Crime Prevention through Environmental Design in schools: Students' perceptions of safety and psychological comfort. *Psychology in the Schools*, *58*(3), pp.475-493.

Lang, M; Pistone, P; Schuch, J; & Staringer, C. eds. 2018. *Introduction to European tax law on direct taxation*. Linde Verlag GmbH.

Larsen, H; Budka, M; & Bennett, M.R. 2021. Technological innovation in the recovery and analysis of 3D forensic footwear evidence: Structure from motion (SfM) photogrammetry. *Science & Justice*.

Laudon, K. 2021. Essentials of management information system.

Laudon, K.C. & Laudon, J.P. 2004. *Management information system: managing the digital firm.* 12th Edition. Upper Saddle River, New Jersey: Pearson Prentice Hall.

Laudon, K.C., Laudon, J.P. & Brabston, M.E. 2011. *Management information systems* (Vol. 8). Upper Saddle River, NJ: Prentice Hall.

Laufer, W.S. 2008. *Corporate bodies and guilty minds: The failure of corporate criminal liability*. University of Chicago Press.

Lebeya, G.S. 2007. *Organised Crime in the Southern African Development Community with Specific Reference to Motor Vehicle Theft.* Pretoria: University of South Africa.

Lee, D.R., 2010. Understanding and applying situational crime prevention strategies. *Criminal Justice Policy Review*, *21*(3), pp.263-268.

Lee, A. 2021. The Settings Approach for Health Promotion: How Does It Work? *The Healthy Settings Approach in Hong Kong. Sustainable Development for Population Health*, p.7.

Lee, D.M. 2023. The Potential and Merits of Narrative-Based Virtual Fieldwork in Preservice Geography Teacher Education. *Education Sciences*, *13*(3), p.259.

Lee, Y.W; Strong, D.M; Kahn, B.K; & Wang, R.Y. 2002. AIMQ: a methodology for information quality assessment. *Information & management*, *40*(2), pp.133-146.

Leese, M., 2021. Security as Socio-Technical Practice: Predictive Policing and (Non-) Automation. *Swiss Political Science Review*, *27*(1), pp.150-157.

Leijonhufvud, F. 2021. An approach to boat documentation: Examples of photogrammetry vs. analogue recording. *FormAkademisk-forskningstidsskrift for design og designdidaktikk*, *14*(2).

Letlatsa, O. 2008. The effects of organised crime on the macroeconomic stability of South Africa. Unpublished Masters dissertation. Johannesburg: University of Johannesburg.

Levantino, P.F., 2020. *Framing the picture: A human rights-based study on AI, the case of Facial Recognition Technology* (Doctoral dissertation).

Levitt, M. 2022. Hezbollah Finances: Funding the Party of God. In *Terrorism Financing and State Responses* (pp. 134-151). Stanford University Press.

Lewis-Beck, M.S.; Bryman, A. & Liao, T.F. 2004. *The Sage Encyclopedia of Social Research Methods, Vol. 3.* Thousand Oaks, CA: Sage Publications.

Liang, X; Wen, L; Mi, Y; Guo, J; Yu, B; Tao, M; Cao, Z; & Zhao, Z. 2021. Highly cross-linked polymeric nanoparticles with aggregation-induced emission for sensitive and recyclable explosive detection. *Dyes and Pigments*, *191*.

Liddick Jr, D.R. 2020. *Transnational Organized Crime and Natural Resources Trafficking: Funding Conflict and Stealing from the World's Most Vulnerable Citizens*. Lexington Books.

LinkedIn Corporation. 2017. Biometric technologies at the airport. From: https://www.slideshare.net/cheaptickets/biometric-technologies-at-the-airport (Accessed 6 June 2017).

Liscio, E. 2017. Photogrammetry in forensic introduction. From: https://www.hg.org/article.asp?id=5220 (Accessed 6 August 2017).

Lisle, D. 2020. Making safe: The dirty history of a bomb disposal robot. *Security dialogue*, *51*(2-3), pp.174-193.

Liu, H; Kulturel-Konak, S; & Konak, A. 2021. measurement model of entrepreneurship education effectiveness based on methodological triangulation. *Studies in Educational Evaluation*, *70*, p.100987

Liu, S. & Silverman, M. 2001. A practical guide to biometric security technology. *IT Professional*, *3*(1), pp.27-32.

Liu, C; & Tseng, M.Y. 2021. Paradigmatic variation in hedging and boosting: A comparative study of discussions in narrative inquiry and grounded theory research. *English for Specific Purposes*, *61*, pp.1-16.

Lloyd, M. 2005. Towards a Definition of the Integration of ICT in the Classroom. In AARE 2005, AARE, Eds. *Proceedings AARE '05 Education Research - Creative Dissent: Constructive Solutions*, Parramatta, New South Wales.

Logistics Update Africa. 2018. African airlines' registers 7.5% y-o-y traffic growth in October 2017. From: http://www.logupdateafrica.com/african-airlines-registers-75-yoy-traffic-growth-in-october-2017-aviation (Accessed 25 January 2018).

Lori, N; & Schilde, K. 2021. A Political Economy of Global Security Approach to Migration and Border Control. *Journal of Global Security Studies*, *6*(1), p.ogaa011.

Lovitt, J; Rahman, M.M; & McDermid, G.J. 2017. Assessing the Value of UAV Photogrammetry for Characterizing Terrain in Complex Peatlands. *Remote Sensing*, *9*(7), p.715.

Lowe, S.E. 2021. Rushed decisions: Ethical considerations for digital storytelling practitioners. *Health Promotion Practice*, p.15248399211044714.

Luo, A. 2019. Content analysis: guide methods & examples. From: Content Analysis | Guide, Methods & Examples (scribbr.com) (Accessed 04 November 2023).

Lyon, D. 2006. Airport screening, surveillance, and social sorting: Canadian responses to 9/11 in context. *Canadian Journal of Criminology and Criminal Justice*, *48*(3), pp.397-411.

Lyon, F. 2015. Access and non-probability sampling in qualitative research on trust. In *Handbook of research methods on trust*. Edward Elgar Publishing.

Lyman, P.N & Morrison, J.S. 2004. The Terrorist Threat in Africa. *Foreign Affairs, Vol. 83, No. 1 (Jan-Feb), pp 75-86.*

Mabunda, D.Q., 2014. *The challenges in establishing partnership policing in Soshanguve* (Masters dissertation). University of South Africa.

Macoun, S.J; Schneider, I; Bedir, B; Sheehan, J; & Sung, A. 2021. Pilot study of an attention and executive function cognitive intervention in children with autism spectrum disorders. *Journal of Autism and Developmental Disorders*, *51*(8).

Madhubuti, H. R. 2020. “The Four Reasons for using ‘K’ in Afrika.” The State of History. Accessed May 21, 2020. https://soh.omeka.chass.ncsu.edu/items/show/692.

Mahat-Shamir, M; Neimeyer, R.A; & Pitcho-Prelorentzos, S. 2021. Designing in-depth semi-structured interviews for revealing meaning reconstruction after loss. *Death studies*, *45*(2), pp.83-90.

Mahlangu, S.B. & Obioha, E.E. 2015. Challenges in land border security and control experienced by the South African Police Service and other agencies. *Acta Criminologica: Southern African Journal of Criminology*, *2015*(Special Edition 4), pp.107-132.

Mail & Guardian Online. 2016. Gauteng may get a new airport. From: http://mg.co.za/article/2008-03-14-gauteng-may-get-a-new-airport (Accessed 15 November 2016).

Mail Online. 2016. Smuggler arrested after he 'swallowed 220 diamonds worth £1.4million before attempting to board a plane in South Africa. From: http://www.dailymail.co.uk/news/article-2232730/Lebanese-diamond-smuggler-swallowed-1-4million-stones-bid-evade-South-African-police.html (Accessed 11 May 2016).

Mail Online. 2017. Hand creams, soaps and heart medication: How YOUR everyday items can set off bomb detectors as you pass through airport security checkpoints. From: http://www.dailymail.co.uk/travel/travel_news/article-3663680/Hand-creams-soaps-heart-medication-everyday-items-set-bomb-detectors-pass-airport-security-checkpoints.html (Accessed 9 August 2017).

Mahr, A; Cichon, M; Mateo, S; Grajeda, C; & Baggili, I. 2021. Zooming into the pandemic! A forensic analysis of the Zoom application. *Forensic Science International: Digital Investigation*, *36*.

Makarenko, T. 2004. The Crime–Terror Continuum: Tracing the Interplay between Transnational Organised Crime and Terrorism. *Global Crime Vol. 6, No. 1, February, pp. 129*–145

Malik, J. 2020. Opinion: aviation sector after Covid-19. From: https://www.iol.co.za/business-report/opinion/opinion-aviation-sector-after-covid-19-4cf50ec2-6c25-4530-90b4-d4ae313caa42 (Accessed 28 December 2020).

Malik, M; Munir, N; Ghani, M.U; & Ahmad, N. 2021. Domestic violence and its relationship with depression, anxiety and quality of life: A hidden dilemma of Pakistani women. *Pakistan journal of medical sciences*, *37*(1), p.191.

Malterud, K., Siersma, V. and Guassora, A.D., 2021. Information power: Sample content and size in qualitative studies.

Maluleke, W; Tshabalala, N.P; & Tolla, A.D. 2021. Perspectives on Stock Theft Prevention in the Selected Provinces of South Africa: Failures and Successes. *International Journal of Criminology and Sociology*, *10*, pp.1029-1038.

Mamdani, M., 1997. Citizen and subject: contemporary Africa and the legacy of late colonialism. *PERSPECTIVES ON POLITICAL SCIENCE*, *26*, pp.120-120.

Manchanda, R.K; Miglani, A; Chakraborty, M; Meena, B.S; Sharma, K; Gupta, M; Sharma, A; Chadha, V; Rani, P; Singh, R.K; & Rutten, L. 2021. Impact of bias in data collection of COVID-19 cases. *Homeopathy*.

Manning, P.K., 1992. Information technologies and the police. *Crime and justice*, *15*, pp.349-398.

Manning, P.K. 2003. *Policing Contingencies.* London: The University of Chicago Press, Ltd.

Manyathi-Jele, N., 2014. Justice, Crime Prevention and Security cluster update: news. *De Rebus*, (541), pp.12-13.

Marais, L; & Twala, C. 2021. Bloemfontein: The rise and fall of South Africa's judicial capital. *African Geographical Review*, *40*(1), pp.49-62.

Marcel, S; Nixon, M.S; & Li, S.Z. 2014. *Handbook of Biometric Anti-Spoofing*. Springer.

Marsh, S.M., Hoffmann, M., Burgess, N.D., Brooks, T.M., Challender, D.W., Cremona, P.J., Hilton-Taylor, C., de Micheaux, F.L., Lichtenstein, G., Roe, D. & Böhm, M., 2022. Prevalence of sustainable and unsustainable use of wild species inferred from the IUCN Red List of Threatened Species. *Conservation Biology*, *36*(2), p.e13844.

Marenin, O. 2010. *Challenges for integrated border management in the European Union*. Geneva Centre for the Democratic Control of Armed Forces (DCAF).

Maritz Africa. 2018. Aviation outlook in Africa: Clear skies or turbulence ahead? From: https://www.howwemadeitinafrica.com/aviation-outlook-africa-clear-skies-turbulence-ahead/59826/ (Accessed 25 January 2018).

Martinelli, A; Mina, A; & Moggi, M. 2021. The enabling technologies of industry 4.0: Examining the seeds of the fourth industrial revolution. *Industrial and Corporate Change*, *30*(1), pp.161-188.

Martinich, A.P. 2015. *Philosophical writing: An introduction*. John Wiley & Sons.

Martinich, A.P. & Sosa, E.D. eds. 2008. *A companion to analytic philosophy*. John Wiley & Sons.

Martinich, A.P. & Stroll, A. 2003. Epistemology. *Encyclopedia Britannica*.

Marxsen, C. 2015. Territorial Integrity in International Law–Its Concept and Implications for Crimea. *Zeitschrift für ausländisches*, pp.7-26.

Matlala, M.M. 2013. The Use of the Automated Fingerprint Identification System to Enhance the Quality of Service Rendered by the South African Police Service on the East Rand. Unpublished Master's Dissertation. Pretoria: University of South Africa.

Matlala, M.M. & Sinclair, I. 2013. Mashopeng Go a Boelwa. *The African Union Ten Years After: Solving African Problems with Pan-Africanism and the African Renaissance*, p.118.

Matlala, M. and Rammala, M.N.R., 2022. Le Re Le Ma-Afrika, Baena Ma-Africa Tena? The un Afrikan Policing Tactics Used During the COVID-19 Lockdown in South Africa. *International Journal of African Renaissance Studies-Multi-, Inter-and Transdisciplinarity*, *18*(1), pp.69-91.

Maxwell, J.A. 2021. Why qualitative methods are necessary for generalization. *Qualitative Psychology*, *8*(1), p.111.

Mayan, M.J., 2023. *Essentials of qualitative inquiry*. Taylor & Francis.

May, T. 2001. *Social Research Issues, Methods and Processes.* 3rd Edition. Buckingham: Open University Press.

May, C. 2017. *Transnational crime and the developing world.* Washington D.C, Washington: Global Financial Integrity.

Mazzitelli, A.L. 2007. Transnational Organized Crime in West Africa: The Additional Challenges. *International Affairs, 83: 6, 1071-1090.* 2007 Blackwell Publishing Ltd/The Royal Institute of International Affairs.

