



**Investigating Security Threat of E-Banking Services on Pensioners:
A Case Study of Hammarsdale, Mpumalanga Township, KwaZulu-
Natal Province, South Africa**

By
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**A research thesis submitted in fulfilment of the requirements for the degree of
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at

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Supervisor: Professor N. Gopal

Date:

DECLARATION

I, Nondumiso Ayanda Ndlovu, student number (214536865), solemnly declare that the research study titled “Investigating Security Threats of E-Banking Services on Pensioners: A Case Study of Hammarsdale, Mpumalanga Township, KwaZulu-Natal Province, South Africa” is the culmination of my dedicated efforts, guided by my supervisor, with invaluable assistance from artificial intelligence (AI). All sources utilised or cited in this study have been duly acknowledged and referenced in accordance with academic standards. Furthermore, I affirm that the figures presented in this research have been crafted by me using AI tools, ensuring their accuracy and reliability for analysis and interpretation.

Researcher: Miss N. A. Ndlovu _____ Signature and Date: _____
Supervisor: Prof. N. Gopal  _____ Signature and Date: 15 August 2025

DEDICATION

This work is solemnly dedicated to my late loving mother, Mrs T. B. Ndlovu.

I wish you were here.

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Above all, I wish to extend my heartfelt gratitude to my supervisor, Professor Nirmala Gopal, for her exceptional guidance and encouragement throughout this research. Her insightful feedback and patience have been instrumental in the successful completion of this thesis. This work is based on research supported by the National Institute for Humanities and Social Sciences. I also thank Sibahle Ntshangase for her invaluable assistance in facilitating meetings with Professor Gopal.

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ABSTRACT

This thesis has made inquiry into the security threats confronting pensioners who rely on e-banking services, with a focus on Hammarsdale, a township situated within the Mpumalanga region of KwaZulu-Natal, South Africa. A comprehensive understanding of the myriad risks inherent in e-banking is indispensable, especially in the contemporary digital epoch, where electronic financial transactions have burgeoned exponentially, especially among segments of the population characterised by their susceptibility, such as pensioners. Employing a qualitative research methodology, this study used in-depth interviews to engage directly with pensioners and security officers, exploring their perspectives, lived experiences, and adaptive behaviours concerning e-banking security. Through qualitative analyses, the research examined the challenges and anxieties encountered by pensioners in Hammarsdale concerning the security of their e-banking transactions, from phishing scams and malware attacks to social engineering tactics and account hijacking. The study undertook a critical examination of the efficacy and adequacy of security protocols and measures implemented by financial institutions and regulatory bodies in fortifying e-banking transactions within the unique socio-economic setting of Hammarsdale. By examining socio-economic factors, technological landscapes, and regulatory frameworks shaping e-banking security in Hammarsdale, this research aspired to offer practical and actionable recommendations for policymakers, financial institutions, and community stakeholders, with the overarching objective of bolstering trust, resilience, and inclusivity of e-banking services for pensioners across South Africa. Through its interdisciplinary approach, this study sought to contribute meaningfully to the broader discourse on financial empowerment, digital literacy, and cybersecurity, ultimately advocating for the equitable access and enhanced security of e-banking services for all pensioners, thereby fostering their financial well-being and societal participation in the digital era.

Keywords: E-Banking Security, Pensioners, Technology Adoption, Online Banking Safety, Financial Security

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CHAPTER ONE: GENERAL ORIENTATION

1.1 INTRODUCTION

This research study has examined grant pension recipients and electronic banking (e-banking), an area of growing importance in an increasingly digitalised world. The significance of this research lies not only in its economic implications but also in its social dimensions. As the financial landscape continues to evolve with the advent of e-banking, it becomes imperative to understand how this transformation impacts vulnerable populations, such as grant pension recipients.

This study recognised that comprehending the intricate factors influencing e-banking among this demographic necessitates a multidisciplinary approach. While its core disciplines encompass economics and criminology, the study goes beyond traditional boundaries by drawing from sociology, psychology, anthropology, law, and cybersecurity. Furthermore, the involvement of security guards in this context accentuates the importance of delving into aspects of security and risk management, further expanding the research's multidisciplinary scope. In embracing this holistic perspective, the multifaceted dynamics of e-banking for grant pension recipients is examined, ultimately contributing to a more comprehensive understanding of their financial well-being and security.

The mandate for old age grant pensioners to adopt e-banking services has arisen with the introduction of digital banking solutions (Eghebi, 2019). This shift represents a fundamental change in the way pensioners access and manage their financial resources. Traditionally, pensioners relied on in-person visits to banks or post offices for their banking needs, a process with which they were familiar and comfortable (Eghebi, 2019). However, the transition to e-banking introduces a new set of challenges, primarily stemming from the technological gap that separates older generations from their younger counterparts (Drigă, and Isac, 2014).

Old age grant pensioners, typically less exposed to digital technology and less technologically savvy, often find themselves grappling with the complexities of e-banking systems (Eghebi, 2019). This study investigated the multifaceted implications of this transition to find the issues that pensioners encounter when attempting to navigate online banking platforms. These difficulties range from the practical, such as mastering the intricacies of online banking interfaces, to the cognitive, involving the challenge of remembering passwords and comprehending the various steps involved in digital transactions (Panwala, 2022).

Through comprehensive research and analysis, this study sought to provide an understanding of how this transition impacts the lives of pension grant recipients. It explores not only the practical barriers they face but also the psychological and social aspects of their adjustment to e-banking. Additionally, the study evaluated the potential security risks that may arise as older individuals venture into the digital financial realm, potentially involving disciplines such as criminology and cybersecurity.

This research aimed to offer valuable insights into how financial institutions and policymakers can better support and facilitate the adoption of e-banking services among old age grant pensioners. Ultimately, the study has endeavoured to make connections between the emerging digital financial landscape and the unique needs and challenges faced by this vulnerable demographic, ensuring that they can fully participate in the benefits of modern banking and safeguard their financial well-being.

Reports and research conducted between 2019–2022 by Panwala (2022) highlighted the challenges faced by old-age grant pensioners in adapting to e-banking, which led to fraudsters targeting and exploiting pensioners for money theft and laundering. This has resulted in trauma and a decrease in trust towards e-banking services in countries and cities such as South Africa, London, Birmingham, Manchester, Nottingham, and Wolverhampton (Beckford, 2020; Gunter, 2019; McLagan, 2019; Home Office, 2020).

Maduku (2014) conducted a research study in South Africa examining the factors that influence the adaptation and use of e-banking among citizens of different genders, age groups, and ethnic groups. The research findings revealed that 52.7% of respondents use e-banking services, while 47.3% do not. Participants expressed their possible reasons for not using e-banking services, as shown in Table 1.1.

Table 1.1 Reasons for non-use of e-banking services

	Frequency	Percentage
Trust and security issues	21	22.58
Lack of interest/ customer apathy	20	21.50
Lack of information on e-banking	10	10.75
Preference for traditional modes of banking	9	9.68
Lack of access to electronic devices for e-banking	8	8.60
I do not know why/ I am not sure	7	7.53
Perceived difficulty	6	6.45
Not technologically inclined	5	5.38
I do not see a need for it	5	5.38
Perceived high charges	2	2.15

Source: Maduku, 2014

Muduku (2014) examined the reasons behind the non-use of e-banking services among a particular group of participants. As seen in Table 1.1, the study's findings revealed that trust issues and concerns about the security of e-banking were the most cited reasons for not adopting these services (Maduku, 2014). This aligns with prior research by Al-Somali and Baghabra, (2019) and Kimiagari and Baei (2022) all of which underscored the significance of trust and security in shaping e-banking acceptance. Additionally, a substantial number of respondents expressed a lack of interest and apathy towards e-banking, while others cited a lack of information as barriers to adoption. These insights provide a foundation for understanding the challenges faced by individuals in embracing e-banking services. Crucially, the study's context was situated in South Africa, where financial crime and cybercrime are persistent concerns (Maduku, 2014). Of note is the vulnerability of the country's pensioners, a demographic that has often been neglected in the context of financial abuse. The South African Older Persons Forum has even labelled pensioners as the "forgotten victims" due to a lack of prioritisation by the South African Police Service in addressing financial abuse related to old age grants. This starkly contradicts the ideals expressed by the late South African President Nelson Mandela, who emphasised the importance of valuing older people as the roots and future of society (Ayikwa, De Jager and Wannenburg, 2022).

Given these circumstances, it was imperative to conduct this study, specifically focusing on the perspectives of old-age pensioners and security guards stationed at automated teller machines (ATM) points within the community of Hammarsdale, KwaZulu-Natal (KZN). This research explored their perceptions regarding the safety of their money when using e-banking services. While the disbursement of old-age grants through e-banking offers numerous advantages, it is essential to understand how Hammarsdale's grant recipients perceive this innovation. This study sought to bridge the gap between the potential benefits of e-banking and the actual perceptions and concerns of this community.

This chapter provides a comprehensive overview of the study's background, the issue it addresses, the rationale behind its execution, its primary objectives and research questions, as well as its inherent limitations. This serves as a clear structure for the research, outlining its fundamental structure and scope. Moreover, this chapter provides an in-depth comprehension of the content covered in this study. It encompasses the study's background, the issue being addressed, the reasoning behind the study, its main goal, and inquiries, as well as the study's limitations.

1.2 BACKGROUND OF THE STUDY

E-banking involves conducting monetary transactions in a technological environment, using mobile or wireless networks and mobile devices such as smartphones and ATMs (Ayikwa et al., 2022). Researchers describe e-banking as a convenient banking channel for managing finances, (Uwamariya et al., 2022; Hassan and Farmanesh, 2022). Similarly, Uwamariya et al. (2022) noted that e-banking services allow customers to take full advantage of the latest technology, which enables them to check account details; view a mini-statement; transfer funds; pay with credit cards and loan instalments; and place remittances to beneficiaries in local banks or abroad. However, even though these technological innovations enable a more convenient life, Mayandi et al. (2023) assert that they tend to have limitations in accommodating the marginalised elderly community. According to Jin (2022), South African banks do not seem to be successful in getting elderly customers to use e-banking services in numbers.

In the context of e-banking, customer adaptation refers to the process through which bank customers adjust to and embrace e-banking services. It encompasses customers' willingness, ability, and comfort in adopting and using digital channels and technology for their banking needs (Zhang and Zhou, 2022).

Customer adaptation is a crucial consideration in the realm of e-banking, closely related to security concerns (Mosolotsane, 2013). Customer adoption of e-banking is a recognised challenge for banks worldwide. This challenge becomes particularly complex due to security-related issues, especially among older adults who are more vulnerable to financial theft. These issues directly impact the process of customer adaptation. These security issues can deter customers, especially older individuals, from adapting to e-banking services (Mosolotshane, 2013).

Maduku (2014) emphasises that security emerges as the most significant concern for old-age pensioners when deciding whether to use e-banking or ATMs. This underscores how security concerns are a critical factor influencing customer adaptation. Over time, security concerns have evolved from mere worries about the privacy of personal information to more extensive apprehensions about falling victim to fraud, which could result in financial loss (Mosolotshane, 2013; Maduku, 2014).

In summary, customer adaptation in the context of e-banking is closely linked to the security challenges faced by older adults and customers in general. These security concerns can significantly impact the extent to which customers are willing and able to adapt to and embrace e-banking services, highlighting the importance of addressing security issues in promoting e-banking adoption.

The security of e-banking stands out as a paramount concern, particularly among older adults who tend to be less technologically inclined (Zhang and Zhou, 2022). This demographic often perceives e-banking as a risky endeavour, driven by fears of becoming victims of fraud and experiencing financial loss when engaging with digital financial channels (Maduku, 2014). This prevailing apprehension significantly impedes their willingness to wholeheartedly embrace e-banking.

Moreover, the vulnerability of older adults to financial fraud, especially when seeking assistance from strangers at ATMs, is an alarming reality that compounds the issue (Zhang and Zhou, 2022). This vulnerability stems from their relative unfamiliarity with technology and, in some cases, a lack of awareness regarding the potential risks associated with using e-banking services (Yousafzai et al., 2010). Pensioners, in particular, bear the burden of these concerns. Given their reliance on pensions for financial security, they approach any perceived threats to their funds with caution. The transition to e-banking for pension disbursements exposes them to new risks, further exacerbating their hesitancy in adopting these services.

To address these multifaceted challenges, governments and relevant authorities have stepped in with various interventions to safeguard older adults and other vulnerable groups within the context of e-banking (Panwala, 2022). One such intervention involves the introduction of legislation, such as the Social Assistance Act of 2004. This legislation is explicitly designed to protect pensioners and establish mechanisms for rendering social assistance, emphasising the importance of ensuring that older adults receive their benefits securely (Mosolotshane, 2013).

