

Effective Digitalisation of Export Promotion Initiatives by the South African Public Sector

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Under the Supervision of

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ABSTRACT

The South African government's export promotion initiatives are currently not operating at their full potential, seemingly hindered by factors such as inadequate digitalisation of export promotion services, including the limited use of digital tools like online trade portals and virtual communication platforms. This qualitative research employs a case study approach to investigate this issue, focusing on the Department of Trade, Industry, and Competition (**the dtic**). The study is underpinned by the Technology Fallacy theory, which highlights the interplay between technology adoption and organisational dynamics.

Purposive sampling was employed to recruit 17 participants, including internal senior managers, non-management employees, exporters, and industry experts. Data was gathered through triangulation using semi-structured interviews and observations, which were analysed using a thematic analysis approach.

The findings reveal that while existing export promotion instruments, such as the Export Marketing and Investment Assistance (EMIA) scheme, are effective, the lag in digitalisation within export promotion services has introduced inefficiencies, reducing their overall utility. Participants expressed an apparent need, expectation, and demand for greater automation and modernisation of digital tools.

The study concludes with the recommendation of a high-level roadmap (amongst others) to propel digitalisation efforts in export promotion, fostering enhanced efficiency, global competitiveness, and economic growth within the public sector.

Keywords: Export Promotion, EMIA, Digitalisation, Public Sector, Digital Tools, Future Digitalisation Roadmap

DECLARATION

I, ___Hloniphile Nkiwane___, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the Master of Management degree in the field of Digital Business at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

Name: Hloniphile Nkiwane

Signature: 

Signed at ...Pretoria.....

On the ...27..... day of ...February.....2025.....

DEDICATION

I dedicate this work to my children with the hope that it will inspire them to go far and beyond and to always believe in their limitless potential.

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A beautiful African proverb states, “If you want to go fast, go alone. If you want to go far, go together”. This has been the epitome of my Master's journey, understanding and support from the loved ones in my life, my beacons of light, without which the journey would have been 10 times more challenging. I am grateful and forever thankful for your unwavering support.

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LIST OF ACRONYMS

AI	Artificial Intelligence
CRM	Customer Relationship Management
EMIA	Export Marketing and Investment Assistance Scheme
EP	Export Promotion
EPP	Export Promotion Programs
SMME	Small, Medium and Micro Enterprises
the dtic	The Department of Trade, Industry and Competition

CHAPTER 1. INTRODUCTION

1.1 Statement of Purpose

This research study aims to explore the nature of relationships and associated factors critical to enable the effective digitalisation of Export Promotion (EP) by the South African public sector, with the findings contributing to a proposed roadmap for the successful implementation of digital export promotion tools and services.

1.2 Background of the Study

1.2.1 *International Trade*

Trade has been a driving force for economies around the world since the dawn of time, with records of trade pre-dating ancient Greek and Roman times (Haas & Schenk-Hoppé, 2023). Trade refers to the buying and selling of goods and services between individuals, businesses, or countries. It typically involves the exchange of goods for money or other goods. Additionally, it encompasses various activities such as importing and exporting and plays a crucial role in economic development and globalisation (Haas & Schenk-Hoppé, 2023).

Leonidou, Palihawadana and Theodosiou (2011) expand on this concept of exporting as a means of establishing and enhancing the global positioning of companies. According to Leonidou et al. (2011), exporting is a traditional method by which companies enter international markets despite the various barriers that may impede their success. In light of these barriers, national governments implement EP programs to support companies that wish to develop or penetrate overseas markets (Leonidou et al., 2011).

Accordingly, EP is a key contributor to export-led economic development and thus requires governments to facilitate the strategic participation of companies in international trade (Hayakawa, Lee, & Park, 2014). Leonidou et al. (2011) argue that the theory of asymmetric information and market failure economically justifies government involvement in EP. These theories relate to gathering foreign market

information about target markets, which private companies may find difficult to obtain alone (Leonidou et al., 2011).

International trade is thus crucial for countries' economic expansion and development (Haas & Schenk-Hoppé, 2023). In solidarity, Fojtíková, Vavrek and Dolezelová (2023) maintain that international trade is a vital prerequisite for achieving substantial economic success and sustainable growth, especially in elevating the living standards of citizens. Given these considerations, an evaluation of strategies for strengthening South Africa's public sector EP initiatives through digital means is necessary.

1.2.2 *Export Promotion Instruments*

According to Massyn, Bezuidenhout and Kleynhans (2021), Export Promotion (EP) entails partial support by a nation's public sector aimed at providing practical assistance to companies in promoting their products and services abroad. Lederman, Olarreaga and Payton (2013) group EP's services into four categories, namely:

- Country image building through such things as advertisements and promotional events, amongst others;
- Export support services such as export training, logistics;
- Marketing through physical trade fairs as well as exporter and importer missions;
- Market Research and Publications

Other traditional forms of government-supported EP initiatives include trade finance, information and match-making services, to mention a few (Hayakawa et al., 2014).

1.2.3 *Export Promotion in the Digital World*

Digitalisation has emerged as a transformative force, offering opportunities to streamline processes, reduce costs, enhance transparency, and improve efficiency (Kotler & Armstrong, 2021). In accord, Meyer, Li, Brouthers and Jean (2023) argue that digital tools, including the internet, have significantly improved information collection, storage, analysis, and sharing, thereby facilitating the spread of goods and knowledge internationally.

Furthermore, studies demonstrate that advanced digital tools, such as online trade portals and virtual communication platforms, enhance exporting opportunities and enable instant cross-border information sharing, thus facilitating more effective participation in international trade (Meyer et al., 2023). For instance, China's adoption of digital technology has driven substantial growth and innovation in its foreign trade sector, particularly in exports, with its digital economy growing from 11 trillion yuan to 39.2 trillion yuan from 2016 to 2020 (Zhang, Pan, Feng, & Qin, 2022).

In South Africa, digital technologies can potentially empower exporting companies to expand internationally by reducing transaction and coordination costs (Meyer et al., 2023). The focus of this study was based on The Department of Trade, Industry and Competition (**the dtic**) a national arm of government that plays a critical role in promoting South African exports (Maroga, Edoun, & Poee, 2023). Narrowing the focus to **the dtic** enabled a deep dive into the current support services for exporters (whilst considering broader governmental issues). Moreover, relevant research findings rooted in the South African context have provided invaluable relevance for recommending effective digitalisation as informed by specific dynamics of the South African context.

1.3 Research Problem

The South African government's export promotion initiatives are currently not operating at their full potential, seemingly hindered by factors such as inadequate digitalisation of export promotion services, including the limited use of digital tools like online trade portals and virtual communication platforms (Cant, Bothma, & Wiid, 2021).

For example, South Africa's market share in world exports has been stagnant, hovering around 0.5% from 2020 to 2022, compared to the 14-15% range of China's share in world exports (International Trade Center, 2023). South Africa's low performance in export competitiveness may be influenced by a range of systemic and operational challenges. Among various possible responses, one area that warrants further exploration is the digitalisation of EP tools and services. Digitalisation may offer opportunities to improve service delivery, reach, and responsiveness, though its actual impact remains underexplored in the local context. This study, therefore, explored digitalisation as a promising intervention within a broader systemic context.

Previous research has primarily focused on the government's Export Marketing and Investment Assistance Scheme (EMIA) and its effectiveness in supporting Small Micro and Medium Enterprises (SMMEs) in its current state (Fihlani, Musasa, Mago, & Modiba, 2023; Maroga, Edoun, & Pooe, 2023; Scholtz, 2019): However, little attention has been paid to how digital tools might be employed to strengthen EP support.. Therefore, this research paper sought to contribute to filling this significant gap in the literature by exploring the following research question: 'Which digital tools are suitable for adoption within the South African public sector?'

The study by Fihlani et al. (2023) reported that South African government often fell short in supporting SMME's export success as it neglected logistics and certification expenses, limiting its aim of aiding SMMEs in accessing export markets. Fihlani et al. (2023) thus recommended that political will was crucial for supporting SMMEs in connecting with international buyers and providing them with reliable networks. They also suggested that the private sector should step in to address logistical costs and introduce localised export incentives, compensating for governmental shortcomings.

In parallel, Scholtz (2019) recommended the essential refinement of business processes related to EMIA, demanding more assertive communication with the export community. Furthermore, Scholtz (2019) suggested that the Department of Trade, Industry and Competition (**the dtic**) should seek innovative partnerships with industry associations and exporters for more seamless engagement, as exporters required increased interaction.

A preliminary review of the current EP incentives and guidelines within the South African public sector revealed a few issues indicating limited digitalisation (the dtic, 2021b). These shortcomings highlighted an urgent need to examine the factors inhibiting digitalisation and explore available digital tools to enhance EP efforts within the South African public sector.

1.4 Research Questions

Based on the research problem outlined in the previous section, this study attempted to answer the following research questions:

1. How effective are the current export promotion tools and services utilised

- by the South African public sector?
2. What are the key barriers which the South African public sector faces in adopting digital tools for export promotion?
 3. Which digital tools are suitable for adoption within the South African public sector?

Corresponding Research Objectives

1. To assess the effectiveness of current export promotion tools and services implemented by the South African public sector.
2. To identify and analyse the key barriers to the adoption of digital tools for export promotion within the South African public sector.
3. To explore suitable digital tools that can enhance export promotion efforts in the South African public sector.

1.5 Rationale

1.5.1 *Informed Interest in Topic*

Traditional methods of export promotion are no longer sufficient on their own. This insufficiency may be due to the inherent limitations of these conventional approaches, the growing significance of digitalisation in trade processes, or the increasing reliance on technology for economic activities (Dayan, 2022). Therefore, it is crucial to comprehend how leveraging digital tools can enhance EP.

1.5.2 *Empirical Rationale of the Study*

The objective of conducting empirical research in this study was to bridge the gap created by inconsistencies between the awareness and understanding of digitalisation's potential and its practical, effective implementation, particularly in the public sector of developing economies such as South Africa (Maremi, Thulare, & Herselman, 2022). This research paper achieved this by providing evidence-based insights into the actual challenges of the current EP tools and services, the opportunities linked to the digitalisation of EP within the South African public sector, and the existing barriers to digitalisation.

1.5.3 Value of Conducting the Research

This research is of great significance as it focused on developing evidence-based knowledge to inform strategic decisions on improving EP through effective digitalisation, particularly in South Africa.

1.6 Delimitations of the study

The research focused on the EP aspect of trade, as pioneered by the South African public sector. The focus was on programs and initiatives that promote exports, not on factors such as market dynamics or industry-specific challenges. The EMIA scheme was the instrument of focus as the public sector's current tool to promote South African exports (the dtic, 2021b).

1.7 Definition of Terms

E-administration- also known as online public administration, encompasses the automation and computerisation of administrative processes, focusing on external stakeholders (such as citizens or businesses) and internal entities (including public sector staff or administrative back-office functions) (Omohwo, Babatunde, Kehinde, & Arome, 2023).

Digitalisation: For purposes of this research paper, digitalisation encompassed various aspects, including (1) digitisation, which refers to the conversion of analogue information into digital formats and the adoption of digital technologies; (2) digital transformation, which involves comprehensive internal institutional change; (3) digital engagement, which entails transformed relationships with stakeholders (Wilson & Mergel, 2022); and (4) e-government, which refers to the use of Information and Communication Technology (ICT) to produce and deliver government services to citizens, replacing traditional face-to-face interactions (Maremi et al., 2022).

1.8 Assumptions

- **Digital Literacy:** The assumption was that participants had sufficient digital literacy to understand the topic and the interview questions

- Potential Biases: The assumption was that participants may have had biases or preconceived notions about digitalisation efforts, which could influence their perspectives and responses during the study.
- Commitment to the Study: The assumption was that participants would be committed to actively participating in the study and providing valuable insights that contribute to the research objectives.

1.9 Research Outline

Chapter 1 introduced the research study, outlining its context and rationale. Chapter 2 provided a preliminary literature review of current public sector EP initiatives in South Africa, including existing digital tools and their application in EP. Chapter 3 detailed the research design employed to investigate the digitalisation of EP within **the dtic**. Chapter 4 presented the empirical findings gathered through interviews and observations. Chapter 5 analysed these findings systematically, while Chapter 6 concluded the study by highlighting its contributions and offering recommendations for future research.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

Chapter 2 outlined the theoretical framework that informed this study, it presented the three research questions and provided a comprehensive review of relevant literature. It began by analysing the current tools and services employed by **the dtic** to promote exports. It then explored the literature on digital technology tools relevant to the digitalisation of EP, along with examples of their utilisation by public sectors of select countries.

2.2 Effectiveness of Current Export Promotion Tools and Services in the South African Public Sector

This section addressed the inquiry on the effectiveness of the current EP tools and services utilised by the South African public sector. While the primary focus is on tools and services, the underlying processes that support their implementation are also considered, as they influence their overall effectiveness

2.2.1 *Current Export Promotion Tools and Services*

The South African public sector, through **the dtic**, boasts of a few initiatives for promoting the country's exports. The EMIA guidelines of **the dtic** serve as a reference for a description of the different tools and processes currently employed by **the dtic** in supporting exporting companies. The goal of the EMIA Scheme, as outlined in these guidelines, is to partially compensate exporters for costs associated with promoting South African exports in foreign markets and attract new foreign investment into the country (the dtic, 2021b, 2024b).

The EMIA Scheme is divided into two distinct sub-schemes, each administered by separate branches within **the dtic**, that employ different processes (the dtic, 2024a).

2.2.2 *Description of Current Tools and Services*

This study's preliminary analysis of the EMIA Group Scheme guidelines revealed that the respective branch primarily relied on manual administrative process to manage the EMIA Group scheme, requiring substantial physical documentation and the printing, signing, and scanning of approval letters by exporters. (the dtic, 2021a, 2021b). For example, applications for participation in NP's or OSM's necessitated the submission of a full-colour product brochure printed on high-quality paper. Furthermore, graphics submission for posters for display at trade events were required in a high-resolution USB drive, following a specific template (the dtic, 2021a, 2021b). EMIA facilitated its communication through telephone, email, postal and courier services (the dtic, 2021b). This labour-intensive process highlighted the need for potential digitalisation to streamline and enhance efficiency.

In contrast, the EMIA Individual Scheme offered an online application process for attending individual trade events via an online portal (the dtic, 2024b). This process required applicants to upload necessary documents in Portable Document Format (PDF) format, streamlining the submission and reducing the need for physical paperwork and in-person approvals (the dtic, 2024b). Applications to access other offerings under this scheme were still manual, however.

Consequently, guidelines for both schemes did not refer to any digital platform where exporters can register for enhanced EP tools and services, which aligns with the findings (Cant et al., 2021).

2.2.3 *Analysis of Effectiveness*

Strengths of Current Export Promotion Tools and Services of the Public Sector

According to the dtic (2024c), South African exports grew from R1.8 billion in 2021 to R2 billion in 2023, reflecting a moderate increase of approximately 11%. Although, when adjusted for inflation and trade fluctuations, the real growth impact may be less pronounced. However, attributing this increase directly to the EMIA scheme was challenging due to limited data that directly links the scheme to export growth (Fihlani et al., 2023). Despite this, the EMIA scheme remained relevant as it provided essential financial and non-financial export support to South African exporting companies,

suggesting that it likely contributed to export growth, even if the impact was not quantifiable.

Evaluating the effectiveness of the EMIA scheme in this research report involved applying the OECD's Development Assistance Committee (DAC) criteria, which measures effectiveness based on the extent to which an intervention achieves its goals and outcomes (OECD, 2024). This report applied these criteria by reviewing the limited studies on the scheme's effectiveness in supporting SMMEs.

Fihlani et al. (2023) argued that the scheme was functional as it culminated in businesses signing export agreements with international companies. However, this functionality translated to partial effectiveness because, in this case, EMIA merely facilitated the exposure of South African exporters to the global market. It did not necessarily ensure sustained export growth or long-term competitiveness. The research conducted by Fihlani et al. (2023) concentrated on the Eastern Cape Province of South Africa, and the results from the study showed that EMIA positively contributed to agro-processing SMME exports by enabling companies to participate in international trade events. While this sample was limited to one province, it could reasonably be extended to other provinces since the public sector provides uniform support nationwide.

Scholtz (2019) offered a broader perspective, recognising the EMIA scheme as effective, mainly through national pavilions that significantly boosted export volumes. Exporters who participated in the study praised the program for offering international market exposure, valuable networking opportunities, and high-quality national pavilions (Scholtz, 2019). Other participants reinforced these findings, highlighting the critical role of dtic foreign representatives in facilitating market entry. Despite acknowledging the program's limited resources, beneficiaries generally viewed EMIA as effective in enhancing export performance (Scholtz, 2019).

While positive and experiential evidence was valuable, there was a need for a more in-depth analysis to assess the scheme's impact definitively.

Weaknesses in Current Tools and Methods

Conversely, there were criticisms regarding the scheme's administrative efficiency, defined by the OECD (2024) as the extent to which an intervention produces results

economically and timely, using the least expensive resources to achieve desired outcomes.

Scholtz (2019) highlighted inefficiencies in EMIA, noting the need for better project preparation, experience sharing, more direct assistance, and more transparent communication from dtic representatives. Furthermore, Scholtz (2019) identified a lack of clear criteria for export readiness, financial constraints, and limited human resources as key challenges. According to Scholtz (2019), some exporters believed that larger companies were often neglected from government export support; this neglect may have hindered overall export volume growth as these companies typically have the capacity, resources, and established networks to drive higher export volumes (Chen, Lin, Chen, Chao, & Pandia, 2021; Fihlani et al., 2023; Geldres-Weiss, Massa, & Monreal-Pérez, 2021). The study also noted that EMIA's budget constraints limited its ability to support more companies more frequently to enhance export promotion efforts. The limited budget thus emphasised the need for increased fiscal support to improve export performance in South Africa (Scholtz, 2019).

Fihlani et al. (2023) also captured these inefficiencies, adding that EMIA failed to integrate Historically Disadvantaged Individuals (HDIs) into the value chain of successful exporters. SMMEs found the scheme complex and more beneficial to established enterprises, with compliance issues preventing them from benefiting due to stringent requirements (Fihlani et al., 2023). There was also a misalignment between EMIA's entry requirements and international standards, complicating participation in global events. Additionally, many SMMEs were unaware of the scheme or faced rejection, leading them to seek support from other industry support organisations and provincial agencies, indicating EMIA's shortcomings (Fihlani et al., 2023).

Martincus and Carballo (2010) state that EP activities correlate with a higher probability of incorporating new destination countries for exporters. However, Malca, Peña-Vinces and Acedo (2019) found that while Export Promotion Programs (EPPs) provide resources for international activities, these resources alone are insufficient to guarantee improved export outcomes. The initiative of individual companies to utilise these resources is imperative (Malca et al., 2019). This notion aligns with findings by Leonidou et al. (2011) and Wilson and Mergel (2022) that stated that the effectiveness

of national EP programs is often hampered by negative perceptions of their utility by employees and poor communication of their value to exporters.

Malca et al. (2019) recommend a review of the design and effectiveness of EPPs to enhance their influence, a view supported by the findings on EMIA by Fihlani et al. (2023). The lack of awareness impedes the success of programs like EMIA, as highlighted by Leonidou et al. (2011) and Fihlani et al. (2023). Effective service delivery in the public sector necessitates ensuring accessibility to all, driven by awareness, which is crucial for maximising scheme utilisation (Hofisi & Chigova, 2023).

Moreover, Martincus and Carballo (2010) noted a lack of evidence on the relative effectiveness and impact of participation versus non-participation in EP activities. This finding correlates with Fihlani et al. (2023) who found little evidence directly connecting the export success of companies in the Eastern Cape to EMIA support. The multifaceted nature of these programs requires considering multiple factors and outcomes to understand their effectiveness fully (Leonidou et al., 2011). Therefore, this and future research should address these gaps, providing a more holistic understanding of the EMIA scheme's effectiveness and role of digitalisation in supporting South African exporters.

2.2.4 *Challenges Experienced by the South African Public Sector*

Effective digitalisation in the public sector encompasses adopting digital technologies to enhance the effectiveness, efficiency, accessibility, transparency, and accountability of public services (Mountasser & Abdellatif, 2023). Despite the theoretical consensus on the benefits of digitalisation, existing literature reveals a limited number of studies on digitalisation efforts specifically for export promotion (EP) services in the South African public sector. While these studies acknowledge its absence, they do not explore its effective integration for EP. Cant et al. (2021) argued that the absence of an online export information system, even though it was identified as crucial in the 2016 Integrated National Export Strategy (INES) document by **the dtic**, was a critical oversight. They advocated for a national export portal to promote exports, serving as an essential information source for the export support community (Cant et al., 2021). This critique by Cant et al. (2021) suggested that while there was awareness of the need for digital solutions, there was a significant lag in

implementation and operationalisation (Jakoet-Salie, 2020; Maremi et al., 2022; Wilson & Mergel, 2022). The misalignment requires future efforts to bridge this gap through targeted strategies that address technological and organisational dimensions (Hofisi & Chigova, 2023; Maremi et al., 2022; Wilson & Mergel, 2022).

However, the capacity of the public sector to embrace digitalisation of this nature faces disputes from studies that reveal a gap in digital skills as well as strategy development and implementation within government (Mountasser & Abdellatif, 2023). Therefore, the public sector's approach to digitalisation must be attentive, intentional, and considerate of the underlying challenges that are often a hindrance. A concerted effort must be made to cultivate an innovation culture, develop a robust and resilient digital infrastructure, and deliver practical staff training (Nurfadilah & Haliah, 2024; Sibanda et al., 2024).