McDonald, C. 2017. The good, the bad and the robot: Experts are trying to make machines be moral. From: https://alumni.berkeley.edu/california-magazine/just-in/2015-06-08/good-bad-and-robot-experts-are-trying-make-machines-be-moral (Accessed 28 April 2017).

McGaughy, T. 2020. "George Galphin's Intimate Empire: The Creek Indians, Family, and Colonialism in Early America by Bryan C. Rindfleisch." Alabama Review 73 (2): 170–73. https://doi.org/10.1353/ala.2020.0003

McGannon, K.R; Smith, B; Kendellen, K; & Gonsalves, C.A. 2021. Qualitative research in six sport and exercise psychology journals between 2010 and 2017: An updated and expanded review of trends and interpretations. *International Journal of Sport and Exercise Psychology*, *19*(3), pp.359-379.

McGinley, S; Wei, W; Zhang, L; & Zheng, Y. 2021. The state of qualitative research in hospitality: a 5-year review 2014 to 2019. *Cornell Hospitality Quarterly*, *62*(1), pp.8-20.

McLaughlin, E. 1992. The Democratic Deficit: European Union and the Accountability of the British Police. *British Journal of Criminology, Vol. 32, No. 4, Autumn, pp 473-487.*

McLeod, R. and Schell, G.P., 1998. *Management information systems*. Upper Saddle River, NJ: Prentice Hall.

Medium.com. 2017. Drones fly over aircraft accident scenes in UK: mapping wrecks, not causing them. From: https://medium.com/@Pix4D/drones-fly-over-aircraft-accident-scenes-in-uk-mapping-wrecks-not-causing-them-8c01171ffe53 (Accessed 5 August 2017).

Mehrabi, N; Morstatter, F; Saxena, N; Lerman, K; & Galstyan, A. 2021. A survey on bias and fairness in machine learning. *ACM Computing Surveys (CSUR)*, *54*(6), pp.1-35.

Mercan, S; Cebe, M; Aygun, R.S; Akkaya, K; Toussaint, E; & Danko, D. 2021. Blockchain-based video forensics and integrity verification framework for wireless Internet-of-Things devices. *Security and Privacy*, *4*(2), p.e143.

Merriam-Webster Incorporated. 2017. Epistemology. From: https://www.merriam-webster.com/dictionary/epistemology (Accessed 4 may 2017).

Mhagama, H. 2021. Outgoing Stergomina revels in tremendous achievements. From: https://www.dailynews.co.tz/news/2021-08-18611ca06e04604.aspx#:~:text=According%20to%20her%2C%20SADC%20mobile%20penetration%20has%20increased,in%202012%20to%2022.9%20per%20cent%20in%202020. (Accessed 23 August 2021).

Mens Journal. 2023. Vin Diesel returns to “xXx”. From: Vin Diesel Rides a Motorcycle on Water in the New 'xXx: Return of Xander Cage' Trailer - Men's Journal (mensjournal.com) (Accessed 18 September 2023).

Meyer, D. 2021. Customs officer arrested for soliciting R10,000 bribe at Cape Town airport. From: https://www.timeslive.co.za/news/south-africa/2019-10-10-customs-officer-arrested-for-soliciting-r10000-bribe-at-cape-town-airport/ (Accessed 4 September 2021).

Midrand Reporter. 2017. Midrand community and political parties of Ward 133 march against crime. From: http://midrandreporter.co.za/177324/midrand-community-and-political-parties-of-ward-133-march-against-the-scourge-of-nyaope-and-crime/ (Accessed 13 May 2017).

Miller, R.L & Brewer, J.D. 2003. *The A-Z of Social Research: A Dictionary of Key Social Science Research Concepts.* London: Sage.

Miller, J; Davis-Sramek, B; Fugate, B.S; Pagell, M; & Flynn, B.B. 2021. Editorial commentary: Addressing confusion in the diffusion of archival data research. *Journal of Supply Chain Management*, *57*(3), pp.130-146.

Miniwatts Marketing Group. 2017. Internet statistics for Africa. From: http://www.internetworldstats.com/stats1.htm (Accessed 5 August 2017).

Miniwatts Marketing Group. 2021. Internet statistics: usage and population statistics. From: https://www.internetworldstats.com/africa.htm#za (Accessed 8 September 2021).

Minnaar, A. 2001. Border control and regionalism: The case of South Africa. *African Security Review*, *10*(2), pp.89-102.

Minnaar, A. 2004. The provision of airport security at international ports of entry: a case study of Johannesburg International Airport. *Acta Criminologica*, *17*(2), pp.34-59.

Minnaar, A. 2007. The “New” Firearms Control Act 60 of 2000 and the policing of firearms at air and sea Ports-of-Entry. *Acta Criminologica 20(4), pp 19-36*

Mironenko, O. 2011. Body scanners versus privacy and data protection. *Computer Law & Security Review*, *27*(3), pp.232-244.

Mitchell, G; & Demir, I. 2021. Translating risk: how social workers' epistemological assumptions shape the way they share knowledge. *Health, Risk & Society*, *23*(1-2), pp.17-33.

Mitra, R.K. & Gupta, M.P. 2008. *A Contextual Perspective of Performance Assessment in e-Government: A Study of Indian Police Administration.* Government Information Quarterly 25, pp 278-302. New Delhi: ELSIVIER.

Mkhabela, M. 2007. Peer Report Damns and Praises SA on Progress. *City Press.* 28 January:8.

Mlambo, V.H. 2021. Irregular migration, cross border crime and the securitization theory: A South African reflection. *Journal of Social Political Sciences*, *2*(1), pp.12-29.

Mohajan, D; & Mohajan, H. 2022. Straussian Grounded Theory: An Evolved Variant in Qualitative Research.

Monar, J. 2006. Cooperation in the Justice and Home Affairs Domain: Characteristics, Constraints and Progress*. European Integration, Vol. 28, No. 5, pp 495-509, December.* Routledge.

Montano, D.E; & Kasprzyk, D. 2015. Theory of reasoned action, theory of planned behavior, and the integrated behavioral model. *Health behavior: Theory, research and practice*.

Montesh, M. 2007. A critical analysis of crime investigative institutions within the South African Criminal Justice System: A comparative study. Unpublished Doctoral Thesis: University of South Africa.

Montesh, M. & Basdeo, V., 2012. The role of the South African National Defense Force in policing. *Scientia Militaria: South African Journal of Military Studies*, *40* (1).

Montesh, M. & Dintwe, S.I. 2008. How independent is South Africa's Independent Complaints Directorate? *Acta Criminologica: Southern African Journal of Criminology*, *21*(2), pp.163-175.

Moodley, D.M. 2014. *An investigation into the illegal movement of goods from sea-ports-of-entry: A case study at Durban harbor.* Unpublished Masters dissertation submitted in fulfilment of Magister Technologiae in the subject Security Management. Pretoria: University of South Africa

Moodley, G. 2005. *Critical Analysis of the Post-Apartheid South African Government's Discourse on Information and Communication Technologies (ICTs), Poverty and Development.* Stellenbosch: University of Stellenbosch.

Moore, M.H. & Braga, A.A. 2003. Measuring and improving police performance: The lessons of Compstat and its progeny. *Policing: An International Journal of Police Strategies & Management*, *26*(3), pp.439-453.

Morais, D.B; & Ogden, A.C. 2011. Initial development and validation of the global citizenship scale. *Journal of studies in international education*, *15*(5), pp.445-466.

Moriña, A. 2021. When people matter: The ethics of qualitative research in the health and social sciences. *Health & Social Care in the Community*, *29*(5), pp.1559-1565.

Morselli, C; Torcutte, M & Tenti, V. 2011. The Mobility of Criminal Groups. *Global Crime, Vol. 12, No. 3, August, pp 165-188.* London: Routledge.

MotionDSP. 2017. Forensic video enhancement software. From: https://www.motiondsp.com/ikena-forensic/?utm_source=g2679464780kwd-1176491687&gclid=CPGQ-rmcnNQCFYoQ0wodWsMEdA (Accessed 1 June 2017).

MotionDSP. 2017a. Forensic video enhancement software. From: https://www.motiondsp.com/ikena-forensic/ (Accessed 9 August 2017).

Mottron, L. 2021. Progress in autism research requires several recognition-definition-investigation cycles.

Mouton, J. 1996. *Understanding Social Research.* Pretoria: van Schaik.

Movchan, A. and Movchan, M., 2021, March. Application of Information and Communication Technologies in Training of Criminal Analysts for the Units of the National Police of Ukraine. In *International Conference on Economics, Law and Education Research (ELER 2021)* (pp. 122-128). Atlantis Press.

Mowery, K; Wustrow, E; Wypych, T; Singleton, C; Comfort, C; Rescorla, E; Halderman, J.A; Shacham, H; & Checkoway, S. 2014. August. Security Analysis of a Full-Body Scanner. In *USENIX Security* (pp. 369-384).

Mozetič, K. 2021. Cartographers of their futures: the formation of occupational aspirations of highly educated refugees in Malmö and Munich. *International Migration*, *59*(4), pp.127-140.

Mphahlele-Ntsasa, L. 2021. *A strategic management framework for intragovernmental collaborations* (Doctoral dissertation).

Mr. Spy. 2016. Products. From: https://www.mrspy.in/?v=7516fd43adaa (Accessed 24 October 2016).

Msutu, F. 2001. Responses to Organised Crime in SADC: Interpol and SARPCCO. *Organised Crime in Southern Africa: Assessing legislation, ISS Monograph Series* 56 (2001): 13-24.

Mthuli, S.A; Ruffin, F; & Singh, N. 2021. 'Define, Explain, Justify, Apply' (DEJA): An analytic tool for guiding qualitative research sample size. *International Journal of Social Research Methodology*, pp.1-13.

Mullen, C.A; & Klimaitis, C.C. 2021. Defining mentoring: a literature review of issues, types, and applications. *Annals of the New York Academy of Sciences*, *1483*(1), pp.19-35.

Munafò, M.R; Higgins, J.P; & Smith, G.D. 2021. Triangulating evidence through the inclusion of genetically informed designs. *Cold Spring Harbor Perspectives in Medicine*, *11*(8), p.a040659.

Murphy, C. 1998. Policing postmodern Canada. *Can. JL & Soc.*, *13*, p.1.

Mutsaers, P. 2016 From: The conflicted contours of police and policing. From: https://www.law.ox.ac.uk/research-subject-groups/centre-criminology/centreborder-criminologies/blog/2016/06/conflicted (Accessed 4 May 2017).

Mzumara, D; & Ndhlovu, D. 2021. How A Good Governance Model Can be Developed to Enhance Management of Integrity Committees (ICs) to Prevent Corruption in the Public Institutions of Zambia, Lusaka, Zambia. *International Journal of Humanities Social Sciences and Education (IJHSSE)*, *8*(2), pp.110-122.

Naseri, R.N.N. 2021. What is a Population in Online Shopping Research? A perspective from Malaysia. *Turkish Journal of Computer and Mathematics Education (TURCOMAT)*, *12*(4), pp.654-658.

National Research Council, 2009. *Strengthening forensic science in the United States: a path forward*. National Academies Press.

National Treasury. 2017. Budget review 2017. National Treasury of the Republic of South Africa. Pretoria: Government Printer.

Natural News Network. 2017. Raw foodists arrested for trafficking chocolate; interrogated for cacao crimes. From: http://www.naturalnews.com/024304.html# (Accessed 9 August 2017).

Naudé, B. 2000. The South African national crime prevention strategy: a critique. *Acta Criminologica: Southern African Journal of Criminology*, *13*(2), pp.1-11.

Navas, G; & Yagüe, A. 2023. A New Way of Cataloging Research through Grounded Theory. *Applied Sciences*, *13*(10), p.5889.

Nazemi, S. 2009. Sir Robert Peel's Nine Principals of Policing. From: http://lacp.org/2009-Articles-Main/062609-Peels9Principals-SandyNazemi.htm (Accessed 6 March 2017).

Ndenje-Sichalwe, E; & Elia, E.F. 2021. Research methodology practices among postgraduate Information Studies students in Tanzania. *IFLA journal*, *47*(2), pp.129-141.

Ndhlovu, R; & Ricover, A. 2009. Assessment of potential impact of implementation of the Yamoussoukro Decision on open skies policy in the SADC region. *GS 10F-0277P). Gaborone: USAID Southern Africa*.

Ndlovu, J.M.L. 2013. The AU–SADC interface on peace and security: challenges and opportunities. *SOUTHERN AFRiCAN*, p.54.

NEC Corporation. 2017. NEC Presents Innovative Solutions for Governments at ICMedia 2012 in Brazil: Technologies include NEC's DNA Analyzer for immediate analysis of genetic information. From: http://www.nec.com/en/press/201209/global_20120912_03.html (Accessed 1 June 2017).

Newham, G. 2005. A decade of crime prevention in South Africa: from a national strategy to a local challenge. *Centre for the Study of Violence and Reconciliation (CSVR).[Online] available: http://www. csvr. org. za/docs/crime/decadeofcrime. pdf (March 21, 2011)*.

News24a. 2016. OR Tambo security upgrade not putting SA's busiest airport at risk – SACAA. From: http://traveller24.news24.com/News/Flights/or-tambo-secutiry-upgrade-not-putting-sas-busiest-airport-at-risk-sacaa-20160216 (Accessed 11 May 2016).

News24b. 2016. 100kg worth of abalone seized at OR Tambo. From: http://www.news24.com/SouthAfrica/News/R100-000-worth-of-abalone-sized-at-OR-Tambo-20150830 (Accessed 11 May 2016).