Government efforts extend to awareness campaigns led by authorities such as the South African Social Security Agency (SASSA). These campaigns serve as educational tools, educating older adults about the potential risks associated with e-banking. The goal is to empower this demographic with knowledge, arming them with the awareness necessary to ward off cybercrime scammers (Maduku, 2014).

Preventing exploitation is another critical aspect of government intervention. Instances where scammers deceitfully claim to be SASSA-deployed personnel assisting pensioners with ATM transactions, are met with countermeasures. Government efforts are focused on preventing such fraudulent activities, ensuring that pensioners are not victimised. These interventions take various forms, ranging from educational programmes aimed at enhancing digital literacy among older adults, making them more comfortable with e-banking technology and aware of potential risks, to collaborating with financial institutions to implement robust security measures such as multi-factor authentication. Moreover, support services offered through authorised channels aim to assist older adults with e-banking transactions, while simultaneously safeguarding them from exploitation by scammers (Eghebi, 2019).

The necessity of these interventions arises from the transformative nature of e-banking, which represents a significant shift in the way financial transactions are conducted (Jin, 2022). While it undeniably offers convenience and efficiency, it simultaneously introduces new risks, especially for vulnerable groups such as older adults and pensioners (Eghebi, 2019). Ensuring the safety and financial security of these individuals is paramount. By actively addressing these concerns and providing the necessary support and awareness, governments strive to balance the benefits of e-banking with safeguarding the interests of their citizens, ultimately fostering greater financial inclusion and security for all (Yousafzai et al., 2010).

1.3 GAP IN RESEARCH

In the realm of crime in South Africa, it is evident that addressing this multifaceted issue requires a concerted effort beyond the legal profession. This study has focused on a specific case, that is Mpumalanga Township, Hammarsdale in KZN, where a significant proportion of the population comprises pensioners who are disproportionately affected by cybercrime and fraud. The existing literature reveals a dearth of research examining how the Hammarsdale community is grappling with these challenges, particularly in the context of e-banking services, which potentially expose pensioners' grant earnings to security threats.

The central objective of this study has been to bridge this gap in knowledge by conducting an in-depth investigation. The study aimed to extract valuable insights from three primary groups of stakeholders: pension recipients, bank employees, and security guards. Through their perspectives and experiences, this research sought to introduce effective mechanisms aimed at reducing financial crimes against pensioners, thereby contributing to the broader discourse on crime mitigation in South Africa.

The specific context of South African pensioners is dire, with a staggering 78% of the population being victims of cybercrime and fraud (StatsSA, 2023). E-banking, as a financial channel, presents both convenience and challenges, particularly in terms of security for pensioners receiving grants. This study focused on the unique case of Mpumalanga Township, Hammarsdale, KZN, South Africa. In this setting, little literature examines the community's response to criminal incidents involving pensioners. By conducting this study, the research addresses the pressing concern surrounding mechanisms to minimise financial crimes, especially in a community such as Hammarsdale. Here, many pensioners are often illiterate and rely on assistance from strangers when utilising e-banking services, a situation making them vulnerable to exploitation. The interactions between pensioners and strangers during these transactions create opportunities for theft and fraud, posing a significant security threat to pensioners' grant earnings.

This study, while concentrated on the Hammarsdale, region of South Africa, offers insights that can be applied more broadly across the country. The challenges faced by pensioners in adapting to e-banking, including technological gaps and security vulnerabilities, are not unique to this specific area. They are reflective of broader trends seen in rural and underserved regions throughout South Africa. Therefore, the findings and recommendations of this research hold

significant potential for informing a national strategy. By integrating these results into a nationwide framework, policymakers and financial institutions can design targeted interventions that address the digital divide, improve cybersecurity, and foster greater financial inclusion for vulnerable populations across South Africa. This approach would ensure a more cohesive and effective response to the challenges faced by pensioners in the digital banking landscape.

Therefore, this study examined the perceptions of bank service providers regarding e-banking services and the perceptions of old-age grant recipients in Hammarsdale. Through this exploration, the research aimed to devise effective mechanisms and solutions to combat financial crimes against pensioners. In essence, the study has a twofold purpose: filling the existing gap in knowledge by clarifying community responses and introducing practical solutions to enhance the safety and security of pensioners in South Africa, thus contributing to the broader discourse on crime prevention and social welfare.

1.4 THE RATIONALE OF THE STUDY

The rationale for conducting this study emerges from a profound concern regarding the escalating challenges faced by vulnerable elderly individuals in the Hammarsdale community, particularly concerning the intersection of crime, grant pension recipients, and the use of e-banking services. This study sought to academically address this pressing issue by delving into the narratives and experiences of community members directly impacted by these multifaceted challenges.

Within the confines of Hammarsdale, instances of crime against the elderly have witnessed a troubling surge. Criminals have increasingly devised methods to target and exploit pensioners, creating an urgent need for academic inquiry into this phenomenon. A pivotal factor driving the urgency of this study is the alarming statistics provided by the South African Crime Statistics Report (2022). According to this authoritative source, reported cases involving the elderly have experienced a 68% increase between 2017 and 2022, as documented by StatsSA (2022). This surge in elderly-related crime serves as the compelling impetus for the researcher to undertake this study, clarifying the underlying factors and potential mitigating strategies.

Furthermore, this research is motivated by a sincere curiosity about understanding the diverse perceptions, opinions, and lived experiences of pensioners concerning the utilisation of e-banking services. The study provides a comprehensive perspective on the challenges and gaps inherent in

these services by incorporating the invaluable insights of bank service providers and employees, as well as security guards, who play a pivotal role in safeguarding financial transactions.

The evolving landscape of technology and the shifting paradigm of grant income distribution are central to the researcher's study. In the past, pensioners received their grants through cash-in-transit vehicles, where the process primarily involved biometric identity verification. However, the contemporary scenario necessitates a bank card, the constant recall of a bank PIN (personal identification number), and in some instances, additional biometric verification (Mosolotshane, 2013). This transformation has profound implications for pensioners and the community at large, prompting a critical examination of the associated challenges and adaptations.

The academic foundation for this research is motivated by the imperative to address the escalating issues of crime against pensioners and the challenges posed by e-banking. By exploring the narratives, perceptions, and experiences of the community, as well as considering the perspectives of relevant stakeholders, this study aspired to contribute meaningful insights and potentially transformative solutions to enhance the security and well-being of vulnerable elderly individuals in Hammarsdale.

1.5 THE KEY OBJECTIVES AND QUESTIONS TO BE ASKED;

This study attempted an inquiry into the following key research questions from which the study objectives were derived:

1. What are the lived experiences regarding e-banking services for old-age pensioners receiving SASSA grants?
2. How do old-age grant pensioners perceive e-banking services as a method of receiving SASSA grants?
3. How can security personnel improve security risks associated to pensioners' e-banking clients?

The research objectives of the study were:

1. To explore the lived experiences of old-age pensioners regarding the use of e-banking services.
2. To explore old-age pensioners' perceptions about using e-banking services.
3. To propose strategies and recommendations for banks to improve the security of e-banking services for elderly clients.

The study aimed to identify strategies that bank service providers can introduce in overcoming challenges experienced by grant pensioners.

1.6 SCOPE OF THE STUDY

This research study had the primary aim to investigate the multifaceted experiences and perceptions of pensioners residing in the Hammarsdale community within the Mpumalanga Township, KZN. Specifically, it focused on their engagement with e-banking services. Moreover, the study investigated the perspectives of both bank service providers and security guards, recognising their roles in addressing the distinct challenges encountered by pensioners in the utilisation of e-banking services.

While extant measures, including community awareness campaigns and banking sector initiatives, have been implemented to combat crime within Mpumalanga Township, Hammarsdale, this research adopted a unique approach. It posited that the insights gained from this study can contribute significantly to the reduction of crime instances against pensioners. The study focused exclusively on the perceptions of pensioners, security guards, and bank employees, acknowledging the pivotal role they play within the societal framework.

The rationale behind the adoption of in-depth interviews as the primary research method arose from a significant gap in the current body of literature. Namely, limited research pertaining to the perceptions of pensioners concerning their use of e-banking services exists, particularly within South African communities in the post-Apartheid era. In taking a multidisciplinary approach, this research endeavoured to furnish a comprehensive understanding of the security implications posed by e-banking services on pensioners.

The structural framework of this study includes an introduction, literature review, methodology, results, discussion, conclusion, and recommendations. Through the execution of this research, the researcher enhanced the comprehension of the challenges encountered by pensioners when navigating e-banking services. Furthermore, this study provides actionable insights into how these challenges can be effectively addressed, thereby contributing to the overall safety and security of the elderly within South African communities.

1.7 RESEARCH OUTLINE

This dissertation consists of six chapters. The details of these chapters are as follows:

Chapter One: General Orientation

The introduction and background of the study has been provided in this chapter as a brief introduction to the research problem and the significance of this study.

Chapter Two: Literature Review

This chapter will encompass critical concepts of the study and explain the phenomenon being studied with a foundation of the previously conducted studies (literature).

Chapter Three: Theoretical Framework

The chapter will primarily focus on providing a discussion using the theoretical frameworks of routine activity theory and rational choice theory as principal theories of this study. The challenges of the community about crime were explored in detail to find and implement a workable solution.

Chapter Four: Description of research design and Methodology

This chapter will describe the research design and methodology for this study. It will describe the research site, population sample, and data collection techniques.

Chapter Five: Analysis and Interpretation of research findings

This chapter consists of analysing the results that have been produced from the data that will be collected through the research procedure. The reporting of the results will be done qualitatively, depicting the perceptions and opinions of the sample that will be interviewed in this study.

Chapter Six: Conclusion and Recommendations

This chapter serves to conclude and give a summary of the entire dissertation. The findings and recommendations are included to provide a clear understanding of how the objectives were met and achieved. It closes with how the research was conducted in a progressive manner that is beneficial to the researcher and the participants and community of this study.

1.8 SUMMARY

This chapter has stated the topic concerning previous foundations set by studies done in the past. Moreover, a summary and breakdown of the following chapters is provided. The following chapters offers more in-depth discussions of what has been briefly highlighted in this chapter.

CHAPTER TWO: LITERATURE REVIEW

2.1. INTRODUCTION

In the broader context of South Africa's developmental trajectory, the issue of crime continues to loom large, posing a significant challenge that transcends geographical boundaries within the country (Perry and Potgieter, 2013). The pervasive nature of criminality underscores a shared concern that permeates societies nationwide. Hesselink (2013) mentions that South Africa grapples with the multifaceted dimensions of crime, particularly against the backdrop of increasing statistical trends, the academic realm, notably in criminology, has become a focal point for understanding the dynamics of these crimes and their societal impact.

According to Lötter, (2020), many complicated factors contribute to crime, its causation, and potential remedies. Within this framework, this research focuses in on the community of Hammarsdale, Mpumalanga Township, KZN, acknowledging the vulnerability of old age pensioners. Notably, this study examined the intersectionality of crime and technology, with e-banking emerging as a potential security threat. By narrowing the focus to this specific community, the research aimed to unravel the nuances of criminal activities affecting the elderly and explores measures to mitigate these challenges in the context of South Africa's developmental landscape.

The upcoming chapter will offer a comprehensive exploration of literature that encapsulates the international perspective of old-age grant pensioners engaging with digital banking. In this context, understanding how elderly individuals globally navigate the digital landscape of banking services is crucial, considering the unique challenges and opportunities presented by technological advancements (Jin, Kuang and Fan, 2021). The literature scrutinises the various modes of digital banking utilisation by pensioners, examining the factors influencing their adoption, as well as the potential benefits and drawbacks they encounter.

Another pivotal aspect to be addressed in this chapter is the examination of old-age pensioners' perceptions of e-banking. Delving into their attitudes, beliefs, and comfort levels with technology-driven financial services is imperative to gain insights into the factors shaping their acceptance or resistance. Exploring the psychological and behavioural dimensions of their perception will contribute to a nuanced understanding of the elderly's engagement with e-banking platforms (Harvey, 2020).

The specific focus was e-banking in South Africa, anchoring the literature review within the local context. This entails an examination of the historical development, current landscape, and prevalent trends in e-banking within the South African financial sector. By scrutinising the unique socio-economic and cultural factors influencing the adoption of e-banking among old-age pensioners in South Africa, this section provided perspectives on the challenges and opportunities inherent in the local digital banking environment.

The literature review also incorporates an investigation into the strategies implemented to combat challenges faced by old-age pensioners in the realm of digital banking. This includes an exploration of both theoretical frameworks and practical interventions designed to enhance the accessibility, security, and usability of e-banking services for the elderly population. Strategies may encompass educational programmes, user interface enhancements, and policy recommendations aimed at fostering a more inclusive and secure digital banking experience for older individuals.