2.2.5 *Enhancing EP through digitalisation*

Exporting companies face significant challenges in exporting their products and services, including cultural and geographical constraints, difficulties in identifying and finding buyers, and a lack of resources and capabilities to manage specific international risks (Catanzaro & Teyssier, 2021). Against this backdrop, the public sector's role in devising initiatives to promote exports is heightened, effectively motivating and supporting firms' export activities (Geldres-Weiss, Massa, & Monreal-Pérez, 2021).

Digitalisation offers an avenue for achieving EP objectives. Armstrong and Lee (2023) broadly define digitalisation as the comprehensive transformation and adaptation of processes, organisations, or societies to align with new digital technology-related market and social trends. Digitalisation is particularly relevant for the South African public sector, which often grapples with limited human capital while serving a larger population (Wilson & Mergel, 2022; World Bank Group, 2019).

Furthermore, the growing importance of digitalisation in trade processes and the increasing reliance on technology for economic activities highlights the necessity of understanding how the public sector can effectively utilise digital tools to enhance export promotion services (Dayan, 2022). While advocates of digital technology like Armstrong and Lee (2023) assert that digitalisation is an unavoidable and pervasive

phenomenon poised to impact all aspects of business, including government operations, this optimistic view may overlook the unpreparedness of public institutions to implement such changes (Hofisi & Chigova, 2023; Jakoet-Salie, 2020; Sibanda, Basheka, & Van Romburgh, 2024). The current digitalisation efforts within the South African context are fraught with challenges, including the risk of exacerbating existing inequalities if not managed inclusively (Jakoet-Salie, 2020). Therefore, critically examining the opportunities and challenges associated with digitalisation in the public sector is essential to ensure that it contributes meaningfully to EP efforts.

As globalisation intensifies and market dynamics evolve, there is a demonstrable need for the South African public sector to explore innovative approaches to effectively leverage digital solutions for promoting exports (World Bank Group, 2019). The traditional export support mechanisms provided by the South African Public Sector need a revamp to deliver impactful support to its exporters. To emphasise this point, a digital economy diagnostic report by the World Bank Group (2019) highlights that South Africa faces significant challenges in accessing new markets, effectively engaging customers, and adapting to shifting global trends without harnessing digital technologies. This report reveals a critical gap and recommends digital public platforms for improving service delivery (World Bank Group, 2019).

Within the context of **the dtic**, the evolution of digital technologies in administering the EMIA scheme could significantly enhance the support exporters receive from the public sector. Omohwo et al. (2023) suggest that e-administration could drive exporter satisfaction through improved responsiveness and reduced error handling. However, their study also cautions against the simplistic adoption of e-administration without addressing underlying bureaucratic inefficiencies and the need for a cultural shift within public sector organisations (Omohwo et al., 2023). This analysis highlights the complex interplay between technology adoption and organisational change, emphasising that successful digitalisation requires more than just technological upgrades—it necessitates a fundamental transformation in how public sector services are conceptualised and delivered (World Bank Group, 2019).

2.2.6 *Proposition 1*

Based on the discussion of shortcomings in existing public sector EP support, the following proposition was proposed:

Proposition 1. EP programmes that integrate future trends and technological advancements are more effective in supporting exporters in a rapidly evolving global trade environment.

2.3 Key Barriers to Digitalisation of Export Promotion Tools and Services in the South African Public Sector

Evidence from literature showed that despite the significant opportunities digitalisation offered, its benefits remained underutilised within the South African public sector, as captured in various literature (Cloete, 2023; Hofisi & Chigova, 2023; Jakoet-Salie, 2020; Maremi et al., 2022).

To fully grasp the extent of the challenges the South African public sector faces in leveraging digital tools for EP, this research paper examined the literature on the barriers to digitalisation as experienced across the entire public sector. This foundational analysis is then applied to the public sector delivery of EP services.

2.3.1 External Barriers

Literature highlighted significant external barriers in South Africa that impede effective digitalisation in the public sector. A primary barrier was the persistent digital divide, characterised by insufficient bandwidth and a lack of bandwidth-intensive applications in many regions of South Africa (Hofisi & Chigova, 2023; Jakoet-Salie, 2020). This digital divide limited access to essential digital tools and exacerbated ICT skills shortages within government hierarchical structures, which are critical for managing digitalisation processes (Jakoet-Salie, 2020). Consequently, these challenges contributed to **the dtic's** struggle to implement modern, efficient EP tools and services reliant on robust digital infrastructure.

Public illiteracy, coupled with the lack of mechanisms, motivation, and widespread technophobia among local communities, posed additional significant obstacles to the digitalisation of the South African public sector (Jakoet-Salie, 2020). These issues hindered **the dtic's** ability to engage effectively with and support exporters, particularly those not tech-savvy, such as emerging exporters who require substantial guidance to navigate international markets.

Maremi et al. (2022) further argued that inadequate ICT infrastructure, poor communication, and a lack of coordination between government departments present critical barriers. The absence of effective cross-departmental information-sharing mechanisms also exacerbated these issues, resulting in inefficient coordination and dissemination of vital information and support services (Maremi et al., 2022). This failure to adequately disseminate information ultimately undermined **the dtic's** capacity to support exporters effectively. Additionally, the lack of clear accountability and responsibility across government departments and the absence of a centralised institution to oversee and manage digitalisation efforts weakened coordinated action and delayed progress (Maremi et al., 2022). Structural barriers further compounded these issues. The fragmentation of e-government programs created silos that hindered cohesive digital strategy execution, resulting in fragmented efforts and redundant processes (Maremi et al., 2022). This situation intensified the need for a unified approach to digitalisation, where coordinated efforts and streamlined processes are essential for effective implementation (Nurfadilah & Haliah, 2024).

The combined effect of these barriers meant that the South African public sector and, by association, **the dtic**, was often unable to fully leverage digital tools and technologies essential for modern EP, thereby limiting South African companies' potential growth and international competitiveness. Addressing these barriers requires a multifaceted approach that enhances digital infrastructure and skills and fosters a culture of innovation and accountability within the public sector (Cloete, 2023; Hofisi & Chigova, 2023).

2.3.2 Internal Barriers

Internally, several authors highlighted a range of organisational and cultural barriers that significantly impeded the public sector's digitalisation efforts. Like findings in the US context, the South African public sector grappled with outdated technical infrastructure and limited technical resources (Cloete, 2023; Hofisi & Chigova, 2023; Kuldosheva, 2021; Wilson & Mergel, 2022). Inadequate funding worsened these technical issues, leaving the public sector without the financial resources required to upgrade systems and train staff adequately (Cloete, 2023; Hofisi & Chigova, 2023; Maremi et al., 2022; Wilson & Mergel, 2022).

Security concerns also presented a significant hurdle, as fears of data breaches and cyber-attacks may have discouraged the adoption of digital platforms essential for modern EP (Hofisi & Chigova, 2023; Wilson & Mergel, 2022). This apprehension was further reinforced by the advent of the Protection of Personal Information Act (POPIA) Act No. 4 of 2013, which safeguards the private information of South African citizens (Government of South Africa, 2013). Sensitive trade data, such as exporter and importer information, and government intelligence are serious cyber threat concerns for the government (Hofisi & Chigova, 2023). The potential for significant financial losses, reputational damage, and disruptions to trade processes increases the need for robust cybersecurity measures (Cant et al., 2021). Cybersecurity requires advanced technological solutions, comprehensive policies, and training to protect against and respond to cyber threats effectively (Cant et al., 2021). If these security concerns are not addressed, the full potential of digital technologies in enhancing EP cannot be realised.

Cloete (2023) adds that insufficient resources and inadequate ICT education and training of specialists further contributed to these challenges in South Africa. Cultural resistance to change, driven by perceptions of a lack of management support, bureaucratic sluggishness, and a fear of change, was significant among civil servants (Jakoet-Salie, 2020; Wilson & Mergel, 2022). Furthermore, Maremi et al. (2022) identified coordination and management of information sharing across departments as lacking but critical within the public sector. Finally, insufficient managerial skills, limited political and management support, and a lack of digital literacy among public administrators further worsened these internal barriers within public sector institutions (Jakoet-Salie, 2020; Kuldosheva, 2021; Wilson & Mergel, 2022).

Literature revealed that similar barriers existed in other governments, such as those in the US and Uzbekistan, where outdated infrastructure, inadequate skills, and resistance to change were also prevalent (Kuldosheva, 2021; Wilson & Mergel, 2022). However, the South African context, as detailed by Hofisi and Chigova (2023), Jakoet-Salie (2020), Maremi et al. (2022) and Cloete (2023) revealed additional complexities, such as more pronounced issues of coordination between departments, fragmentation of e-government programs, and a critical need for centralised management. These multifaceted challenges highlight the importance of tailored strategies to address common and unique barriers to digitalisation within the public sector.

Implications for EMIA

The challenges the South African public sector faces, as outlined in the literature, directly impacted **the dtic** and its efforts to digitalise EP tools and services. These barriers, noted in the broader public sector, are present within **the dtic**, reflecting the systemic nature of these issues across government departments (Maremi et al., 2022).

Within **the dtic**, the identified challenges may have manifested in delayed processing of export documentation, inefficient EP processes, and limited access to real-time data for quick decision-making. Additionally, these barriers may have led to inconsistent communication with exporters, reduced responsiveness to market opportunities, and difficulty coordinating with international trade partners. Fragmented ICT infrastructure may have resulted in delayed and poor integration of EP systems. Furthermore, insufficient digital skills among staff may have hindered the implementation of innovative digital marketing strategies, which are crucial for understanding and penetrating new markets.

The literature suggested that overcoming these barriers required more than just technological upgrades. It also highlighted the critical need for significant investment in technology upgrades and fostering a culture of innovation and collaboration within the public sector (Maremi et al., 2022; Wilson & Mergel, 2022). These adjustments included ensuring adequate funding, improving ICT education and training, agility, enhancing managerial skills, and strengthening coordination and communication across departments (Cloete, 2023; Kuldosheva, 2021; Wilson & Mergel, 2022). Furthermore, tailored strategies to improve digital literacy, strengthen infrastructure, and enhance coordination with external partners were identified as crucial for harnessing the full potential of digitalisation in promoting exports (Cloete, 2023; Hofisi & Chigova, 2023; Jakoet-Salie, 2020). This assessment highlights the need for a holistic approach focusing on technological capabilities and prioritising initiatives to foster a supportive organisational culture and streamline bureaucratic processes (Wilson & Mergel, 2022).

By addressing these barriers comprehensively, **the dtic** can better harness the potential of digitalisation to promote exports and drive economic growth.

2.3.3 *Proposition 2*

Based on the discussion on the barriers to digitalisation of EP support by the public sector, the following proposition was proposed:

Proposition 2. The key barriers faced by the South African public sector in adopting digital tools for EP are primarily rooted in organisational culture, limited digital skills, insufficient infrastructure and inadequate funding.

This proposition was relevant as it addressed the primary barriers hindering digitalisation efforts by the South African public sector.

2.4 Digital Tools for Export Promotion

The South African public sector can leverage digitalisation to enhance EP by increasing trade's scale, scope, and speed. In enabling companies to introduce new products and services to many digitally connected customers worldwide, digitalisation opens up new markets for South African businesses (OECD, 2023). In this way, **the dtic** can support significantly smaller firms in using innovative digital tools to overcome growth barriers, such as high entry costs and lack of market information (OECD, 2023). By fostering an environment that embraces digital trade, **the dtic** can help local businesses compete more effectively in the global market (OECD, 2023).

2.4.1 *Exploring the Capacity of Digitalisation*

The COVID-19 pandemic has undeniably accelerated the innovation and growth of the digital economy, catalysing change in business operations (Geldres-Weiss et al., 2021; Vorobiova, Krupskyi, & Stasiuk, 2023). During the pandemic, resilient companies swiftly pivoted to invest in digital technology tools, migrate to digital platforms, and secure VPN servers for remote work (Geldres-Weiss et al., 2021). These advancements enhanced communication and service provision, enabling Export Promotion Agencies (EPAs) to meet their objectives despite national lockdowns (Geldres-Weiss et al., 2021). This adaptability highlights governments' imperative to imitate such resilience and responsiveness to ever-changing global conditions.

However, while the pandemic-induced shift to digitalisation presented significant opportunities, it is essential to critically assess the broader implications. For instance, Geldres-Weiss et al. (2021) emphasised the benefits of enhanced resilience and communication. Yet, they did not sufficiently address the digital divide, which may have disadvantaged smaller enterprises or less developed provinces and regions. This gap highlights a potential oversight in assuming similar capabilities of digitalisation across different contexts.

Evidence from diverse examples demonstrates digital tools' viability and potential impact on export growth (Asia News Monitor, 2023; Dong & Xu, 2022; International Trade Administration, 2024; OECD, 2019). Zhang et al. (2022) argue that digital technology can transcend geographical limitations and circumvent constraints imposed by conventional transaction methods and physical trading venues like trade fairs. They suggest that digitalisation can reduce trade costs, such as transaction, search, communication, and transportation costs, thus promoting market expansion (Zhang et al., 2022). While this perspective is promising, it tends to overlook the challenges of digitalisation, such as cybersecurity threats and the need for continuous and potentially expensive technological upgrades.

Digitisation through e-administration promises to streamline EMIA's administrative functions, reducing bureaucratic delays and errors (Omohwo et al., 2023). Such improvements can make the scheme more accessible and user-friendly for SMMEs and other stakeholders. By integrating digital technologies to automate and simplify compliance and application processes, **the dtic** can enhance transparency and responsiveness. Thus, the focus should be on adopting new digital tools and fundamentally transforming the work culture to align with digital capabilities (Omohwo et al., 2023).

However, this focus on business improvements should also consider the accessibility and affordability of these technologies for all market participants (Jakoet-Salie, 2020; Maremi et al., 2022). Within the context of exporters, young exporters, such as emerging exporters, may face challenges that limit their access to digital EP tools and services, rendering these tools and services less effective for their specific needs. While digitalisation offers substantial benefits for EP, including cost reduction and market expansion (Zhang et al., 2022), addressing the potential inequalities and

challenges associated with this transition is crucial. A deeper understanding and critique of the impact of digitalisation of EP tools and services can help ensure its benefits are equitably distributed and sustainable over time.

This complex interplay between digitalisation and organisational change highlights the need for a comprehensive, context-specific strategy to bridge the gap between theory and practice.

2.4.2 *Digital Tools for Enhancing Export Support*

A comprehensive examination of the literature reveals a broad spectrum of digital tools identified as effective means to enhance export activities, streamline operations, and improve customer engagement. This section thus organises these digital technology tools by technology types to contextualise their contributions to EP and critically assess their utility and limitations.

Artificial Intelligence (AI) and Machine Learning

AI Systems for Personalization and Customization: Proponents of AI, Ferencz, López-González and García (2022) stipulate that AI can enhance consumer experience by personalising content and automating targeted advertising to strengthen engagement. Furthermore, studies stipulate that AI-driven tools help create more relevant and appealing marketing content, significantly boosting export performance (Ilanenko, Ilanenko, Huhlaev, & Martynenko, 2019). Within EMIA's context, this tool can help tailor marketing activities according to demand, making it possible to market specific products, such as indigenous items, to specific markets identified by the AI tool. However, the effectiveness of AI systems often depends on the quality and quantity of input data; inaccurate data can lead to inaccurate recommendations and missed opportunities by exporters (Magoulas & Swoyer, 2020). Moreover, implementing AI technologies may require substantial investment and expertise (Ferencz et al., 2022) which might not be readily available to **the dtic**.

AI for Data Analytics: The integration of AI with data analytics enables the collection and analysis of vast amounts of data, allowing for better customer insights and more informed decision-making (Krasyuk, Yanenko, Asfondiarova, Illarionova, Katkova, & Muhutdinov, 2023; Nham, Bao, & Ha, 2022). This capability can help EMIA employees gain information and understand market trends and consumer behaviour,

leading to more effective marketing strategies to promote South African exports. Nonetheless, the use of AI for data analytics also presents challenges. According to Hofisi and Chigova (2023), the public sector seriously concerns itself with the risk to data privacy, which requires robust cybersecurity measures to mitigate.

Overcoming Language Barriers: Ferencz et al. (2022) state that AI-powered machine translation can lower language barriers in trade, facilitating communication and smoother export processes. Smoother communication is crucial for EMIA employees and exporters dealing with non-English-speaking markets. AI translation tools can enable unhindered communication (Ferencz et al., 2022). However, despite advancements in machine translation, these tools are not always dependable and can struggle with human language intricacies, idiomatic expressions, and industry-specific terminology (Ferencz et al., 2022). Thus, miscommunications can still occur, potentially jeopardising trade negotiations and relationships.

Customer Relationship Management (CRM)

CRM systems are vital for managing customer interactions and improving business relationships by consolidating information on a platform and helping officials identify and immediately use information that better serves customers (Chen et al., 2021; Ianencko et al., 2019). A CRM system can house accounts for EMIA clients, enabling an EMIA official to access comprehensive information such as the number of countries the company exports to, the products they export, their growth, and the number of times they have received assistance from EMIA, thereby making interactions seamless (Martincus & Carballo, 2010).

CRM for Enhanced Customer Insights and Engagement: CRM systems integrate customer data and analytics to provide valuable insights into customer behaviour, preferences, and feedback (Ianencko et al., 2019). EMIA can use CRM's multipurpose potential to serve exporters, industry players, and buyers. A CRM tool would allow **the dtic** officials to tailor EP strategies to meet the specific needs of different market segments. However, like AI tools, the effectiveness of CRM systems would depend on the quality of data input and the regular updating of customer information. Inaccurate or outdated data can lead to erroneous output and decreased customer satisfaction (Magoulas & Swoyer, 2020). Furthermore, while CRM systems offer valuable insights, they require adequate training to prepare officials to use them.

Automation and Efficiency in Customer Management: CRM tools automate various customer management tasks, such as follow-up communications, order processing, and service requests, enhancing operational efficiency and customer satisfaction (Ilanenko et al., 2019). In EMIA's context, automation can significantly reduce the administrative burden on employees, allowing them to focus on more strategic activities. However, implementing CRM systems may be costly and time-consuming, especially for governments with limited budgets (Scholtz, 2019).

Social Media and Digital Communication Platforms

Social Media for Government Digital Initiatives: Social media helps improve interactions between the government and the public, enhancing the delivery of quality information related to export activities (Yemelianenkova & Bielova, 2022; Yuan, Dwivedi, Tan, Cham, Ooi, Xi Aw, & Currie, 2023). Quality information can support exporters in understanding and complying with regulations and initiatives. Furthermore, the internet and social media allow clients to share experiences and different product offerings by clients (Chen et al., 2021) which can help create awareness of improved EMIA offerings. The benefits of using social media are numerous, one of which is the measure of the sheer number of people who visit these social networks (Yemelianenkova & Bielova, 2022). However, the effectiveness of these platforms in providing accurate and timely information would depend on the active and consistent engagement of government officials and exporters. Moreover, the potential for constant monitoring and updating by an already understaffed public sector may pose significant challenges.

Targeting Younger Populations: According to Yuan et al. (2023), social media can effectively target younger populations, as seen in China, where younger generations participate actively in government-initiated digital innovations and trust government social media channels for information. The public sector can leverage this younger generation's familiarity with digital platforms to promote export activities and encourage new exporters. However, the over-reliance on social media for information dissemination raises concerns about digital divides, where older or less tech-savvy populations are excluded, potentially missing out on crucial export-related information and opportunities.

Digital Platforms for Training and Networking: Platforms like Zoom facilitate virtual meetings and targeted training, fostering better communication and collaboration with the business community, such as the export industry (Geldres-Weiss et al., 2021). Such platforms can benefit small and medium-sized enterprises (SMEs) seeking to network and expand their export activities without significant expenditure. Ianiro et al. (2019) stress that big data technologies and digital platforms are essential in EP because they allow for the seamless organisation and management of EP activities. Additionally, Heriqbaldi, Esquivias, Samudro and Widodo (2023) suggest that digital platforms can be used by EPP's to provide helpful information about export activities and by exporters to interact with buyers. These tools enhance efficiency and reduce costs associated with travel and physical meetings. However, the effectiveness of virtual platforms depends on reliable internet access and digital literacy among users, which can vary significantly across different regions and socioeconomic groups.

Fostering Inclusivity: According to OECD (2023), and Poole and Martincus (2023) digital platforms help foster the inclusivity of previously excluded individuals, such as women, from economic participation. They enable convenient access to information and resources, thus supporting **the dtic** Annual Performance Plan's goal of including youth, people living with disabilities, and women in the economy (the dtic, 2022). Digital platforms present an avenue to reach these groups, promoting inclusivity in EP activities (OECD, 2023). Despite these advantages, ensuring that digital initiatives are accessible to all requires addressing barriers such as cost, digital literacy, and access to technology. Without targeted interventions, there is a risk that these platforms might exacerbate existing inequalities rather than mitigate them.

E-Commerce and Online Marketplaces

E-commerce platforms play a crucial role in promoting exports by offering a trade environment free of barriers (Theofanous, Thrassou, & Uzunboyu, 2024).

E-Commerce for Market Access and Efficiency: E-commerce not only offers new sales channels but also optimises the distribution and logistics processes and availability of large amounts of information as well as interactivity, making international trade more accessible and efficient (OECD, 2023; Vorobiova et al., 2023). In designing an e-commerce platform, **the dtic** would enable exporters, particularly emerging and

financially constrained ones, to reach a global audience. However, while e-commerce platforms offer significant advantages in terms of market access and operational efficiency, their effectiveness depends on the quality of digital infrastructure and the ability of exporters to adapt to digital trade practices. Additionally, cybersecurity threats, digital literacy gaps, and varying international e-commerce regulations can pose significant challenges to maximising the benefits of these platforms for the public sector.