News24c. 2016. Rhino horn worth R3 million seized at OR Tambo. From: http://www.news24.com/SouthAfrica/News/rhino-horn-worth-r3m-seized-at-or-tambo-20151223 (Accessed 11 May 2016).

News24d. 2017. SA's biggest heist. From: http://www.news24.com/SouthAfrica/News/sas-biggest-heists-20170308 (Accessed 21 August 2017).

News24. 2017. WATCH: New smart security screening systems implemented at OR Tambo. From: http://www.traveller24.com/TravelPlanning/watch-new-security-screening-systems-implemented-at-or-tambo-20161107 (Accessed 30 May 2017).

Ngobese, N., 2011. *Client perception of service delivery in the South African Police Service community Service Centres in the Greater Durban area* (Doctoral dissertation, Department of Marketing, Durban University of Technology).

Ngoma, N. 2003. *SADC: Towards a Security Community?* African Security Review, Vol. 12, No. 3. FEATURE.

Nguyen, H.G. & Bott, J.P. 2000. *Robotics for law enforcement: beyond explosive ordnance disposal* (No. SSC/SD-TR-1839). SPACE AND NAVAL WARFARE SYSTEMS CENTER SAN DIEGO CA.

Nincic, D. 2009. Maritime Piracy in Africa: The Humanitarian Dimension. *African Security Studies, 18.3*: 1-16.

Nissan, E. 2008. Legal Evidence, Police Intelligence, Crime Analysis or Detection, Forensic Testing, and Argumentation: An Overview of Computer Tools or Techniques. *International Journal of Law and Information Technology, Vol. 17, No. 1.* Oxford University Press.

Niyonkuru, F. 2016. Failure of foreign aid in developing countries: A quest for alternatives. *Business and Economics Journal*, *7*(3).

Njie-Carr, V.P; Sabri, B; Messing, J.T; Suarez, C; Ward-Lasher, A; Wachter, K; Marea, C.X; & Campbell, J. 2021. Understanding intimate partner violence among immigrant and refugee women: A grounded theory analysis. *Journal of Aggression, Maltreatment & Trauma*, *30*(6), pp.792-810.

Nkrumah, K. 1963. *Africa must unite.* New York, NY: Frederick A. Praeger, Inc.

Nmehielle, V.O. 2003. The African Union and Africa Renaissance: A New Era for Human Rights Protection in Africa. *Sing. J. Int'l & Comp. L.*, *7*, p.412.

Nolan, M; Larsen, C; & Sturm, M. 2015. Mapping snow depth from manned aircraft on landscape scales at centimeter resolution using structure-from-motion photogrammetry. *The Cryosphere*, *9*(4), pp.1445-1463.

Norio, E. 2021. Why are tourist resorts attractive for transnational crime? The case of the Mayan Riviera. *Tourism Critiques: Practice and Theory*.

Norton Rose Fulbright. 2015. Africa – Is it a major untapped market for the airline industry? From: http://www.nortonrosefulbright.com/knowledge/publications/134084/africa-is-it-a-major-untapped-market-for-the-airline-industry (Accessed 21 December 2017).

Novitskiy, K. & Boyarskaya, A. 2016. Self-driving Cars.

Nowicki, P; Ćwiklicki, M; Kafel, P; & Wojnarowska, M. 2021. Credibility of certified environmental management systems: Results from focus group interviews. *Environmental Impact Assessment Review*, *88*, p.106556.

Nshimbi, C.C; & Fioramonti, L. 2013. A region without borders. *Policy frameworks for regional labour migration towards South Africa. MiWORC Report*, *1*.

Nshimbi, C.C; & Fioramonti, L. 2014. The will to integrate: South Africa's responses to regional migration from the SADC region. *African Development Review*, *26*(S1), pp.52-63.

Nugent, N. 2017. *The government and politics of the European Union*. Springer.

Nuth, M.S. 2008. Crime and Technology- Challenges or Solutions? Taking Advantage of New Technologies: For or Against Crime. *Computer Law & Security Report, No. 24, pp 437-446*. ELSEVIER.

Nyerere, J.K. 1987. Ujamma: the basis of African socialism. *The Journal of Pan-African Studies*, *1*, pp.4-11.

Nyerere, J.K. 1967. *Freedom and unity* (Vol. 966). London: Oxford University Press.

Nyirenda-Jere, T & Biru, T. 2015. Internet development and Internet governance in Africa. *ISOC Report.*

Obama, B. 2010. *National security strategy of the United States (2010)*. Diane Publishing.

Oberwittler, D. & Wikström, P.O.H. 2009. Why small is better: Advancing the study of the role of behavioral contexts in crime causation. In *Putting crime in its place* (pp. 35-59). Springer New York.

O'Brien, J.A. & Marakas, G.M. 2006. *Management information systems*. McGraw-Hill Irwin.

Øien, T.B., 2023. Methodological considerations in collaborative processes: a case of ethnographic action research. *International Journal of Managing Projects in Business*, *16*(1), pp.165-184.

O'Kane, P; Smith, A; & Lerman, M.P. 2021. Building transparency and trustworthiness in inductive research through computer-aided qualitative data analysis software. *Organizational Research Methods*, *24*(1), pp.104-139.

Oksamytna, K; Bove, V; & Lundgren, M. 2021. Leadership selection in United Nations peacekeeping. *International Studies Quarterly*, *65*(1), pp.16-28.

Okunade, S.K; & Ogunnubi, O. 2021. A "Schengen" agreement in Africa? African agency and the ECOWAS protocol on free movement. *Journal of Borderlands Studies*, *36*(1), pp.119-137.

Okumu, W., 2011. Border Management and Security in Africa. *Concordis Briefing*, (4).

O'Malley, T. 2015. Forensic informatics enabling forensic intelligence. *Australian Journal of Forensic Sciences*, *47*(1), pp.27-35.

Omar, B. 2008. Are we Taking Physical Evidence Seriously? The SAPS Criminal Record and Forensic Services. *SA Crime Quarterly No 23, March.*

Omari, R; Hunt, C; Coumbaros, J; & Chapman, B. 2021. Virtual anthropology? Reliability of three-dimensional photogrammetry as a forensic anthropology measurement and documentation technique. *International Journal of Legal Medicine*, *135*(3), pp. 939-950.

Ong, J.J; Pollard, T.D; Goyanes, A; Gaisford, S; Elbadawi, M; & Basit, A.W. 2021. Optical biosensors-Illuminating the path to personalized drug dosing. *Biosensors and Bioelectronics*, p.113331.

Oppenheimer, J.A. 2008. Rational choice theory. *Encyclopedia of political theory*.

O'Reilly, D. 2015. *A feasibility study on the application of polarimetric decomposition algorithms to the detection of concealed weapons* (Doctoral dissertation, Manchester Metropolitan University).

Pace, D.S. 2021. Probability and Non-Probability Sampling-An Entry Point for Undergraduate Researchers. *International Journal of Quantitative and Qualitative Research Methods*, *9*(2), pp.1-15.

Pack, H; & Pack, J.R. 1993. Foreign aid and the question of fungibility. *The Review of Economics and statistics*, pp.258-265.

Palermo, C; Reidlinger, D.P; & Rees, C.E. 2021. Internal coherence matters: Lessons for nutrition and dietetics research. *Nutrition & Dietetics*, *78*(3), pp.252-267.

Panchal, J.H. 2021. 13 In Search of an Intermediate Paradigmatic Ground: Critical Realism-Post-Positivism in Understanding Tourists' Motivation and Experiences in Asian Spas. In *Research Paradigm Considerations for Emerging Scholars* (pp. 171-188). Channel View Publications.

Panchenko, L.F; Korzhov, H.O; Kolomiiets, T.V; & Yenin, M.N. 2021, March. PhD student training: principles and implementation. In *Journal of Physics: Conference Series* (Vol. 1840, No. 1, p. 012056). IOP Publishing.

PaanLuel Wël Media Ltd. 2023. 82% of people live under the poverty line in South Sudan. From: 82% of people live under the poverty line in South Sudan – PaanLuel Wël Media Ltd – South Sudan (paanluelwel.com) (Accessed 18 September 2023).

Panyapanya, M. 2021. Interview with experts on security at international airports. 2021-06-15.

Papastergiadis, N. 2018. *The turbulence of migration: Globalization, deterritorialization and hybridity*. John Wiley & Sons.

Parliamentary Monitoring Group. 2016. Border Management Authority Bill [B9-16]: Home Affairs, SAPS & National Treasury briefing: From: https://pmg.org.za/committee-meeting/23073/?utm_source=homepage&utm_medium=meeting-card (Accessed 21 October 2016).

Parliamentary Monitoring Group. 2024. Border control: briefing by SAPS and Border Control Operational Coordinating Committee. From: Border Control: briefing by SAPS and Border Control Operational Coordinating Committee | PMG (Accessed 7 June 2024).

Parsons, F.J; Pantridge, M.J; & Flaherty, G.T. 2021. Cybersecurity risks and recommendations for international travellers. *Journal of Travel Medicine*.

Passas, N. 2022. 2. Terrorism Financing Mechanisms and Policy Dilemmas. In *Terrorism Financing and State Responses* (pp. 21-38). Stanford University Press.

Peel, R. 1829. *Sir Robert Peel's Principles of Law Enforcement.*

Pérez, J; Díaz, J; Berrocal, J; López-Viana, R; & González-Prieto, Á. 2022. Edge computing: A grounded theory study. *Computing*, *104*(12), pp.2711-2747.

Però, D., 2007. *Inclusionary rhetoric/exclusionary practices: Left-wing politics and migrants in Italy* (Vol. 28). Berghahn Books.

Perry, E.C., Chunderduth, A. and Potgieter, C., 2012. Securing South Africa during the 2010 FIFA World Cup: Legacy implications for post-event safety and security. *African Journal for Physical Health Education, Recreation and Dance*, *18*(sup-2), pp.123-130.

Petrisor, I.G. 2014. *Environmental forensics fundamentals: A practical guide*. CRC Press.

Pierskalla, J.H. & Hollenbach, F.M. 2013. Technology and collective action: The effect of cell phone coverage on political violence in Africa. *American Political Science Review*, *107*(2), pp.207-224.

Pillay, S. 2004. Corruption - The Challenge to Good Governance: A South African Perspective. *The International Journal of Public Sector Management, Vol. 17, No. 7, pp 586-605.*

Pirastu, N; Cordioli, M; Nandakumar, P; Mignogna, G; Abdellaoui, A; Hollis, B; Kanai, M; Rajagopal, V.M; Parolo, P.D.B; Baya, N; & Carey, C.E. 2021. Genetic analyses identify widespread sex-differential participation bias. *Nature Genetics*, *53*(5).

Pita, J., Jain, M., Marecki, J., Ordóñez, F., Portway, C., Tambe, M., Western, C., Paruchuri, P. and Kraus, S., 2008, May. Deployed ARMOR protection: the application of a game theoretic model for security at the Los Angeles International Airport. In *Proceedings of the 7th international joint conference on Autonomous agents and multiagent systems: industrial track* (pp. 125-132). International Foundation for Autonomous Agents and Multiagent Systems.

Płotka, W. 2021. A Commentary on Pokropski's Functionalist Reading of Husserlian Phenomenology. *Frontiers in Psychology*, *12*, p.870.

Polkinghorne, S; & Given, L.M. 2021. Holistic information research: From rhetoric to paradigm. *Journal of the Association for Information Science and Technology*.

Pomerantz, A.L; Bell, K; Green, K; Foster, S; Carvallo, M; & Schow, P. 2021. “Badge of Honor”: Honor Ideology, Police Legitimacy, and Perceptions of Police Violence. *Journal of Police and Criminal Psychology*, pp.1-17.

Polo D. 2021. *EFFECT OF IMPLEMENTATION OF STRATEGIC REFORMS ON NATIONAL POLICE SERVICE PERFORMANCE IN UASIN GISHU COUNTY, KENYA* (Doctoral dissertation, University of Eldoret).

Polygraphia. 2011. The polygraph history. From: http://www.polygraphia.ca/polygraph_history.html (Accessed 20 April 2017).

Polity.org.za. 2021. Police, Sars won't lose power under new border control unit. From: https://www.polity.org.za/article/police-sars-wont-lose-power-under-new-border-control-unit-2016-09-14 (Accessed 20 July 2021).

Polkinghorne, S; & Given, L.M. 2021. Holistic information research: From rhetoric to paradigm. *Journal of the Association for Information Science and Technology*.

Prosek, E.A; & Gibson, D.M. 2021. Promoting rigorous research by examining lived experiences: A review of four qualitative traditions. *Journal of Counseling & Development*, *99*(2), pp.167-177.

Pravdiuk, A; Gerasymenko, L; & Tykhonova, O. 2021. Overcoming Cybercrime in Ukraine (Cyberterrorism). *International Journal of Computer Science & Network Security*, *21*(6), pp.181-186.

Proshare. 2016. Aviation contributes $10 billion to GDP of Nigeria, others. From: https://www.proshareng.com/news/General/Aviation-contributes-$10-billion-to-GDP-of-Nigeria,-others,-/6810 (Accessed 21 December 2017).

Public Service Commission. 2017. Functions of the Commission. From: http://www.psc.gov.za/about/functions.asp (Accessed 10 May 2017).

Pourmehdi, M. 2021. Measurement Reliability. *The Encyclopedia of Research Methods in Criminology and Criminal Justice*, *1*, pp.72-76.

Pujol-Tarrés, J., 2023. The methodological and epistemic narrative of narrative productions. *Qualitative Research in Psychology*, pp.1-14.