In summary, the literature review chapter will encompass a holistic examination of the international, national, and localised dimensions of old-age pensioners' engagement with digital banking. By exploring their perspectives, perceptions, and strategies devised to address challenges, the chapter contributes to a comprehensive understanding of the intricate interplay between aging populations and the evolving landscape of electronic financial services.

2.1.1 The Development of E-Banking Services Worldwide

The evolution of information technology (IT) has ushered in a new era for businesses, fundamentally reshaping the landscape and exerting a profound influence on various industries, with the banking sector standing prominently among them. These developments have introduced novel dimensions to business operations, catalysing a paradigm shift in the way financial institutions conduct their affairs (Potgieter, 2013).

The initiation of IT in the banking industry has become a transformative force, bringing about substantial changes in how banks operate, interact with customers, and deliver financial services (Kuitto, Madia and Podesta, 2023). This shift is not merely incremental but represents a revolutionary departure from traditional banking practices. IT has become a catalyst for innovation, redefining banking by leveraging digital tools and technologies. The significance of these developments lies in their ability to enhance efficiency, streamline processes, and improve

service delivery within the banking sector (Rajapakse, 2017). IT has enabled banks to automate internal operations, optimise resource utilisation, and, perhaps most notably, provide a more seamless and convenient experience for customers (Kuitto et al., 2023).

Furthermore, these technological advances have played a pivotal role in expanding the scope and reach of banking services. Payne, Peltire and Barger (2021) believe that the integration of IT has facilitated the development of online and mobile banking platforms, providing customers with unprecedented access to financial services at their fingertips. Georgieva (2018), Payne et al. (2021), and Kuitto et al. (2023) are of the notion that this shift from traditional, brick-and-mortar banking to a digital paradigm has redefined customer expectations and the very notion of banking convenience.

The changes brought about by IT are not confined to the operational aspects alone; they extend to the very nature of financial transactions (Kumar, 2018). Digitalisation has revolutionised the way individuals and businesses buy and sell financial products, conduct transactions, and manage their accounts (Kumar, 2018). Online banking, electronic payments, and mobile applications have become ubiquitous, offering users a level of convenience and immediacy that was previously unimaginable.

In essence, the developments in IT have become a driving force behind the evolution of the banking industry (Payne et al., 2021). The integration of digital solutions has not only modernised banking practices but has also positioned financial institutions to adapt to the changing needs and preferences of their customers (Jin et al., 2021). As technology continues to advance, the banking industry is poised for further transformations, presenting new possibilities and challenges that will undoubtedly shape its trajectory in the years to come (Kessler, 2021). The inexorable march of technology ensures that the banking sector remains at the forefront of innovation, poised to navigate, and capitalise on the dynamic landscape of the digital future.

2.1.2 International Perspective of Old-Age Pensioners Using E-Banking

The international perspective of old-age pensioners using e-banking reflects a complex intersection of technological advancements, financial inclusion efforts, and the evolving needs of an aging population (Msweli and Mawela, 2020). Online and mobile banking, known as e-banking, has become a significant component of the global financial landscape, and its impact on older individuals, particularly pensioners, is a subject of growing interest.

One notable aspect of the international landscape is the varying degrees of technological adoption and digital infrastructure across different countries. In regions with advanced technological ecosystems, older individuals may find it easier to access and utilise e-banking services. Conversely, in areas with limited digital infrastructure, older pensioners might face challenges in embracing these technologies (Georgieva, 2019). Subsequently, the perception of e-banking among old-age pensioners is shaped by a multitude of factors, including familiarity with digital devices, concerns about security and privacy, and the availability of user-friendly interfaces. Efforts to bridge the digital divide and promote digital literacy among older individuals are crucial in fostering their confidence and competence in using e-banking platforms.

Developed countries such as Canada and Singapore with well-established e-banking frameworks often witness positive outcomes for old-age pensioners due to advanced educational initiatives as well as government support (Georgieva, 2019). These outcomes include greater financial independence, improved convenience in managing funds, and enhanced access to a range of financial products and services. Additionally, e-banking can provide older individuals with tools for financial planning, such as real-time access to account information and digital budgeting features (Kumar, 2018).

In contrast to developed countries, underdeveloped countries such as Nigeria and Kenya often face unique challenges in the adaptation of e-banking services, and the outcomes for old-age pensioners may differ (Omotayo and Tolulope, 2020). Factors contributing to the slower adoption of e-banking in underdeveloped nations include limited technological infrastructure, inadequate access to the Internet, and lower levels of digital literacy among older populations. Old-age pensioners in these countries may experience challenges in accessing e-banking services due to a lack of connectivity, which restricts their ability to enjoy the convenience and financial independence that e-banking can offer (Msweli et al, 2021). Moreover, concerns about security and trust may be heightened in environments where regulatory frameworks and consumer protection measures are less robust (Omotayo, 2020).

However, numerous challenges persist and emphasise the need for tailored strategies to address the specific concerns of old-age pensioners. Security remains a paramount concern, and financial institutions worldwide must implement robust measures to safeguard the personal and financial information of elderly users (Msweli et al., 2020). Moreover, user interfaces should be designed

with the diverse needs of older individuals in mind, incorporating features that enhance accessibility and accommodate varying levels of technological proficiency (Lyons, 2020).

In summary, the international perspective of old-age pensioners using e-banking underscores the dynamic interplay between technology, demographics, and financial services. While e-banking holds immense potential for empowering older individuals, a nuanced and inclusive approach is essential to address challenges and ensure that the benefits of digital financial services are accessible to all, regardless of age or technological familiarity. Policymakers, financial institutions, and technology developers play pivotal roles in shaping an e-banking landscape that is truly inclusive and supportive of the diverse needs of older populations on a global scale.

2.1.3 E-Banking adaptation of Old Age Grant Pensioners in Canada and the UK (Developed Countries)

Canada and Singapore do not specifically have a programme called “old age grant pension” as a singular term. However, both countries have social security and pension systems in place to support their aging populations (Brink, 2023). In Canada, several programmes aim at providing financial assistance to seniors. The main programme is the Old Age Security pension, which is a monthly payment available to most Canadians aged 65 and older. Additionally, there is a guaranteed income supplement for seniors with low income and the Canada Pension Plan for those who have contributed to the national pension plan during their working years (Brink, 2023).

In Singapore, the Central Provident Fund (CPF) is a comprehensive social security savings plan that covers retirement, healthcare, home ownership, family protection, and asset enhancement. CPF contributions are made by both employees and employers, and the funds can be used for various purposes, including retirement income. The CPF LIFE (Lifetime Income for the Elderly) scheme provides a monthly payment to eligible members for as long as they live (Brink, 2023).

While the terminology may vary, both Canada and Singapore have established systems to support their elderly citizens financially, ensuring they have a source of income during their retirement years. Research on the adoption of e-banking by elderly pensioners in developed countries such as Canada and Singapore are limited (Brink, 2023). However, studies conducted on the uptake of e-banking services by older individuals in well-developed nations have pinpointed several critical factors that influence their engagement with these digital financial platforms.

According to Msweli et al. (2021) and Msweli (2020), prominent obstacles hindering the adoption of mobile banking among the elderly demographic are limited information and understanding, concerns related to security and trust, and general resistance to change emerge. These studies also underscore the essential role of convenience, unrestricted access, and cost-effectiveness as aspects that encourage this group to embrace e-banking. Lyons et al. (2020) suggests that addressing issues related to motivation, social influence, perceived usefulness, and ease of use could serve to enhance the participation of elderly individuals in various e-commerce activities, including the utilisation of e-banking services.

The implementation of e-banking services in Canada has significantly contributed to the financial independence of old-age pensioners. Brink (2023) alludes that the convenience of managing funds through online platforms has granted them a heightened sense of control over their financial affairs posing benefits such as real-time access to account information, seamless fund transfers, and online bill payments have become integral aspects of their fiscal management. The user interfaces of e-banking platforms in Canada are designed with accessibility in mind, ensuring that older individuals can navigate and utilise these services effectively (Brink, 2023). This emphasis on accessibility has not only empowered pensioners but has also fostered financial inclusivity by providing them with the tools to actively participate in the digital financial landscape. Moreover, the diverse array of financial products and services available through e-banking enables pensioners to make informed decisions, explore investment opportunities, and diversify their financial portfolios, thereby contributing to enhanced financial well-being (Dodd et al., 2017).

In the United Kingdom (UK) context, security emerges as a primary impediment to the expansion of e-banking, with concerns revolving around the substantial risks associated with electronic transactions for both banks and customers. Dodd et al. (2017) underscore the hesitancy of financial organisations toward implementing internet security measures, citing scepticism about available technologies. The introduction of innovations such as digital signatures, encryption, and firewalls is acknowledged as a potential resolution to internet security issues, although a cautious period for implementation is suggested. Despite consumers exhibiting strong confidence in their banks, their trust in technology is deemed fragile, reflecting an increasing focus on security and privacy concerns (Lyons et al., 2020). Security and privacy challenges have been particularly pronounced in the e-banking sector, with apprehensions about electronic transactions being vulnerable to

external threats from hackers and viruses, leading to a reluctance among banking institutions to fully embrace e-commerce applications (Nidhi, 2016.).

Perceived risk, stemming from uncertainties surrounding security and privacy, is identified as a significant factor influencing both consumer adoption and satisfaction with online banking services (Lyons et al., 2020). Msweli et al. (2021) characterises security as the protection of interests, emphasising the shared desire of individuals and banks to safeguard financial assets. Governmental roles are highlighted in maintaining system integrity and fostering confidence. The surge in account hijacking and online fraud poses a substantial threat, eroding consumer trust in online services and underscoring the necessity for a secure environment in financial transactions (Frik et al., 2019). Perceived security, defined as a threat with the potential to cause economic harm through data destruction, disclosure, modification, denial of service, fraud, waste, and abuse, is recognised as a critical factor influencing online purchasing intentions.

Potential customers in the realm of online banking identify internet security, online banking regulations, consumer privacy, and the reputation of banks as key challenges. A study conducted by Msweli et al. (2001) further emphasises that customers rank internet security and customer privacy as the foremost challenges faced by banks in the future of online banking. Perceived usefulness and perceived security are identified as significant determinants influencing the acceptance of Internet banking, with elevated levels of perceived risk acting as a barrier to the widespread adoption of innovative technologies (Lyons, 2020). Customer apprehensions, fuelled by vivid narratives of hackers, centre around the fear of unauthorised access to online accounts and the potential for severe financial repercussions, thus emphasising the crucial role of security in mitigating barriers to e-commerce growth.

Singh and Srivastava (2020) conducted a comprehensive survey to investigate the determinants of Internet banking service quality in the UK. Their findings revealed that security considerations ranked as the paramount attribute among UK consumers when evaluating the quality of a bank's website. This prevalent concern is substantiated by Jäger and Philipp's (2023) study, which reported that a substantial majority of Australian respondents expressed apprehensions regarding the security of e-banking. As evidenced by studies conducted by Singh et al. (2020) and Frik et al. (2019), existing literature consistently suggests an inverse relationship between the perceived risk associated with online banking and users' attitudes towards this mode of banking, Recognising the

significance of perceived security as a predictor of customer acceptance, Singh et al. (2020) emphasised its significant role in shaping consumer preferences for Internet banking services. Singh et al. (2020) further identified the hierarchy of attributes influencing UK internet banking customers, with “security” ranking as the foremost concern. Following security, considerations such as “responsiveness of service delivery (speed and timeliness),” “ease of use,” “credibility of the bank,” and “product variety” were also noted as influential factors. Msweli et al. (2021) extended these findings by demonstrating that the selection of an internet banking service provider is impacted by security, reliability, and privacy concerns. The significance of security in online financial transactions is not limited to the UK, as its critical role in ensuring the safe use of the Internet for financial activities in Saudi Arabia is highlighted (Sohail and Shanmugham, 2003).

The slow-moving uptake of e-banking applications, as indicated by Sohail et al. (2003), is attributed to persistent barriers related to security and data confidentiality. Security and privacy emerge as formidable challenges for customers engaging in e-commerce, affecting trust and satisfaction. Maintaining customer trust hinges on companies’ commitment to delivering on promises concerning security and privacy, given the close interrelation between security and trust. Pavlou’s (2010) definition of security perceptions underscores the subjective nature of consumers’ beliefs regarding the protection of their confidential information during transit and storage.

Privacy assumes paramount importance in a comparative study focusing on Turkey and the UK, where Sayar and Wolfe (2020) posit it as the single most influential characteristic shaping customer perceptions. In the context of e-banking, Pavlou (2001) underscores the criticality of the security issue, emphasising its direct involvement in users’ activities. Hill’s (2020) study challenges assumptions about the influence of demographics on the acceptance of electronic self-service tools, revealing that attitudes play a more decisive role. Young, trendy, and high-earning individuals actively seek online banking tools, as opposed to findings by Frik et al. (2019), which attribute online banking usage to the customer relationship management efforts of banks, highlighting the dominance of attitudes over demographics.