Omnichannel and Mobile Commerce: The integration of omnichannel strategies helps businesses respond more effectively to changing consumer behaviour by providing seamless interactions across various channels (Krasyuk et al., 2023). Mobile commerce (m-commerce) further supports this by enabling transactions and interactions via smartphones and other mobile devices (Krasyuk et al., 2023). **the dtic** can leverage these tools for export promotion by facilitating access to international markets through streamlined digital channels. By encouraging and supporting businesses in adopting omnichannel and m-commerce strategies, **the dtic** can help exporters reach a broader global audience, enhance customer engagement, and improve the overall efficiency of the export process. Nevertheless, transitioning to omnichannel and m-commerce strategies requires significant technological and training investments. The varying levels of technological adoption and digital readiness among businesses can lead to disparities in the effectiveness of these strategies (Krasyuk et al., 2023; OECD, 2023).

Advanced Technologies: VR and Blockchain

VR for Enhanced Customer Experience: VR can simulate real-world environments, offering potential buyers a more immersive and realistic experience (Vorobiova et al., 2023). This technology can be helpful in showcasing products and services to international clients. **the dtic** can facilitate the use of VR in export promotion by investing in VR technology and infrastructure and organising virtual trade shows and exhibitions that allow exporters to demonstrate their products to a global audience. However, the potential high costs associated with VR technology and the need for technical expertise can be significant barriers to its widespread adoption by the public sector. Additionally, an exploration of the effectiveness of VR in driving sales

and engagement is necessary, and further research is needed to understand its long-term impact on EP.

Blockchain for Security and Transparency: Blockchain technology enhances the security and transparency of transactions, reducing the risk of fraud and ensuring the reliability of trade data (Sibanda, Basheka, & Van Romburgh, 2024; Vorobiova et al., 2023). **the dtic** can support blockchain implementation in export processes by establishing blockchain-based trade platforms and ensuring that legal frameworks are in place for validation. This approach to managing export data can build trust with international buyers and streamline export processes, making transactions more secure and transparent (Sibanda et al., 2024). However, the adoption of blockchain technology is hindered by its complexity, the need for significant investment, and the current lack of widespread understanding and expertise (Sibanda et al., 2024). Additionally, the decentralised nature of blockchain can pose regulatory challenges, and its integration with existing legal and financial systems requires careful planning and coordination (Sibanda et al., 2024).

Cloud Computing for Scalability and Flexibility: Cloud computing provides scalable and flexible solutions for managing and storing large volumes of data, enabling exporters to access and share information easily (Vorobiova et al., 2023). **the dtic** can support exporters by facilitating access to cloud-based services that enhance collaboration and operational efficiency. However, concerns about data security and compliance with international data protection regulations pose significant challenges (Hofisi & Chigova, 2023). Ensuring exporters have the necessary skills and knowledge to leverage cloud computing effectively is also crucial for its success.

Digital Marketing and Communication Tools

Email Marketing and Search Engine Optimisation (SEO): Yemelienenkova and Bielova (2022) maintain that email marketing remains a cost-effective way to reach potential customers, while SEO helps improve the visibility of exporters' websites on search engines. In the export context, these tools can drive traffic and generate leads. In the export context, these tools can drive traffic and generate leads. **the dtic** can facilitate training programs to help exporters master these digital marketing techniques, subsidise digital marketing campaigns, and develop platforms that offer SEO and email marketing tools tailored explicitly for exporters (Heriqbaldi et al., 2023).

However, poorly executed campaigns can lead to low engagement and wasted resources for **the dtic**.

Mobile Marketing: Mobile marketing refers to reaching consumers through their mobile phones, which is critical given the significant amount of time people spend on these devices (Yemelienenkova & Bielova, 2022). Advertising through applications, location-based advertising, search engine marketing, QR codes, SMS, and MMS messaging are all examples of mobile marketing tactics (Yemelienenkova & Bielova, 2022). **the dtic** can promote mobile marketing by investing in mobile technology infrastructure, providing guidelines and best practices for effective mobile marketing, and developing mobile-friendly platforms to connect exporters with international buyers. Nonetheless, the success of mobile marketing campaigns may be limited by varying effectiveness of different mobile marketing tactics across diverse consumer segments.

Social Media Marketing: Platforms like Facebook, Twitter, LinkedIn, and Instagram are critical for engaging with a global audience and promoting products and services. Effective use of social media can enhance brand awareness and customer loyalty (Yemelienenkova & Bielova, 2022). **the dtic** can support exporters by offering training on social media strategies, creating promotional campaigns on these platforms, and using official social media channels to highlight national products and success stories (Dong & Xu, 2022). Krasnyuk et al. (2023) add that storytelling can help influence purchasing decisions, making it an important marketing tool. However, the effectiveness of social media marketing is contingent upon the consistency and creativity of content. The rapid change in social media trends necessitates continuous learning and adaptation by **the dtic** staff. Furthermore, the potential for negative feedback and public relations crises poses significant risks that must be managed effectively by **the dtic**.

Infrastructure and Support Services

Sibanda et al. (2024) argue that infrastructure and support services are vital for successfully implementing digital tools. By effectively utilising these tools, governments can significantly enhance their export promotion efforts and drive economic growth.

Digital Support Services: Comprehensive digital support services are required to maintain and optimise the EP's various digital tools and platforms (Krasyuk et al., 2023; Sibanda et al., 2024). Technical support, software maintenance, and user training are good examples (Geldres-Weiss et al., 2021; Heriqbaldi et al., 2023). Governments can establish dedicated digital support centres to provide continuous assistance to exporters, ensuring they can effectively use these tools to reach international markets (Heriqbaldi et al., 2023). By offering user training programs, governments can help exporters become proficient in using digital platforms, enhancing their ability to engage with global buyers and increase export volumes. However, the cost and sustainability of maintaining comprehensive support services by an already budget-constrained public sector pose significant challenges for **the dtic**.

Infrastructure for Digital Transformation: A robust digital infrastructure, including reliable internet connectivity and advanced computing resources, is essential for leveraging digital tools effectively (OECD, 2023). Governments can invest in building and upgrading digital infrastructure to support EP activities. Improved internet connectivity and access to cutting-edge technology can facilitate smoother and reducing barriers to the international market (OECD, 2023). By ensuring that exporters have access to high-quality digital infrastructure, the Public Sector can help companies overcome logistical challenges and improve their competitiveness in the global market (Tolba, Karadeniz, Boutaleb, Bouhaddioui, Menipaz, Pereira, Bueno, Alsaeed, & Schøtt, 2022). However, the potential high costs associated with upgrading infrastructure may initially limit the ability of **the dtic** to provide widespread access to advanced digital resources.

Effectiveness of Digital Tools

The literature highlights various digital tools that can significantly enhance EP efforts. In addition to organisational culture and leadership support, the exporter's digital literacy and ability to adapt to rapidly changing technologies will determine the successful implementation of these tools. Limited digital literacy and resistance to change can hinder the adoption and effective use of these tools (Kane, 2019).

2.4.3 *Gaps in the Literature and Future Research Directions*

Despite the capabilities of advanced digital technologies in EP, several critical gaps in the literature remain. These include the ethical implications and privacy concerns of employing AI in marketing by the public sector and the scalability and effectiveness of CRM solutions and digital communication tools in heavily regulated and under-staffed public sectors. Additionally, there is a lack of research on the long-term impact of these technologies on export performance, particularly for small and medium-sized enterprises (SMMEs). The quality of digital infrastructure is another crucial factor affecting the success of these technologies, and it varies significantly across different regions. Future research should focus on the applicability and scalability of these solutions for the public sector, strategies to enhance digital literacy and widespread access to technology, and the implementation of robust cybersecurity measures. Addressing these challenges through targeted policies and ongoing research can help maximise the potential of digital tools in promoting exports and ensure that all potential exporters, regardless of size or technical expertise, can benefit from digital initiatives.

2.4.4 *The Role of Digitalisation in Export Promotion: Examples from Various Countries*

According to Vorobiova et al. (2023), to more effectively digitalise EP tools and services, the government needs to adopt best practises from global trends and use foreign experience. In the age of globalisation, digitalisation has become a cornerstone of EP strategies. Governments worldwide are leveraging digital tools to support their companies in accessing international markets, enhancing competitiveness, and fostering economic growth (Asia News Monitor, 2023; Dong & Xu, 2022; Massyn et al., 2021; OECD, 2019; Republic of Turkiye Ministry of Trade, 2022). This section consolidates examples from various countries, showcasing the digitalisation initiatives undertaken by public sectors to promote exports.

PROCOLOMBIA'S Use of Digital Technologies to Enhance Export Promotion

The Colombian government actively promotes exports and integrates local firms into global value chains through PROCOLOMBIA, an agency associated with the Ministry of Commerce, Industry, and Tourism (MinCIT) (OECD, 2019).

Recently, PROCOLOMBIA launched the ProColombia Market Place online portal to assist firms in exporting and has encouraged online sales channels. Their services include training events and consultancy on logistics and customs procedures (OECD, 2019). A key promotional activity by PROCOLOMBIA is the Virtual Macro Business Match-making Forum, which aims to enhance commercial exchanges between Colombia and the rest of the continent, stabilising intraregional trade relationships (ProColombia, 2020).

Uganda: WhatsApp Groups for Trade Assistance

Uganda's export promotion agency, the Uganda Export Promotion Board (UEPB) is part of the Ministry of Tourism, Industry, and Trade. Despite being a small agency, UEPB is highly effective due to its resourcefulness and strong networking within the public and private sectors and with foreign markets (Massyn et al., 2021).

The UEPB has innovatively used WhatsApp groups to provide trade information and assistance. These groups, managed by district representatives, connect various stakeholders in international trade, facilitating direct communication and timely support (Massyn et al., 2021). Exporters benefit from real-time access to vital information, quicker resolution of trade issues, and a stronger support network, which is crucial for navigating international trade complexities (Massyn et al., 2021).

Vietnam: Vietnam Pavilion on Alibaba

The Vietnam Trade Promotion Agency (Vietrade) a governmental organisation of Vietnam under the Ministry of Industry and Trade, has partnered with Alibaba to create the "Vietnam Pavilion," a dedicated space on the platform to showcase Vietnamese products (Asia News Monitor, 2023). This initiative aims to popularise Vietnamese goods to a vast international audience. With over 260 million users, this platform has significantly boosted exports by providing unparalleled market access and visibility (Asia News Monitor, 2023). The benefits for Vietnamese exporters include access to a large pool of potential buyers, increased international exposure, and enhanced opportunities for business growth. This strategic collaboration highlights the power of leveraging established e-commerce platforms to expand export horizons (Asia News Monitor, 2023).

Turkey: Easy Export Platform

In 2022, Türkiye launched the Easy Export Platform, which leverages artificial intelligence (AI) to offer comprehensive market analysis for target market selection, sector and country analysis, and market entry strategies. This platform is a decision support tool for exporters (Republic of Türkiye Ministry of Trade, 2022). Its user-friendly, intelligent interface delivers digital consultancy services that support international trade (Republic of Türkiye Ministry of Trade, 2022).

The platform integrates up-to-date foreign trade data from 15 domestic and international sources, including the International Trade Centre and World Bank (Republic of Türkiye Ministry of Trade, 2022). The Easy Export Platform includes modules for different stages of export decisions. The "Smart Export Robot" recommends potential target markets, while the "Country Page" and "Sector Page" modules provide product-based trade statistics and market information (Republic of Türkiye Ministry of Trade, 2022). It also offers customized market entry maps for different products and countries, serving as a comprehensive guide for exporters (Republic of Türkiye Ministry of Trade, 2022).

China: Comprehensive Digital Economy Strategies

China's digital economy is crucial to its national development, significantly enhancing the trade environment through strategies that promote digital industrialization and information technology (Dong & Xu, 2022). These strategies reduce costs, boost market demand, and offer efficient trade infrastructure, fostering global competitiveness (Dong & Xu, 2022). Integrating digital technology in international trade has transitioned China's exports to digital trade, embedding export activities within the global value chain and fostering high-quality development (Dong & Xu, 2022). This integration improves the trade environment, adjusts product structures, and supports the overall progress of export trade (Dong & Xu, 2022).

Estonia's e-Commerce

Estonia's robust digital infrastructure and tech-savvy population have fuelled the growth of e-commerce. The country's digital identity system and e-residency program facilitate easy engagement in online business for residents and international entrepreneurs. E-commerce in Estonia has grown steadily, especially post-COVID-19,

as more consumers embrace online shopping for convenience and variety (International Trade Administration, 2024).

Estonian e-commerce companies leverage advanced technologies like artificial intelligence, machine learning, and big data analytics to personalize customer experiences and optimize operations. In 2022, Estonia's e-commerce turnover reached 3.54 billion euros, a 34% increase from 2021, constituting at least 20% of the total retail trade volume (International Trade Administration, 2024).

Summary

These examples highlight digitalisation's strategic and pivotal role in EP, as seen in success stories from Colombia, Uganda, China, Turkey, and Vietnam. Adopting similar digital strategies can help South African companies thrive in the international market, contributing to economic development. This approach can enhance internal processes and elevate service delivery in the public sector, aiding trade growth in exports (Puke, Batraga, Salkovska, & Kalkis, 2022).

2.4.5 *Proposition 3*

Based on the discussion of the potential digital tools, initiatives and services for enhanced export support, the following proposition was proposed:

Proposition 3. The suitability and effectiveness of digital tools for the South African public sector is determined by their ability to influence and align with the sector's specific organisational, cultural, and operational contexts.

This proposition envelopes the idea that digitalisation is contextual and multifaceted and not merely a technical issue.

2.5 Analytical Framework

Theoretical Framework

The concept behind the Technology Fallacy Theory comes from the inaccurate assumption that since the lack of digital technologies often causes business challenges, the solutions must come from digital technologies. However, this

assumption is wrong because, in reality, the workforce is the driving force or hindrance to digital transformation (Kane, 2019).

The application of the Technology Fallacy Theory to this research was highly relevant as it signified the critical understanding that successful digitalisation in the South African public sector, particularly for EP, extends beyond mere technological adoption. Accordingly, reviewed literature also revealed that culture significantly impeded technological advancement within the South African Public Sector (Wilson & Mergel, 2022). The Technology Fallacy Theory highlights that addressing these human and cultural factors is pivotal in realising the full potential of digital tools (Kane, 2019). Cultural factors include organisational culture, leadership mindset, employee adaptability, resistance to change and the overall digital maturity of teams. Human factors include shared values, trust in leadership, openness to experimentation, and a willingness to learn (Kane, 2019). By integrating this theory, this research discussed deploying advanced digital solutions and the essential need for fostering a supportive organisational culture, effective change management strategies, and enhanced employee engagement.

2.6 Conclusion of Literature Review

The three research questions formulated for this study guided the conception of the propositions mentioned below. Chapter 2 delved into the theoretical framework of technology fallacy, offering a comprehensive understanding of the aspects that may affect digitalisation within the context of EP in the Public Sector.

2.6.1 *Proposition 1*

EP programmes that integrate future trends and technological advancements are more effective in supporting exporters in a rapidly evolving global trade environment.

2.6.2 *Proposition 2*

The key barriers faced by the South African public sector in adopting digital tools for EP are primarily rooted in organisational culture, limited digital skills, insufficient infrastructure and inadequate funding.

2.6.3 *Proposition 3*

The suitability and effectiveness of digital tools for the South African public sector is determined by their ability to influence and align with the sector's specific organisational, cultural, and operational contexts.

CHAPTER 3. RESEARCH METHODOLOGY

3.1 Introduction

Chapter 3 detailed the research methodology used to achieve the study's objectives. It explored the interpretivism paradigm and its tenets, the research approach, the motivation behind selecting the identified population and research sample, the data collection and analysis methods and instruments used, and the quality measures to ensure research rigour.

3.2 Research Paradigm: Interpretivism

The Interpretivist paradigm was the research paradigm chosen for this study. Proponents of the interpretivism paradigm, Alharahsheh and Pius (2020) state that this approach focuses on understanding people's encounters and the implications thereof (Alharahsheh & Pius, 2020). This study focused on unearthing perceptions of those affected by the digitalisation prospects of EP tools and services by the public sector. Recognising that reality is socially constructed and subjective, interpretivism states that stakeholders may have diverse world views about digitalisation experiences (Alharahsheh & Pius, 2020). Therefore, because it is essential to understand the interviewees' cultural context and opinions, the interpretivism paradigm helped understand employee perception of digitalisation.

3.2.1 *Ontology, Epistemology, and Axiology in Interpretivism Research*

Ontology refers to what is real; interpretivism ontology, in particular, sees reality as socially constructed and relative; it acknowledges multiple worldviews shaped by individual experiences and contexts (Alharahsheh & Pius, 2020; Guba & Lincoln, 1994). This study noted that various stakeholders would view digitalisation in EP tools and services differently based on their interaction with digital tools and their association with the EP services of **the dtic** (e.g., employees, managers, external stakeholders). Thus, the focus was on understanding these multiple, subjective worldviews.

According to Alharahsheh and Pius (2020), Interpretivist epistemology looks at the importance of understanding these different worldviews based on individual subjective experiences. It is concerned with uncovering knowledge to discover the perceived reality (Alharahsheh & Pius, 2020). This study uncovered knowledge through qualitative methods like interviews, where participants shared their experiences and perceptions of digitalisation.

On the other hand, Interpretivist axiology purports that personal values and biases inevitably influence the research process (Alharahsheh & Pius, 2020). Therefore, transparency by the researcher about their values and how they may affect or be affected by the research is crucial.

3.3 Research Approach

This research paper used the qualitative research approach to investigate the digitalisation of EP tools and services within the South African public sector. This approach allowed for a relevant, contextual and flexible investigation of the subjective worldviews of digitalising EP tools and services (Alharahsheh & Pius, 2020; Guba & Lincoln, 1994). These subjective views were necessary for providing insight into digitalisation's potential barriers and enablers within the public sector.

This paper employed the case study approach using semi-structured interviews and observations as key instruments. These instruments enabled the collection of rich, detailed accounts of interviewees' experiences and perceptions regarding the complexity of the factors influencing the success or lack of digitalisation within the public sector and **the dtic** in particular (Alharahsheh & Pius, 2020; Tracy, 2010). Moreover, this detailed data is essential for developing guiding frameworks and strategies for enhancing digitalisation efforts.

3.4 Research Design

As adopted from Crowe, Cresswell, Robertson, Huby, Avery and Sheikh (2011) and Paparini, Papoutsis, Murdoch, Green, Petticrew, Greenhalgh and Shaw (2021), the case study approach enabled an in-depth examination of the effectiveness of digitalisation of EP tools and services. It was the key to addressing the research

propositions in the natural setting of the case (Crowe et al., 2011; Paparini et al., 2021). The data gathered from the interviews captured the interviewee's perceptions on the integration of future trends and technological advancements in EP work. Furthermore, the data assisted in assessing the perceptions of whether these digital tools would be welcomed and viewed as effective in supporting exporters.

Focusing on **the dtic** helped the study cast light on complex issues in a real-life context, which provided a real-life case reference when looking at context-specific barriers and the proposed potential solutions (Crowe et al., 2011; Paparini et al., 2021). This approach yielded a detailed contextual analysis of digitalisation initiatives within **the dtic**, offering a holistic overview of their conduciveness for EP work. Additionally, Crowe et al. (2011) highlight the flexibility of case studies, suggesting that they enable the utilisation of various methods of collecting data, such as interviews, document analysis, and observations, which further enhances the richness of the data collected. Crowe et al. (2011) also argue that the nature of the in-depth analysis made possible by case studies provides an opportunity to capture tacit knowledge, which involves non-verbal cues revealed through subtle behaviours. These non-verbal cues can reveal the organisational culture's hidden values and meanings, evident in what is stated and left unsaid (Crowe et al., 2011). Furthermore, with this case study of **the dtic**, this research paper provides a concrete example that can influence theories and strategies, making the research findings more relatable and actionable (Crowe et al., 2011; Paparini et al., 2021).

Case studies are not without disadvantages. Crowe et al. (2011) caution that case studies may have limited generalisability due to focusing on a specific case. This research report circumvented this disadvantage by selecting a representative case such as **the dtic**, which shares many commonalities with other government departments (Crowe et al., 2011). This method enables generalisability to different departments, although it must be tailored accordingly. However, this study prioritised the depth and richness of data for contextual analysis rather than generalisability.

3.5 Data Collection Methods

This study adopted two data collection methods to gather comprehensive data. Fifteen semi-structured interviews with employees of **the dtic** and stakeholders

(exporters and industry experts) were conducted to explore their experiences, perceptions, and insights regarding the digitalisation of EP tools and services at **the dtic**. Additionally, two observations of current export promotion tools and services at **the dtic** were carried out to gain a practical understanding of their functionality and effectiveness.

The Technology Fallacy theoretical framework informed the formulation of the interview questions and guided the observation process, ensuring alignment with the study's theoretical underpinnings. The observational data complemented the interview findings by providing practical insights into the current tools and processes, indicating where digital tools can be incorporated (Crowe et al., 2011). Both these methods offered a contextual background and supported the triangulation of data, thereby increasing the reliability of the study and ensuring that the feasibility of the digitalisation of EP tools and services was demonstrated (Paparini et al., 2021).