Qualcomm. 2024. Everything you need to know about 5G. From: What is 5G? | Everything You Need to Know | 5G FAQ | Qualcomm (Accessed 6 June 2024).

Queens University of Charlotte. 2021. A guide to qualitative rigor in research. From: https://online.queens.edu/resources/article/guide-to-qualitative-rigor-in-research/ (Accessed 24 October 2021).

Quizlet Inc. 2017. Basic services provided by a crime lab. From: https://quizlet.com/26989958/basic-services-provided-by-a-crime-lab-flash-cards/ (Accessed 7 August 2017).

Rachman, S. 1983. Part I—Overview: Fearlessness and courage in bomb-disposal operators. *Advances in Behaviour Research and Therapy*, *4*(3), pp.99-104.

Rajan, R; & Subramanian, A. 2007. Does aid affect governance? *American economic review*, *97*(2), pp.322-327.

Raskar, P.S; & Shah, S.K. 2021. Methods for forgery detection in digital forensics. *International Journal of Electronic Security and Digital Forensics*, *13*(5), pp.528-547.

Rauch, J. 2001. Police reform and South Africa's transition. In *Proceedings of an international conference [30 August-September 1, 2000] on Crime and policing in transitional societies* (pp. 119-126).

Rauch, J. 2005. Crime prevention and morality-the campaign for moral regeneration in South Africa. *Institute for Security Studies Monographs*, *2005*(114), p.59.

Rauch, J & Van der Spuy, E. 2006. *Police Reform in Post-Conflict Africa: A Review.* Pretoria: Institute for Democracy in South Africa.

Rabetino, R., Kohtamäki, M; & Federico, J.S. 2021. A (re) view of the philosophical foundations of strategic management. *International Journal of Management Reviews*, *23*(2), pp.151-190.

Rawlings, P., 2012. *Policing: A short history*. Routledge.

Recker, J. 2021. Ethical considerations in research. In *Scientific research in information systems* (pp. 197-214). Springer, Cham

Reddekop, J; & Trownsell, T. 2021. Disrupting Anthropocentrism through Relationality. In *International Relations in the Anthropocene* (pp. 441-458). Palgrave Macmillan, Cham.

Rehman, Y. 2021. Difference between Quantitative and Qualitative Research Question-PICO vs. SPIDER. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*, *77*(1), pp.188-199.

Reichel, P; & Albanese, J. 2014. The Handbook of Transnational Crime and Justice. 2nd edition. Thousand Oaks, Ca: SAGE

Reiner, R. 1992. Policing a postmodern society. *The Modern Law Review*, *55*(6), pp.761-781.

Reitano, T., Shaw, M., Hunter, M. and Gastrow, P. 2015. Transnational organised crime in the IGAD region. *Addis Ababa: International Governmental Authority on Development*.

Remler, D.K; & Van Ryzin, G.G. 2021. *Research methods in practice: Strategies for description and causation*. Sage Publications.

Reuters. 2023. U.S airlines to defend $54 billion COVID-19 government lifeline. From: U.S. airlines to defend $54 billion COVID-19 government lifeline | Reuters (Accessed 18 September 2023)

Revez, J; & Corujo, L. 2021. Librarians against fake news: A systematic literature review of library practices (Jan. 2018–Sept. 2020). *The Journal of Academic Librarianship*, *47*(2), p.102304.

Richards, N.U; & Eboibi, F.E. 2021. African governments and the influence of corruption on the proliferation of cybercrime in Africa: wherein lies the rule of law? *International Review of Law, Computers & Technology*.

Riener-Hofer, R; Webb, B. & Scheurer, E. 2014. Forensigraphy: The integration of imaging techniques into the criminal justice system. *European Police Science and Research Bulletin,* p.47.

Ring, T. 2021. Europol: the AI hacker threat to biometrics. *Biometric Technology Today*, *2021*(2), pp.9-11.

Risk Diversion. 2020. Forensic image and video enhancement. From: https://www.riskdiversion.co.za/forensic-image-and-video-enhancement (Accessed 29 December 2020).

Roberts, T. 2009. On the radar: Government unmanned aerial vehicles and their effect on public privacy interests from fourth amendment jurisprudence and legislative policy perspectives. *Jurimetrics*, pp.491-518.

Robinson, O.C. 2014. Sampling in interview-based qualitative research: A theoretical and practical guide. *Qualitative research in psychology*, *11*(1), pp.25-41.

Robinson, T., 2018. Comparative Headstone Analysis and Photogrammetry of Cemeteries in Orange County, Florida.

Robotics Tomorrow. 2017. Robotics in law enforcement. From: http://www.roboticstomorrow.com/article/2013/03/robotics-in-law-enforcement/132/ (Accessed 28 April 2017).

Rodehau-Noack, J. 2023. Counting bodies, preventing war: Future conflict and the ethics of fatality numbers. *The British Journal of Politics and International Relations*, p.13691481231183880.

Rogerson, C.M; & Kiambo, W. 2007. The growth and promotion of regional tourism in the developing world: the South African experience. *Development Southern Africa*, *24*(3), pp.505-521.

Rohlfing, M.L; Buckley, D.P; Piraquive, J; Stepp, C.E; & Tracy, L.F. 2021. Hey Siri: How Effective are Common Voice Recognition Systems at Recognizing Dysphonic Voices? *The Laryngoscope*, *131*(7), pp.1599-1607.

Romano, S; Fucci, D; Scanniello, G; Baldassarre, M.T; Turhan, B; & Juristo, N. 2021. On researcher bias in Software Engineering experiments. *Journal of Systems and Software*, *182*, p.111068.

Ronkainen, N.J; & Wiltshire, G. 2021. Rethinking validity in qualitative sport and exercise psychology research: A realist perspective. *International Journal of Sport and Exercise Psychology*, *19*(1), pp.13-28.

Ross, P.T; & Zaidi, N.L.B. 2019. Limited by our limitations. *Perspectives on medical education*, *8*(4), pp.261-264.

Rost, F. 2021. Q-sort methodology: Bridging the divide between qualitative and quantitative. An introduction to an innovative method for psychotherapy research. *Counselling and Psychotherapy Research*, *21*(1), pp.98-106.

Rostami, B. and Jooj, A., 2021. The Capacity of Police Organizations to Prevent Crime with an Emphasis on Interpol and Europol. *International Journal of Multicultural and Multireligious Understanding*, *8*(3), pp.200-213.

Roufa, T. 2016. Definition of traditional policing. From: https://www.thebalance.com/traditional-policing-974687 (Accessed 5 December 2016).

Roybal-Lewis, A. 2021. Moving Towards Proficiency: A Grounded Theory Study of Early Childhood Teacher Candidates and Professional Development Schools. *Early Childhood Education Journal*, pp.1-12.

Saferstein, R. 2013. *Criminalistics*. *An introduction to forensic science.* Upper Saddle River, NJ: Pearson Education.

Saldaña, J. 2021. *The coding manual for qualitative researchers*. sage.

Salem, G.W; & Lewis, D.A. 2016. *Fear of crime: Incivility and the production of a social problem*. Transaction Publishers.

Salman, B. 2012. Iris recognition system. Master's thesis submitted at the Tennessee State University.

Salter, M.B. 2005. At the threshold of security: a theory of international borders. *Global surveillance and policing: Borders, security, identity*, pp.36-50.

Sandelowski, M. 2000. Combining Qualitative and Quantitative Sampling, Data Collection, and Analysis Techniques in Mixed-method Studies. *Research in Nursing & Health* 23, no. 3: 246-255.

Sanderson, T.M. 2004. Transnational Terror and Organized Crime: Blurring the Lives. *SAIS Review, Vol. 24, No. 1, Winter-Spring.* From: http://museweb02-ub.mse.jhu.edu/login?uri=/journals/sais_review/v024/24.1sanderson.pdf (Accessed 15 September 2009).

Sandhu, A; & Fussey, P. 2021. The 'uberization of policing'? How police negotiate and operationalise predictive policing technology. *Policing and Society*, *31*(1), pp.66-81.

Sanny, J.A.N; & Patel, J. 2021. Beyond borders? Africans prefer self-reliant development but remain skeptical of free trade and open borders.

Santos, T.D. 1970. The structure of dependence. *The American economic review*, *60*(2), pp.231-236.

Saurombe, A. 2009. Regional Integration Agenda for SADC "Caught in the Winds of Change" Problems and Prospects. *Journal of International Commercial Law and Technology, Vol. 4, Issue 2.*

Sawyer, J.M; & Brady, S.R. 2021. Beyond Cultural Competence: A Methodology for Teaching Effective Practice across Difference. *Journal of Teaching in Social Work*, *41*(4), pp.342-359.

Scharpf, F.W. 2010. The asymmetry of European integration, or why the EU cannot be a 'social market economy'. *Socio-economic review*, *8*(2), pp.211-250.

Schlagwein, D. 2021. Natural sciences, philosophy of science and the orientation of the social sciences. *Journal of Information Technology*, *36*(1), pp.85-89.

Schlumberger, C.E. 2010. *Open skies for Africa: implementing the Yamoussoukro decision*. World Bank Publications.

Schmitz, T & Kihato, C. 2001. *Understanding Policy Implementation: An Exploration of Research Areas in the Water Sector.* CPS Research Report 77. Centre for Policy Studies: Johannesburg.

Schouten, P., 2014. Security as controversy: Reassembling security at Amsterdam Airport. *Security Dialogue*, *45*(1), pp.23-42.

Schradie, J. 2011. The digital production gap: The digital divide and Web 2.0 collide. *Poetics*, *39*(2), pp.145-168.

Schumacher, A; Kapranov, P; Kaminsky, Z; Flanagan, J; Assadzadeh, A; Yau, P & Virtanen, C. 2006. Microarray-based DNA methylation profiling: technology and applications. *Nucleic acids research* 34, no. 2: 528-542.

Schmaltz, F. 2023. Brain research on Nazi "euthanasia" victims: Legal conflicts surrounding Scientology's instrumentalization of the Kaiser Wilhelm Society's history against the Max Planck Society. *Journal of the History of the Neurosciences*, *32*(2), pp.240-264.

Schwab, K. 2017. *The fourth industrial revolution*. Penguin UK.

Seba, I; Rowley, J; & Delbridge, R. 2012. Knowledge sharing in the Dubai police force. *Journal of Knowledge Management*, *16*(1), pp.114-128.

Securitysa.com. 2016. O.R. Tambo International Airport upgrades surveillance. From: http://www.securitysa.com/news.aspx?pklnewsid=33231 (Accessed 19 October 2016).

Security News Desk. 2016. Investment in airport security to reach $12.67 billion by 2023. From: http://www.securitynewsdesk.com/investment-in-airport-security-to-reach-12-67-billion-by-2023/ (Accessed 30 May 2017).

Seghetti, L. 2014. Border Security: Immigration Inspections at Port of Entry. *Current Politics and Economics of the United States, Canada and Mexico*, *16*(2), p.157.

Servant-Miklos, V., 2021. Sustainability, Identity and Learning: Lessons from a two-year Investigation in a Problem-Based Setting. *PBL, SUSTAINABILITY AND DIGITALISATION 2021*, p.81.

Seymen, C.Ç; Arzu, S.A.K.A; & Gamze, T.U.T.İ. 2023. A Phenomenographic Research On The Covid-19 Pandemic Process. *Kastamonu Eğitim Dergisi*, *31*(4), pp.611-624.

Shah, A.A; Ullah, A; Mudimu, G.T; Khan, N.A; Khan, A; & Xu, C. 2023. Reconnoitering NGOs strategies to strengthen disaster risk communication (DRC) in Pakistan: a conventional content analysis approach. *Heliyon*, *9*(7).

Shahbaz, S; Ashraf, M.Z; Zakar, R; Fischer, F; & Zakar, M.Z. 2021. Psychosocial effects of the COVID-19 pandemic and lockdown on university students: Understanding apprehensions through a phenomenographic approach. *Plos one*, *16*(5), p.e0251641.

Shariati, A. & Guerette, R.T. 2017. Situational Crime Prevention. In *Preventing Crime and Violence* (pp. 261-268). Springer International Publishing.

Shahidullah, S.M. 2016. *Crime policy in America, 2nd Edition.* Lanham, Maryland: University Press of America, Inc.

Shane, J. 2021. Situational crime prevention. *Violence reduction project. Retrieved from https://qualitypolicing. com/violencereduction/shane*.

Shared Value Initiative. 2017. About shared value. From: http://sharedvalue.org/about-shared-value (Accessed 29 December 2017).

Shaw, R. 2000. *Does Suffering Make Sense?* Scepter.

Shaw, P. 2001. *Organised Crime in the SADC Region: Police Perceptions. No. 60*. Pretoria: Institute of Security Studies.

Shaw, M. 2002. Crime, Police and Public in Transitional Societies. *Transformation: Critical Perspectives on Southern Africa* 49, no. 1: 1-24.

Shaw, M. & Gastrow, P. 2001. Stealing the Show? Crime and its Impact in Post-Apartheid South Africa. *Daedalus, Vol. 130, No. 1, Why South Africa Matters (Winter 2001), pp 235-258.* MIT Press.

Shaw, M. and Reitano, T., 2013. The evolution of organised crime in Africa-towards a new response. *Institute for Security Studies Papers*, *2013*(244), p.28.

Shearing, C.D. & Johnston, L., 2013. *Governing security: Explorations of policing and justice*. Routledge.

Sheridan, T.B. 2016. Human–robot interaction status and challenges. *Human Factors: The Journal of the Human Factors and Ergonomics Society*, *58*(4), pp.525-532.