Pew Internet and American Life Project’s (2002) exploration of online banking demographics reveals that men, younger individuals, and those aged 30 to 49 are more likely to engage in online banking. Kemp et al.’s (2023) study on the adoption of Internet banking among adults underscores that individuals over 60 years old tend to be late adopters, with insufficient training and complex

interfaces deterring senior citizens. Sohail et al. (2003) emphasise that age and educational qualifications have negligible impacts on e-banking adoption in Malaysia, with accessibility, awareness, and resistance to change emerging as pivotal factors. Sohail et al. (2003) concludes that common perceptions regarding online banking transcends demographic, geographic, or psychographic characteristics, identifying security concerns and a lack of awareness as primary barriers to adoption.

Sohail et al. (2003) outline concerns regarding customers' preferences in e-banking in Malaysia. Their conclusion indicates that age and educational qualifications of electronic and conventional banking have no significant impact on e-banking adoption. Instead, they argued that accessibility to the Internet, awareness of e-banking, and customers' resistance to change were the main factors influencing the adoption. Kemp et al. (2023) concluded that there are common perceptions regarding online banking with disregard for demographic, geographic, or psychographic characteristics. He argued that among the major 'non-adoption' areas were security concerns and a lack of awareness of online banking.

Similarly, in Singapore, the widespread adoption of e-banking has yielded positive outcomes for old-age pensioners, driven by the city-state's robust digital infrastructure (Kwong, Yiuman and Chan, 2017). The emphasis on security, coupled with advanced technological features such as biometric authentication, has instilled a sense of trust among older users. The user-friendly interfaces of e-banking platforms facilitate easy navigation, allowing pensioners to conduct various financial transactions and access information effortlessly (Georgieva, 2019). The convenience and efficiency offered by e-banking in Singapore extend beyond basic transactions, providing pensioners with the flexibility to manage their finances from the comfort of their homes. The availability of a diverse range of e-banking services ensures that older individuals can tailor their financial activities to align with their specific needs and preferences.

In both Canada and Singapore, the positive outcomes for old-age pensioners adapting to e-banking underscore the importance of a comprehensive and inclusive digital banking framework. The success of these ecosystems lies in their commitment to accessibility, security, and the provision of a broad spectrum of financial services, contributing to financial empowerment and improved quality of life for older individuals.

2.1.4 E-Banking Adaptation of Old Age Grant Pensioners in Nigeria and South Africa (Developing Countries)

The e-banking adaptation among old-age grant pensioners in underdeveloped countries, such as Nigeria and South Africa, unfolds against a backdrop of distinctive challenges and opportunities that shape the trajectory of digital financial inclusion for elderly individuals (Omotayo and Tolulope, 2020). Foremost among these challenges is the prevailing digital divide, where a significant portion of the elderly population lacks access to essential technological devices, including smartphones and computers. Moreover, the unreliable or non-existent internet connectivity in certain regions exacerbates the hurdles faced by elderly pensioners seeking to engage with e-banking platforms (Msweli et al., 2020).

Compounding these challenges is the limited digital literacy prevalent among older individuals in these underdeveloped regions. The complexities of navigating e-banking interfaces and conducting transactions online pose formidable barriers, hindering a seamless transition to digital financial services (Msweli et al., 2021). Infrastructure constraints further impede progress, as inadequate technology infrastructure, particularly in rural areas such as Mhlab'uyalingana and Mpolweni, restricts access to electronic financial services. Poor network connectivity and insufficient banking infrastructure contribute to the challenge of extending the benefits of e-banking to elderly pensioners in these regions (Kuitto et al., 2023).

However, amidst these challenges lie a host of opportunities that, if strategically harnessed, can catalyse the adoption of e-banking among old-age grant pensioners. South Africa has a well-developed and established banking system that compares favourably with those in many developed countries (e.g., United States of America), but also sets South Africa apart from many other emerging market countries such as Nigeria, Egypt, and Brazil (Bus, 2017). The four dominant banks, namely the Amalgamated Banks of South Africa (ABSA), Standard Bank, Nedcor, and First National Bank (FNB) influence the South African banking environment (Nguyen et al., 2015). E-banking has slowly been taking off in South Africa since 1996 as consumers are attracted to the convenience, safety, and lower costs of doing banking online. Trust is a significant component of internet banking and online services.

Lyons (2020) is of the notion that addressing challenges faced by old-age grant pensioners in developed countries, particularly Nigeria and South Africa, demands a multifaceted strategy

attuned to the distinctive socio-economic contexts of each nation. A pivotal aspect of this strategy involves the implementation of comprehensive digital literacy programmes specifically tailored to the unique needs of elderly pensioners (Kuitto et al., 2023). These programmes, collaboratively conducted with community centres, non-governmental organisations (NGOs), and government agencies, are designed to impart essential knowledge and skills related to the effective utilisation of e-banking services (Dodd et al., 2017). Through direct training sessions, workshops, and educational materials, elderly individuals are empowered with the necessary digital literacy to navigate and benefit from electronic financial services, thereby fostering financial inclusion and independence among this demographic group (Garba and Abubakar, 2014).

Moreover, ensuring the affordability and accessibility of technology devices constitutes a pivotal aspect of combating challenges faced by elderly pensioners (Msweli, 2020). Strategic partnerships with technology companies or the provision of subsidies can contribute to making smartphones and computers more attainable for this demographic (Han and Nam, 2021). Concurrently, investments in technology infrastructure, particularly in rural areas, are essential to improve internet connectivity and facilitate seamless access to e-banking services (Msweli, 2020).

Dodd et al., (2017) stipulates that designing user-friendly interfaces for e-banking applications is paramount, given the diverse needs and preferences of elderly users. Meanwhile, Msweli et al. (2021) emphasise collaboration with financial institutions which becomes crucial in this regard to ensure that interfaces are intuitive and accommodating. Simultaneously, the establishment of dedicated customer support services, equipped with staff trained to assist elderly pensioners, addresses concerns related to the navigation of e-banking platforms. Helplines, chat support, and in-person assistance cater to varying levels of technological proficiency among the elderly (Msweli, 2020).

According to Singh (2004), citizens of South Africa, especially the elderly are being impacted because of the influence of the internet. In addition, banking services extend perfectly to the Internet, as there are no queues, and customers can bank at their leisure and obtain detailed information about services and products without being hurried by customers waiting in queue. Researchers discovered that the younger generation is attracted to the convenience, safety, and lower costs of online banking (Abdulwahan et al., 2018). ABSA Bank was the first to offer online

services, followed by Nedcor, and then with Standard Bank, FNB, and Mercantile Bank following soon after (Singh, 2004).

South African financial institutions incorporate the latest and advanced security (hardware and software) mechanisms. Banks use advanced verification and authentication principles, incorporated with technologies such as Short Message Service (SMS) (Msweli et al., 2020). All these technologies are used to ensure that the user's Internet banking experience is safe and secure. According to Han et al. (2021), South African banks' online services still lack maturity, and, in most cases, they do not see the customer as king. In addition, banks do not fully understand the way customers experience banking websites, as customers generally do not have a platform on which to voice their frustrations with online services. Han et al. (2021) proposes that if banks want to improve customers' experiences, they should monitor and understand the individual customer's online experience by ensuring they have a 'line of sight' for every user.

According to the South African Banking Risk Information Centre (SABRIC, 2022), data security and theft remain the major headaches for financial institutions as the advancement of e-banking grows so do the skills to perform cyber-crime. The issue of data security is becoming significantly more important as the trend toward mobile banking is increasing. For example, phishing attacks are increasing by the day (Williams et al., 2013). Foster (2023) defines phishing as a criminal activity that uses social engineering techniques to extract personal information from computer users. Despite efforts to stop phishing attacks, the number of consumers influenced has doubled since 2004 (Han et al., 2021). Increasingly, however, most attacks fail at looting consumer bank accounts, but those users who fall prey to these swindles are more targeted (SABRIC, 2022).

Although Internet banking threats are ever-present, technology offers its users an extensive range of benefits and opportunities. One of the greatest benefits that E-banking offers its consumers is convenience (Han et al. ,2021). Consumers have the choice to do Internet banking from home or at their offices any time during the day or night. The annoyance of standing in long queues at bank branches to speak to financial consultants has been removed.

Empowering consumers to take control of their financial situations is extremely beneficial. Consumers can create or delete beneficiaries, set up payment structures, and view financial records of their own will (Han et al. ,2021). If customers manage their financial portfolio properly, E-banking can provide definite cost benefits. Financial solutions and/or packages are often structured

in such a way that makes E-banking more lucrative to consumers. E-banking also reduces the time taken to perform banking transactions. Not only is the absence of queues a benefit, but e-banking forms are normally streamlined through simple and efficient processes.

Complementary to government initiatives, community-based education programmes present a grassroots solution to address digital literacy concerns among elderly pensioners. These programmes, tailored to the specific needs of the community, can empower pensioners with the knowledge and skills required to confidently engage with e-banking platforms.

In summary, while the e-banking adaptation of old-age grant pensioners in underdeveloped countries faces formidable challenges rooted in digital disparities and infrastructure limitations, strategic government interventions, mobile-centric solutions, and community education programmes offer promising avenues to surmount these obstacles. These opportunities, if harnessed effectively, hold the potential to enhance financial inclusion and empower elderly individuals in underdeveloped regions to navigate the evolving landscape of digital financial services.

2.1.5 Strategies to Combat Challenges Faced by Old-Age Grant Pensioners in Canada and the UK (Developed Countries)

In addressing the challenges faced by old-age grant pensioners in Canada, it is crucial to recognise and mitigate potential security threats, fraud, and the risk of funds being misplaced (Brink, 2023). As the aging population grows, the vulnerability of pensioners to financial exploitation increases. Implementing strategies to enhance the security of pension disbursements and safeguarding pensioners' financial resources becomes paramount.

One significant challenge is the potential for security threats in electronic transactions and digital financial systems. With an increasing reliance on online platforms for pension disbursements, there is a heightened risk of cyberattacks, identity theft, and fraudulent activities targeting elderly individuals (Rasmussen, and Knutsen, 2024). To address this, the development and implementation of robust cybersecurity measures within the pension distribution infrastructure are essential. This includes encrypted communication channels, multi-factor authentication, and regular security audits to ensure the integrity of pensioner data and financial transactions (Nagarajan and Sixsmith, 2023).

Fraudulent activities, such as scams targeting pensioners, pose another significant challenge. Awareness campaigns and educational initiatives can play a vital role in empowering pensioners to recognise and avoid common scams (Brink, 2023). Moreover, collaboration between government agencies, financial institutions, and law enforcement can enhance the ability to investigate and prosecute those involved in fraudulent schemes, providing an additional layer of protection for pensioners.

The risk of funds being misplaced or mismanaged is also a concern, especially for pensioners who may face difficulties in managing their financial affairs. Implementing user-friendly digital interfaces, providing accessible financial literacy programmes, and offering personalised financial counselling services can help pensioners better understand and manage their funds, reducing the likelihood of financial mismanagement (Brink, 2023).

While addressing security threats, fraud, and financial mismanagement, it is essential to continue focusing on broader strategies to support the well-being of old-age grant pensioners. This includes the development of affordable housing initiatives and accessible healthcare services to alleviate financial burdens (Rasmussen et al., 2024). Additionally, the creation of community-based networks and support systems remains crucial in mitigating social isolation, promoting a sense of belonging, and offering emotional support to elderly individuals. By adopting a comprehensive approach that integrates security measures with social support programmes, Canada can better address the unique challenges faced by its aging population and ensure the financial security and well-being of old-age grant pensioners (Nagarajan et al., 2023).

According to Jager (2023), challenges encountered by old-age grant pensioners in the UK are diverse and multifaceted, ranging from concerns about pension adequacy to issues related to regional disparities. A comprehensive strategy is imperative to address these challenges and ensure the overall well-being of pensioners. Foster (2023) is of the notion that periodic reviews of pension rates constitute a core component of this strategy, aiming to maintain alignment with the evolving cost of living and economic conditions. Such regular assessments are crucial to guarantee that pensioners receive financial support that remains adequate amidst changing economic landscapes. Furthermore, Kuitto et al. (2023) believe that the strategy must encompass policy measures designed to tackle regional variations in living costs. By addressing these disparities, the aim was to establish a more equitable distribution of pension benefits across different regions of the UK.

This approach recognises the diverse economic circumstances experienced by pensioners in various areas, fostering a fair and inclusive system for all recipients of old-age grants. In addition to these primary challenges, there is a growing need to consider the potential risks associated with security threats and fraud, particularly in an era of increasing reliance on digital platforms for pension disbursements (Kessler, 2021). Cybersecurity measures should be integrated into the pension distribution infrastructure, incorporating encryption, multi-factor authentication, and regular security audits to safeguard pensioner data and financial transactions (Foster, 2023). Simultaneously, educational initiatives become crucial to empower pensioners in recognising and preventing fraud. Collaborative efforts with law enforcement agencies enhance the ability to investigate and prosecute fraudulent activities.