3.6 Self-Reflexivity

It is important to note that this study was conducted by a researcher employed at **the dtic**, which is the chosen case for this study. This role within **the dtic** provides access to insights and internal data that would not have been available to an external researcher. While this insider perspective offers a deeper understanding of **the dtic's** processes, it also introduces the potential for bias. To mitigate this, careful steps were taken, including validating interview transcripts with participants to ensure accuracy and transparency. Triangulation through observations was also used to ensure objectivity and maintain the study's rigour. It was important to set aside preconceived ideas about the case's context and aim to present the data in alignment with the participants' reports. Additionally, this study upheld ethical guidelines to ensure confidentiality and neutrality throughout the research process.

3.7 Population And Sample

3.7.1 Population

The population for this research comprised varied officials of **the dtic** and its stakeholders, including exporters and industry experts. **the dtic's** processes

significantly influence the effectiveness of EP tools and services, making it an appropriate population for examining the impact of digital tools on effective EP. Most importantly, **the dtic** is the primary entity responsible for trade and industry policies and is directly involved in developing and implementing EP programs (the dtic, 2021a, 2021b, 2024a). In addition to **the dtic** officials, the population included exporters who use the department's services and industry experts who engage with **the dtic** and have experience with its EP tools and services. This diverse population provided a comprehensive view of how digitalisation is perceived and its challenges from multiple perspectives.

3.7.2 *Sample*

The sample for this research included six senior officials of **the dtic** who are involved in decision-making processes related to EP and digitalisation efforts. These senior officials were from different branches, such as the EP unit and the Office of the Chief Operating Officer (OCIO). The combination of these senior officials provided a comprehensive perspective due to the interconnected nature of their work. Additionally, four technical support and EP program implementation employees were interviewed and observed. The sample also included five exporters who have interacted with **the dtic's** EP tools and services, thereby providing insights from a user perspective. Lastly, two stakeholders were included: industry experts and consultants with experience engaging in technology-advanced EP tools and services in general. The above makes up fifteen interviews and two observations in total.

Approval to approach **the dtic** participants and their stakeholders was granted by **the dtic**, and the participants were recruited through formal invitations. Emails were sent to selected dtic officials, explaining the purpose of the study and requesting their participation. Other stakeholders were recruited directly as per **the dtic's** approval. The participants provided informed consent and declared that they understood the purpose of the research, their role in it and that their contributions would be confidential. This diverse sample was essential to gather detailed, contextual insights into the digitalisation of EP tools and services within the South African public sector (Palinkas, Horwitz, Green, Wisdom, Duan, & Hoagwood, 2015).

3.7.3 Sampling Method

The purposive sampling method was used. According to Palinkas et al. (2015), purposive sampling allows the selection of individuals with specific knowledge and experience relevant to the research questions. This method is used in qualitative research where the goal is to gain in-depth insights into a phenomenon (Palinkas et al., 2015).

3.8 The Research Instruments

The main instruments for this research were semi-structured interviews using open-ended questions and observations. Adding observations facilitated triangulation, enriching the collected data (Tracy, 2010). According to Moser and Korstjens (2018), open-ended questions allow the participants to reflect deeply on their experiences, allowing for a conversational inquiry. This instrument is also flexible, delving deeper into specific issues while ensuring the research covers all key interests (Moser & Korstjens, 2018). Three distinct interview schedules were developed: one for dtic employees who engage with the EMIA instrument, another for other dtic employees who do not engage with the instrument directly, and a third for external participants. An observation guide was also developed, though its usage was minimal and guided by the nature of interaction with the observed participants. The interview and observation guides were such that they aligned with the research questions, the literature, and the theoretical framework, specifically the Technology Fallacy framework.

For dtic officials, face-to-face interviews were prioritised for in-depth discussions and to capture non-verbal cues, which are crucial in qualitative research (Crowe et al., 2011). Where face-to-face interviews were not feasible, especially for external participants, due to geographical constraints, virtual interviews were carried out instead. A scheduling tool, Calendly, was used to help schedule interviews, allowing the participants to select convenient interview times within a two-week period but later extended to accommodate late confirmations.

Of the 27 potential participants invited to participate in the study, 17 participants were successfully interviewed and observed. Nine invitations went unanswered, with some confirmations later postponed. Reminders were sent to select individuals from

the unresponsive group, but ultimately, replacements were identified to meet the target of 20 interviews and observations. However, saturation appeared to have been reached by the 17th interview, as no new themes were emerging and responses had begun to repeat those already identified in earlier interviews.

The interviews took 25 minutes to an hour, and a software tool, Fireflies.ai, was used to record and transcribe physical and virtual interviews. Of the 17 participants included in the study, 15 semi-structured interviews were conducted and 2 participants observed. These observations were conducted with two of the interviewed participants to gain first-hand insight into the processes and tools used for export promotion, assessing their functionality and impact. The data was collected in boardroom settings to avoid disruptions.

3.9 Data Analysis Strategies and Interpretation

The data analysis strategy suitable for this research paper was thematic analysis. This method entailed identifying, analysing, and reporting themes within qualitative data (Braun & Clarke, 2006; Naeem, Ozuem, Howell, & Ranfagni, 2023). Firstly, all interviews were recorded, transcribed verbatim to ensure accuracy and transparency and familiarised with, and the observation notes were reviewed. The transcriptions were thoroughly examined and cleaned, discarding typographical errors and missing words. Patterns in data were then sought out and identified to categorise and code them with the help of a qualitative data analysis tool (Atlas.ti).

This data analysis approach helped identify relevant themes (Braun & Clarke, 2006). These themes were continuously reviewed and refined to ensure they were accurately coded and representative of the data, with each theme being clearly defined (Naeem et al., 2023). The benefits of thematic analysis are that it is flexible and can provide a detailed understanding of the participants' experiences and perspectives presented through themes for better understanding (Braun & Clarke, 2006).

While the Technology Fallacy Framework helped inform the research questions, the analysis itself was inductive, allowing themes to emerge directly from the data without preconceived influence from the framework (Naeem et al., 2023). These themes were subsequently interpreted inductively and related back to the research questions,

naturally aligning with the theoretical framework. The analysis maintained its grounding in the data while situating the findings within the broader theoretical context (Naeem et al., 2023).

This methodological choice ensured that the data-driven insights were relevant to the research questions and meaningful within the Technology Fallacy framework.

A continued, thorough examination of the themes was further complemented and enriched using a systems thinking tool, the iceberg model, to unearth the findings' implications and develop recommendations. This approach was discussed in detail in Chapter 5. It did not change the analysis process; it simply involved using the iceberg model as a lens to present the implications of the findings. The rationale for using the iceberg model rested on the premise that it enhanced the discussion in Chapter 5 because its approach aligned well with the Technology Fallacy framework. This paper utilised OpenAI's ChatGPT to enhance clarity for presentation purposes. All data, findings, interpretations, and theoretical frameworks were developed independently.

3.10 Limitations and Challenges of the Study

Limitations and challenges of the study were:

Sample Size: Though purposive sampling ensures relevant participants (Palinkas et al., 2015) it may have not fully captured the differences in experiences within **the dtic** and among exporters.

Participant transparency: There is the possibility that some participants withheld truthful responses due to concerns about organisational protection or fear of identification.

Participant Availability: Planning and securing interviews was sometimes difficult, leading to delays. While these challenges limited the number of interviews, data saturation was ultimately achieved, ensuring sufficient depth and coverage.

Non-verbal Cues in Remote Interviews: While face-to-face interviews were preferred, some were conducted virtually. Virtual interviews may have limited the ability to observe non-verbal cues that reveal what is left unsaid (Crowe et al., 2011).

Understanding of digitalisation: Some participants were not well-versed with the concept of digitalisation and what it entails, though it was subsequently explained.

Potential bias: An additional limitation of this study was the potential bias introduced by the researcher's prior knowledge of the department's status quo. This familiarity could have influenced participants' responses or the interpretation of their answers. While some reactions appeared irrelevant, strategies were employed to maintain neutrality during the interviews, such as asking open-ended questions and encouraging participants to express their perspectives freely without leading them towards any specific response. Awareness of this bias was maintained throughout the data collection process, with active reflection on its potential impact to ensure it did not influence the findings.

Participant Scope and Representation: The study involved various stakeholders, including managers, non-managers, industry experts, and exporters. However, key voices, such as high-level policymakers or broader exporter communities, may not have been adequately represented, potentially leaving out critical perspectives. Further studies could include high-level policymakers and a larger, more diverse pool of exporters to capture broader perspectives.

3.11 Quality Assurance

3.11.1 *Transferability*

To enhance transferability, Tracy (2010) and Morse (2015) prescribe that the report should contain a thick description of the research context, participants, and processes to transfer the results to similar situations. Furthermore, transferability was achieved by gathering direct testimonies written simply and invitingly to familiarise the reader with the report and its context (Morse, 2015; Tracy, 2010). However, caution must be applied when replicating the findings in different settings outside the public sector. Further research may be necessary to extend the findings of this study to various contexts.

3.11.2 *Credibility*

The credibility of this study was enhanced through triangulation by collecting data from interviews and observations. Triangulation helped ensure validity by providing a comprehensive understanding (Tracy, 2010). Member reflections were conducted to ensure collaboration with the participants, allowing them to review and confirm the accuracy of the data captured and the resulting interpretations (Morse, 2015; Tracy, 2010).

3.11.3 *Dependability*

This study's dependability was enhanced through an audit trail, which kept detailed records of the research process, decisions, and any changes (Morse, 2015; Tracy, 2010). Reliable coding ensured systematic data analysis, helping to frame the findings as consistent and repeatable under similar conditions (Morse, 2015).

3.12 Ethical considerations

This research implemented several measures during data collection to ensure ethical integrity. Firstly, ethical approval was obtained from the University's Ethics Committee, providing a thorough review of the research protocols. Participants were fully informed about the study, their rights, and confidentiality measures. Consent forms were shared before data collection though some were only signed after. Data has been anonymised and securely stored on password-protected devices. Participation was voluntary, with the right to withdraw at any time.

After data collection, participants were allowed to review their interview transcripts to ensure accuracy and offer additional reflections. However, not all participants chose to engage with this option. This process was included to uphold ethical transparency and to allow participants greater control over their contributions (Morse, 2015; Tracy, 2010). A summary of the findings will be sent to participants at their request.

CHAPTER 4. RESEARCH FINDINGS

4.1 Introduction

Chapter 4 presented the study's results, derived from the analysis of data gathered through interviews and observations within the case study context of **the dtic**.

The results were derived from an inquiry informed by the three research questions. First, the study examined how effective the public sector's current export promotion tools and services were, assessing their impact on facilitating international trade and supporting exporters. Second, it explored the key barriers faced by the South African public sector in adopting digital tools for EP tools and services, highlighting challenges such as resource constraints, technical limitations, and organisational resistance. Lastly, the research sought to identify suitable digital tools for adoption within the public sector to enhance efficiency, broaden geographical reach, and improve service delivery to exporters.

Findings were organised into five major themes corresponding to the challenges, opportunities, and dynamics surrounding the digitalisation of EP tools and services in the South African public sector. Each theme was explored in detail, examining the associated codes and their significance in understanding the digitalisation of EP service processes. This approach followed the thematic analysis approach, supported by evidence from data collected during interviews and observations.

4.2 Pilot study

During the initial data collection process, it was identified that the initial interview schedule for external stakeholders included questions that could only be adequately answered by individuals working within **the dtic**. However, the external stakeholder sample subset for whom the interview schedule was designed did not possess the insider knowledge required to answer these questions comprehensively.

As a result, the decision was made to revise the interview schedule after the first interview. This adaptation was necessary to ensure that the questions were aligned with the expertise and experience of the external participants, allowing for the

collection of relevant and insightful data. This adaptation also improved the effectiveness of the interviews and the overall quality of the data collected.

4.3 Alignment with Research Questions and Theoretical Framework

The interview questions were formulated to align with the research questions and theoretical framework as follows:

4.3.1 *Perceptions of Effectiveness of Export Promotion Tools and Services*

Participants were asked about their perceptions of the current processes in EP initiatives. This section aimed to evaluate the effectiveness of current EP methods at **the dtic**, focusing on how the impact of EP initiatives is assessed and the perceived utility of these processes.

4.3.2 *Barriers to Digital Adoption*

The interview questions also addressed perceived barriers faced in the digitalisation of EP tools and services. This section aimed to identify and understand the key barriers to digitalisation within the dtic, examining how these barriers relate to organisational culture and resistance, deficit digital skills, inadequate infrastructure, and leadership challenges highlighted by the Technology Fallacy framework.

4.3.3 *Suitability and Impact of Digital Tools*

Participants were asked about their experiences with various digital tools and their views on how well these tools would fit **the dtic's** context and enhance service delivery. This section aimed to assess the suitability of digital tools for EP at **the dtic**, considering how organisational culture and leadership support influence digitalisation.

4.4 Research Participants

The participants were a combination of employees of **the dtic**, exporters and industry experts that engage with **the dtic**, and they opted to remain anonymous as

per the interview guidelines. The data was collected and coded using the Atlas.ti software. For confidentiality and ease of reference, the participants were referred to as P1 through P17.

4.4.1 *Participants Job Function*

Figure 1

Job Function

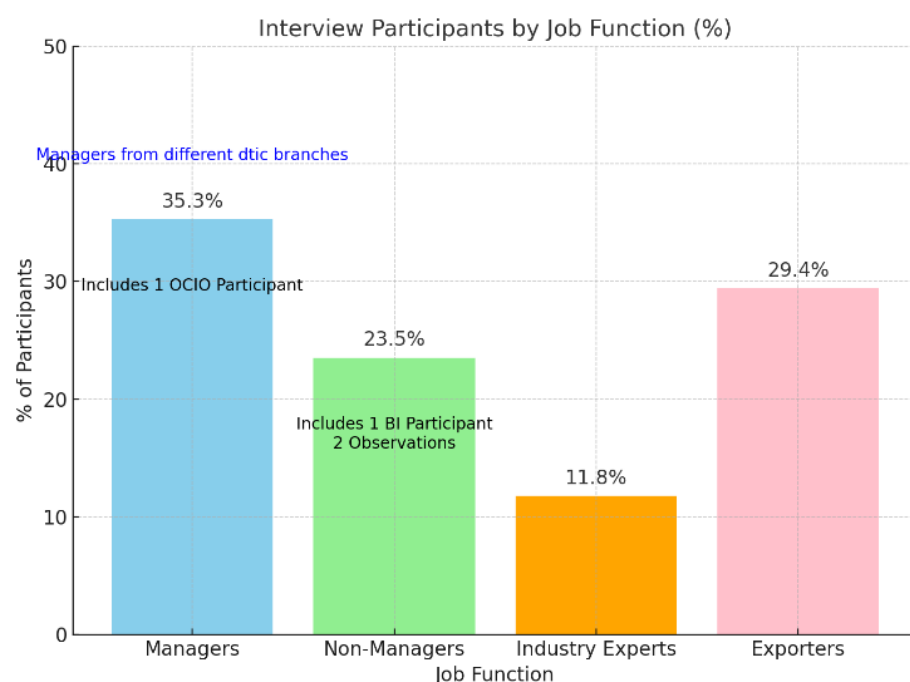


Figure 1 Note: This bar chart illustrates an aggregated view of the participant's job functions.

The dominance of managers showed that decision-makers and higher-level stakeholders were significantly involved in the interviews. The involvement of exporters (nearly a third of the participants) highlighted the emphasis on practical, on-the-ground perspectives. The relatively smaller representation of industry experts indicated their more specialised and targeted role in the study. This spread of job functions represented a diverse set of perspectives, balancing strategic as well as operational insights.

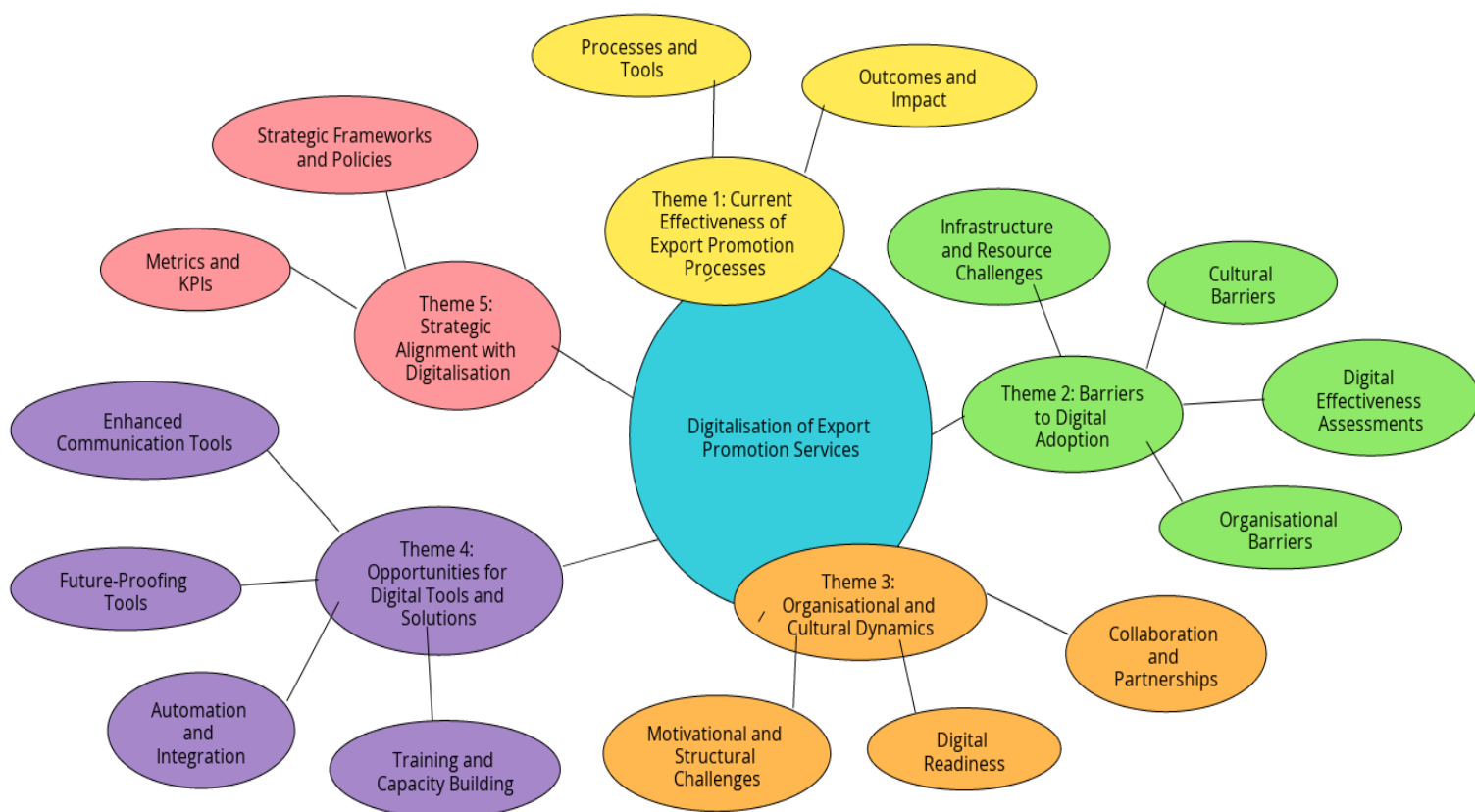
4.5 Overview of the Themes

An Inductive approach to thematic analysis, as captured by Braun and Clarke (2006) and (Naeem et al., 2023) was employed in this study. The approach embodied an exploratory and data-driven approach that identified keywords from the collected data. These keywords formed the basis for generating and organising codes accordingly (Naeem et al., 2023). The Atlas.ti tool was used in this process. These codes made it possible to identify patterns within the data, which were then categorised into code groups and used to formulate themes (Braun & Clarke, 2006). These themes were referenced to the research questions and the Technology Fallacy Theoretical Framework underpinning the study.

A mind map (*Figure 2*) was used to present an overview of the themes and categories of codes identified. The mind map highlighted five primary themes that emerged from the data.

Figure 2

Mindmap of Themes



Note: Visual representation of themes. Each category of codes in Figure 2 branched into specific themes that represented the key insights derived from participant responses. The themes were organised to highlight the relationships between technological, cultural, and organisational factors impacting the digitalisation of EP tools and services. The following sections unpack these themes in detail.

The five primary themes that emerged from the data include:

- Current Effectiveness of Export Promotion Tools and Services
- Barriers to Digital Adoption
- Organisational and Cultural Dynamics
- Opportunities for Digital Tools and Solutions
- Strategic Alignment with Digitalisation

Figure 3 provided a structured overview of the frequency of different categories of codes mentioned by the four participant groups: Experts, Exporters, Non-Managers, and Senior Managers.

Figure 3

Frequency Data Table of Category of Codes (Code Groups)



Note: Each code group represented a thematic focus raised during discussions, and the frequency highlighted perceived priorities for each participant group. The intensity of the colour represents the strength of the relationship, with higher values shown in darker shades and lower values shown in lighter shades.

The frequency data in Figure 3, columns 1-4, captured the interaction between strategic priorities, operational needs, and cultural challenges surrounding the effective digitalisation of export promotion services by **the dtic**. Higher Numbers (Darker Shades) indicate a stronger relationship, meaning that the people in that

category frequently mentioned codes within that code group. For example, "Processes and Tools" has 47 occurrences from Senior Managers, showing that it's a significant focus for that group.

Whilst the distribution of the codes may have been skewed by the number of participants in each group, the frequency of mentions of each category was worth noting to indicate the concerns held by each group. Senior Managers accounted for the highest total mentions (267) emphasising their strategic involvement and broader perspective on organisational challenges and priorities. Non-managers recorded the second-highest mentions (163) reflecting their participation in operational processes and tools. Their concerns reflect individuals' pain points directly engaging with day-to-day EP operations and systems. Exporters contributed (95) mentions focusing on efficient systems and long-term planning to support their role in export promotion. Experts accounted for the lowest mentions (51) indicating their narrower focus on strategic insights and technical challenges.