Shih, H-P. 2004. Extended Technology Acceptance Model of Internet Utilization Behavior. *Information & Management, 41, pp 719-729.* ELSEVIER.

Shim, M; Johnson, B; Bradt, J; & Gasson, S. 2021. A Mixed Methods–Grounded Theory Design for Producing More Refined Theoretical Models. *Journal of Mixed Methods Research*, *15*(1), pp.61-86.

Shmakov, D. 2014. Airports case study book. Berlin: Axis Communications AB.

Silverman, D. ed. 2020. *Qualitative research*. sage

Siyam, N; & Abdallah, S. 2021. A Pilot Study Investigating the Use of Mobile Technology for Coordinating Educational Plans in Inclusive Settings. *Journal of Special Education Technology*, p.01626434211033581.

Smith, M J. 2017. Situational crime prevention/ From: http://www.oxfordbibliographies.com/view/document/obo-9780195396607/obo-9780195396607-0040.xml (Accessed 27 April 2017).

Smith, H; Miele, M; Charles, N; & Fox, R. 2021. Becoming with a police dog: Training technologies for bonding. *Transactions of the Institute of British Geographers*, *46*(2), pp.478-494.

Simon, H.A. 1979. Rational decision making in business organizations. *The American economic review*, pp.493-513.

Simpson, D. 2014. The Digital Divide. *Cyberbook*, p.45.

Sinclair, I & Matlala, M. 2011. The Use of Technology and Leadership in Enhancing Strategic Cooperative Policing Within the SADC Region. *International Journal of African Renaissance Studies: Multi-, Inter- and Trans-disciplinarity, Vol. 6, No. 1, June.*

Singh, S. 2007. Sensors—an effective approach for the detection of explosives. *Journal of hazardous materials*, *144*(1), pp.15-28.

Siror, J.K; Huanye, S; Dong, W & Jie, W. 2009. Application of RFID technology to Curb Diversion of Transit Goods in Kenya. *Fifth International Joint Conference on INC, IMS and IDC, IEEE Computer Society.*

Siror, J.K; Guangun, L; Kaifang, P; Huanye, S & Dong, W. 2010. Impact of RFID Technology on Tracking of Export Goods in Kenya, *Journal of Convergence Information Technology, Vol 5, No 9, November 2010.*

Sivasubramaniam, S.D; Cosentino, M; Ribeiro, L; & Marino, F. 2021. Unethical practices within medical research and publication–An exploratory study. *International Journal for Educational Integrity*, *17*(1), pp.1-13.

Skhosana, J.S. 2019. *Applying the 7-C Protocol to assess the implementation of immigration policies in the Department of Home Affairs: A case study* (Doctoral dissertation, Stellenbosch: Stellenbosch University).

Smith, G. 2010. Every complaint matters: Human Rights Commissioner's opinion concerning independent and effective determination of complaints against the police. *International Journal of Law, Crime and Justice (38), pp 59-74.*

Smith, G.F. & Figueiredo, E., 2014. The Global Plants Initiative: Where it all Started. *Taxon*, *63*(3), pp.707-709.

Smith, B; & McGannon, K.R. 2018. Developing rigor in qualitative research: Problems and opportunities within sport and exercise psychology. *International review of sport and exercise psychology*, *11*(1), pp.101-121.

Soares, F; Madureira, A; Barbosa, A; Coelho, A; Cassola, F; Ribeiro, F; Viana, J; Andrade, J; Dorokhova, M; Morais, N; & Wyrsch, N, 2021. Feedback: An ICT-Based Platform to Increase Energy Efficiency through Buildings' Consumer Engagement. *Energies*, *14*(6), p.1524.

South Africa. 1977. Criminal Procedure Act 51 of 1977. Pretoria: Government Printer.

South Africa. 1980. National Key Points Act 102 of 1980. Pretoria: Government Printer.

South Africa. 1994a. Intelligence Oversight Act (Act 40 of 1994). Pretoria: Government Printer.

South Africa. 1994. Public Service Act 103 of 1994. Pretoria: Government Printer.

South Africa. 1995. South African Police Service Act 68 of 1995. Pretoria: Government Printer.

South Africa. 1995a. Auditor General Act (Act 12 of 1995). Pretoria: Government Printer.

South Africa. 1996. Constitution of the Republic of South Africa (Act 108 of 1996). Pretoria: Government Printer.

South Africa. 1996a. National Crime Prevention Strategy. Pretoria: Government Printer.

South Africa. 1997. White Paper on Transforming Public Service Delivery. Department of Public Service and Administration. Pretoria: Government Printer.

South Africa. 1998. Prevention of Organised Crime Act 1998 Act 121 of 1998. Pretoria: Government Printer.

South Africa. 1998. White Paper on Safety and Security: *In Service of Safety: 1999-2004.* Department of Safety and Security. Pretoria: Government Printer.

South Africa. 1998a. Prevention of Organised Crime Act (Act 121 of 1998). Pretoria: Government Printer.

South Africa. 1999. Prevention of Organised Crime Act (Act 24 of 1999). Pretoria: Government Printer.

South Africa. 2002a. National Disaster Management Act (Act 57 of 2002). Pretoria: Government Printer.

South Africa. 2002. Strategic plan 2002/2005: Information Technology Resource Strategy (ITRS). Pretoria: Government Printer.

South Africa. 2009. Civil Aviation Act (Act 13 of 2009). Pretoria: Government Printer.

South Africa. 2010. Criminal Law (Forensic Procedure) Amendment Act (Act 6 of 2010). Pretoria: Government Printer.

South Africa. 2014. Government Gazette, Notice No. 37968. Pretoria: Government Printer.

South Africa. 2015. Draft white Paper on Safety and Security. Pretoria: Government Printer.

South Africa. 2015a. White Paper on Civil Aviation Policy. Department of Public Service and Administration. Pretoria: Government Printer.

South Africa. 2017. Department civilian secretariat for police. From: https://nationalgovernment.co.za/units/view/8/Justice-Protection-Services/Department-Civilian-Secretariat-for-Police (Accessed 10 May 2017).

South Africa. 2020. Border Management Authority Act 21 of 2020. Pretoria: Government Printer.

South African Cities Network. 2016. The state of South African cities report. Johannesburg: South African Cities Network

South African Civil Aviation Authority. 2017. South African civil aviation industry comes under international spotlight. Midrand: SACAA.

South African Civil Aviation Authority. 2017a. Annual Report 2016/2017 of the South African Civil Aviation Authority. Midrand: SACAA.

Southern African Development Community. 2001a. Protocol on Politics, Defence and Cooperation. Harare: Southern African Development community.

Southern African Development Community. 2001b. Declaration on Information and Communications Technology (ICT). Harare: Southern African Development community.

Southern African Development Community. 2008. Protocol on Science, Technology and Innovation. Harare: Southern African Development Community.

Southern African Development Community. 2011. Regional Indicative Strategic Development Plan (RISDP). Harare: Southern African Development Community.

South African Government. 2016a. Justice, Crime Prevention and Security Cluster. From: http://www.gov.za/about-government/justice-crime-prevention-and-security-cluster (Accessed 9 November 2016).

South African Government. 2016b. T Mbeki: O R Tambo International Airport renamingJustice, From: http://www.gov.za/t-mbeki-o-r-tambo-international-airport-renaming (Accessed 20 December 2016).

South African Government News Agency. 2015a. Human trafficking plagues SA. From: http://www.sanews.gov.za/south-africa/human-trafficking-plagues-sa (Accessed 11 May 2016).

South African Government News Agency. 2015b. Rough diamond, gold bust at Beit Bridge. From: http://www.sanews.gov.za/south-africa/rough-diamonds-gold-bust-beitbridge (Accessed 11 May 2016).

South African History Online. 2015a. The Johannesburg International Airport is officially renamed OR Tambo International Airport by President Mbeki From: http://www.sahistory.org.za/dated-event/johannesburg-international-airport-officially-renamed-or-tambo-international-airport-pre (Accessed 29 April 2016)

South African History Online. 2015b. 2009 - President Zuma, State of the Nation Address, 3 June 2009 (After National Elections). From: http://www.sahistory.org.za/archive/2009-president-zuma-state-nation-address-3-june-2009-after-national-elections (Accessed 9 November 2016).

South African History Online. 2017. South African Police Service (SAPS). From: http://www.sahistory.org.za/organisations/south-african-police-sap (Accessed 1 February 2017).

South African Institute of International Affairs. 2021. Understanding the African Continental Free Trade Agreement. From: https://saiia.org.za/research/understanding-the-african-continental-free-trade-agreement/ (Accessed 2 January 2021).

South African Police Service. 2001. Constitutional mandate for democratic policing in the Republic of South Africa (1st Edition). Study Guide for Crime Prevention level- I & II. Pretoria: South African Police Service Training Division.

South African Police Service. 2008. Annual Report 2007/2008. Pretoria: Commissioner of the South African Police Services.

South African Police Service. 2009. Annual Report 2008/2009. Pretoria: Commissioner of the South African Police Services.

South African Police Service. 2014. Strategic Plan 2014-2019. Pretoria: Commissioner of the South African Police Services

South African Police Service. 2015. Annual Report 2014/2015. Pretoria: Commissioner of the South African Police Services.

South African Police Service. 2016. Annual Performance Plan 2016/2017. Pretoria: Commissioner of the South African Police Services.

South African Police Service. 2016a. Technical Indicator Description: 2015/2016 Annual Performance Plan 2105/2016, Version 2. Pretoria: Commissioner of the South African Police Services.

South African Police Service. 2016b. Annual Performance Plan 2015/2016. Pretoria: Commissioner of the South African Police Services.

South African Police Service. 2018. Annual Performance Plan 2018/2019. Pretoria: Commissioner of the South African Police Services.

South African Revenue Service. 2015. Annual report 2014-2015. Pretoria: Government Printer.

South African Revenue Service. 2016. SARS Commissioner launches customs cargo scanner at Cape Town habour. From: http://www.sars.gov.za/Media/MediaReleases/Pages/22-July-2015---SARS-Commissioner-launches-Customs-cargo-scanner-at-Cape-Town-Harbour.aspx (Accessed 24 October 2016).

Southern African Development Community. 1996. Protocol on transport, communication and meteorology. Maseru: Southern African Development Community.

Southern African Development Community. 2012. Air & aviation. From: http://www.sadc.int/themes/infrastructure/transport/air-aviation/ (Accessed 6 February 2018).

St. Pierre, E.A. 2021. Post qualitative inquiry, the refusal of method, and the risk of the new. *Qualitative Inquiry*, *27*(1), pp.3-9.

Stahl, N.A; & King, J.R. 2020. Expanding approaches for research: Understanding and using trustworthiness in qualitative research. *Journal of Developmental Education*, *44*(1), pp.26-29.

Stahnisch, F.W. 2023. Neuroscience research in the Max Planck Society and a broken relationship to the past: Some legacies of the Kaiser Wilhelm Society after 1948. *Journal of the History of the Neurosciences*, *32*(2), pp.81-122.

Stenfors, T; Kajamaa, A; & Bennett, D. 2020. How to… assess the quality of qualitative research. *The clinical teacher*, *17*(6), pp.596-599.

Stack Exchange Inc. 2023. Homing device for missile, which can be applied remotely. From: technology – Homing device for missile, which can be applied remotely – Worldbuilding Stack Exchange (Accessed 18 September 2023).

Statistics South Africa. 2020. Housebreaking is the number one crime in SA. From http://www.statssa.gov.za/?p=12614 (Accessed 29 December 2020).

Stavridou, I; & Ferreira, A. 2010. Multi-Inter-and Trans-disciplinary research promoted by the European Cooperation in Science and Technology (COST): Lessons and experiments.

Steinberg, J. 2005a. *An Overview of South African Border Control, 1994-2004*. Institute for security Studies.

Steinberg, J., 2005b. *Drug smuggling and border control at Johannesburg International Airport and Durban Harbor*. Institute for security Studies.

Stepchenkova, S; & Belyaeva, V. 2021. The effect of authenticity orientation on existential authenticity and postvisitation intended behavior. *Journal of Travel Research*, *60*(2), pp.401-416.

Stern, A.M., 2021. Cautions About Medicalized Dehumanization. *AMA Journal of Ethics*, *23*(1), pp.64-69.

Store, I.C.M.A; & Join, I.C.M.A. 2017. The digital divide. From: http://icma.org/en/BlogPost/2227/The_Digital_Divide (Accessed 17 May 2017).

Stott, N. 2003. Implementing the Southern Africa Firearms Protocol: Identifying the challenges and Priorities. *ISS Paper 83, Institute of Security Studies.*

Stovin, G; & Davies, C. 2008. Beyond the Network: A Crime Science Approach to Organized Crime. *Policing, Vol. 2, No. 4, pp 497-505. London: Oxford University Press.*

Streefkerk, J.W; van Esch-Bussemakers, M.P; & Neerincx, M.A. 2008. *Field Evaluation of a Mobile Location-Based Notification System for Police Officers.* New York: ACM.

Sturman, K. 2002. The AU Plan on Terrorism: Joining the Global War or Leading an African Battle. *African Security Review 11 (4), pp 103-108.*

Subban, V; & Govender, P. 2020. Unpacking SA's new Border Management Authority Act. From: https://www.bizcommunity.com/Article/196/717/206975.html (Accessed 05 October 2020).

Sundbom, M; Näslund, I; Näslund, E; & Ottosson, J. 2021. High acquisition rate and internal validity in the Scandinavian Obesity Surgery Registry. *Surgery for Obesity and Related Diseases*, *17*(3), pp.606-614.