Spijker and Schneider (2021) alluded that mitigating the risk of funds being mismanaged requires the implementation of user-friendly interfaces and financial literacy programmes. These measures are essential to ensure that pensioners can effectively manage their finances, reducing the likelihood of financial mismanagement. Moreover, a comprehensive strategy should involve targeted financial assistance programmes for low-income pensioners. By tailoring financial support to the specific needs of vulnerable pensioners, this aspect of the strategy contributes to alleviating financial strains, fostering a more inclusive and supportive system for elderly individuals (Jager and Philipp, 2023).

Addressing the challenges faced by old-age grant pensioners in the UK requires a comprehensive strategy that encompasses various dimensions. By integrating measures to ensure pension adequacy, address regional disparities, and mitigate security threats and fraud, the UK can establish a resilient and equitable pension system that safeguards the financial well-being of its aging population.

In summary, regarding challenges faced by the elderly when utilising Internet banking and ATM services, Kumar (2018) recommended the development of dimensional website pages incorporating voice recognition and the utilisation of video technology to facilitate interaction with bank employees. These measures aimed to enhance accessibility for the elderly, providing them with greater control over their finances and fostering trust in the utilisation of e-banking services. Recognising the significance of security in the realm of banking IT initiatives, Lyons et al. (2020) emphasised the critical role of safeguarding against data breaches, as such incidents can

profoundly impact a bank's revenue, brand value, and consumer trust. To mitigate security threats, financial institutions are advised to carefully assess vulnerabilities and implement software solutions that contribute to fraud protection. Additionally, with the proliferation of mobile devices equipped with biometric capabilities, the authors propose the implementation of biometric authentication as a secure means of verifying customers' identities, given the heightened security offered by biometrics compared to conventional systems.

To diminish security issues such as fraud and identity theft, the implementation of robust security measures is imperative (Kemp and Pérez, 2023). Awareness campaigns that educate pensioners about online security practices and the importance of safeguarding personal information contribute to a safer digital environment. Additionally, fostering collaboration between government agencies, financial institutions, and non-profit organisations creates a holistic support system for elderly pensioners (Manic and Miljković, 2022). The development of policies and regulations that encourage the inclusion of elderly individuals in the digital economy further fortifies this collaborative effort.

Combatting challenges faced by old-age grant pensioners in Canada and the UK requires a comprehensive approach. Policy reforms, community engagement, and targeted social support programmes tailored to the unique circumstances of each region can collectively contribute to improving the quality of life for elderly individuals and ensuring their financial security in their later years.

2.1.6 Strategies to Combat Challenges Faced by Old-Age Grant Pensioners in Nigeria and South Africa

In the context of addressing the multifaceted challenges faced by old-age grant pensioners in underdeveloped countries, particularly Nigeria and South Africa, a comprehensive approach is imperative. A fundamental aspect of this strategy involves the establishment of robust digital literacy programmes tailored specifically for elderly pensioners (Kuitto et al., 2023). To achieve this, collaborative efforts between governmental bodies, NGOs, and community organisations are essential.

By joining forces, these entities can organise workshops, training sessions, and educational campaigns aimed at equipping elderly individuals with essential digital skills. The goal is to foster confidence among pensioners in navigating e-banking services, contributing to their financial

empowerment. This collaborative approach not only addresses the unique socio-economic landscapes of these nations but also recognises the importance of inclusivity and community involvement in enhancing the digital literacy of elderly pensioners, thereby promoting their active participation in the financial realm (Omotayo and Tolulope, 2020).

The affordability and accessibility of technology devices emerge as critical components of combating challenges faced by elderly pensioners (Kessler, 2021). In these underdeveloped regions, partnerships with technology providers or governmental subsidies can be instrumental in making smartphones and computers more affordable (Nguyen, 2015). Simultaneously, targeted investments in technology infrastructure, especially in rural areas, become imperative to enhance internet connectivity and facilitate seamless access to e-banking services for elderly pensioners in remote locations (Han and Nam, 2021).

Moreover, Fadzil et al. (2021). recognises the diverse needs and capabilities of elderly pensioners in underdeveloped regions, and customisation of technology solutions becomes paramount. Adapting user interfaces and applications to align with the cognitive and sensory abilities of the elderly population enhances the overall accessibility and usability of digital devices (Harvey, 2020). Collaborative initiatives between technology developers, local communities, and relevant stakeholders can play a crucial role in designing user-friendly interfaces that cater to the specific requirements of elderly users.

In addition to device accessibility, digital literacy programmes tailored for the elderly can further bridge the technological gap. Educational initiatives aimed at imparting essential digital skills, including online security practices, and navigating e-banking interfaces, empower elderly pensioners to confidently engage in digital financial transactions. Community-driven workshops and training sessions can be instrumental in fostering a supportive environment where elderly individuals can learn and adapt to the evolving technological landscape (Datta et al., 2019).

Additionally, community engagement initiatives can serve as a conduit for disseminating information and building trust. Local leaders, community organisations, and governmental bodies can collaborate to create awareness about the benefits of e-banking services and address concerns related to security and privacy (Lötter, 2020). By fostering a sense of community and shared responsibility, these initiatives contribute to a more inclusive and secure digital environment for

elderly pensioners in underdeveloped regions, ensuring that they can fully participate in the opportunities offered by digital financial services.

User-friendly interfaces for e-banking applications are pivotal, acknowledging the diverse needs and preferences of elderly users (Harvey, 2020). Collaboration with financial institutions becomes crucial to ensure that interfaces are intuitive, accommodating, and designed with the elderly demographic in mind (Dupuis and Tsotsos, 2018). The establishment of dedicated customer support services, equipped with staff trained to assist elderly pensioners, addresses concerns related to the navigation of e-banking platforms, providing personalised assistance tailored to varying levels of technological proficiency among the elderly (Dupuis et al., 2018).

Effectively mitigating security concerns, such as fraud and identity theft, necessitates the implementation of stringent security measures (Manic and Miljković, 2022). To bolster these measures, comprehensive awareness campaigns are essential to educate pensioners about online security practices and underscore the importance of safeguarding personal information. Initiatives aimed at raising awareness, as noted by Frik et al. (2019), contribute significantly to creating a safer digital environment for elderly individuals engaging in online transactions. Moreover, collaborative efforts between government agencies, financial institutions, and non-profit organisations play a pivotal role in developing and implementing policies and regulations that encourage the secure inclusion of elderly individuals in the digital economy (Kemp et al., 2023). By addressing security concerns through a combination of technological safeguards, educational campaigns, and regulatory frameworks, stakeholders can collectively create a resilient and secure digital landscape for elderly pensioners in their digital financial endeavors.

Implementing incentives to encourage e-banking adoption, such as reduced transaction fees or exclusive benefits tailored for old-age grant pensioners, can serve as a significant motivational factor (Harvey, 2020). Beyond financial incentives, community engagement initiatives play a pivotal role in actively involving local communities in supporting elderly pensioners through the process of adopting and utilising e-banking services (Geffen, 2019). This involvement includes peer-to-peer learning programmes and community-led support networks. Furthermore, establishing mechanisms for regular feedback ensures continuous improvement based on the experiences and suggestions of elderly pensioners. Through these collaborative and targeted strategies, stakeholders can collectively work towards alleviating challenges and fostering a secure, inclusive environment for old-age grant pensioners in underdeveloped countries such as

Nigeria and South Africa (Geffen, 2019). By combining financial motivations with community engagement and responsive feedback mechanisms, this integrated approach aims to create a supportive ecosystem that empowers elderly pensioners in navigating and embracing the benefits of e-banking services.

2.1.7 Empirical Review

Studies indicate numerous key elements, including digital literacy, cybercrimes, and security measures effectiveness in safeguarding the financial transactions of pensioners.

2.1.7.1 Digital literacy and vulnerability

Research by Chapple and Lofflin (2024) mentioned the association between digital literacy and the adoption of e-banking, discovering that the lack of technical know-how among the elderly people worsens their susceptibility to security threats. This is supported by the study carried out by Brink (2023), which investigated the challenges in digital banking among old people in developing nations. The results of the study implied that a lack of acquaintance with the systems of online banking correspond directly with higher vulnerabilities to fraud and cyber-attacks. Another research conducted in South Africa by Barker (2020) further explained that pensioners in remote regions usually do not have the required skills to adopt digital financial systems. These gaps in digital literacy increase the risk of being phishing scams victims and other cybercrimes forms.

2.1.7.2 The existence of cybercrime

Numerous research studies in South Africa have examined the increase of cybercrime, especially in the context of financial services. A substantial rise in digital fraud targeting pensioners has been highlighted by the South African Banking Risk Information Centre (Barker, 2020). The findings further highlighted that pensioners are increasingly becoming vulnerable to online scams such as bogus websites of pension distribution and sham phishing calls. A study by Ayikwa (2022) observed that cybercriminals take advantage of the restricted knowledge of e-banking systems among older people, influencing them to offer sensitive banking information. The susceptibility of pensioners is further worsened by poor measures in place of cybersecurity, such as multifactor authentication, which can avoid unauthorised access to bank accounts

2.1.7.3 Security measures and banking infrastructure

The effectiveness of the current security measures in curbing this concern is the main concern in literature. Research by Ajibade and Mutula (2020) showed that, though e-banking technologies in South Africa implement encryption and secure sockets layer systems, older people usually fail to know or use these security features. Another research by Brink (2023) revealed that the awareness of the user to secure practices of login, such as the complexity of the password and biometric authentication, is low among pensioners in remotes areas. The research further showed that the execution of user-friendly digital interfaces and awareness campaigns by banks could substantially minimise the security experienced by older people.

2.1.7.4 E-Banking adoption and financial inclusion

The e-banking service adoption among South African older people is not entirely deterred by security threats but also by elements such as affordability and access to technology. A study Cosman (2023) discovered that even though pensioners in urban areas have increased levels of engagement with digital banking, rural folks usually face infrastructural challenges, such as erratic network connectivity and restricted access to smartphones. These barriers deter their ability to completely benefit from e-banking services. To address these challenges, Fadzil et al. (2021) suggested digital literacy programmes that are community-based and target older people, emphasizing both the practicality and security of online banking.

Even though the reviewed studies provide insights into the barriers of adopting e-banking services, there are gaps in comprehending the particular effect of security threats on their financial well-being. Just a few studies have emphasised factors affecting the trust of pensioners in e-banking services, especially in South African rural areas. Furthermore, even though several studies recommend the need for enhanced digital literacy and enhanced security features, there is limited empirical evidence assessing the efficacy of executed strategies. Further studies could benefit from longitudinal research that monitors the security experiences of older people over time, offering a more detailed insight into the changing nature of e-banking threats and the efficiency of preventive measures.

2.2 CONCLUSION

In addition to the dynamic nature of the e-banking landscape and its intersection with the security challenges faced by the elderly, it is essential to recognise the profound societal impact of these issues (Geffen et al., 2019). As older individuals increasingly embrace digital financial transactions, often driven by convenience and efficiency, the potential consequences of inadequate security measures become more significant. The consequences extend beyond individual financial losses, encompassing broader implications for trust in digital financial systems and the financial well-being of the elderly population.

Therefore, this study goes beyond a narrow focus on technological intricacies; it examines broader socio-economic implications, aiming to foster a comprehensive understanding of the multifaceted challenges posed by the intersection of e-banking services and the security concerns specific to the elderly demographic. This integrated approach ensures that the findings contribute not only to technological advancements but also to the development of inclusive and secure financial systems that safeguard the monetary interests of the elderly.

Furthermore, the outcomes of this research hold promise for informing policymakers, financial institutions, and technology developers about the specific needs and vulnerabilities of the older demographic in the context of e-banking. The insights gained from this study are expected to guide the formulation of targeted policies and interventions aimed at enhancing the security and accessibility of e-banking services for the elderly. By engaging with this research, stakeholders can be better equipped to design inclusive financial systems that prioritise the protection of the elderly, fostering a more equitable and secure digital financial landscape.

In essence, this literature review sets the stage for an in-depth exploration of the security challenges encountered by old-age grant pensioners in the realm of e-banking. By acknowledging the existing gaps and building upon the insights gained from previous research, this study aims to make a meaningful contribution to the ongoing efforts to create a secure, accessible, and inclusive digital financial environment for the elderly.

CHAPTER THREE: THEORETICAL FRAMEWORK

3.1 INTRODUCTION

A theoretical framework serves as the foundational structure of a research study, amalgamating ideas and theories from existing literature to provide a structured framework (Akcem, Guney, and Cresswell, 2019). Bezuidenhout (2011) highlights its significance in constructing a robust theoretical foundation for research, acting as a scaffolding for the systematic organisation of key concepts, principles, and established theories to guide the entire research process (Mohajan, 2018). Gunter (2019) emphasises its crucial function in reinforcing the overarching theory, scope and boundaries of the study, and provides a conceptual map for comprehending the relationships between variables and concepts, thereby enhancing credibility and integration into scholarly discourse (Cresswell, 2005).