4.6 Theme 1: Current Effectiveness of Export Promotion Tools and Services

This theme aligns with research question 1, which investigated the effectiveness of current export promotion processes and tools. It supported proposition 1, which asserted that EP programmes that integrate future trends and technological advancements are more effective in adapting to the rapidly evolving global trade environment. By examining processes, tools, outcomes, and impacts, this theme provided insights into the South African government's current state of export promotion.

4.6.1 *Tools and Services*

A resounding finding regarding the tools and services currently used at **the dtic**, as captured through the worldview of the participants, was that **the dtic** employed manual and fragmented systems, it was reliant on outdated tools, and legacy systems that negatively impacted operational efficiency (P1, P2, P3, P4, P5, P6, P7, P8, P11, P14). Many systems used were static with limited digital capabilities or efficiencies. The employees used simple digital tools like Excel, E-room, Documentum, and email for

information management. P1 was observed utilising these four different tools for a single project.

These simple digital tools were used to store and organise exporter information (P1, P2). However, these tools were not designed for comprehensive data management, limiting their effectiveness in managing exporter relationships or tracking EMIA's impact. Employees on all levels reported that these tools lack essential functionalities, such as centralised tracking and automated notifications, making it challenging to manage large volumes of data and applications (P1, P7, P11). Data from observations also corroborated these sentiments by revealing many repetitive, cumbersome manual tasks, such as data entry and status tracking, which reduce productivity and limit the department's ability to respond quickly to exporters' needs (P1, P2). For instance, P1, who was part of the observations, noted, *"We just input data. It doesn't do much. It's just saving. We capture manually on an e-room or Documentum"*. While capturing data, P1 frequently navigated between screens, sometimes referring to printed and scanned documents from which she copied information. This unstructured way of working revealed the lack of an integrated, consolidated, internal system that merges siloed data. These observed repetitive and manual tasks had the potential to reduce employee's productivity.

P7 highlighted the high chance of human error when manually inputting data into the system, which was a serious concern when employees dealt with projects involving large amounts of money. P7 noted, *"Because we don't have a system to say, we are aware that we've assisted you... so unless you are working with this scheme, you won't know"*. P1 adds, *"There's no way of verifying...you just trust yourself that you captured it correctly"*. This lack of automated systems or error-checking can often lead to inaccuracies. The email-based system was also reported as problematic, where P14 worried that when **the dtic's** email infrastructure was down, applications would not be received on time, impacting standard operating procedures and engagements with exporters.

Unexpectedly, there were pockets of digital upstreaming within the department where an official highlighted using specialised software such as an enterprise tool used during special projects (P14). However, other participants mentioned ongoing and abandoned digitalisation projects in some branches and sub-units (P3, P6, P11).

Finally, observations showed little integration with advanced digital platforms for market research, client relationship management, or event planning. Tools for in-depth data analysis or automated client follow-ups were absent, creating extra manual work (P2).

4.6.2 Outcomes and Impact

The current predominant tools and services impacted exporters, as expressed through frustrations over response times and lengthy decision-making processes. According to P12, *“...with AGOA, I did not even get a response that rejects, or we received your application”*. P15 shared similar concerns, mentioning that application processes often required extensive follow-ups to confirm status, impacting their ability to prepare for international exhibitions. P17 highlighted that, *“...for example, currently the national Pavilion list for 2023-2024 is not available and that was not communicated...So if that is not communicated and timeously, how am I going to plan, for the marketing, of our company, of our products in the export market, because we heavily rely on this too”*. On the other hand, inconsistencies in experience were present with another exporter reporting, *“...the experience that I've had with that application, it's efficient, Once I put in the time and I submit, you know, I'm quite surprised, you know, by like, oh, an email will come through, we received your application, you know, and it's gonna process”* (P13). This sentiment suggested that communication was centred on approved companies, with rejected companies sometimes overlooked.

Employees like P2 noted the lengthy waiting periods required for multiple approval signatures, affecting exhibition planning. Another impact of the current processes was the constrained implementation of digitalisation where P14 stated, *“While we have innovative ideas, they often face delays in approval...”*. P11 said, *“And the reason why maybe we stopped doing that, we'll prepare a report and then there were no implementation...some of the recommendations that the companies will be recommending...it was never implemented”*. Constrained implementation created gaps in the utilisation of advanced export promotional tools that could enhance **the dtic's** visibility but were underutilised. Industry experts stated, *“Social media campaigns are powerful but not implemented effectively”* (P10). P9 supported this,

“...the dtic could possibly play a kind of a facilitation role also...utilising social media which has been proven to be very effective”.

Despite these inefficiencies, **the dtic**’s financial support for exporters attending international events and exhibitions was highly regarded. Exporters (P12, P13, P15 and P17) noted that this support had significantly increased their global exposure and access to new markets, emphasising the effectiveness of **the dtic**’s funding but highlighting the need for process improvement to maximize this impact. Although exporters appreciated **the dtic**’s financial and logistical support, they often felt frustrated by the inefficiencies and lack of transparency in service delivery. Some exporters suggested that **the dtic** could enhance its effectiveness by modernising its systems and improving communication (P15, P16).

4.7 Theme 2: Barriers to Digital Adoption

This theme addressed research question 2, which explored the key barriers in the South African public sector faced in adopting digital tools for export promotion. It aligned with proposition two, which asserted that these barriers stem from organisational culture, limited digital skills, insufficient infrastructure, and inadequate funding. By focusing on cultural and organisational barriers, infrastructure challenges, and digital effectiveness, the theme highlighted critical obstacles to the digitalisation of EP tools and services.

4.7.1 Cultural Barriers

Cultural resistance to change emerged as a significant barrier within **the dtic**, citing the hesitancy to adopt new digital tools or methods due to a lack of digital culture. P5 observed that **the dtic** employees were hesitant to shift from traditional processes, reducing the effectiveness of digitalisation efforts. *“They are scared to learn new things. Like they don’t want to learn. They like to be comfortable in whatever they are doing...”* (P11). An exporter, P17, expressed that this resistance impacted professionalism and the overall service experience for exporters. This perception was supported by evidence of limited digital orientation, where P3 remarked that the employees at the bottom were ready for change. Still, implementation was slow, signalling a lack of strategic direction.

P8 reflected, “...We are still a person-to-person knowledge economy...”, which suggested the norm of resistance to adopting shared digital ecosystems. Managers also noted that resistance to change was a significant barrier to digital transformation. They mentioned that many employees preferred traditional methods and were hesitant to adopt new tools, which slowed overall digitalisation efforts (P7, P8). P5 and P14 observed that limited training and performance incentives contributed to this resistance, as staff were not fully aware of the benefits of digital tools and high performance was not incentivised. Low leadership support for digitalisation was another barrier, with references to hesitancy toward risk-taking with new tools or a lack of trust in tools by leadership (P4, P14, P11).

Insights from observations revealed that both P1 and P2 heavily relied on traditional methods, and there appeared to be an ingrained culture within **the dtic** that resisted digital transformation. There was also an observed reluctance to use available digital tools or explore ways to streamline work, possibly due to a lack of training or encouragement from leadership (P1). P8 and P11 commented that employees often reverted to familiar manual processes instead of exploring new digital methods.

4.7.2 Digital Effectiveness Assessments

Participants highlighted gaps in assessing the effectiveness of **the dtic**'s tools and services, including its website, in achieving desired export promotion initiatives, “*But if the question is whether or not there is an assessment tool to receive direct feedback from the prospective participants as to give an indication of whether or not our services have an outreach, we don't have that or not that I'm aware of*” (P5).

The effectiveness of the EMIA outreach efforts through **the dtic** website was reported as limited, with participants reflecting that **the dtic** website was ineffective (P8, P15, P16). P15 mentioned, “*For the last ever I can think, you sort of go to the website, wait for the national pavilion calendar to come up, apply, and that's been the same ever since. And I think it's a bit outdated, my opinion...*”. P16 shared, “*But I think the disadvantage was, for so many small businesses... is that this is, kind of not very well communicated*”, and P7 declared, “*I think the lacking part here is the awareness. Are we reaching the correct stakeholders? Are we reaching people that should be targeted? Are we targeting the right audience?*”. On the access to **the dtic** services,

P3 offered that she thought, “...*access is very limited, especially because a lot of services for **the dtic** are not digitalised yet*”.

4.7.3 Infrastructure and Resource Challenges

Reported financial constraints and complex approval processes limited **the dtic**’s ability to invest in and adopt new digital tools, with budget limitations that often led to underutilised or outdated technologies. “*So for me, the biggest indictment on public sector work is the lack of resources...*” (P6). P5 highlighted that budget cuts often impacted digital initiatives, delaying essential updates to **the dtic**’s infrastructure, adding that the ones responsible for employing new technologies were usually not digitally inclined. P4, P6, P14, and external stakeholders (P9, P10) also pointed out the bureaucratic delays as the culprit impeding the acquisition of essential digital resources that could enhance export promotion.

P4 pointed out that the requirement to align with the State Information and Technology Agency (SITA) systems and infrastructure was often a hindrance as the long process of seeking approval from the agency discouraged digitalisation efforts. These constraints delayed critical digital projects, reduced competitiveness, and prevented **the dtic** from aligning with global standards (P4, P8, P11). P6 added a different dimension highlighting time as a resource constraint that limited employees from taking part in the full extent of their work and some activities like training that could capacitate them in preparation for digital business.

4.7.4 Organisational Barriers

Managers (P4, P5, P7) and employees (P1, P2, P11, P14) observed a strong resistance to digital adoption within the organisation. Despite the hesitancy to adopt new tools due to limited familiarity, a lack of incentives and insufficient support from leadership were highlighted as hindrances. This lack of digital orientation also hindered **the dtic**’s digitalisation progress and impacted its ability to deliver efficient, modern services.

There were insights into leadership gaps, fragmented digital efforts, and lack of organisational alignment in adopting digital tools. P5 and P6 revealed the usage of online platforms like MS Teams to deliver webinars to exporters. Delivering webinars

using MS Teams may not have been a prevalent practice, judging by other participants' lack of strong reiteration of this service. P14 mentioned other advanced systems for special projects, which were also highlighted by some of the exporters (P12, P15) though they seemed to have not been utilised in all project projects (P12). This discrepancy suggested a lack of coordinated efforts concerning digitalisation efforts within the department. Even though leadership was calling for digitalisation (P3) stagnant implementation and fragmented efforts suggested a lack of strategic direction and broader organisational alignment.

In addition, there were instances of decision-making bottlenecks that further delayed digitalisation. Both P9 and P10 noted that **the dtic's** decision-making process was often slow and burdened by bureaucracy, which delayed the adoption of necessary digital tools. This hesitation resulted in outdated practices that made it difficult for the department to keep pace with international standards. Furthermore, P9 and P10 expressed that the department's decision-making was often reactive rather than proactive, focusing on addressing immediate needs rather than strategically planning for future challenges. This reactive approach limited the department's ability to innovate and adjust swiftly to the dynamic requirements of the global export landscape.

4.8 Theme 3: Organisational and Cultural Dynamics

This theme extended the analysis of research question 2, delving deeper into the organisational readiness and structural challenges affecting the digitalisation of EP tools and services. It emphasised motivational factors, collaboration, and partnerships, aligning with proposition two, which asserted that these barriers stem from organisational culture, limited digital skills, insufficient infrastructure, and inadequate funding.

4.8.1 *Digital Readiness*

Research findings on this theme related to low productivity mindsets, lack of conducive digital culture, and low leadership intensity. Non-management employees noted that they often lacked the necessary support to integrate digital tools into their workflows. They felt that management could do more to facilitate the transition by

providing straightforward guidance and resources (P7, P11, P14). P11 mentioned that requests for digital tool support were often deprioritised, affecting their ability to work effectively. There was also consensus amongst the employees that despite available tools, there was little encouragement and guidance on best practices, which led to a lack of utilisation and inefficiencies (P7, P11).

Through the perspectives of Managers (P4, P5, P7, P8) and an external expert (P9) there were perceptions of a prevailing culture that lacked readiness for digitalisation, with entrenched habits that favoured manual processes. However, there was a feeling that non-management employees were ready for digital change and that implementation was constrained even though there were steps to digitalise some processes (P3, P6). This lack of coherence highlighted the varying degrees of readiness for digitalisation across different organisational levels.

Both external experts (P9 and P10) believed a cultural shift towards embracing digital tools and prioritising innovation was essential for **the dtic** to adapt and thrive in a digital landscape. P10 emphasised that leadership should have encouraged a culture open to digital experimentation and innovation, which would have empowered staff to adopt digital tools without fear. In agreement, managers and non-management employees believed leadership involvement was essential for successful digital adoption. They emphasised that top leadership needed to model digital engagement and support change management actively (P7, P11). P5 and P6 mentioned that digital projects often stalled or lost momentum without strong leadership advocacy, as employees lacked motivation to embrace new tools. P8 suggested that leadership initiatives such as recognising digital tool usage could have encouraged wider adoption. This suggestion casts a glaring light on the existing challenges in cultivating digital readiness at **the dtic** and the essential role of leadership in fostering digital change.

4.8.2 *Collaboration and Partnerships*

Participants suggested that **the dtic** could benefit from working with external stakeholders and experts to improve its decision-making processes and services. They believed this inclusion would allow the department to leverage a broader range of insights and stay attuned to global best practices, particularly in digital tools and

export trends (P9, P10, P15, P16). P9, P10 and P16 emphasised the need for **the dtic** to practise active, inclusive engagement and collaborate with stakeholders such as the provincial agencies when making strategic choices. This perception suggested that collaboration would make decisions more impactful and aligned with industry standards, ultimately improving exporter market access. This balanced with the expressed need to promote real-time collaboration with other entities that employed more advanced tools: “...So Wesgro is incredibly proactive...they're very much provincial if everybody sort of starts working together and maybe starts looking at a centralised site where you've got these tools that are accessible...” (P16).

There was, however, evidence of strong partnerships between **the dtic** and organisations such as SIPPO and GIZ, which, as noted by experts, employees, and exporters, which contributed to enhancing its export promotion services, somewhat (P6, P9, P10, P12, P13).

4.8.3 Motivational and Structural Challenges

There were perceptions of a lack of trust in digital tools, with P6 mentioning, “I believe that the challenges of dtic are not about digitisation...There are underlying challenges. And it would go back to organisational culture, again, if people do not see the relevance or there's distrust in the tools, in the champions of the tools, dead in the water...”. To support this, P11 highlighted that, “...I think for me people are scared to change. Yeah. I think for me is that fear of the unknown...”. These findings highlighted the lack of motivational structures that promoted the use of digital technologies by showcasing their benefits and positive impact.

Other results reflected the presence of conflicting priorities that hinder digitalisation efforts, with P6 stating, “...my assessment is that there's conflicting priorities... So to say where is the focus? Is it on people? Is it on digitisation? At the moment, It's not on either...”. These conflicting priorities discouraged organisation-wide utilisation of digital tools, with different branches having varied approaches to utilising available tools; P7 states, “As much as we don't have a system...whatever is uploaded on webtop, my claim application and I send an email to the next person ...Finance division will say they don't want anything on Webtop...”. P1, P6 and P14 expressed that the public sector lacked the resources and incentives to commit to digitalisation effectively.

4.9 Theme 4: Opportunities for Digital Tools and Solutions

This theme aligns with research question 3, which seeks to identify suitable digital tools for the South African public sector. It supports proposition three, which asserts that digital tools' suitability and effectiveness depend on their ability to align with the sector's organisational, cultural, and operational contexts. By exploring automation, enhanced communication tools, future-proofing technologies, and capacity-building opportunities, this theme identifies pathways for digital innovation.

4.9.1 *Automation and Integration*

There was a strong consensus among participants about the need for the department to adopt centralised, user-friendly digital platforms that catered to its specific requirements for export promotion. Participants believed that digital tools should be tailored to **the dtic**'s organisational structure, export promotion goals, and the needs of South African exporters (P1, P2, P3, P7, P10, P15 and P17). They advocated for a centralised digital system that consolidated information, tracked applications, and gave exporters easy access to resources. This platform could have helped to streamline workflows, reduce redundancy, and improve communication with exporters. There was also interest in implementing real-time monitoring tools that enhanced responsiveness and reduced manual effort (P3, P11, P14).

4.9.2 *Enhanced Communication Tools*

Observations of P1 and P2 revealed communication with exporters that occurred in scattered channels, such as email and printed documents. This fragmented approach resulted in missed information and a lack of timely updates for exporters (P12, P15). Exporters (P13, P16, P15) preferred self-service digital tools to independently access information, track application status, and receive updates. There were reports on informal rejection processes and inconsistencies in communication with exporters (P12, P15). This feedback indicated a need for user-friendly digital solutions that reduced dependence on manual inquiries and enhanced user satisfaction.

Industry experts P9 and P10 recommended that **the dtic** develop a centralised digital platform to facilitate efficient exporter engagement through digital campaigns, data management, and communication: A platform that could consolidate applications,

updates, and resources in one place, such as a CRM tool. P3, P5, P7, P8, P13, P15 and P16 reiterated the importance of practical communication tools for **the dtic**'s visibility and reach in creating awareness about government support for exporters. P8 stated, *"If they're not published, how do we expect the exporters to get them?"* this emphasised the need to advance communication with exporters digitally.

4.9.3 Future-Proofing Tools

Another recurring theme across the feedback was the need for **the dtic** to align its practices with international digital standards, ensuring it remains competitive and relevant in a globalised, digital-first economy. Consequently, observed practices of P1 and P2 showed limited digital engagement that did not match global trends, making it difficult to compete or effectively promote South African exports. Participants emphasised the importance of adopting advanced digital tools and maintaining a proactive approach to align with global best practices (P5, P14, P17). External experts (P9, P10) and managers (P4, P6) recommended that **the dtic** benchmark its processes against best practices from other international trade promotion agencies. This alignment could have helped the department to adopt scalable, globally recognised digital tools and practices, such as virtual trade platforms and CRM systems, to strengthen its competitiveness.

Participants also suggested that the department explore integrating advanced technologies, including AI and data analytics, to improve market insights, streamline exporter matchmaking, and optimise workflows. Both internal employees and external experts highlighted how these tools could drive efficiency, enhance data accuracy, and improve decision-making (P10, P13, P14, P17). These sentiments highlighted a strong interest in tools aligned with global trade advancements. P14 noted, *"In other countries, export activities are conducted digitally...we need to adopt similar digital solutions and workflows to enhance our export activities"*. P4 noted, *"...we have to invest in our own tools to be on the same global...scale. Currently, we don't have anything. Then how are we going to improve our exports?"*. P8 referred to modern digital trade platforms like Alibaba that should be used as models for enhancing small enterprise exports. P9 and P10 suggested that the department adopts a more proactive, strategic approach to decision-making, anticipating future needs rather than reacting to immediate issues.

In addition, exporters felt that hybrid event solutions would help to improve accessibility and exporter engagement (P12, P17). This perception mirrored the consistent interest among participants in adopting advanced technologies such as AI-driven market intelligence, Search Engine Optimisation, virtual trade platforms, and automated matchmaking to enhance dtic's capabilities (P10, P13).

4.9.4 *Training and Capacity Building*

A lack of digital skills and insufficient training initiatives were recurrent issues, with participants highlighting the need for formalized digital training for both staff and exporters (P7, P11, P14, P16). Observed participants (P1 and P2) showed limited exposure to new tools or platforms that could make their work more efficient. Non-management employees highlighted a need for training and support in digital tools (P11, P14). There were sentiments that current training programs were either insufficient or not aligned with daily work needs, contributing to the underutilisation of available tools and minimal exploration of digital alternatives (P7, P11, P14, P17).

Non-management employees (P11, P14) noted that current training programs did not adequately prepare them to use digital tools effectively. This gap resulted in limited digital engagement, underutilisation of available resources, and frustrations with complex tasks that could be simplified through better digital literacy initiatives. These frustrations spoke to the consensus over the limited awareness or utilisation of existing digital systems at **the dtic** (P2, P5, P6, P7, P8) and lack of commitment to training (P6, P7, P9).

Adding on to the finding was the evidence of a lack of understanding of the full functionalities of some of the tools. Some officials noted that the e-room tool was also used for tracking purposes (P11, P14) whilst others stated that no tracking tools were available (P1, P2). An employee, P7, suggested that the lack of and resistance to training reduced staff's capability to leverage existing digital tools effectively; P14 noted the lack of data literacy, mentioning that informal self-learning was often the only option for some employees. P6 highlighted, *"...I think people are taking their initiatives to become digitally literate. The government makes available the courses, but they are not mandatory."* An exporter, P16, pointed out the need for regular digital training programs that improved digital skills amongst **the dtic** employees.

Since **the dtic** did not actively promote or enforce digital training, it was symptomatic of an organisation that did not prioritise digital learning or professional development. Without a clear commitment to ongoing digital training, evidence showed that employees were left ill-prepared to adapt to evolving technologies, ultimately hindering innovation, efficiency, and export promotion's long-term effectiveness. This lack of focus on skill-building could also have led to lower employee morale, as team members may have felt unsupported in their career growth, leading to potential disengagement (P14). P3 noted that while leadership is focused on introducing digital platforms, there's minimal effort to prepare employees through awareness and training initiatives. P2 suggested that more practical training sessions focused on **the dtic's** specific tools would help employees use them more effectively. P14 emphasised that digital literacy training should be continuous and particular to the needs of a data-driven organisation that should ideally learn complex tools. This emphasis highlighted the need for digital literacy training programs and broader digital skills development to support capacity building for EP tools and services.