Susanti, D.A. 2021. The Study of Advertisement Quality of Message, Attractiveness, and Display Frequency Influence to Purchase Intention in Indonesia. *Ganaya: Jurnal Ilmu Sosial Dan Humaniora*, *4*(2), pp.466-479.

Swiatek, L. 2023. To illustrate this argument, the chapter presents original research gained through two methods: a case study of Macquarie University and a conventional qualitative content analysis (of the university's publicly avail-able organizational communication collateral). I chose the case study method because it provides a way of exploring one context in depth and. *Sustainable Practices in Higher Education: Finance, Strategy, and Engagement*, p.221.

Switchenko, J.M; Roy, S.L; Muñoz, F; Lopez, G; Rivera, J.G; Cuéllar, V.M; Juliao, P; López, B; Thornton, A; Patel, J.C; & Alvarez, M. 2021. Evaluation of residential structures not covered by aerial photographs used to generate a sampling frame–Nueva Santa Rosa, Guatemala. *Journal of Global Health Reports*, *5*, p.e2021056.

Szewczyk, R. 2021. *Automation 2021: Recent Achievements in Automation, Robotics and Measurement Techniques*. Springer Nature.

Szollosi, A; & Donkin, C. 2021. Arrested theory development: The misguided distinction between exploratory and confirmatory research. *Perspectives on Psychological Science*, *16*(4), pp.717-724.

Taboada, I; & Shee, H. 2021. Understanding 5G technology for future supply chain management. *International Journal of Logistics Research and Applications*, *24*(4), pp.392-406.

Takada, Y; Nagano, H; Suzuki, Y; Sugiyama, M; Nakajima, E; Hashimoto, Y; & Sakairi, M. 2011. High-throughput walkthrough detection portal for counter terrorism: detection of triacetone triperoxide (TATP) vapor by atmospheric-pressure chemical ionization ion trap mass spectrometry. *Rapid Communications in Mass Spectrometry*, *25*(17), pp.2448-2452.

Taksler, G.B; Dalton, J.E; Perzynski, A.T; Rothberg, M.B; Milinovich, A; Krieger, N.I; Dawson, N.V; Roach, M.J; Lewis, M.D; & Einstadter, D. 2021. Opportunities, pitfalls, and alternatives in adapting electronic health records for health services research. *Medical Decision Making*, *41*(2), pp.133-142.

Tang, R; Mehra, B; Du, J.T; & Zhao, Y. 2021. Framing a discussion on paradigm shift (s) in the field of information. *Journal of the Association for Information Science and Technology*, *72*(2), pp.253-258.

Tangi, L., Benedetti, M., Gastaldi, L., Noci, G. and Russo, C., 2021. Mandatory provisioning of digital public services as a feasible service delivery strategy: Evidence from Italian local governments. *Government Information Quarterly*, *38*(1), p.101543.

Taplin, K. 2021. South Africa's PNR regime: Privacy and data protection. *Computer Law & Security Review*, *40.*

Taute, B.J. 2007. Integrated control of the South African border environment. *Research Space CSIR.*

Technews Publishing (Pty) Ltd. 2024. O.R Tambo International Airport upgrades surveillance. From: O.R. Tambo International Airport upgrades surveillance - August 2009 - SMART Security Solutions (securitysa.com) (Accessed 6 June 2024).

Techtarget. 2017. Iris recognition. From: http://whatis.techtarget.com/definition/iris-recognition (Accessed 8 June 2017).

Teleworkva.org. 2021. Pros and cons of conducting a pilot study. From: http://www.teleworkva.org/telework/assets/File/downloads/PilotProsAndCons.pdf (accessed 02 November).

Terre Blanche, M; Durrheim, K; & Painter, D. 2006. *Research in Practice: Applied Methods for the Social Sciences*. 2nd Edition. Cape Town: Martin Terre Blanche, Kevin Durrheim and Desmond Painter.

Teshome, E; & Demissie, E. 2021. Tourist Services Quality in the Simien Mountains National Park, World Heritage Site, Ethiopia. From: http://213.55.79.198/xmlui/handle/123456789/4245 (Accessed 15 October 2021).

Thakkar, A. 2016. An overview of biometric iris recognition technology and Its application areas. From: https://www.bayometric.com/biometric-iris-recognition-application/ (Accessed 8 June 2017).

Thali, M.J; Braun, M; Brueschweiler, W; & Dirnhofer, R. 2003. Morphological imprint': determination of the injury-causing weapon from the wound morphology using forensic 3D/CAD-supported photogrammetry. *Forensic science international*, *132*(3), pp.177-181.

The Chattered Institute of Public Finance and Accountancy. 2016. Delivering Good Governance: Guidance Notes for Policing Bodies in England and Wales (2016 Edition). From: http://www.cipfa.org/policy-and-guidance/publications/d/delivering-good-governance-guidance-notes-for-policing-bodies-in-england-and-wales-2016-edition (Accessed 16 March 2017).

The Commonwealth of Australia. 2017. Policing at Australian international airports. From: https://www.anao.gov.au/work/performance-audit/policing-australian-international-airports (Accessed 29 May 2017).

The Conversation. 2017. The science of airport bomb detection: Chromatography. From: http://theconversation.com/the-science-of-airport-bomb-detection-chromatography-35199 (Accessed 9 August 2017).

The Davis Tax Committee. 2013. Introduction. From: http://www.taxcom.org.za/ (Accessed 15 November 2016).

The Guardian. 2023. RoboCop review- thrilling, subversive 80's masterpiece from Paul Verhoeven. From: RoboCop review – thrilling, subversive 80s masterpiece from Paul Verhoeven | Film | The Guardian (Accessed 18 September 2023).

The Guardian. 2023a. "Show me your ID": Tunisia deploys "robocop" to enforce coronavirus lockdown. From: 'Show me your ID': Tunisia deploys 'robocop' to enforce coronavirus lockdown | Coronavirus | The Guardian (Accessed 18 September 2023).

The Guardian. 2023b. The good, the bad and the cyborgs: Westworld's robot forebears. From: The good, the bad and the cyborgs: Westworld's robot forebears | Westworld | The Guardian. Accessed 18 September 2023).

The Herald. 2017. Airport heist suspect appear in court. From: http://www.heraldlive.co.za/news/2017/03/21/airport-heist-suspects-appear-court/ (Accessed 6 April 2017).

The National Planning Commission. 2019. The National Development Plan. From: https://nationalplanningcommission.wordpress.com/the-national-development-plan/ (Accessed 3 January 2019).

The Presidency. 2016. Justice, Crime Prevention and Security Cluster. From: http://www.gov.za/about-government/justice-crime-prevention-and-security-cluster (Accessed 21 October 2016).

The Presidency. 2020. President Ramaphosa signs Border Management Authority Bill into law. From: http://www.thepresidency.gov.za/press-statements/president-ramaphosa-signs-border-management-authority-bill-law (Accessed 05 October 2020).

The Strategist. 2017. Europe's unprecedented border management challenge. From: https://www.aspistrategist.org.au/europes-unprecedented-border-management-challenge/ (Accessed 01 November 2017).

Thomas, G. 2021. *How to do your case study*. Sage

Thompson, V.B., Gupta, A; & Nyerere, J.K. 1971. Africa and unity: The evolution of Pan-Africanism.

Thoreson, R. R. 2014. Troubling the waters of a 'wave of homophobia': Political economies of anti-queer animus in sub-Saharan Africa. *Sexualities*, *17* (1-2), pp.23-42.

Tien, N.H; Diem, P.T; Vu, N.T; Nhan, V.K; Bien, B.X; & Hung, N.T. 2021. The strategy of CRM system development at Mega Market Vietnam. *International journal multidisciplinary research and growth evaluation*, *2*(4), pp.802-806.

Tomellini, D; Penney, M; & Brooks, P. 2017. *Personal substance detection field test kit*. U.S. Patent 9,551,695. Lindon Group, Inc.

Toth, C; Jozkowa, G; Koppanyi, Z; Young, S; & Grejner-Brzezinska, D. 2016. Monitoring aircraft motion at airports by Lidar. *ISPRS Annals of Photogrammetry, Remote Sensing & Spatial Information Sciences*, *3*(1).

Tong, J; & Zuo, L. 2021. The Inapplicability of objectivity: Understanding the work of data journalism. *Journalism Practice*, *15*(2), pp.153-169.

Tumulo, L.J., Sumadinata, R.W.S., Sudirman, A. & Herdiansah, A.G. 2022. Transnational Organized Crimes At Husein Sastranegara Air Force Base. *Specialusis Ugdymas*, *1*(43), pp.3366-3372.

Traveller24.com. 2017. What does ACSA's new aviation barometer mean for travelers? From: http://www.traveller24.com/News/Flights/what-does-acsas-new-aviation-barometer-mean-for-travellers-20160801 (Accessed 30 October 2017).

Tyrer, S; & Heyman, B. 2016. Sampling in epidemiological research: issues, hazards and pitfalls. *BJPsych bulletin*, *40*(2), pp.57-60.

UK Essays. 2017. Theories of crime causation. From: https://www.ukessays.com/essays/criminology/theories-of-crime-causation.php (Accessed 3 May 2017).

Underwood, K; van Rhijn, T; Balter, A.S; Feltham, L; Douglas, P; Parekh, G; & Lawrence, B. 2021. Pandemic Effects: Ableism, Exclusion, and Procedural Bias. *Journal of Childhood Studies*, pp.16-29.

United Nations. 1945. Charter of the United Nations and statute of the International Court of Justice. San Francisco: United Nations.

United Nations. 1979. Resolution 169 of the 34th Session of the General Assembly, 34/169, Code of Conduct for Law Enforcement Officials. http://www.un.org/documents/ga/res/34/a34res169.pdf (Accessed 21 March 2017

United Nations. 2004. International human rights standards for law enforcement. Geneva: UN High Commissioner for Human Rights Center for Human Rights

United Nations. 2007. *Auditing for Social Change: A Strategy for Citizen Engagement in Public Sector Accountability.* Department of Economic and Social Affairs, 6th Global Forum on Reinventing Government: Towards Participatory and Transparent Governance, Seoul, May. New York: United Nations.

United Nations. 2010. Handbook on the Crime Prevention guidelines: making them work. UN Office on Drugs and Crime. New York: United Nations.

United Nations. 2015. Universal Declaration of Human Rights. Geneva: United Nations.

United Nations. 2018. 1973 UN Convention on Apartheid as a Crime Against Humanity. From: http://www.politicsweb.co.za/documents/1973-un-convention-on-apartheid-as-a-crime-against (Accessed 26 October 2018).

United Nations. 2021. The African Continental Free Trade Area Agreement – what is expected of LDCs in terms of trade liberalisation? By Trudi Hartzenberg, Executive Director, Trade Law Centre (tralac) and member of the Committee for Development Policy (CDP). From: https://www.un.org/ldcportal/afcfta-what-is-expected-of-ldcs-in-terms-of-trade-liberalisation-by-trudi-hartzenberg/ (Accessed 2 January 2021).

United Nations. 2021a. The United Nations Charter on Peace, Dignity and Equality on a Healthy Planet. From: https://www.un.org/en/sections/un-charter/chapter-i/index.html (Accessed 2 January 2021).

United Nations Office on Drugs and Crime. 2016. Organized crime. From: https://www.unodc.org/unodc/ar/organized-crime/index.html (Accessed 1 December 2016).

United Nations Peacekeeping. 2017. Peacekeeping issues. From: http://www.un.org/en/peacekeeping/issues/ (Accessed 13 March 2017).

United Nations Police. 2015. Serve and protect to build peace and security. Geneva: United Nations Police.

United States of America. 2001. Uniting and Strengthening America by Providing Appropriate Tools Required to Intercept and Obstruct Terrorism Act of 2001 (Public Law 107-56). Washington D.C: Government Printer.

University of Arizona. 2017. What is MIS? From: https://mis.eller.arizona.edu/what-is-mis (Accessed 17 April 2017).

University of Cambridge. 2014. Situational crime prevention. From: http://www.crim.cam.ac.uk/research/cpt/situationalprevention/ (Accessed 11 May 2017).

University of South Africa. 2007. *University of South Africa's Policy on Research Ethics*. Pretoria: Unisa Press.

U.S Department of Justice. 2024. DOJ Strategic Plan. From: Department of Justice | Objective 1.1: Protect Our Democratic Institutions | United States Department of Justice (Accessed 7 June 2024).

USA Today. 2016. TSA defends full-body scanners at airport checkpoints. From: https://www.usatoday.com/story/news/2016/03/02/tsa-defends-full-body-scanners-airport-checkpoints/81203030/ (Accessed 30 May 2017).

USA Today. 2023. Possibility or pipe dream: how close are we to seeing flying cars? From: Flying cars: Uber, Boeing and others say they're almost ready (usatoday.com) (Accessed 18 September 2023).

van Asten, A.C., 2014. On the added value of forensic science and grand innovation challenges for the forensic community. *Science & justice*, *54*(2), pp.170-179.

Van der Spuy, E. 2009. Police Cooperation in the Southern African Region. *Crime Law Social Change,51.* Cape Town: Springer.

Van der Spuy, E & Rontsch. 2008. *Police and Crime Prevention in Africa: A Brief Appraisal of Structures, Policies and Practices. Draft Report, 31 October.* Cape Town: UCT Center for Criminology.

van Dijk, J.A.G.M. 2006. Digital Divide Research, Achievements and Shortcomings. *Poetics, 34, no. 4: 221-235.*

Van Teijlingen, E. and Hundley, V., 2010. The importance of pilot studies. *Social research update*, *35*(4), pp.49-59.