Moreover, the theoretical framework acts as a lens for interpreting research findings, aiding in framing research questions, guiding methodology selection, and informing result analysis and interpretation (Mohajan, 2018). Drawing on existing theories allows researchers to leverage the collective wisdom of the academic community, contributing to the cumulative knowledge in the field of Criminology (Gunture, 2019). Additionally, the theoretical framework is not static but evolves throughout the research, adapting to new insights and emerging findings (Liamputting, 2013). Continual refinement based on empirical evidence ensures that the study remains theoretically grounded and relevant to the dynamic research context. In essence, the theoretical framework serves as a dynamic tool, aiding researchers in navigating complexities and contributing to ongoing knowledge advancement (Mahojan, 2018).

In this study, the adoption of e-banking introduces a dynamic environment where the rational choice theory becomes pertinent, explaining how individuals may strategically contemplate and execute criminal acts through rational decision-making processes. Simultaneously, the diffusion of innovation (DOI) theory gives the stages of adaptation and behavioural changes associated with the integration of e-banking into society. Given that e-banking serves as a platform for change and adaptation, particularly in the context of collecting monthly grant income, it becomes imperative to explore potential security threats, especially for vulnerable populations such as senior citizens.

The implementation of e-banking services creates a dynamic setting that accentuates the relevance of the rational choice theory. This theory elucidates the strategic consideration and implementation of criminal actions by individuals through rational decision-making processes (Walters, 2016). Concurrently, the DOI theory provides insights into the various stages of adjustment and behavioural shifts associated with the assimilation of e-banking services into societal structures (Loughran et al., 2016). Given that e-banking represents a transformative platform, notably in the realm of disbursing monthly grant income, it becomes essential to examine potential security risks. This inquiry is particularly crucial for safeguarding vulnerable groups, such as senior citizens, who may encounter unique challenges in adapting to and utilising these evolving financial technologies. Furthermore, the integration of e-banking services introduces a complex interplay between technological advancements and criminal behaviour. The rational choice theory underscores the intentional decision-making processes behind criminal acts in this evolving landscape (Loughran et al., 2016). As individuals navigate the changing dynamics of accessing financial resources through e-banking services, understanding how rational choices shape their actions becomes pivotal in devising effective security measures.

In addition to rational choice theory, the DOI theory by Rogers (1995), cited by Sahini (2006), offers a comprehensive lens through which to examine the societal adaptation to e-banking usage. It not only explores the stages of acceptance but also clarifies the behavioural adjustments accompanying the widespread adoption of this financial technology (Sahini, 2006). Exploring these stages is crucial for anticipating and mitigating potential security threats, ensuring a smooth integration of e-banking into the fabric of society. Given that e-banking services serve as critical channels for the distribution of monthly grant income, it is imperative to address security concerns, especially concerning the vulnerable demographics of senior citizens. Their unique needs and potential challenges in adapting to this evolving financial landscape demand an approach to security measures, emphasising the importance of inclusive and protective strategies for the broader community (Orr, 2003).

Moreover, the DOI theory provides a valuable perspective for dissecting the multifaceted stages of acceptance and adaptation to technological shifts within society (Sahini 2006). When applied to the realm of e-banking, this theory facilitates an examination of how individuals, including those with criminal intent, progressively embrace and adjust to the pervasive use of these financial

technologies. Investigating the details of the diffusion process becomes paramount for anticipating the changing dynamics of criminal activities associated with e-banking and devising custom preventative strategies.

By scrutinising the stages of innovation diffusion, researchers and policymakers can gain insights into the factors influencing the adoption of e-banking, both legitimate and illicit. This understanding is instrumental in crafting proactive measures that address potential security vulnerabilities arising at different points in the diffusion trajectory. In essence, the DOI theory serves as a strategic tool for comprehensively evaluating the societal impact of e-banking services integration and formulating targeted interventions to ensure the responsible and secure assimilation of this technology into daily life (Singh, 2002).

Certainly, the focus on senior citizens relying on e-banking services such as ATMs for collecting monthly grant income amplifies the significance of the intersection between rational choice and DOI theories. This demographic, due to potential unfamiliarity with rapidly evolving technologies, becomes especially susceptible to security threats. By examining how rational choices and the diffusion process interact within the context of senior citizens' engagement with ATMs, the researcher gained an understanding of the influences on criminal behaviours and vulnerabilities unique to this user group.

The rational choice theory and DOI theory are the frameworks for examining the decisions of senior citizens for adopting and adapting to e-banking services usage. It underscores the need for tailored security measures that consider the specific challenges faced by seniors in this evolving technological landscape. This holistic approach enhances the ability to address not only criminal motivations but also the vulnerabilities inherent in the adoption of financial technologies among the elderly.

In conclusion, the selected theoretical framework not only deepens understanding of the motivations driving criminal activities related to e-banking but also enriches comprehension of broader societal implications. The emphasis on vulnerable populations, such as senior citizens relying on these platforms for essential financial transactions, underscores the importance of adopting a comprehensive approach to security and societal integration of evolving technologies.

This study explores the dynamic environment introduced by the adoption of e-banking, wherein the rational choice theory elucidates how individuals strategically contemplate and execute criminal acts through rational decision-making processes. Concurrently, the DOI theory gives the stages of adaptation and behavioural changes associated with e-banking integration into society, particularly in disbursing monthly grant income, prompting the exploration of potential security threats, especially for vulnerable populations such as senior citizens.

The implementation of e-banking accentuates the relevance of the rational choice theory, detailing strategic considerations and the implementation of criminal actions through rational decision-making processes. Simultaneously, the DOI theory offers insights into stages of adjustment and behavioural shifts associated with the assimilation of e-banking services into societal structures. As e-banking serves as a transformative platform, especially in disbursing monthly grant income, delving into potential security risks is essential, particularly for safeguarding vulnerable groups such as senior citizens, who may face unique challenges in adapting to evolving financial technologies. Furthermore, the integration of e-banking introduces a complex interplay between technological advancements and criminal behaviour, emphasising the importance of understanding how rational choices shape actions when accessing financial resources through e-banking services.

The DOI theory, when applied to e-banking, facilitates an exploration of how individuals, including those with criminal intent, progressively embrace and adjust to the pervasive use of these financial technologies. This perspective becomes paramount for anticipating the changing dynamics of criminal activities associated with e-banking and devising tailored preventative strategies. Scrutinising the stages of innovation diffusion allows researchers and policymakers to gain insights into factors influencing e-banking adoption, both legitimate and illicit, instrumental in crafting proactive measures addressing potential security vulnerabilities at different points in the diffusion trajectory. The emphasis on senior citizens relying on e-banking services underscores the significance of the intersection between rational choice and DOI theories, necessitating a holistic approach to tailored security measures for the evolving technological landscape among the elderly. This comprehensive theoretical framework deepens the understanding of motivations driving criminal activities related to e-banking and enriches the comprehension of broader societal implications, emphasising the need for a comprehensive approach to security and societal integration of evolving technologies.

3.2 RATIONAL CHOICE THEORY

The rational choice theory posits that individuals, driven by self-interest, make decisions aimed at maximising their benefits. This theory, as articulated by Thomas et al. (2022), suggests that people engage in a cognitive process of evaluating available options and choosing the one they believe will serve their interests most effectively. The internal process of rationalisation plays a pivotal role in the rational choice theory, particularly in the context of criminal behaviour. Before committing a crime, individuals engage in a thoughtful consideration of various factors, including the potential risks, punishments, and desired benefits associated with the contemplated action. This process involves a deliberate weighing of the potential consequences against the perceived advantages (Gul, 2009).

Crucially, if the perceived punishment for a criminal act outweighs the anticipated benefits, individuals are less inclined to engage in unlawful behaviour. Conversely, when individuals perceive the benefits as outweighing the potential punishment, the likelihood of them committing the crime increases (Thomas et al., 2022). This cost-benefit analysis, inherent in the rational choice theory, reflects the rational decision-making processes individuals undergo when contemplating criminal actions.

The rational choice theory underscores the importance of individuals' self-interest and the conscious consideration of risks and rewards in the decision-making process, providing a framework to understand and predict criminal behaviours based on perceived costs and benefits (Nagy and Groves, 2021). In the realm of criminality, this theory suggests that individuals engage in a rationalisation process where they assess not only the potential legal repercussions but also the social consequences of their actions. Social factors, such as the influence of friends, family, or community, can play a significant role in shaping an individual's perception of the benefits and risks associated with criminal behaviour (Thomas et al., 2022).

Additionally, the rational choice theory acknowledges the bounded rationality of individuals, recognising that decision-making is constrained by cognitive limitations, information asymmetry, and time constraints. This aspect highlights that people may not always have access to complete information or the ability to thoroughly analyse all possible alternatives, leading to decisions that are rational within the constraints of the situation (Schram, Schwartz and Tibbetts, 2023)

3.2.1 Application of the Rational Choice Theory

The application of the rational choice theory to the domain of e-banking services reveals underlying security threats as individuals meticulously assess the risks and benefits associated with engaging in cybercriminal activities (Schram et al., 2023). Within the context of e-banking, where financial transactions occur electronically, the rational choice theory offers valuable insights into the decision-making processes of both potential attackers and users.

From the perspective of cybercriminals, a cost-benefit analysis plays a crucial role in their decision to exploit vulnerabilities in e-banking systems. In this evaluation, cybercriminals weigh the potential gains, such as financial profits or data theft, against the perceived risks of detection and legal consequences (Thomas et al., 2022). If the anticipated benefits outweigh the potential penalties, individuals with malicious intent are more inclined to engage in cyberattacks. Moreover, the rational choice theory helps elucidate how cybercriminals consider their technological sophistication and the level of security measures when selecting targets (Steinmetz and Pratt, 2024). Advanced attackers may strategically target systems where they believe their technical skills provide them with a distinct advantage such as targeting elderly citizens with minimal knowledge of the system and operations (Chapple and Lofflin, 2024).

In contrast, examining the users' perspective through the lens of the rational choice theory provides insights into the factors influencing their decisions regarding e-banking services (Thomas et al., 2022). Users evaluate the trustworthiness and perceived security of e-banking platforms, choosing to engage with those they believe offer a secure environment for their financial transactions. Additionally, users engage in a trade-off between the convenience offered by e-banking services and potential security risks. If individuals perceive e-banking as a convenient and efficient means of managing their finances, they may be more willing to accept certain risks, assuming the benefits outweigh potential negative outcomes (Nagy et al., 2021).

Consideration of system design and countermeasures is crucial in the context of e-banking security. Rational choice theory suggests that effective deterrence measures, such as robust cybersecurity protocols, strong authentication methods, and swift legal consequences for cybercrimes, can influence individuals' decisions by making the perceived costs outweigh the benefits (Gunture, 2019). Furthermore, understanding users' rational choices informs strategies for educating and raising awareness among e-banking users about potential security threats.

Empowering users with knowledge about safe online practices can influence their decision-making toward more secure behaviours (Steinmetz et al., 2024).

In conclusion, the application of the rational choice theory to e-banking services provides a comprehensive understanding of the motivations and considerations of both potential attackers and users (Chapple et al., 2024). This insight is indispensable for designing effective security measures, implementing deterrents, and fostering a secure environment for electronic financial transactions (Steinmetz et al., 2024).

The proposed study centres on the fundamental premise of rational choice theory, asserting that offenders are rational actors capable of calculating and evaluating the benefits and risks before engaging in criminal activities. According to this theoretical framework, individuals are presumed to engage in a cognitive process where they consciously weigh the pros and cons of potential criminal actions (Thomas et al., 2022). This decision-making process is marked by a deliberate consideration of whether the benefits of committing a crime outweigh the associated risks and potential punishments.

In the specific context of the proposed study, the focus is on situations where an individual is exposed to a pensioner in need of assistance while utilising the e-banking system. In such scenarios, the rational choice theory posits that the individual, being a rational being, will assess the situation in terms of their self-interest and the potential gains or losses involved.

The decision-making process involves a careful consideration of various factors. In one aspect, the individual must evaluate the risks of engaging in criminal behaviour, such as the possibility of being caught by security guards or facing mob justice (Chapple et al., 2024). In another manner, they weigh the potential benefits of dishonest actions, such as theft and taking advantage of the vulnerable pensioner's situation. If the rational calculation leads the individual to conclude that the benefits of engaging in criminal behaviour outweigh the risks and potential punishments, it is suggested that they are more likely to indulge in such actions. Conversely, if the perceived risks and potential consequences outweigh the anticipated benefits, the rational choice theory implies that the individual may refrain from engaging in criminality (Thomas et al., 2022).