4.10 Theme 5: Strategic Alignment with Digitalisation

This theme also connects to research question 3, focusing on the need for strategic frameworks and performance metrics to guide the digitalisation of EP tools and services by the South African public sector. It reinforces proposition three, asserting that practical digital tools must align with the public sector's strategic, organisational, and operational goals, ensuring measurable impact and sustainability.

4.10.1 Metrics and KPIs

Participants highlighted the absence of consistent and effective systems for measuring the impact of **the dtic's** export promotion services and interactions with export stakeholders. P3 highlighted, *"I don't think we have any measurement at this point, but even if there is a point of measurement, it will be challenging because without a digital platform, how do you know how many exporters are there?"*. P4, P6, P7, P9, and P11 all collaborated, emphasising the lack of standardised metrics, follow-up processes, and centralised data platforms, which hindered program success and stakeholder engagement evaluation.

4.10.2 Strategic Frameworks and Policies

Evidence showed that digital transformation goals may not have been fully integrated or aligned with current strategic and policy frameworks (P4, P5). Data from the interviews revealed the need to align with broader organisational goals and eliminate fragmented digital efforts as aforementioned (P4, P5). Managers consistently expressed a desire for a unified digital strategy that aligned with **the dtic's** broader goals. They recognised the benefits of digitalisation but highlighted a lack of strategic guidance and resources (P4, P5). P4, P6, P9 and P16, mentioned the need for a comprehensive digital roadmap with clear objectives, departmental coordination, and budget allocation. P7 suggested that digitalisation efforts required a top-down approach, with specific strategies to integrate digital tools across the department.

Participants noted that visible leadership support for digital initiatives could have signalled commitment and motivated staff to engage with new tools and practices (P7, P11). Expert P10 recommended encouraging a culture of digital innovation and experimentation, which could reduce resistance and increase the department's adoption of digital tools.

4.11 Alignment of Themed Results with Research Questions and Propositions

The themed results directly relate to the research propositions linked to the research questions, as illustrated in Table 1.

Table 1*Alignment of Results Table*

Research Question	Proposition	Theme
How effective are the current export promotion tools and services utilised by the South African public sector?	Proposition 1: EP programmes that integrate future trends and technological advancements are more effective in supporting exporters in a rapidly evolving global trade environment.	Current Effectiveness of Export Promotion Tools Processes and Tools Outcomes and Impact
What are the key barriers faced by the South African public sector in adopting digital tools for export promotion?	Proposition 2: The key barriers faced by the South African public sector in adopting digital tools for EP are primarily rooted in organisational culture, limited digital skills, insufficient infrastructure and inadequate funding.	Barriers to Digital Adoption Cultural Barriers Organisational Barriers Infrastructure and Resource Challenges Digital Effectiveness Assessments Organisational Dynamics Digital Readiness Motivational and Structural Challenges Collaboration and Partnerships
Which digital tools are suitable for adoption within the South African public sector?	Proposition 3: The suitability and effectiveness of digital tools for the South African public sector is determined by their ability to influence and align with the sector's specific organisational, cultural, and operational contexts.	Opportunities for Digital Tools Automation and Integration Enhanced Communication Tools Future-Proofing Tools Training and Capacity Building Strategic Alignment Strategic Frameworks and Policies Metrics and KPIs

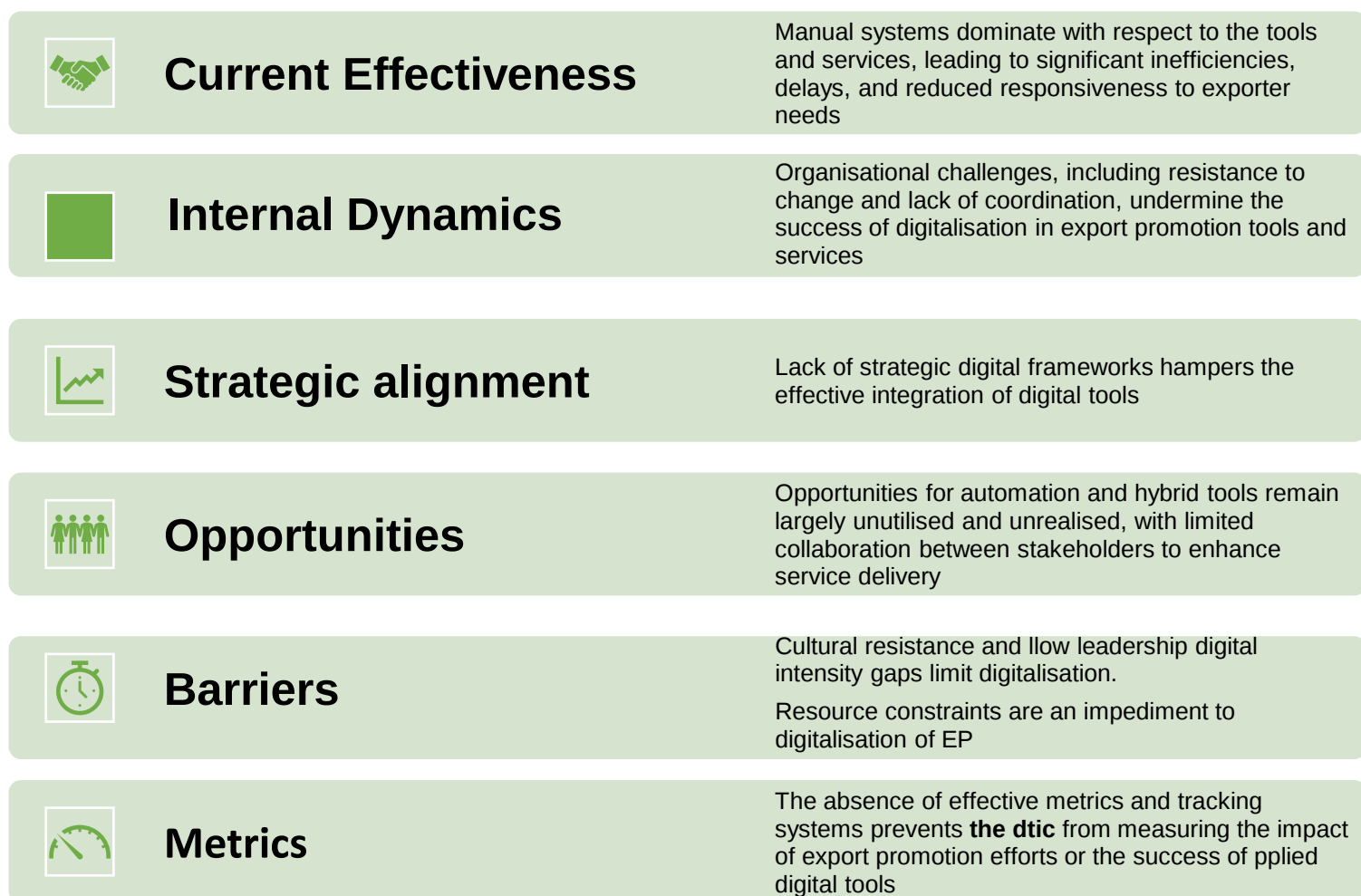
Note. Table 1 highlights the developed themes relating to the research questions and propositions.

4.12 Conclusion

Table 1 served as a concise overview of the findings. It provided a structured framework for understanding the key areas requiring attention and intervention, as reflected in the themes. This summary led to a discussion of the results in Chapter 5, where implications were explored.

Figure 4

Summary of Insights in Challenges



Note: Figure 4 summarised the challenges identified from the results of Chapter 4, highlighting critical insights across five themes. These included the current effectiveness of South Africa's public sector EP tools and services, the internal dynamics influencing the services, strategic alignment challenges, unrealised technological opportunities, and the absence of metrics to measure the success of the **dtic's** EP efforts.

These findings summarised in Figure 4 emphasised the significant challenges **the dtic** faced in digitalising its EP tools and services. Inefficiencies in current processes, compounded by organisational resistance to change and limited strategic alignment constrained progress. Furthermore, the absence of robust metrics to measure the impact of current EP tools and services highlighted a critical gap in **the dtic's** ability to

evaluate and improve its performance. Despite these barriers, the findings revealed untapped opportunities for leveraging automation and stakeholder collaborations to enhance service delivery. Addressing these challenges through targeted interventions may position **the dtic** to support exporters better and achieve its broader strategic export objectives in a digitalised trade environment.

CHAPTER 5. DISCUSSION OF RESULTS

5.1 Introduction

To explore the implications of the study's results, Chapter 5 adopted a systems thinking perspective, using Peter Senge's approach to the Iceberg Model. This model was used as a lens to present the implications of the findings, it allowed for a deep dive into the themed layers of the research findings by explicitly identifying some underlying causes and systemic issues hindering the effective digitalisation of EP tools and services. The chapter concludes with a discussion on an emerging theme, theme 6, that developed from data analysis.

5.2 Layers of Insights into Digitalisation of Export Promotion Services

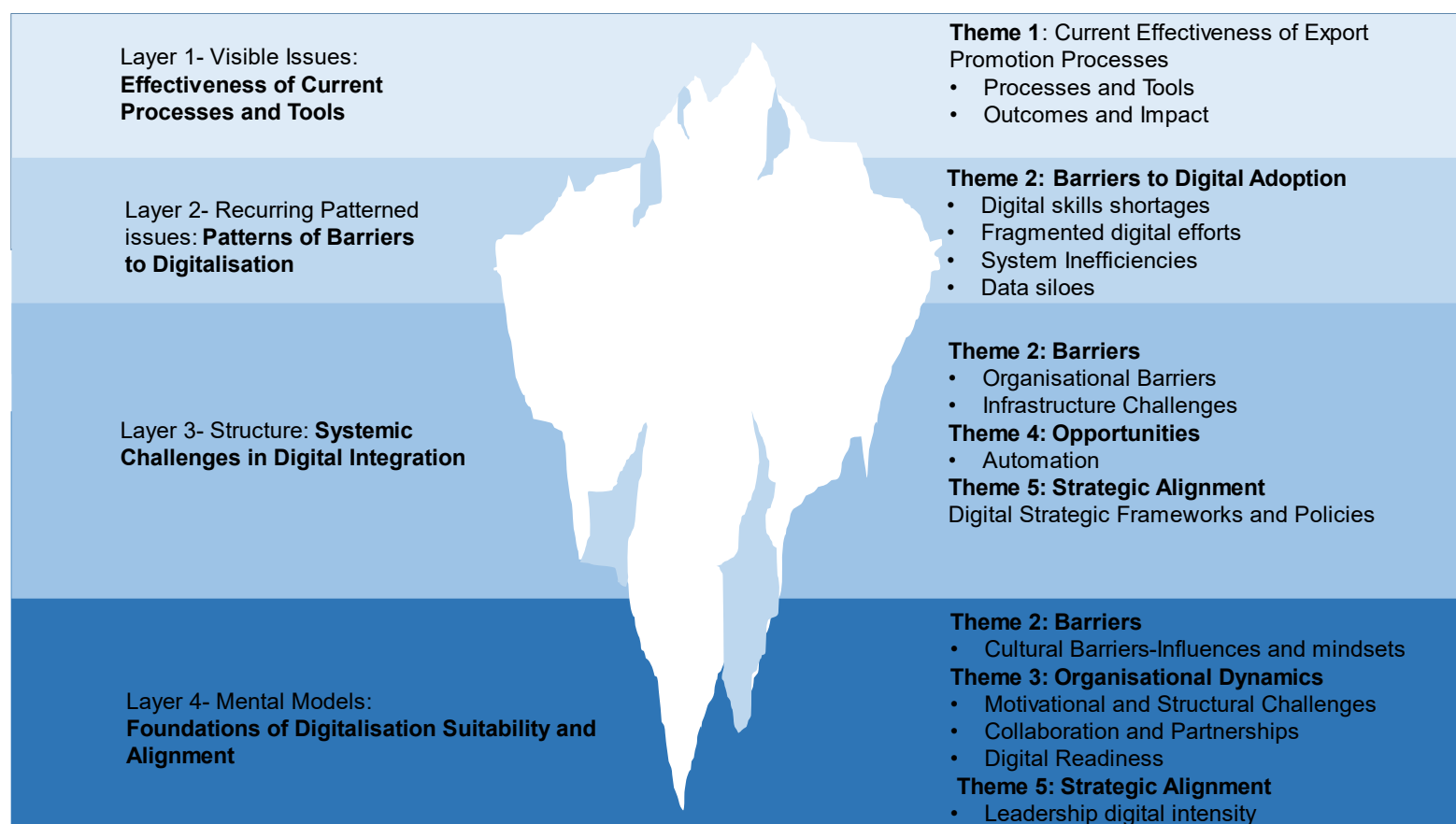
As aforementioned, the Technology Fallacy theory emphasises that digital tools alone are insufficient for effective digitalisation or business utopia. Instead, an in-depth understanding of the existing challenges, often embedded in the organisation's fabric and frequently overlooked, is paramount, including human, cultural, and systemic factors (Kane, 2019; Senge, 2006). Adequately addressing these factors helps guarantee progressive digitalisation efforts. Similarly, the iceberg model distinguishes between visible, surface-level factors and more profound, often hidden, underlying factors that impact organisations (McLean, Read, Hulme, Dodd, Gorman, Solomon, & Salmon, 2019). This alignment makes the iceberg model (see Figure 5¹) a practical

¹ According to Senge, P. M. (2006). *The fifth discipline: The art and practice of the learning organization* (C. Publishing, Ed. 2nd ed. ed.). Doubleday. , systemic issues are often misunderstood because they are observed only at the surface level of events. To illustrate this, Messer, J. (2020). The Systems "Iceberg". www.luminexusa.org/wp-content/uploads/2020/03/Systems-Thinking-Series-Week-2-Part-1-The-Systems-Iceberg.pdf , demonstrates that the visible tip of an iceberg is inseparably connected to its larger, unseen base, emphasising that the visible events at the tip can often be traced back to the deeper, systemic factors at the base. Similarly, challenges observed within an organisation can often be traced back to underlying patterns, systemic structures, and mental models that are not immediately observable. This highlights the importance of uncovering and addressing these hidden factors to create effective and sustainable change McLean, S., Read, G. J. M., Hulme, A., Dodd, K., Gorman, A. D., Solomon, C., & Salmon, P. M. (2019). Beyond the Tip of the Iceberg: Using Systems Archetypes to Understand Common and Recurring Issues in Sports Coaching. *Frontiers in Sports and Active Living*, 1(49). <https://doi.org/10.3389/fspor.2019.00049> , Senge, P. M. (2006). *The fifth discipline: The art and practice of the learning organization* (C. Publishing, Ed. 2nd ed. ed.). Doubleday.

approach for structuring the complex discussion and layering the themes according to the research findings. It reflects visible (technological tools and systems) and hidden (cultural resistance, organisational barriers) dynamics within this research's findings that may negatively impact any initiative, such as the digitalisation of EP tools and services.

Figure 5

Iceberg Model: Unveiling Underlying Themes in the Findings



Note. This iceberg model infographic was employed to systematically and visually illustrate the cross-cutting thematic findings of this research's results. It represents the layered relationship between visible (surface-level) and submerged (underlying) codes and, collectively, themes. The issues at the tip are easily identifiable and prioritised, while the submerged ones are foundational and often overlooked. The following section detailed the individual layered representation of the findings illustrated through the iceberg model.

5.2.1 *Effectiveness of Current Tools and Services*

The tip of the iceberg is what we see and notice daily (McLean et al., 2019). For this case study, this themed layer was represented by the noticeable outcomes of the export promotion services and their challenges, such as specific actions, tools and surface-level processes. They included the observable elements that defined operational workflows to provide export promotion services. It also included the results from the current tools and processes, such as outcomes and impact.

The prevailing processes and tools were constrained, as revealed during data collection. They were characterised by a lack of automation, a lack of tracking mechanisms, decision-making bottlenecks, fragmented processes, and a lack of awareness of the scheme, to mention a few. These directly represented the visible symptoms of the system's challenges, highlighting operational inefficiencies and surface-level challenges that constrained export promotion digitalisation efforts.

Naturally, these were symptoms that were quickly noticed and mentioned by the participants of this study, as presented in the results chapter. These symptoms can also be linked to the findings of previous studies that describe the South African public sector as grappling with outdated technical infrastructure and limited technical resources (Cloete, 2023; Hofisi & Chigova, 2023; Wilson & Mergel, 2022). However, studies explicitly focusing on the export promotion efforts of **the dtic**, such as those examining the EMIA tool. Fihlani et al. (2023) and Scholtz (2019) did not directly address the challenges of the digitalisation of these export promotion tools.

a. *Implications*

A reactive approach is often employed when dealing with surface-level events (Kim, 1994). Consequently, Senge, Hamilton and Kania (2015) assert that focusing solely on surface-level challenges as a solution often addresses only the symptoms of the problem, resulting in effects that may not be long-lasting or worsening the underlying issues. The implications are that organisations such as **the dtic** may thus rush to address the symptoms of inefficient systems by implementing digital tools without delving deeper into the root causes contributing to the stagnation of digitalisation efforts for export promotion work. This notion aligns with the Technology Fallacy theory, which emphasises that digitalisation is not just about the tools but relates deeper to the organisational context (Kane, 2019).

However, if these challenges are not addressed systematically, the implications are that significant inefficiencies are likely to persist within the department's export promotion services (Stermann, 2001). Such inefficiencies hindered operational effectiveness and created bottlenecks in many areas, such as stakeholder or data management. These bottlenecks likely had a negative domino effect on the department's decision-making capabilities. Additionally, the inability to deliver visible improvements might have eroded trust and confidence in the system among the internal and external stakeholders of **the dtic**. Consequently, addressing surface-level issues is necessary but insufficient without tackling underlying systemic problems. A balanced approach to short-term problem-solving and long-term value creation remained paramount (Senge et al., 2015).

b. ***Alignment of Findings with Research Themes, Questions, and Propositions***

This discussion represents theme one and research question 1 and reflects the effectiveness of current export promotion processes, focusing on technology integration and trends. It examines how the South African public sector utilises its tools and methods.

Furthermore, this analysis addressed proposition 1, which postulated that EP programmes integrating future trends and technological advancements are more effective in supporting exporters in a rapidly evolving global trade environment. Incorporating digital technologies could have significantly enhanced the public sector's ability to support exporters and address existing system inefficiencies.

5.2.2 Patterns of Barriers to Digitalisation of Export Promotion Services

Patterns are recurring events or challenges that emerge over time and represent systemic behaviours or trends that occur repeatedly (Kim, 1994). Recurring patterns in the research results highlighted human resource challenges, fragmented or sporadic digital efforts and system inefficiencies from lack of integration. These patterns were also evident in the reviewed studies that discuss these issues plaguing the public sector at large (Cloete, 2023; Hofisi & Chigova, 2023; Jakoet-Salie, 2020; Kuldosheva, 2021; Maremi et al., 2022; Wilson & Mergel, 2022). These recurring patterns suggested internal systemic issues where deep-seated trends impacted

export promotion services. The lack of digital skills and awareness meant that digital capacity-building efforts had not been sufficiently prioritised at **the dtic**, leading to resistance or ineffective use of digital tools for export promotion work, as highlighted in the results. Scholtz (2019) also found the issue of human resource constraints a challenge at **the dtic**.

a. ***Implications***

Fragmented digital efforts, system inefficiencies, and data siloes showed significant implications for the effectiveness of export promotion initiatives as well as their digitalisation, thereof. These issues may have hindered seamless communication and coordination across branches of **the dtic** and with key stakeholders such as the exporters. As captured in the research findings, this broken communication led to frustrations among exporters, duplicated efforts, and wasted time. Additionally, data siloes likely limited the ability to leverage insights from comprehensive datasets collected from the export value chain, resulting in restricted decision-making and a lack of a unified strategy, as highlighted in the results of the study.

Finally, fragmented digital efforts may have contributed to inconsistent user experiences for stakeholders, frustrating exporters and reducing trust in the system, as reflected in the study results. Addressing these challenges is critical to achieving a cohesive, efficient, data-driven approach to export promotion services. However, an understanding of other underlying issues is still warranted.

b. ***Alignment of Findings with Research Themes, Questions, and Propositions***

This discussion represents theme two and research question 2 which addressed barriers to digitalisation. Additionally, this analysis supported Proposition 2, which asserted that key barriers to adopting digital tools in the South African public sector stemmed primarily from organisational culture, limited digital skills, and insufficient infrastructure. These were partially visible but often overlooked in favour of immediate fixes for more apparent issues, such as the lack of and demand for digital tools. The implications of not leveraging systematic solutions when resolving these recurring patterns are that the public sector risks perpetuating the same cycle of inefficiencies in its export promotion endeavours, regardless of investments in surface-level solutions or quick fixes (Sterman, 2001).

5.2.3 *Systemic Challenges in Digital Integration*

This themed layer reflects more profound structural challenges involving systemic factors that shape organisational behaviours and patterns, essentially, how the organisation is organised (McLean et al., 2019). In this case study, the results revealed structural challenges, including organisational barriers, infrastructure limitations, and a lack of strategic alignment mirrored by the lack of digital strategic frameworks and policies. These structural challenges significantly impact export promotion systems and thus require urgent attention, which involves long-term investment and planning (Kim, 1994).