Varpio, L; Ajjawi, R; Monrouxe, L.V; O'Brien, B.C; & Rees, C.E. 2017. Shedding the cobra effect: problematising thematic emergence, triangulation, saturation and member checking. *Medical education*, *51*(1), pp.40-50.

Vaughan-Williams, N. 2015. *Europe's border crisis: biopolitical security and beyond*. Oxford University Press, USA.

Verdict Media Limited. 2023. Bomb disposal robots- evolution and revolution. From: Bomb disposal robots - evolution and revolution - Army Technology (army-technology.com) (Accessed 18 September 2023).

Veridium IP Ltd. 2017. Biometrics bringing future tech to airport security. From: https://www.veridiumid.com/blog/biometrics-bringing-future-tech-airport-security/ (Accessed 6 June 2017).

Vivekanandan, M; & Sastry, V.N. 2021. BIDAPSCA5G: Blockchain based Internet of Things (IoT) device to device authentication protocol for smart city applications using 5G technology. *Peer-to-Peer Networking and Applications*, *14*(1), pp.403-419.

Vocabulary.com, Inc. 2021. Methodological. From: https://www.vocabulary.com/dictionary/methodological (Accessed 09 September, 2021).

Waggoner, K; & Suchma, K.H. 2007. Handbook of Forensic Services. *US Dept. of Justice, Federal Bureau of Investigation, Laboratory Div*.

Wagner, A; Wright, J; Ganesh, A; Zhou, Z; Mobahi, H; & Ma, Y. 2012. Toward a practical face recognition system: Robust alignment and illumination by sparse representation. *IEEE Transactions on Pattern Analysis and Machine Intelligence*, *34*(2), pp.372-386.

Walters, P.M. 2006. *Policing philosophy.* Santa Ana, Ca: Santa Ana Police Department.

Walters, W. 2016. Border/control. In *An Anthology of Migration and Social Transformation* (pp. 151-165). Springer International Publishing.

Walton, J.R; Barrett, M.L. & Agent, K.R. 2005. Evaluation of Methods to Limit the Time Taken to Investigate Crash Sites.

Wang, R.Y; & Strong, D.M. 1996. Beyond accuracy: What data quality means to data consumers. *Journal of management information systems*, *12*(4), pp.5-33.

Wang, D; Zhou, T. & Wang, M., 2021. Information and communication technology (ICT), digital divide and urbanization: Evidence from Chinese cities. *Technology in Society*, *64*, p.101516.

Washington Office on Latin America. 2017. Actual security challenges at the U.S.-Mexico border. From: https://www.wola.org/analysis/actual-security-challenges-u-s-mexico-border-address/ (Accessed 27 December 2017).

Wasilewski, T; Gębicki, J; & Kamysz, W. 2021. Bio-inspired approaches for explosives detection. *TrAC Trends in Analytical Chemistry*, p.116330.

Watts, J.H., 2008. Integrity in qualitative research.

We are Social Ltd. 2017. Digital in 2017: Global overview. From: https://wearesocial.com/uk/special-reports/digital-in-2017-global-overview (Accessed 30 May 2017).

Webster, J. 1996. Roman imperialism and the 'post imperial age'.

Weindling, P; von Villiez, A; Loewenau, A; & Farron, N. 2016. The victims of unethical human experiments and coerced research under National Socialism. *Endeavour*, *40*(1), pp.1-6.

Weisburd, D. and Neyroud, P., 2013. Police science: Toward a new paradigm. *Australasian Policing*, *5*(2), p.13.

Weisburd, S. 2021. Police presence, rapid response rates, and crime prevention. *Review of Economics and Statistics*, *103*(2), pp.280-293.

Weisburd, D; Gill, C; Wooditch, A; Barritt, W; & Murphy, J. 2021. Building collective action at crime hot spots: Findings from a randomized field experiment. *Journal of Experimental Criminology*, *17*(2), pp.161-191.

Welman, J.C & Kruger, S.J. 2001. *Research Methodology.* 2nd Edition. Cape Town: Oxford University Press Southern Africa.

Wen, W. 2009. An Intelligent Traffic Management Expert System with RFID Technology. *Expert Systems with Applications 37 (2010), pp 3024–3035.* Elsevier.

West, D.M. 2004. E-Government and the Transformation of Service Delivery and Citizen Attitudes. *Public Administration Review. January/ February, vo. 64, No. 1.* Andromeda: Rutgers.

West, P.W. 2016. Simple random sampling of individual items in the absence of a sampling frame that lists the individuals. *New Zealand Journal of Forestry Science*, *46*(1), pp.1-7.

West Yorkshire Police. 2017. Problem solving. From: https://www.westyorkshire.police.uk/help-advice/what-crime-prevention/problem-solving (accessed 13 March 2017).

Whyjoburg.com. 2024. The history of OR Tambo International Airport. From: Johannesburg Airport History | whyjoburg.com (Accessed 7 June 2024).

Wickberg, S. 2021. Understanding corruption in the twenty-first century: towards a new constructivist research agenda. *French Politics*, pp.1-21.

Wigell, M; Scholvin, S; & Aaltola, M. eds. 2018. *Geo-Economics and Power Politics in the 21st Century: The Revival of Economic Statecraft*. Routledge.

Wikström, P.O.H. 2004. Crime as alternative: Towards a cross-level situational action theory of crime causation. *Beyond empiricism: Institutions and intentions in the study of crime*, *13*, pp.1-37.

Wikström, P.O.H. 2014a. Situational action theory. *Encyclopedia of Criminology and Criminal Justice*, pp.4845-4852.

Wikström, P.O.H. 2014b. Why crime happens: A situational action theory. *Analytical Sociology*, pp.71-94.

Wikström, P.O.H. & Svensson, R. 2010. When does self-control matter? The interaction between morality and self-control in crime causation. *European Journal of Criminology*, *7*(5), pp.395-410.

Wikström, P.O.H. & Treiber, K. 2007. The role of self-control in crime causation beyond Gottfredson and Hirschi's general theory of crime. *European Journal of Criminology*, *4*(2), pp.237-264.

Wilensky, H.L. 2015. *Organizational intelligence: Knowledge and policy in government and industry* (Vol. 19). Quid Pro Books.

Wilkinson, C. 2021. James Peter Byrne, 31 May 1928-21 April 2019. *SAMJ: South African Medical Journal*, *111*(3), pp.194-194.

Williams, P.D. 2021. How United Nations Peacekeeping Works: Peacekeeping in the midst of war, by Lisa Hultman, Jacob D. Kathman and Megan Shannon, Oxford, Oxford University Press, 2019, 256 pp.,£ 65.00 (hardback), ISBN 9780198845577; Composing peace: mission composition in UN peacekeeping, by Vincenzo Bove, Chiara Ruffa and Andrea Ruggeri, Oxford, Oxford University Press, 2020, 288 pp.,£ 65.00 (hardback), ISBN 9780198790655; Power in peacekeeping, by Lise M. Howard, Cambridge, Cambridge University Press, 2019, 274 pp.,£ 22 ....

Williams, V; & Carr, L. 2006. The draft protocol on the facilitation of movement of persons in SADC: implications for state parties.

Wilson, J.A. 2013. The Digital Divide.

Wilson, C; & Kim, E.S. 2021. Qualitative data collection: Considerations for people with Aphasia. *Aphasiology*, *35*(3), pp.314-333.

Winterdyk, J.A. ed. 2017. *Crime Prevention: International Perspectives, Issues, and Trends*. CRC Press.

Wired. 2016. 11 Police robots patrolling around the world. From: https://www.wired.com/2016/07/11-police-robots-patrolling-around-world/ (Accessed 28 April 2017).

Wits Journalism. 2016. Is China's appetite for rhino horn increasing? From: http://china-africa-reporting.co.za/2014/01/is-chinas-appetite-for-rhino-horn-increasing/ (Accessed 11 May 2016).

World Economic Forum. 2017. The fourth industrial revolution: What it means, how to respond. From: https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/ (Accessed 17 May 2017).

World Travel & Tourism Council. 2017. Travel & Tourism: Economic impact 2017: Egypt. London, UK: World Travel & Tourism Council.

Wood, D; Cockcroft, T; Tong, S; & Bryant, R. 2017. The importance of context and cognitive agency in developing police knowledge: going beyond the police science discourse. *The Police Journal*, p.0032258X17696101.

Wood, S; & Raj, R. 2021. The impact of security scanners at airports and ethnic minority travelers' experience. *Security Journal*, *34*(2), pp.278-298.

Wood, M.A., Ross, S. and Johns, D., 2022. Primary crime prevention apps: A typology and scoping review. *Trauma, Violence, & Abuse*, *23*(4), pp.1093-1110.

Wood, M.A; & Thompson, C. 2021. Crime prevention, swarm intelligence and stigmergy: Understanding the mechanisms of social media-facilitated community crime prevention. *The British journal of criminology*, *61*(2), pp.414-433.

Wolstenholme, R; & Forbes, S. 2021. Presumptive Testing. *Analytical Techniques in Forensic Science*, pp.51-69.

Wright, B.R.E; Caspi, A; Moffitt, T.E. & Silva, P.A. 1999. Low self-control, social bonds, and crime: Social causation, social selection, or both?. *Criminology*, *37*(3), pp.479-514.

Wright, G. J., M. Ward, M & Burgers, F. 2005. Police and Business Support Microdot Technology. *Science in Africa. From* http://www.scienceinafrica.co.za/2005/november/microdot.htm (Accessed 29 September 2014).

Xu, S; & Hu, G. 2021. A cross-disciplinary and severity-based study of author-related reasons for retraction. *Accountability in Research*, pp.1-25.

Yang, X.F; Li, M.Q; Liao, L.L; Feng, H; Zhao, S; Wu, S; & Yin, P. 2021. A qualitative study of the first batch of medical assistance team's first-hand experience in supporting the nursing homes in Wuhan against COVID-19. *PloS one*, *16*(4), p.e0249656.

Youthlaw Young People's Legal Rights Center, Inc. 2014. United Nations to challenge the Victorian police complaints system. From: http://youthlaw.asn.au/2014/05/06/united-nations-committee-challenge-to-victorian-police-complaints-system/ (Accessed 13 May 2017).

Yuan, L; & Chun Mu, Z. 2012. Ear recognition based on local information fusion. *Pattern Recognition Letters*, *33*(2), pp.182-190.

Yu, J; & Chen, A. 2021. Differentiating and modeling the installation and the usage of autonomous vehicle technologies: A system dynamics approach for policy impact studies. *Transportation Research Part C: Emerging Technologies*, *127*, p.103089.

Zhang, J.X; Cheng, J.W; Philbin, S.P; Ballesteros-Perez, P; Skitmore, M; & Wang, G. 2023. Influencing factors of urban innovation and development: a grounded theory analysis. *Environment, Development and Sustainability*, *25*(3), pp.2079-2104.

Zeleza, P.T. 2002. The Politics of Historical and Social Science Research in Africa. *Journal of Southern African Studies, Vol. 28, No. 1.*

Zhou, J; Cadavid, S; & Abdel-Mottaleb, M. 2012. An efficient 3-D ear recognition system employing local and holistic features. *IEEE transactions on Information Forensics and Security*, *7*(3), pp.978-991.

Zhu, Z; Huang, G; Deng, J; Ye, Y; Huang, J; Chen, X; Zhu, J; Yang, T; Guo, J; Lu, J; & Du, D. 2021. Masked Face Recognition Challenge: The WebFace260M Track Report. *arXiv preprint arXiv:2108.07189*.

Zhu, P; Luke, M; & Bellini, J. 2021. A grounded theory analysis of cultural humility in counseling and counselor education. *Counselor Education and Supervision*, *60*(1), pp.73-89.

Zondi, P. 2012. *Service Delivery and the South African Police Service Community Service Centres: An Evaluative Study of East Rand, Gauteng*. MTech Dissertation, Unpublished. Pretoria: Tshwane University of Technology.

ANNEXURE A: INTERVIEW SCHEDULE

POLICING EXPERT

1 What is the framework for police service delivery in the border, borderlines, and entry ports settings?

2 May you please elaborate on the kinds of transnational crime that happens in these settings, the modus operandi and the level of success attained by the police in combating the crimes.

3 In your view, what are the principles that the police should adhere to when dispensing services at entry ports such as the O.R Tambo International Airport (ORTIA)?

4 What type of technologies do the police use to ensure security at the airport?

5 Are there complaints of violations by the police at the ORTIA, specifically violations that involve the use or abuse of technologies by the police? Please elaborate on the violations and specific technologies involved.

6 In your experience, to what extent does police training inculcate African philosophies such as Ubuntu?

7 In your view, is policing at the ORTIA a complex or easy task? Please substantiate.

8 How do you see the compatibility of the SAPS with the Fourth Industrial Revolution (4ir) and what technological aspects do you think will need to be improved to align with the revolution?

9 In your view, does policing in the 4ir require a new philosophy? If so, please elaborate on the principles that you think are relevant.

10 In your opinion, what do you think the relationship between policing, transnational crime, and technologies entail?

11 In your view, does the SAPS rely on research as a source to inform problem solving and dealing with operational challenges? Please elaborate.

12 From your observations, do you think there is political interference in the work done by the police in the border, borderlines, and entry ports environment? Please elaborate.

13 Please share your thoughts on whether the SAPS are coping with the workload in the border, borderlines, and entry ports, given the broad scope of its mandate.