In conclusion, the study aims to explore how the rational choice theory operates in real-life situations, specifically in the context of e-banking and interactions with vulnerable individuals such as pensioners. By examining the decision-making processes in these scenarios, the research

seeks to contribute to a deeper understanding of the motivations and considerations that drive individuals to choose between honest assistance and criminal actions.

3.2.2 Critiques of Rational Choice Theory

The rational choice theory, a foundational framework in various disciplines, has faced criticism and scrutiny due to several inherent limitations (Loughran et al., 2022). A primary critique concerns the theory's oversimplification of human behaviour, assuming individuals consistently act as rational, goal-oriented decision-makers with complete information. Decision-making often occurs under uncertainty, with bounded rationality and incomplete information challenging the theory's foundational assumptions (Nagy et al., 2021).

Critics argue that the rational choice theory tends to neglect the substantial influence of social and cultural factors on decision-making. Human behaviour is intricately shaped by societal norms, cultural values, and group dynamics, elements not fully considered in the theory's individualistic focus (Thomas, Loughran and Hamilton, 2020). This oversight limits the theory's applicability in contexts where social and cultural influences play a pivotal role in shaping choices.

Moreover, the theory's assumption of perfect information is a notable limitation. It implies that individuals possess complete information to make optimal decisions, disregarding scenarios where information is imperfect. In the real world, individuals often make decisions based on limited or inaccurate information, leading to choices that might be rational given the available data (Thomas et al., 2020).

The rational choice theory struggles to predict or explain behaviour in situations where emotions, social norms, or ethical considerations are significant factors (Nagy et al., 2021). Decisions involving altruism, fairness, or other non-self-interested motives may not align well with the theory's assumptions, highlighting its limitations in capturing the complexity of human decision-making.

Additionally, Hayward (2017) is of the notion that the theory lacks consideration for psychological factors, emotions, and cognitive biases that influence decision-making. Human decisions are often shaped by psychological heuristics, and biases, aspects not fully accounted for in the rational framework. This limitation hinders the theory's ability to comprehensively capture the richness of human decision-making processes.

In conclusion, while the rational choice theory provides valuable insights into certain decision-making processes, its critiques, and limitations emphasise the need for a more context-specific understanding of human behaviour. Researchers often integrate insights from various theories to offer a more comprehensive explanation of decision-making in diverse contexts, acknowledging the inherent complexities and challenges associated with rational choice models (Jeffery, 2021).

3.2.3 Addressing Critiques of the Rational Choice Theory

The study on e-banking experiences among senior citizens aims to address the limitations associated with the rational choice theory by adopting a multifaceted research approach. One primary limitation of the theory is its oversimplification of human behaviour, assuming individuals consistently act as rational, goal-oriented decision-makers with complete information. To counter this, the study employed a qualitative research methodology, incorporating in-depth interviews and participant observations. This approach is designed to capture the context-specific aspects of decision-making among senior citizens engaging with e-banking platforms, allowing for a more comprehensive exploration of motivations and preferences beyond the assumptions of rationality.

In response to the critique that the rational choice theory neglects social and cultural influences on decision-making, the study integrated a sociocultural lens into its research design. By examining the socio-cultural context of senior citizens, including community norms, social networks, and cultural values, the research seeks to unveil the social dynamics shaping e-banking adoption decisions. This deliberate consideration of broader societal influences aims to provide a more holistic understanding of decision-making that goes beyond individualistic rationality.

The challenge related to perfect information and the assumption that individuals possess complete knowledge will be addressed by investigating the information environment of senior citizens engaged in e-banking. The study explored sources, comprehensibility, and perceived accuracy of information available to individuals when making e-banking decisions. This inquiry seeks to offer insights into the information asymmetry that often characterises real-world decision scenarios.

Moreover, the study deliberately explored the emotional and ethical dimensions of e-banking experiences among senior citizens. Recognising that the rational choice theory tends to overlook these aspects, the qualitative approach will allow for the in-depth examination of sentiments, fears, and ethical considerations that influence decision-making in the realm of e-banking. This

exploration aims to provide a more detailed understanding of the complex interplay of emotions and ethics in the decision processes of senior citizens.

In conclusion, the study strategically addressed the limitations of the rational choice theory by employing qualitative methods, integrating sociocultural considerations, investigating information asymmetry, exploring emotional and ethical dimensions, incorporating a longitudinal perspective, and delving into collective decision-making dynamics. Through these methodological and theoretical strategies, the research aims to provide a more contextually sensitive, dynamic, and comprehensive understanding of e-banking adoption among senior citizens.

3.3 DIFFUSION OF INNOVATION THEORY

The DOI theory is a valuable framework for exploring the particulars of technological innovation, particularly when adaptations and presentations of the innovation are designed to meet the varied needs of adopters across different levels. According to Rogers (2003), a pivotal aspect of successful adoption lies in individuals' perceptions of the idea, behaviour, or product as novel and innovative.

Rogers (2003) describes the adoption process as a dynamic sequence commencing with a select group of innovators who, being inherently open to experimentation, require minimal persuasion to engage with new ideas. As innovators actively embrace and disseminate information about innovation, a gradual expansion ensues, leading to an increasing number of individuals becoming amenable to its adoption. This incremental acceptance ultimately gives rise to the development of a critical mass. Over time, as the innovative concept or product gains momentum, it permeates throughout the wider populace until reaching a saturation point. Rogers (2003) categorises adopters into five distinct groups within this diffusion process.

The first group, the innovators, is characterised by individuals who display an eagerness to test and incorporate innovations, necessitating minimal persuasion for adoption. The second group, early adopters, predominantly found in leadership positions, readily embrace change opportunities and play a pivotal role in influencing others. The third category, early majority, comprises individuals comfortable with change but typically lack active involvement in leadership roles. This group represents a substantial segment of the population and significantly contributes to the diffusion process. The fourth group, the late majority, tends to be sceptical of change and necessitates testimonials or evidence from early adopters before considering the innovation.

Finally, laggards and non-adopters, characterised by conservatism and aversion to unnecessary risks, constitute the last demographic to adopt, often requiring concrete facts and extensive persuasion (Rogers, 2003).

In essence, the DOI theory provides a comprehensive framework for comprehending how innovations traverse diverse segments of society. Its insights are instrumental in guiding strategies aimed at the successful introduction and integration of innovations within varied user groups (Rogers, 2003).

3.3.1 Application of the Diffusion of Innovation Theory

In this study focused on the e-banking experiences of senior citizens, the DOI theory offers a pertinent lens through which to understand the dynamics of technology adoption within this specific demographic. As e-banking represents a technological innovation, examining the adoption patterns and behaviours of senior citizens aligns with the key principles of the theory.

Considering the senior citizens as the target adopters, they are likely to exhibit varying responses based on their categorisation within the DOI framework (Sohail, 2012). Innovators among senior citizens may be those who eagerly explore and embrace e-banking services, driven by a natural curiosity and a willingness to test new technological solutions. Early adopters within this demographic, potentially those in leadership positions or with a predisposition for technological advancements, may readily adopt e-banking and serve as influencers within their social circles (Kaminski, 2011).

According to Sohail, (2012), the early majority of senior citizens, comfortable with change but not necessarily involved in leadership roles, could represent a significant portion of adopters. They may adopt e-banking services as the innovation gains wider acceptance and becomes more normalised within the senior community. Late majority individuals may be more sceptical, requiring testimonials and assurances from their peers before considering the adoption of e-banking.

The DOI theory also acknowledges that certain individuals, such as laggards and non-adopters, may be resistant to embracing e-banking due to a conservative mindset or an aversion to perceived risks (Kaminski, 2011). Understanding these various adopter categories becomes crucial for tailoring interventions and support mechanisms aimed at addressing the diverse needs and concerns of senior citizens engaging with e-banking platforms. Moreover, recognising that the

diffusion process is not uniform among all adopter categories can inform the design of targeted educational programmes, user-friendly interfaces, and support structures. This approach is vital for ensuring that the diffusion of e-banking services among senior citizens is both inclusive and effective (Chang, 2010).

3.3.2 Critiques of the Diffusion of Innovation Theory

In extrapolation, applying the DOI theory to the study allows for a comprehensive examination of how senior citizens adopt and adapt to e-banking services. By considering the varying categories of adopters, the study can provide valuable insights for developing strategies that facilitate a smoother integration of e-banking technologies within this specific demographic, ultimately contributing to the overall success of technological innovation in the context of senior citizen e-banking experiences.

The DOI theory, while influential in elucidating the patterns of innovation adoption, is not exempt from critiques within scholarly discourse (Walker, Avellaneda and Berry, 2011). One notable criticism pertains to its overemphasis on individual rationality in decision-making, neglecting the intricate interplay of social and cultural influences that shape behaviour. Critics argue that the theory's linear model oversimplifies the dynamic nature of the adoption process, failing to account for feedback loops and nonlinear trajectories (MacVaugh and Schiavone, 2010). Additionally, the theory's categorisation of adopters into distinct groups is criticised for oversimplifying diverse attitudes and motivations within each category. The neglect of power dynamics within social systems is another critique, as the theory does not adequately address how disparities in power may impact the equitable distribution of innovations (Kee, 2017). Furthermore, the theory assumes innovation homogeneity and does not sufficiently explore temporal factors, such as the timing of innovation introduction and changing circumstances. The lack of attention to resistance to change and limited exploration of communication are also noted critiques (Rogers, 1964). These criticisms collectively underscore the need for a more context-specific approach when applying the DOI theory in academic research and practical contexts.

3.3.3 Addressing Critiques of the Diffusion of Innovation Theory

In response to the identified critiques of the DOI theory, the study on e-banking experiences among senior citizens employed specific methodological and theoretical strategies to enhance the applicability and robustness of the research. To address the potential oversimplification inherent

in the categorisation of adopters, the study embraced a qualitative approach, incorporating interviews and participant observations. This methodological choice aims to capture context-specific experiences of senior citizens, allowing for a more sophisticated analysis that transcends rigid adopter categories.

Given the critique related to communication, the current study explored the effectiveness of various communication channels in disseminating information about e-banking among senior citizens. Findings of the study outline that personalized face-to-face interactions and instructional workshops were significantly more effective than digital mediums such as emails and social media, which were often less accessible or less trusted by the older demographic. This investigation encompassed the influence of interpersonal communication, community engagement, and educational programmes on perceptions and adoption decisions. Understanding complex communication strategies is pivotal for addressing the multifaceted nature of information dissemination.

To overcome the mentioned critique, this study incorporated a longitudinal element, enabling the capture of changes in adoption patterns over time. This longitudinal approach examines the evolving nature of e-banking adoption among senior citizens, accommodating shifting circumstances, external events, and changes in technological landscapes. In recognition of the importance of understanding resistance to change, this current study explicitly investigated factors contributing to scepticism or reluctance among senior citizens toward e-banking adoption. Identifying these barriers to change is essential for informing strategies that mitigate resistance and promote a more inclusive diffusion of e-banking technologies.

Lastly, acknowledging the diversity of e-banking services, this study considered different facets of innovation, including user interface design, security features, and financial literacy components. This approach recognises that innovations are not homogenous and aims to provide an analysis of the specific features influencing adoption. In summary, through the incorporation of these methodological and theoretical strategies, the study endeavours to address the critiques of the DOI theory, contributing to a comprehensive understanding of e-banking adoption among senior citizens.

3.4 CONCLUSION

The researcher has discussed the theoretical framework that is underpinned by the rational choice theory and the DOI theory for this current study. The rational choice theory provides a lens to understand the decision-making processes of cybercriminals, who weigh the potential rewards of targeting pensioners against the risks and consequences. This theory helps explain why pensioners, often seen as less technologically savvy, become prime targets for cyber fraud. On the other hand, the DOI theory sheds light on how pensioners adopt e-banking services, highlighting the stages of adoption and the various factors influencing their acceptance and use of these technologies.

By combining these two theories, the researcher aims to offer a comprehensive understanding of the dynamics at play in the security threats faced by pensioners using e-banking services. This dual-theoretical approach not only elucidates the motivations behind cybercriminal activities but also explores the socio-technical challenges that hinder the effective adoption of secure e-banking practices among pensioners. The framework provides a structured way to analyse how technological, psychological, and social factors intersect to create vulnerabilities, thereby informing the development of targeted interventions to enhance the security and usability of e-banking for this demographic.