These barriers manifested themselves in consistent limitations in physical and financial resources and gaps in adequate and relevant digital strategies. These issues were also reflected in the reviewed literature by Hofisi and Chigova (2023); Jakoet-Salie (2020); Maremi et al. (2022) and Cloete (2023). Mountasser and Abdellatif (2023) highlighted that strategy development and implementation are gaps within government. Again, while the reviewed studies on EMIA discussed export promotion strategies, they did not specifically address strategies aligned to digital technologies within **the dtic's** export promotion services (Hofisi & Chigova, 2023; Scholtz, 2019). The absence of this finding could be explained by the fact that these studies did not address digital strategy or the digitalisation of export promotion services.

a. *Implications*

The implications of the lack of adequate digital strategy development and implementation exacerbated challenges such as infrastructure and resource limitations, uncoordinated adoption of digital tools, and the inability to measure the progress and effectiveness of any digital efforts. Moreover, while the literature highlights the importance of measurement for digitalisation efforts as a guiding factor for effective digitalisation (Mountasser & Abdellatif, 2023) participants did not mention such a measurement tool. It has been identified as an emerging theme, reflecting a potential gap in practical awareness or prioritisation of digitalisation efforts. Despite its recognition in the literature, this lack of emphasis on measurement by participants has significant implications for the digitalisation of export promotion services.

The implication of not having robust measurement frameworks is that **the dtic** faced challenges in evaluating the effectiveness of digitalisation efforts (Mountasser &

Abdellatif, 2023). In addition, without the necessary metrics, **the dtic** may have failed to align with international export goals or ensure efficient resource allocation. This gap also hindered accountability for digitalisation efforts within the leadership structures; it hindered effective stakeholder engagement within the export value chain and the ability to scale digital initiatives. Furthermore, this gap highlighted a disconnect between what theory presents and what is practised, which presents opportunities for future research to develop comprehensive measurement tools and bridge this gap. Addressing this issue is critical for driving evidence-based decision-making and achieving sustainable digitalisation outcomes in export promotion.

On the other hand, resource and infrastructure challenges limited the scalability and sustainability of solutions, often reinforcing siloed operations and fragmented systems as well as sporadic digital efforts, as evidenced by patterns within **the dtic**. It is evident that structural issues are critical bottlenecks as event generators; resolving them is necessary for scalable, long-term solutions (Jackson, 2019). In addition, effective digital strategy development presents untapped opportunities that would work as digitalisation enablers for **the dtic**.

b. ***Alignment of findings with Research Themes, Questions, and Propositions***

This layer corresponded to part of Theme 2 on barriers, Theme 4: Opportunities and Theme 5: Strategic Alignment. It addressed research question 2 by examining the barriers that hinder digitalisation, which overlapped with research question 3, linking it to the need for shifting mental models to address structural and digitalisation gaps. Additionally, this analysis supported proposition 2, which asserted that key barriers to adopting digital tools for export promotion in the South African public sector stemmed primarily from organisational culture, limited digital skills, and insufficient infrastructure.

5.2.4 Foundations of Digitalisation Suitability and Alignment

Mental models are at the base of the iceberg and represent the belief system, assumptions, or mindsets that drive the system's structure and operations. They are people's worldviews within a system (Senge, 2006). These deep-rooted ideologies influence the creation and maintenance of structures that influence other layers of the

iceberg (Kim, 1994; McLean et al., 2019). In this case study, these are the **dtic**'s foundational organisational perspectives on collaboration and partnerships, motivational and structural challenges, digital readiness, cultural norms and mindsets influenced by leadership digital intensity. Digital intensity is "an important aspect of digital transformation, which refers to the number of areas managed using digital solutions, transformation techniques, or strategies" (Kludacz-Alessandri, Hawrysz, Żak, & Zhang, 2025). In this context, leadership digital intensity is understood as the degree to which leaders actively and intentionally engage with, lead, prioritise, and incorporate digital transformation efforts into organisational strategies, operations, and culture, thus driving the overall digital intensity of the organisation.

The internal cultural norms and mindsets reflected in the perceptions and experiences of the participants need to undergo systemic transformation and digital strategic alignment to effectively embrace and adapt to digitalisation trends and internal efforts (Senge, 2006). Since the strategic direction is often shaped by underlying beliefs, assumptions, and values about how an organisation should function, these must be appropriately aligned with digitalisation objectives (Jackson, 2019). According to Senge et al. (2015), collaborative efforts with partners are essential for progress, and they often reflect deeply held beliefs and assumptions about the importance of teamwork, shared goals, and collective problem-solving. Furthermore, leadership digital intensity at **the dtic** appeared to have been influenced by incomplete or underdeveloped underlying beliefs, values, and attitudes regarding the importance and role of technology in the workplace. Consequently, these needed to be re-evaluated and adjusted accordingly.

a. ***Implications***

Constraints in implementing a well-developed strategy risked reinforcing fragmented mindsets within **the dtic**, potentially hindering cohesive decision-making and strategic alignment. Fragmented mindsets likely contributed to a continued cycle of inefficiencies, duplicated efforts, fragmented digitalisation efforts, and misaligned workflows, which hindered the full potential of digitalisation efforts for export promotion work. Therefore, there is an urgent need for high-level strategies influenced by resilient and agile mindsets (McLean et al., 2019). At **the dtic**, decisions needed to be driven by reasonable assumptions about technology's value and role; Beliefs about the importance of working collectively required to be strengthened; Cultural attitudes

towards change and innovation needed to be adjusted; Perceptions about **the dtic's** preparedness for digitalisation needed enhancement; Motivational systems needed to be put in place; and leadership digital intensity required improvement. Mental models shape all other levels. Changing these foundational beliefs is critical for sustainable digital transformation and systemic change within **the dtic** (Jackson, 2019; McLean et al., 2019; Senge et al., 2015).

Additionally, fostering mindsets that prioritise enhanced communication tools to enable seamless collaboration would be essential to address issues raised by the research participants. Embracing automation and broader integration to streamline workflows, boost productivity and cultivate a mindset of continuous learning through training and capacity-building programs to reinforce the lack of digital skills is paramount (McLean et al., 2019). Without aligned strategies and frameworks, efforts to implement digitalisation in EP tools and services will remain disjointed and unsustainable.

b. ***Alignment of findings with Research Themes, Questions, and Propositions***

This layer corresponds to Theme 2 on cultural barriers, Theme 3: Organisational Dynamics and Theme 5: Strategic Alignment. It addresses research questions 2 and 3 by examining digitalisation barriers and suggesting potential solutions, mainly through shifting mental models. As applied in this research, the iceberg model highlights that tool suitability depends on alignment with systemic structures and support for cultural shifts (mental models); a mismatch can lead to limited success or adoption. This analysis further supports proposition 3, which asserts that the effectiveness of digital tools in the South African public sector relies on their ability to align with the sector's organisational, cultural, and operational contexts.

5.3 Summary of Discussion

Table 2

Summary of Analysis

Layer	Proposition	Findings	Implications
Layer 1: Effectiveness of Current Tools and Services	Prop. 1: EP programmes integrating future trends and technological advancements are more effective in supporting exporters in an evolving trade environment.	The research findings supported this proposition, with evidence suggesting that exporters would benefit from technologically advanced EP tools. However, adopting such tools remained inconsistent due to strategic and operational gaps within the public sector. There were visible issues like inefficiencies in processes, lack of integration, and suboptimal digital tools.	Visible issues point to deeper structural and cultural issues that limit the effectiveness of processes and tools. Assessing and dealing with effectiveness involves identifying inefficiencies and misaligned structures.
Layer 2: Patterns of Barriers to Digitalisation of Export Promotion Services	Prop. 2: Barriers in the SA public sector stem from organisational culture, limited digital skills, inadequate infrastructure, and insufficient funding.	The research findings confirmed this proposition, highlighting recurring barriers such as organisational culture, skills shortages, infrastructure constraints and limited funding as significant obstacles to digitalisation in EP programmes.	Addressing these requires system-wide interventions and leadership-driven cultural shifts. Unaddressed digital skills gaps and fragmented systems reinforce siloed operations and inefficiencies, hindering cohesive progress of digitalising EP tools and services.
Layer 3: Systemic Challenges in Digital Integration	Prop. 2: Barriers in the SA public sector stem from organisational culture, limited digital skills, inadequate infrastructure, and insufficient funding.	Other recurring barriers included system inefficiencies, misaligned workflows, fragmented efforts and the absence of comprehensive digital strategies.	Structural challenges are bottlenecks; fragmented workflows and lack of strategic alignment may continue to hinder the scalability and sustainability of digitalisation. Addressing these requires system-wide interventions and leadership-driven cultural shifts.
Layer 4: Foundations of Digitalisation Suitability and Alignment	Prop. 3: The suitability of tools is determined by their ability to align with organisational, cultural, and operational contexts.	The results supported this proposition, indicating that digital tools can be practical, but their success depends on their alignment with organisational and operational contexts. Findings showed that digital tools were implemented with inadequate workflows or unclear objectives and thus struggled to uphold digitalisation. Foundational resistance to change, misaligned visions, and leadership gaps were impediments. Additionally, the absence of measurement frameworks limited the perceived utility of digital tools.	Suitable tools must address structural gaps (integration, automation) and align with a shift in mental models (supporting innovation and collaboration). System readiness must be assessed to ensure tools align with structural needs and cultural expectations. Overcoming cultural resistance and outdated beliefs is critical; shifting mindsets and strategic leadership are vital for systemic digital transformation.

Note: This table incorporates the insights from the iceberg model to outline the hierarchy of challenges and their strategic implications.

5.4 Emerging Theme 6: Impact of Digitalisation on Export Promotion

While the primary focus of this study was on the challenges, opportunities, and dynamics associated with the digitalisation of EP tools and services, a different theme emerged during the research process, which was of critical importance. This emerging theme focused on measuring the impact of the digitalisation efforts of EP tools and services and **the dtic** at large. Although this theme was not explicitly stated during data collection, its lack and significance were evident in the fragmented nature of the digital initiatives as revealed during data collection. The absence of a measurement tool emphasised the necessity of considering a standardised measurement framework to guide the structuring and evaluation of digitalisation efforts in EP to encourage sustainable digitalisation. Future research could explore the development or adaptation of such an instrument, depending on whether existing standardised tools are applicable in a government context.

This theme is essential in understanding the effectiveness of implemented digital strategies, tools, and guiding policies. This theme ensured that the future roadmap developed by this research evolved from theoretical underpinnings to actionable insights, serving as a baseline for future research and improvements in EP tools and services. It connects digitalisation to measurable and tangible results, making it vital for validating and refining digitalisation initiatives over time.

This emerging theme ties into other themes discussed in Chapter 4, such as Theme 1 (Current Effectiveness of Export Promotion Tools and Services). Without a formal way to measure digitalisation outcomes instead of just measuring the EMIA instrument's outcomes, it is not easy to evaluate the effectiveness of digital tools and services. It also ties in with theme 3 (Opportunities for Digital Tools and Solutions). Impact measurement of adopted digital tools could help identify which tools provide the least or most value and justify further investments. Finally, it ties in with theme 5 (Strategic Alignment with Digitalisation). Developing metrics aligns with the goal of ensuring that digitalisation efforts contribute to long-term strategic objectives.

5.4.1 *Metrics and Key Performance Indicators (KPIs)*

Defining the quantitative and qualitative KPIs to evaluate the success of digitalisation of EP tools and services is essential. These could include the increase in export volumes linked to digital initiatives, evident reduction in time/cost for exporters and **the dtic** due to digital tools, and improvement in exporter satisfaction rates measured by an online survey or other reviewing tools.

5.4.2 *Research Methodologies*

Different approaches can be used to conduct empirical studies and surveys to gather relevant data and assess the effectiveness of the digitalisation of EP tools and services. These could include longitudinal studies to track progress over time. It could also be comparative studies between provinces or industries adopting digitalisation at varying levels, for example, between Western Cape and Eastern Cape or between the food and cosmetics industries. As aforementioned, it could also include surveys and interviews with exporters and other key stakeholders in the export value chain to gauge impact perception.

5.4.3 *Digitalisation Effectiveness Assessment*

These could include specific frameworks and tools for assessing digitalisation efforts' return on investment (ROI). Factors to be analysed can range from adoption rates of digital tools by exporters, success stories and case studies showing improved trade outcomes, and the effectiveness of training programs in enhancing the digital readiness of employees.

5.5 Conclusion

This layered discussion helped to bridge the findings with systemic insights. This connection strengthened the applicability of the theoretical framework underpinning this study by showing that solving visible challenges requires addressing systemic barriers and foundational mindsets.

Furthermore, the findings at each layer revealed a progression of challenges, from visible symptoms to deeper systemic issues. The implications emphasised that while visible-layer fixes can address immediate needs, sustainable digitalisation requires

addressing the root causes, structural gaps and mental models that hinder progress. Finally, identifying an emerging theme wrapped up Chapter 5 by highlighting a critical element previously underexplored relating to the digitalisation of EP by the South African public sector. This theme provided a new perspective that connects the study's findings to broader theoretical frameworks and practical implications. These insights in Chapter 5 guide targeted recommendations and strategic interventions for the long-term digitalisation success of EP tools and services discussed in Chapter 6.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

Chapter 6 brought together the study's key insights as a basis for providing actionable recommendations. It began by addressing the conclusions to the research questions and then continued to highlight the study's theoretical, practical, and policy contributions. These contributions illustrated the significance of the study within the broader context of the digitalisation of export promotion (EP) tools and services within the public sector in South Africa. Building on these insights, the chapter presented a high-level future roadmap to guide further efforts in the effective digitalisation of EP tools and services by **the dtic**. The chapter concluded with practical recommendations for future research.

6.2 Conclusions

6.2.1 *Effectiveness of the Current Export Promotion Tools and Services by the South African Public Sector*

The first research question in this study was on the effectiveness of the current export promotion processes and tools utilised by the South African public sector. This study found that prevalent Export Promotion tools and services were partially effective and somewhat inefficient due to the limited use of digital tools such as online trade portals and virtual communication platforms. The Export Marketing and Investment Assistant (EMIA) scheme was partially effective in assisting companies with market access, however, manual systems dominated, causing delays and reduced responsiveness to exporters' needs. Technological tools were inconsistently adopted due to operational gaps, insufficient integration, and poor alignment with modern trade demands. While exporters could have benefited from advanced tools, structural and cultural barriers limited their adoption with the public sector.

This research emphasised that inefficiencies were symptoms of deeper systemic issues, such as misaligned workflows, digital strategy gaps, low leadership digital intensity, and fragmented digital efforts. In identifying these underlying barriers, the study bridged the gaps in understanding the root causes of the partial effectiveness and inefficiencies in the current export promotion tools and services.

6.2.2 *Key Barriers Faced by the South African Public Sector in Adopting Digital Tools for Export Promotion*

The second research question in this study investigated the key barriers faced by the South African public sector in adopting digital tools for export promotion. This study found that multiple barriers hindered the adoption of digital tools in the South African public sector. Organisational culture presented significant obstacles, including resistance to change and low leadership digital intensity. A shortage of digital skills, inadequate infrastructure, and insufficient funding exacerbated the problem, whilst fragmented systems and workflows created inefficiencies. This research confirmed that these barriers aligned with earlier findings from reviewed literature but added new insights into how the absence of cohesive digital strategies prevented progress. Addressing these barriers required leadership-driven cultural shifts, improved infrastructure, and the development of digital readiness frameworks to guide system-wide interventions.

6.2.3 *Suitable Digital Tools for Adoption within the South African Public Sector*

The third research question in this study explored suitable digital tools for adoption within the South African public sector. This study found that the suitability of digital tools depended on their alignment with the public sector's organisational, cultural, and operational contexts, which supports the chosen Technology Fallacy Theory. This research highlighted the importance of aligning digital tools with strategic frameworks and operational needs, emphasising leadership engagement and cultural readiness for successful implementation. It emphasised how integrating these digital tools with cohesive strategies can overcome long-standing barriers and drive sustainable digitalisation within the South African public sector. Identified practical tools included automation systems to reduce inefficiencies, integrated digital platforms to eliminate fragmentation, and enhanced communication tools to improve collaboration. Training and capacity-building programs were found to be critical for addressing skills gaps, while future-proofing solutions ensured adaptability to evolving trade environments.

Furthermore, existing research explored in this study highlighted digital tools successfully adopted in other public sectors, providing a foundation for evaluating their

relevance to the South African context. It also identified various digital tools that align with the export promotion initiative, providing a basis for exploring their adoption.

6.3 Contributions

The following contributions aligned with the identified significance of the study outlined in Chapter 1. This significance was established by developing evidence-based knowledge to inform strategic decisions to improve export promotion through effective digitalisation, particularly in South Africa.

Practical contribution

This study examined the digitalisation gaps within **the dtic's** export promotion initiatives, addressing a gap overlooked in prior research that focused primarily on the effectiveness of EP tools like EMIA. Since the insights are specific to **the dtic**, the study offers a practical understanding of digitalisation in export promotion within the South African context. Future research can extend to provinces, agencies, or industries.

In addition, because this study focused specifically on the digitalisation of export promotion services rather than on EMIA as an instrument, its findings introduced a new dimension by highlighting the role of digital tools in enhancing service delivery, streamlining processes, and addressing systemic challenges beyond the scope of traditional export promotion initiatives.

Theoretical contributions

This study addressed a previously overlooked gap in the literature, where challenges related to the lack of digitalisation within **the dtic's** export promotion initiatives were not explicitly examined. By exploring the barriers to digitalisation and identifying the underlying causes through theoretical frameworks such as the Technology Fallacy, this research provided new insights into systemic challenges the public sector faces.

Policy Contribution

Finally, the findings contributed to the field by offering a layered understanding of the digitalisation barriers specific to export promotion at **the dtic**. The study's results

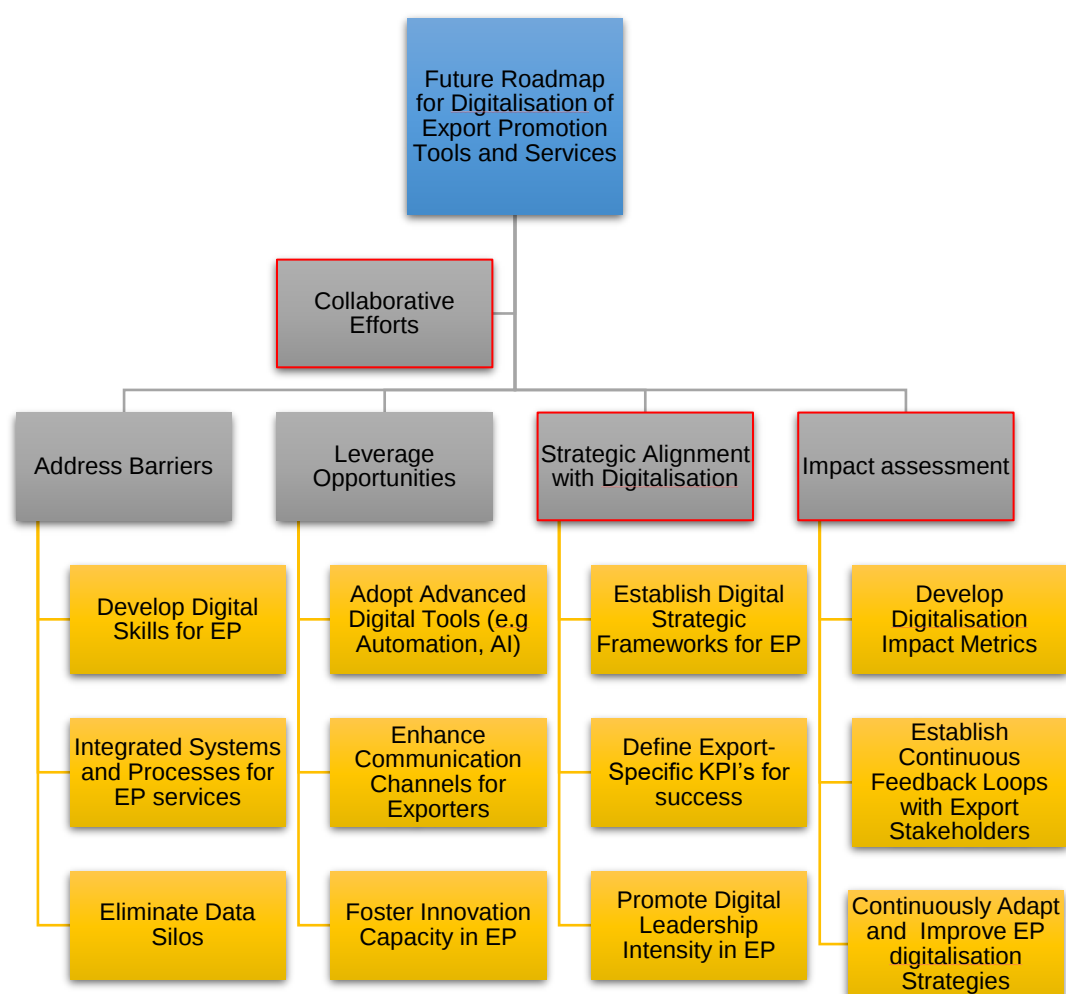
can inform future strategies, policies, and digital tools aimed at enhancing the effectiveness of public sector export promotion initiatives. The potential to adapt **the dtic's** strategies presents an opportunity to inform policies to broaden the impact of digital tools in other government or industry settings.

6.4 Strategic Recommendation

This study recommended a high-level Future Roadmap for the digitalisation of export promotion tools and services (see *Figure 6*) to address the research problem of inadequate digitalisation, seemingly contributing to the South African government's partially effective and somewhat inefficient EP initiatives. The roadmap is designed to contribute to addressing challenges such as organisational culture, resistance to change, limited digital skills, inadequate infrastructure, and low digital leadership intensity, to mention a few. This roadmap also aims to support public sector leaders, policymakers, and other stakeholders in effectively navigating the digitalisation of export promotion services.