14 What do you think are the factors that hinder the efficiency of the police at the ORTIA?

15 What do you think should be done to streamline and improve policing at the border, borderlines, and entry ports?

CROSS BORDER MOVEMENT EXPERT

1 Please explain the purpose and scope of your work as a cross border movement expert.

2 In your line of work, what type of cross border crime do you come across and what is the modus operandi?

3 In your view, are the security agencies succeeding or failing in combating cross border crime? Please provide reasons for your response.

4 What type of technologies do you think are key in capacitating the police and other security role player, that is technologies that can enhance the fight against cross border crimes?

5 Please share your thoughts on the value of technologies in combating cross border crime, the relating technological challenges and ways to remedy the identified challenges.

6 In your view, is policing at the ORTIA a complex or easy task? Please substantiate your answer.

7 How do you see the compatibility of the SAPS, your agency and other security actors with the Fourth Industrial Revolution and what technological aspects do you think will need to be improved in order to align with the revolution (4ir)?

8 In your view, does policing in the 4ir require a new philosophy? If so, please elaborate on the principles that you think will be relevant.

9 In your opinion, what do you think the relationship between policing, transnational crime, and technologies entail?

10 In your view, are the police coping with their securitisation role at entry ports, particularly the international airports? Please elaborate.

11 What do you think should be done to bolster the operational efficiency of the police in the border, borderlines and entry ports setting?

12 What type of relationship does your agency have with the SAPS, what is the level of cooperation, the inherent challenges in the relationship and how can the situation be improved?

13 In your view, does your agency, the SAPS and any other institution involved with border security in South Africa rely on research as a source to inform problem solving and dealing with operational challenges? Please elaborate on your response

14 What do you think are the factors that hinder the efficiency of the police at the ORTIA?

15 What do you think should be done to streamline and improve policing at the border, borderlines, and entry ports?

POLICE MANAGERS AT O.R TAMBO INTERNATIONAL AIRPORT

1 Please describe the work that the police do here at the ORTIA.

2 In addition to the SAPS, which other entities are responsible for policing or security in the facility and what are each of them responsible for?

3 What kind of training do border police, including the police here receive? In your response, please also elaborate on the duration of the training, whether the training is adequate or enough, and reasons for your response.

4 In your view, does the training of border police embed principles from African philosophies such as Ubuntu? If so, which aspects of the philosophy, if not is it worthwhile to embed such principles. Please elaborate on your response.

5 What type of transnational crime do the SAPS encounter at the airport and how effective are police interventions in dealing with the crimes?

6 May you please explain what the service delivery framework for the police entail, what the principles are, and the type of challenges you encounter in terms of service delivery.

7 What kind of technologies are you equipped with to do the job? In your response, please specify the technologies, what they are used for and what the relating challenges are.

8 In your opinion, what do you think the relationship is between police work, transnational crime, and technologies?

9 In your experience, are there instances where the police use technologies to perpetuate violations on individuals at the ORTIA? If so, what type of violations have been reported and how have the SAPS dealt with these?

10 Generally, what do you think are the factors that hinder the operational efficiency of the police at the ORTIA?

11 What do you think should be done to streamline/ improve policing at the airport?

12 What kind of relationships does the SAPS have with other stakeholder who are also responsible for policing or security at the airport and what are the inherent challenges.

13 What other challenges do you generally encounter, be it with staff, equipment or any other issue that makes work difficult?

FOCUS GROUP SAMPLE

1 Please explain what type of work you do here at the ORTIA.

2 Please share your thoughts on the type of training you received, how long was the training, whether you think the training was adequate and whether the training includes principles on African philosophies such as Ubuntu. Please elaborate on your responses.

3 What type of transnational crime or cross border crime do you encounter here at the airport, what is the modus operandi and how successful are police interventions in dealing with the crimes?

4 What type of technologies do you use if fighting transnational crime? In your answer, please specify the type of technology, what it is used for and the type of challenges with the regard to specific technology.

5 What do you think the 4ir entails and how it can benefit police operations?

6 What are the factors that hinder the efficiency of the police here at ORTIA?

7 What do you think can be done to improve policing in this facility?

ANNEXURE B: ETHICAL CLEARANCE

UNISA | college of law

COLLEGE OF LAW RESEARCH ETHICS REVIEW COMMITTEE

Date: 2017/04/05

Reference: P3 / 2017

Applicant: M M Matlala

Dear M M Matlala
(Supervisor : Dr T Budhram)

DECISION: ETHICS APPROVAL

Name	M M Matlala
Proposal	THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS AT O.R TAMBO INTERNATIONAL AIRPORT: DYNAMICS AND CHALLENGES
Qualification	Doctor of Literature and Philosophy

Thank you for the application for research ethics clearance by the College of Law Research Ethics Review Committee for the above mentioned research. **Final approval is granted.**

The application was reviewed in compliance with the Unisa Policy on Research Ethics.

The proposed research may now commence with the proviso that:

1. *The researcher will ensure that the research project adheres to the values and principles expressed in the Unisa Policy on Research Ethics which can be found at the following website:*

   http://www.unisa.ac.za/cmsys/staff/contents/departments/res_policies/docs/Policy_Research%20Ethics_rev%20app%20Council_22.06.2012.pdf

2. *Any adverse circumstances arising in the undertaking of the research project that is relevant to the ethicality of the study, as well as changes in the methodology, should be communicated in writing to the College of Law Ethical Review Committee.*

University of South Africa
Preller Street, Muckleneuk Ridge, City of Tshwane
PO Box 392, Unisa, 0003, South Africa
www.unisa.ac.za/law

Open Rubric

An amended application could be requested if there are substantial changes from the existing proposal, especially if those changes affect any of the study-related risks for the research participants

3. *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.*

Note:

The reference number (top right corner of this communique) should be clearly indicated on all forms of communication (e.g. Webmail, E-mail messages, letters) with the intended research participants, as well as with the URERC.

Kind regards

PROF D GOVENDER
CHAIR PERSON: RESEARCH ETHICS
REVIEW COMMITTEE
COLLEGE OF LAW

PROF R SONGCA
EXECUTIVE DEAN:
COLLEGE OF LAW

ANNEXURE C: PERMISSION TO CONDUCT RESEARCH

SUID-AFRIKAANSE POLISIEDIENS SOUTH AFRICAN POLICE SERVICE

Privaatsak/Private Bag X 94

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

DIVISION: RESEARCH
SOUTH AFRICAN POLICE SERVICE
PRETORIA
0001

The Divisional Commissioner
OPERATIONAL RESPONSE SERVICE

PERMISSION TO CONDUCT RESEARCH IN SAPS: THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS AT OR TAMBO INTERNATIONAL AIRPORT: DYNAMICS AND CHALLENGES: DLITT ET PHIL: UNIVERSITY OF SOUTH AFRICA: RESEARCHER: M MATLALA

1. The above subject matter refers.

2. The researcher, Mr M Matlala, is conducting a study with the aim ***to explore the dynamics and challenges relating to the policing of transnational crime and techno-securitisation nexus at OR Tambo International Airport (ORTIA).***

3. The researcher is requesting permission to conduct semi-structured interviews with SAPS Border Police Personnel working at ORTIA. The police personnel will be interviewed until data is saturated.

4. The proposal was perused according to National Instruction 1 of 2006. This office recommends that permission be granted for the research study, subject to the final approval and further arrangements by the office of the Divisional Commissioner: Operational Response Service.

5. We hereby request the final approval by your office if you concur with our recommendation. Your office is also at liberty to set terms and conditions to the researcher to ensure that compliance standards are adhered to during the research process and that research has impact to the organisation.

6. If approval granted by your office, this office will obtain a signed undertaking from researcher prior to the commencement of the research which will include your terms and conditions if there are any and the following:

6.1. The research will be conducted at his/her exclusive cost.

1

PERMISSION TO CONDUCT RESEARCH IN SAPS: THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS AT OR TAMBO INTERNATIONAL AIRPORT: DYNAMICS AND CHALLENGES: DLITT ET PHIL: UNIVERSITY OF SOUTH AFRICA: RESEARCHER: M MATLALA

6.2 The researcher will conduct the research without the disruption of the duties of members of the Service and where it is necessary for the research goals, research procedures or research instruments to disrupt the duties of a member, prior arrangements must be made with the commander of such member.

6.3 The researcher should bear in mind that participation in the interviews must be on a voluntary basis.

6.4 The information will at all times be treated as strictly confidential.

6.5 The researcher will provide an annotated copy of the research work to the Service.

7. If approval granted by your office, for smooth coordination of research process between your office and the researcher, the following information is kindly requested to be forwarded to our office:

- **Contact person:** Rank, Initials and Surname.
- **Contact details:** Office telephone number and email address.

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

9. Your cooperation will be highly appreciated.

LIEUTENANT GENERAL
DIVISIONAL COMMISSIONER: RESEARCH
DR BM ZULU

DATE: 2017/03/17

ANNEXURE D: INFORMED CONSENT FORM

STUDY: THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS AT O.R TAMBO INTERNATIONAL AIRPORT: DYNAMICS AND CHALLENGES

DOCTOR OF PHILOSOPHY(PhD): POLICE SCIENCE

RESEARCHER: MPHO MATLALA

I am Mpho Matlala is a student and employee of the University of South Africa (UNISA). I am conducting research on the study as per title reflected above. Permission to conduct the above-mentioned study has already been granted by the SAPS. I have also obtained ethical clearance from the university to do the research and am requesting your voluntary participation to help inform the study for the benefit of the SAPS and enriching police science. The following is what I would like you to attest to before you can sign this consent form to participate:

---

1. **RESEARCH PURPOSE:** The researcher explained to me that the aim of the research in this study is to explore the dynamics and challenges relating to the policing, transnational crime and techno-securitisation (use of technology in police work) nexus at ORTIA. Also, I am aware that the research is purely for academic purposes, towards the fulfilment of a Doctoral degree at UNISA.
2. **RESEARCH RISK:** I understand that my participation in this research may have an emotional effect on myself and may create some anxiety and or fatigue. In which case, I also understand that I am entitled to communicate my anxiety and fatigue to the researcher, who is bound by research ethics to facilitate immediate and reasonable relief or intervention as required.
3. **RESEARCH PROCEDURE:** I am aware that the interview may take some time and as estimated by the researcher I may be involved for anytime between thirty minutes and an hour and hereby agree thereto.
4. **VOLUNTARY CONSENT:** I know that my participation in this research is completely voluntary.
5. **PRIVACY AND CONFIDENTIALITY**: I am also aware that by participating in this research, I am not obliged to questions of a personal nature that may infringe on my privacy and that my identity will not be made public without my express consent.
6. **NON-DISCLOSURE OF SENSITIVE INFORMATION:** I am aware that I may not divulge to the researcher, any information that is deemed classified or sensitive by any organisation, including the SAPS, without the written consent from the official duly authorised to give such permission.
7. **LEGAL PRIVILEDGE:** I am aware that my participation in this research is protected by law and that any information I give will not be used against me in any form of proceedings and that by law, the researcher is indemnified not to provide any information relating to my participation in

the research, to any person or testify in any type of proceedings. Any breach of the legal privilege by the researcher would be unethical, will constitute misconduct and is unlawful.

8. **OPTION TO WITHDRAW:** I know that I have the right to withdraw my participation in this research at any time and such withdrawal will not be used against me in any manner.
9. **PPORTUNITY TO ASK QUESTIONS**: If I have any questions about this research, I know that I can ask the researcher to clarify any aspects of the research and that I may reach him on 083 339 4719 or by email on matlamm@unisa.ac.za.
10. **MEMBER CHECKING:** I have been assured by the researcher that a copy of, or parts of the research report that deals with the information I provided, will be made available for my perusal, so that I can confirm or refute aspects in the interest of accuracy, before the research report is published.
11. **NATIONAL DISSASTER MANAGEMENT ACT PROTOCOLS:** I also acknowledge that all interviews will be conducted in observance of social distancing with all parties involved having masks on. Furtherhereto, I understand that the researcher will have additional masks to issue out where necessary and will also supply a sanitiser.
12. **RECORDING OF THE INTERVIEWS**: I also understand that the interviews will be recorded for the purpose of transcription and data analysis and that the information is subject to legal privilege and can only be used for academic study purposes and nothing else.
13. **ETHICAL CLEARANCE**: I am further aware that the research being conducted has been granted ethical clearance by UNISA, subject to observation of all ethical protocols that include anonymity and confidentiality for research participants, as well as keeping all research participants safe from any harm.

DISCLAIMER: I am aware that all research participants have unlimited access to me as the researcher using all agreed communication mediums, including telephone, cell phone and email and such interaction is strictly limited to this research or study only.

Thank you for your participation in this study

I, the undersigned agree to participate in this study voluntarily without undue influence.

PARTICIPANT'S SIGNATURE: _____ **DATE:** _____

(OPTIONAL)

ANNEXURE E: EDITORS CERTIFICATE

To Whom it May Concern

Editorial Services for Mr. M.M Matlala: Student no. 30768144: Date 2024-01-24

I, ...(***Anon for professional reasons).....,*** herewith confirm that I have language and content edited the thesis, ***THE POLICING, TRANSNATIONAL CRIME AND TECHNO-SECURITISATION NEXUS AT O.R TAMBO INTERNATIONAL AIRPORT: DYNAMICS AND CHALLENGES*** to be submitted in fulfilment of the requirements for the degree Doctor of Philosophy (PhD) in Criminal Justice, in the subject: Police Science, at the University of South Africa (UNISA), Pretoria.