Figure 6

High-Level Future Digitalisation Road Map



Note. This high-level future roadmap provides a structured plan built around four interconnected pillars: Addressing Barriers, Leveraging Opportunities, Strategic Alignment, and Impact Assessment.

The roadmap addresses current challenges and provides a foundation for future collaborative efforts and measurable progress in the digitalisation of export promotion services. Future research could focus on developing a phased implementation plan and piloting this roadmap to assess its long-term impact. A benchmarking exercise that explores technologies other governments and export promotion agencies employ to promote exports, is recommended. This report has provided some application examples and explored different technologies that could be instrumental in the digitalisation of export promotion services for enhanced efficiency.

6.5 Recommendations for Future Research

As this research focused on South Africa, subsequent studies could conduct a comparative analysis with other provinces and comparable government departments internationally or in leading digital trade economies globally. This broad approach would allow for benchmarking similarities and differences in those respective environments to identify best practices and lessons for South Africa. Furthermore, such practical studies may also focus on developing and testing measurement tools, as informed by the emerging theme, to guide and evaluate the impact of digitalisation efforts in export promotion, reducing fragmentation and improving service delivery by the public sector.

Future research could adopt a mixed-methods approach, integrating quantitative methods such as surveys or statistical analyses with qualitative insights to provide a more comprehensive and varied understanding of digitalisation efforts in export promotion services.

Finally, future researchers could also explore the adoption of the Systems Thinking approach in driving effective digitalisation within export promotion and broader government operations. This approach could provide a holistic framework to address complex interconnected challenges, enhance collaboration, and develop sustainable, scalable digital solutions. Furthermore, this approach may help researchers understand why digital strategy development and implementation remains a gap within government. In this manner, the government may be able to explore the role of leadership digital intensity and innovation culture for driving successful digitalisation efforts.

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APPENDIX A: PARTICIPANT INFORMATION SHEET

Hloniphile Nkiwane
Assistant Director
HNkiwane@thedtic.gov.za/ 076 903 3634
10 September 2024

Dear Potential Participant,

My name is Hloniphile Nkiwane. I am a Masters student at the University of Witwatersrand, Johannesburg. My Supervisor is Dr. Euphemia Godspower-Akpomiemie. I am conducting a study about digitalisation within the public sector. The study title is "Effectiveness of Digitalisation of Export Promotion Services in the public sector."

The purpose of this study is to explore the integration and impact of digital technologies within the Department of Trade, Industry, and Competition (**the dtic**) with a focus on understanding the organisational cultural and leadership role associated with digitalisation efforts.

You have been chosen for this study because of your expertise and valuable insights into the digitalisation efforts of export promotion services at **the dtic**. Your participation involves taking part in an interview, which will last approximately 45-60 minutes. During the interview, I will ask you about your experiences and perspectives on digital technology trends, barriers to digitalisation, and the suitability and impact of digital tools for export promotion.

With your permission, I would like to audio record the interview. This data will be stored in pass-word protected devices. Only the researcher will have access to the data.

Participation in this study is voluntary, and you may choose to withdraw at any time without any consequences. You do not have to take part. You can stop being in the study at any time. You do not have to answer any questions if you do not want to. You will not get any direct benefits if you choose to join the research study. You will not lose any services, benefits or rights you would normally have if you decide not to join. Taking part in the research study will not cost you anything. You will not be paid for being in this research study. The information you provide will be kept confidential and used solely for the purposes of this research. When I share the results of the study, I will not include your name, all data will be anonymised to protect your identity.

The risks for this research study are no more than what happens in everyday life.

With your permission, other researchers may use the data collected from this research study, but your name and any other personal information will not be used or passed on.

The insights gained from this study will contribute to a better understanding of the digitalisation efforts within **the dtic** and provide recommendations for improving these

processes. Your contribution is highly valued and will play a crucial role in the success of this research.

This research study will be written up as a research report. The report will be available on the university library website. If you would like to receive a summary of this report, I will be happy to send it to you.

If you have any questions during or afterwards about this research study, feel free to contact me or my supervisor on the details listed below. If you have any concerns or complaints about the ethical procedures of this research study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical) telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za.

Thank you for your consideration. I look forward to your participation.

Yours Sincerely,

Researcher:

Hloniphile Nkiwane, 0608823T@students.wits.ac.za, 076 903 3634

Supervisor:

Dr. Euphemia Godspower-Akpomiemie,
Euphemia.godspower-akpomiemie@wits.ac.za, +27 11 717 3287

APPENDIX B: PARTICIPANT CONSENT FORM

Consent Form

Title of project: Effectiveness of Digitalisation of Export Promotion Services in the Public Sector

Name of researcher: Hloniphile Nkiwane

I,, agree to participate in this research project.

I agree to the following: (Please circle the relevant options below)

The research study was explained to me. I understand what this study is about.	YES	NO
--	-----	----

I understand that I can volunteer to take part in the study.	YES	NO
--	-----	----

I agree that the interview/observation may be audio-recorded	YES	NO
--	-----	----

I agree that direct quotations from my interview/ observation may be used by the researcher in their research report.	YES	NO
---	-----	----

I agree that my participation will remain anonymous (my name or other identifying data will not be used by the researcher in their research report.	YES	NO
---	-----	----

I agree that other researchers may use the information I provide in my interview/observation (depending on their own ethics clearance being obtained) but my name and any personal information will not be used or passed on	YES	NO
--	-----	----

..... (signature)

..... (name of participant)

..... (date)

..... (signature)

..... (name of researcher/person seeking consent)

..... (date)

APPENDIX C 1: INTERVIEW SCHEDULE FOR EMPLOYEES OF THE DTIC WORKING IN EXPORT PROMOTION

Interview Schedule

Introduction

• Thank you for agreeing to participate in this study. The purpose of this research is to explore the effectiveness of digitalisation in export promotion services within the South African public sector. Your insights and experiences are invaluable to this study.

Background Information

- Can you tell me about your role within **the dtic**?
- How long have you been working in this department?

Effectiveness of Current Export Promotion Processes and Tools

1. How do exporters access **the dtic** services and how are they supported in reaching offshore markets?
2. What criteria do you use to assess client access to export promotion services?
3. How would you rate the effectiveness of the current export promotion/ support processes and tools utilised by **the dtic**?
4. Can you provide specific examples where these tools have either succeeded or failed in supporting exporters?
5. What metrics or criteria do you use to assess the success of these export promotion/export support tools?
6. How do you think the dtic's organisational culture and leadership have influenced the adoption of digital tools in export promotion/ export support programs? Do you think the focus has been more on technology or people?
7. What digital tools and technologies are you currently using in your work?

Barriers to Digital Tool Adoption

8. In line with the idea that digitalisation is more about people than technology, what challenges related to organisational culture, skills, leadership or any other challenges do you think are hindering digitalisation?

9. How do you think leadership within **the dtic** has influenced these barriers?

Suitability of Digital Tools for Export Promotion

10. How effective do you think the current digital tools/ tools are in enhancing export promotion services?

11. In your opinion, how well do these tools fit the organisational and/ global context and needs of exporter and the department?

12. How has leadership played a role in shaping the department's readiness for digitalisation, considering that successful digitalisation often requires more focus on organisational change than on the tools themselves?

Personal Exposure to Digital Technologies

13. How would you describe your personal exposure to and usage of digital technologies?

14. In your experience, how does personal exposure to digital technologies influence their acceptance within your work environment?

15. What initiatives are in place to improve digital literacy and positive attitudes towards digital technologies among employees?

Closing

16. Do you have any suggestions for improving the digitalisation efforts within the dtic's export promotion initiatives?

17. Is there anything else you would like to add?

APPENDIX C2: INTERVIEW SCHEDULE FOR EMPLOYEES OF THE DTIC (OUTSIDE EXPORT PROMOTION)

Interview Schedule

Introduction

Thank you for agreeing to participate in this study. The purpose of this research is to explore the effectiveness of digitalisation in export promotion services within the South African public sector. Your insights and experiences are invaluable to this study.

Background Information

- Can you tell me about your role within **the dtic**?
- How long have you been working in this department?

Effectiveness of Current Export Promotion Processes and Tools

1. In your experience working within the department, how do you perceive exporters access the dtic services, and how are they supported in reaching offshore markets?
2. Although you are not directly involved in export promotion, how would you assess the overall effectiveness of the processes and tools used by the dtic to support exporters?
3. From your position, have you come across specific examples where the tools and processes for export promotion/broader departmental trade functions have succeeded or faced challenges in supporting exporters/public citizens?
4. What criteria or feedback, if any, does your unit or department consider when evaluating the success of these export promotion efforts/ or broader departmental trade functions?
5. How do you think the dtic's organisational culture and leadership have influenced digitalisation of export promotion programs or other programs of the dtic? Do you think the focus has been more on technology or people?
6. Which digital tools and technologies do you currently use in your role, and how do they impact or relate to the export promotion/ trade functions within the department?

Barriers to Digital Tool Adoption

7. In line with the idea that digitalisation is more about people than technology, what challenges related to organisational culture, skills, or leadership do you think are hindering digitalisation or any other challenges?
8. How do you think leadership within the dtic has influenced these barriers, both within your unit and more broadly?

Suitability of Digital Tools for Export Promotion

9. In your opinion, how effective are the current digital tools in supporting broader departmental trade functions, especially export promotion services?
10. How well do you think these tools fit the organisational context and the evolving needs of exporters and the department as a whole?
11. From your perspective, how has leadership played a role in shaping the department's readiness for digitalisation, considering that successful digitalisation often requires more focus on organisational change than on the tools themselves?

Personal Exposure to Digital Technologies

12. How would you describe your personal exposure to and usage of digital technologies?
13. In your experience, how does personal exposure to digital technologies influence their acceptance within your work environment?
14. What initiatives are in place to improve digital literacy and positive attitudes towards digital technologies among employees?

Closing

15. Do you have any suggestions for improving the digitalisation efforts within the dtic's export promotion initiatives?
16. Is there anything else you would like to add?

APPENDIX C3: INTERVIEW SCHEDULE FOR EXTERNAL STAKEHOLDERS

Introduction

Thank you for agreeing to participate in this study. The purpose of this research is to explore the effectiveness of digitalisation in export promotion services within the South African public sector. Your insights and experiences are invaluable to this study.

Background Information

- Can you tell me about your role in the export industry and your involvement with **the dtic**?
- How long have you been engaged in export activities, and how has your collaboration with **the dtic** evolved over time?

Effectiveness of Current Export Promotion Processes and Tools

1. From your perspective, how effective are the current export promotion processes and tools provided by the dtic?
2. What digital tools and technologies have you encountered or utilised in your interactions with export promotion initiatives in general? With **the dtic**? Did these significantly impact your export activities?

Barriers to Digitalisation

3. What barriers do you perceive the dtic faces in adopting digital tools for export promotion? (Anything specific? E.g. organisational culture, digital skills, infrastructure, or funding that you have observed or experienced?)
4. How have these barriers affected your interactions with the dtic's export promotion services?
5. How do you perceive the dtic's leadership has prioritised digital transformation in export promotion services?

Suitability of Digital Tools for Export Promotion

6. Which digital tools do you think would be most beneficial for the dtic to adopt, considering your needs as an exporter/industry player?
7. In your opinion, how well do these tools fit the organisational and global context and needs of exporters and the department?

Personal Exposure to Digital Technologies

8. How would you describe your exposure to and usage of digital technologies in your export activities?
9. In your experience, how does this exposure influence your expectations and interactions with public sector digital tools for export promotion?
10. What improvements would you suggest to enhance the acceptance and effectiveness of digital technologies within the public sector?

Closing

11. Do you have any suggestions for improving the digitalisation efforts within the dtic's export promotion initiatives?
12. Is there anything else you would like to add?

APPENDIX C4: OBSERVATION GUIDE

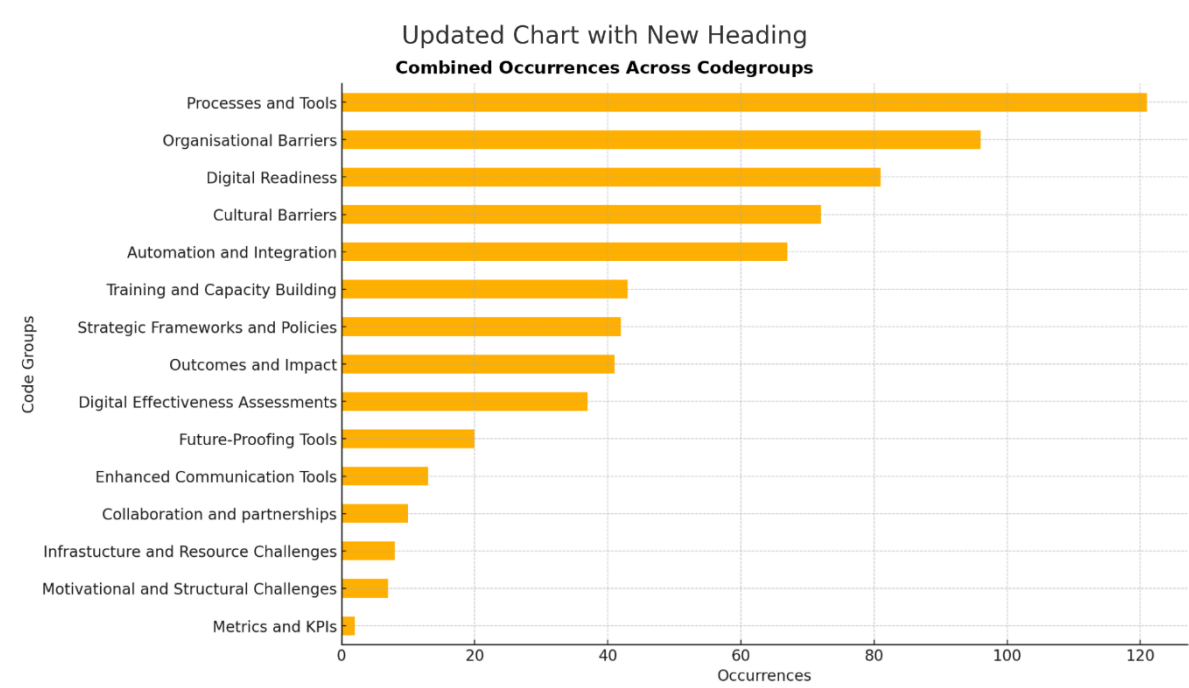
1. I noticed that you used certain to assist an exporter. Could you explain how this tool helps in your work?
2. Can you explain the typical process of supporting an exporter and how digital tools are used?
3. Are there any challenges you face when using the current system to provide support to exporters? If so, which parts are most difficult?
4. What do you do when the system isn't working as expected?
5. Do you feel this tool/system makes your job easier, or are there areas where it falls short?
6. What improvements in the system would you suggest to better support exporters?
7. When you receive a request from an exporter, how do you decide which resources or tools to use to assist them?
8. I noticed that you often check multiple systems completing a task. Is that a standard practice, or do you do it for specific cases?
9. Do your systems usually provide all the information you need to support exporters, or do you sometimes need to look elsewhere?
10. How do you stay updated on the latest export regulations and opportunities to share with exporters? Do you have systems that support with this?
11. What happened earlier when the system slowed down or you couldn't find certain data in the system? Does that happen often?
12. Are there any tasks in your export work that you think could be automated to save time?
13. How do you ensure the data you enter is accurate?
14. What do you do if you need to retrieve data quickly? Is the system usually fast enough?

ANNEXURE D: ANALYSIS TABLES

Frequency Data Table of Code Groups with meaning

Code Group	Experts	Exporters	Non-Managers	Senior Managers	Meaning
Automation and Integration	4	10	18	24	Streamline processes through technology to enhance EP efficiency and connectivity.
Collaboration and partnerships	3	3	1	3	Cooperation among stakeholders for mutual benefit in export promotion
Cultural Barriers	5	3	19	32	Challenges as a result of differing norms, values, and attitudes impacting digitalisation
Digital Effectiveness Assessments	2	11	8	16	Evaluating the success of digital tools in achieving desired export promotion outcomes, e.g. the dtic's website
Digital Readiness	8	5	23	38	The preparedness of the dtic to adopt and implement digital tools effectively
Enhanced Communication Tools	4	8	1	0	Utilising advanced technologies to improve interaction and information sharing with export stakeholders
Future-Proofing Tools	3	7	5	5	Implementing strategies and tools to ensure adaptability to future changes and trends
Infrastructure and Resource Challenges	1	1	4	2	Limitations in facilities, funding, or human resources impacting digitalisation in EP
Metrics and KPIs	0	0	1	1	Quantifiable indicators used to measure the performance and effectiveness of EP initiatives.
Motivational and Structural Challenges	1	1	4	0	Internal factors hindering enthusiasm and alignment within the dtic for digitalisation of EP.
Organisational Barriers	5	10	21	44	the dtic's obstacles that prevent seamless adoption of digital tools and practices
Outcomes and Impact	4	9	5	18	The measurable results and influence of EP initiatives
Processes and Tools	6	17	25	47	Procedures and technologies employed to achieve export promotion goals.
Strategic Frameworks and Policies	2	6	11	21	Strategies, guidelines or policies shaping the direction and execution of digital export initiatives.
Training and Capacity Building	3	4	17	16	Programs aimed at equipping the dtic employees with necessary digital skills.
Total	51	95	163	267	

Combined Code Occurrences



The bar chart shows in descending order the occurrence of code groups across all the interviews, highlighting the group with the most mentions.

ANNEXURE E: TURNITIN SCORE

_H Nkiwane_0608823T_Research Report_BUSA7480A_-1.docx			
ORIGINALITY REPORT			
7%	5%	7%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS
PRIMARY SOURCES			
1	wiredspace.wits.ac.za Internet Source	2%	
2	Mhelembe, K.. "The Relationship Between Supply Chain Risk, Flexibility and Performance in the South African Public Sector", Vaal University of Technology (South Africa), 2024 Publication	<1%	
3	doaj.org Internet Source	<1%	
4	core.ac.uk Internet Source	<1%	
5	Joseph Bamidele Awotunde, Kamalakanta Muduli, Biswajit Brahma. "Computational Intelligence in Industry 4.0 and 5.0 Applications - Trends, Challenges and Applications", CRC Press, 2025 Publication	<1%	
6	Magagula, Nothando Linnet. "Consumer Acceptance of Fintech Services in the South African Banking Sector: A COVID-19 Context.", University of the Witwatersrand, Johannesburg (South Africa), 2024 Publication	<1%	
7	Innocent Musonda, Erastus Mwanaumo, Adetayo Onososen, Retsepile Kalaoane. "Development and Investment in	<1%	

96

ulir.ul.ie
Internet Source

<1%

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ANNEXURE F: ETHICS APPROVAL

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg



Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/DB0608823T/731

This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below).

Project title	Effective digitalisation of export promotion initiatives by the South African public sector
Investigator / Researcher	Ms Hloniphile Nkiwane
Nature of Project	MM (Digital Business)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentiality.
Issue Date of Certificate	02/09/2024
Expiry date	Date of submission of the project / research report
Chairperson	Dr Ayanda Magida ☎ +27 11 717 3953 ✉ ayanda.magida@wits.ac.za

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

03/09/24

Date:

ANNEXURE G: PERMISSION LETTER FROM ORGANISATION



Private Bag X84, PRETORIA, 0001, the dtic Campus, 77 Meintjies Street, Sunnyside, 0002, Tel: (012) 394 0000
the dtic Customer Contact Centre local: 0861 843 384 International: +27 12 394 9500, www.thedtic.gov.za

Inquiries: Dr. A. Ontong
Telephone: (012) 394 5980
E-mail: AOntong@thedtic.gov.za

Ms. Hloniphile Nkiwane
5339 Nanaberry Street
Brooklands Estate 1
Centurion
0157

Dear Ms. Nkiwane,

RE: REQUEST FOR APPROVAL TO CONDUCT RESEARCH AT the dtic

Your request to conduct research at the Department of Trade, Industry and Competition (the dtic) with the topic “*Effective Digitalisation of Export Promotion Initiatives by the South African Public Sector*” refers.

the dtic supports your research request towards a Master of Management in Digital Business at the University of the Witwatersrand and is willing to provide you with the necessary support to make your studies a success. We trust that your recommendation will assist the Public Service of the Republic of South Africa at the National Government level.

Kindly note that approval has been granted on the following conditions:

- a) That you complete a Confidentiality Declaration form to ensure compliance with Departmental policies;
- b) That you participate in a briefing discussion with the Vetting Unit before the commencement of the research;
- c) That you provide the dtic with a detailed research plan and draft questionnaires, surveys and/or interview questionnaires (where applicable); and
- d) That you submit a copy of your research report once you have published the final document.

Should you have further inquiries regarding the content herein, please contact the Director of Human Resource Development, Dr. Angie Ontong at 012 394 5980 or email AOntong@thedtic.gov.za.

Yours sincerely,

NJ Madula
CHIEF DIRECTOR: ERPC
DATE: 21/08/24

Lefapha la Dikgwebisano, Dilintaseteri le Tiholisano • Lefapha la Kgwebo Indasteri le Phadishano • UmNyango wezoRhwebo neZimboni kanye noMncintiswano • Muhasho wa zwa Mbambadzo, Makweho na Mujajisano • Die Departement van Handel, Nywerheid en Mededinging • Kgoro ya Kgwebo Indasteri le Kgaisano • Ndzawulo ya Vuxavisi, Mabindzu na Mphikizano • Litiko leTekuhweba tiMboni neKuncintiswano • ISebe lezoRhwebo noShishino kunye noKhuphiswano • UmNyango wezokuRhwebelana, amaBubulo nama Phalishwano

Batho Pele - putting people first