Building upon the comprehensive understanding garnered from the integration of rational choice theory and the DOI theory, the following chapter embarks on the practical exploration of the dynamics surrounding security threats encountered by pensioners utilizing e-banking services. This dual-theoretical approach, elucidating both the motivations driving cybercriminal activities and the socio-technical challenges impeding secure e-banking adoption among pensioners, serves as the bedrock for the methodological framework outlined in this chapter. Through a structured analysis of technological, psychological, and social factors, the following chapter seeks to operationalize these theoretical constructs into actionable research methodologies. By delineating the research design, sampling strategies, data collection instruments, and analytical frameworks, this chapter sets the stage for a systematic inquiry into the complexities of e-banking security within the targeted demographic. Thus, the following chapter serves as a pivotal juncture in translating theoretical insights into empirical investigation, paving the way for the development of targeted interventions aimed at enhancing the security and usability of e-banking services for pensioners.

CHAPTER FOUR: RESEARCH METHODS

4.1. INTRODUCTION

In detailing research methods, the following section offers a comprehensive overview of the chosen research design, methodological procedures, and various approaches incorporated in this study (Worthington, 2013). It outlines the step-by-step process for collecting data. It explicitly states the techniques used for data analysis (Mweshi and Sakyi, 2020). This discussion serves as a pivotal point for explaining the researcher's design to guide the study.

4.2 RESEARCH DESIGN

The phenomenological research design employed in this study focused on understanding individuals' lived experiences of a particular phenomenon and aimed to uncover the essence of these experiences through interviews or observations (Mweshi et al., 2020). This methodology focuses primarily on the everyday experiences of individuals, intending to set aside any preconceived assumptions researchers may have about the phenomenon in question (Worthington, 2013). The choice of this design aligns with the objectives of the proposed study, as it seeks to gain insight into the lived experiences of pensioners concerning the evolution of banking system operations, particularly in the realm of e-banking.

In adopting a phenomenological research design, the study is strategically positioned to examine the subjective aspects of pensioners' experiences with the evolving landscape of banking, especially in the context of e-banking (Mohajan, 2018). This design is well-suited to capture the richness and diversity of individual perceptions and interpretations regarding advancements in banking technology (Bezuidenhout, 2011).

4.3 RESEARCH APPROACH

The qualitative research methodology is well-suited to the particulars of this study since it focuses on capturing the depth and context of participants' narratives rather than reducing their experiences to quantitative measures (Braun and Clarke, 2023). Given that the study explored the unique lived experiences of senior citizens, this approach allowed for an in depth understanding of their perspectives, attitudes, and behaviours. The choice of a phenomenological research design further enhanced the qualitative approach by providing a detailed and context-specific investigation into the phenomenon within Hammarsdale, Mpumalanga Township. According to the work of Braun

et al. (2023), phenomenological research design offers an in-depth exploration of real-world situations, allowing researchers to uncover details and contextual factors that may influence participants' experiences and perceptions of security threats associated with e-banking. The qualitative research approach enabled the researcher to establish a meaningful connection with participants, fostering a deeper understanding of the local dynamics and cultural influences shaping their interactions with e-banking technologies.

4.3.1 Research Paradigm

A research paradigm refers to a set of beliefs, assumptions, and methodologies that guide the way researchers conceptualise and conduct their studies (Mohajan, 2018). It encompasses the researcher's worldview, epistemological stance, ontological assumptions, and methodological approaches while providing a framework within which researchers interpret data, formulate research questions, and make sense of their findings (Mncwabe, 2018). This study employed the interpretive research paradigm which signifies a commitment to understanding the complexities inherent in human behaviour, particularly in the context of elderly SASSA grant pensioners' perspectives on e-banking as a security threat (Muzari, Shava and Shonhiwa, 2022). Unlike positivist approaches that seek to establish universal laws and generalisations through quantifiable data, the interpretive paradigm acknowledges the unique and multi-layered nature of human experiences (Worthington, 2013).

The interpretive research paradigm is particularly well-suited for exploring subjective meanings, and social interactions that shape individuals' perceptions and behaviours (Cervone and Pervin, 2022). In the case of this study, exploring the lived experiences of elderly pensioners necessitates an approach that valued the richness of the qualitative data and embraced the idea that human behaviour is influenced by diverse and interconnected factors (Maxwell, Bickman and Rog, 2009). Moreover, the interpretive paradigm aligns with the study's emphasis on studying human behaviour in its natural, everyday context rather than isolating variables in a controlled environment (Braun et al., 2023). The choice of this paradigm recognises the importance of understanding the social, cultural, and personal dimensions that contribute to pensioners' perspectives on e-banking security.

The interpretive research paradigm encouraged the researcher to engage with participants holistically, acknowledging the subjectivity inherent in their experiences (Cervone et al., 2022).

By adopting the interpretive research paradigm, this study aimed to generate in-depth insights that went beyond surface-level observations. This paradigm encouraged an exploration of the factors influencing pensioners' perceptions, offering an understanding of how they navigate and interpret the evolving landscape of e-banking security threats.

4.3.2 Study Location

According to Mosoetsa (2005), Mpumalanga is positioned as the eastern boundary of the eThekweni Metropolitan Municipality within the Greater Durban region, contiguous with the Mkhambathini Local Municipality in the uMgungundlovu District and Cato Ridge to the north. Situated amidst the Valley of a Thousand Hills, an mountainous terrain between Durban and Pietermaritzburg, Mpumalanga encompasses a vast area of 21.66 km², featuring subdivisions denoted by letters A to H, and distinct areas such as Elangeni, Geogedale, eMophela, and eShiyabazali.



Figure 1.1 Map of Hammarsdale, Mpumalanga Township, KZN

Source: AfriGIS, 2024

The township of Hammarsdale, located in Mpumalanga, the focal point of the study, is positioned southeast of Cato Ridge and approximately 40 km west of Durban in KZN, South Africa (Bonnin, 2006). While Pinetown serves as the nearest regional urban centre, situated 35 km to the east, Pietermaritzburg, located about 39 km to the northwest, also functions as an urban hub for Mpumalanga. Notably, the study area falls under the jurisdiction of the eThekweni Municipality, and its demographic landscape primarily comprises of Black Africans, with IsiZulu being the predominant language of communication. The proximity of Hammarsdale to surrounding towns,

including Cato Ridge (10 km), Camperdown (16 km), and Hillcrest (24 km), contributes to the interconnected urban fabric of this region (Mosoetsa, 2005).

The choice of Hammarsdale as the study location is strategic for several reasons such as the township is grappling with substantial challenges related to crime, rendering it an apt setting for examining e-banking security threats. Of particular concern is the vulnerability of senior citizens, who are seen as targets as they are often less familiar with modern banking technologies and may be more susceptible to scams and fraudulent activities (Mncwabe, 2018). Additionally, Hammarsdale's demographic profile, characterised by a significant proportion of elderly residents, provides a unique opportunity to explore the impact of e-banking security threats on this vulnerable population segment (Mncwabe, 2018). Instances, where strangers exploit grant pay dates to gain access to the bank details and funds of the elderly, have become increasingly prevalent, underscoring the urgent need to address e-banking security concerns in the community (Mncwabe, 2018). According to Ndlovu (2018), the township has been identified as facing significant crime-related challenges, particularly affecting senior citizens who are often targeted and robbed of their grant income when using e-banking services. Incidents involving strangers taking advantage of grant pay dates to exploit the elderly by helping gain access to their bank details and money have become increasingly prevalent (Mncwabe, 2018). This alarming trend underscores the urgency for research to address the existing gap in the literature and provide recent and reliable information.

The study holds the potential to benefit the township of Hammarsdale in several significant ways by contributing valuable insights into the dynamics of crime, particularly those impacting senior citizens. This understanding is crucial for local authorities and community organisations in devising targeted interventions and strategies to address the root causes of crime and improve safety (Mncwabe, 2018). The study aimed to identify effective strategies to combat crimes targeting senior citizens, such as robbery and fraud related to e-banking services. Doing so works towards enhancing the safety and well-being of the residents in Hammarsdale, particularly the vulnerable elderly population. The research findings may serve as a foundation for community-based initiatives and interventions aimed at addressing the specific challenges senior citizens face. Ultimately, these efforts have the potential to foster a safer and more secure environment for all residents of Hammarsdale utilising e-banking services.

4.3.3 Sampling Technique and Sample Size

In the process of selecting research respondents from a population, the choice between probability and non-probability sampling design is pivotal. Selecting between probability and non-probability sampling relies on securing representative samples, reducing bias, and enabling statistical inference (Creswell and Clark, 2007). Probability sampling ensures greater reliability and generalisability, whereas non-probability methods may be more pragmatic or aligned with specific research goals, despite potential drawbacks in representativeness and statistical robustness (Mncwabe, 2018). For the current study, the researcher opted for a non-probability sampling technique, specifically employing purposive sampling. This decision aligns with the findings of Kumar (2011), Maxfield and Babbie (2001), and Whitley (2002) as cited in Booyens (2008), who assert that non-probability sampling is particularly effective when the number of participants in a population is either unknown or cannot be individually identified. This approach addresses practical challenges associated with precisely determining the population size or identifying each member. Furthermore, Kemper, Stringfield and Teddlie (2003), as cited in Booyens (2008), assert that non-probability sampling can be judiciously applied in both quantitative and qualitative studies, showcasing the versatility of this method.

Purposive sampling is characterised by researchers employing diverse methods to identify all potential cases within a particular and challenging-to-reach population (Guba and Lincoln, 1994; Patton, 2002; Creswell, 2005; Choy, 2014). Cohen, Phillips and Palos (2001) assert that purposive sampling stands out as the predominant strategy in qualitative research due to the qualitative approach to comprehend the meaning of phenomena from the participants' perspectives. Given this emphasis, researchers Guba (1994), Patton (2002), Creswell et al. (2007) and Cohen et al. (2001) agree that prioritising a sample that yields maximum insights emphasises that qualitative research focuses on information-rich cases that can be thoroughly investigated. Consequently, the researcher in this study opted for purposive sampling, and selecting this method to construct a sample tailored to the specific needs of the research.

The study specifically employed purposive sampling to optimise cost-effectiveness and time efficiency, given the known nature of the participants (Choy, 2014). This sampling strategy was considered suitable for identifying the most relevant populations, aligning with the study's focus on senior citizens of Hammarsdale, Mpumalanga Township (Mweshi et al., 2020). In implementing purposive sampling, the researcher sought permission from the community ward

councillor to visit elderly individuals in each household within the community. This formal request was a crucial step in gaining access to potential participants and ensured that the study’s aims and objectives were effectively communicated to the community stakeholders. The use of non-probability sampling, particularly through purposive sampling, not only addresses practical constraints associated with the population but also aligns with the versatile nature of this technique, integrating into various research paradigms encompassing both quantitative and qualitative methodologies.

Once permission was obtained from the ward councillor, the researcher then proceeded to identify and select participants based on the study’s criteria. The involvement of the community ward councillor not only facilitated the participant selection process but also added a layer of community endorsement, potentially enhancing the participants’ willingness to engage in the study. This collaborative approach enhanced the study’s ability to capture a diverse range of perspectives from the targeted population. The application of purposive sampling, in conjunction with community collaboration, ensured that the study included participants who were most relevant to the research focus. This methodological choice reflected a pragmatic and efficient approach to participant selection, aligning with the constraints of time and resources while ensuring the study’s alignment with its objectives.

A sample of the population consisted of the following.

Table 4.1 Recruitment of participants

Category of Participants	Number of Participants	
	Women	Men
SASSA Grant Pensioners	5	5
Security Guards	10	10
Total number of participants	30	

The intentional selection of the age group for pensioners aged 60–75 years old aimed to mitigate potential mental, physical, and emotional challenges that participants above this age range might face, thereby avoiding limitations in the study. This strategic decision underscored the researcher’s consideration for the well-being and comfort of the participants within a manageable age bracket.

The inclusion of security personnel as valuable participants was based on their potential to provide insights derived from their observations during instances when pensioners needed to utilise e-banking services such as ATMs and cellular telephone (cellphone) banking services. Their unique perspective as observers in these situations held the promise of contributing significantly to understanding the challenges and dynamics surrounding senior citizens' use of e-banking services.

The chosen number of 30 participants was carefully determined to align with the larger population of Hammarsdale, Mpumalanga Township community. Following the principle of data saturation, where a comprehensive understanding is achieved, the researcher aimed to ensure that views were thoroughly explored. Considering the work of Guest et al. (2006), the decision to sample 30 participants exceeded the perceived point of data saturation, guaranteeing a robust understanding of the participants' perspectives.

In this study, the researcher has chosen to explore the advantages of sampling in contrast to collecting data from the entire population. These advantages have been summarised in Table 4.2:

Table 4.2 Advantages of purposive sampling in research

Advantages of Purposive Sampling in Research	Description
Time efficiency	Gathering data from a sample is less time-consuming compared to collecting data from the entire population. Focusing on specific samples streamlines the data collection process.
Cost-effectiveness	Data collection from a sample is generally more cost-effective. Research costs are often proportional to the time spent on data collection. Sampling reduces expenses such as travel costs and the reproduction of data collection instruments such as questionnaires.
Practicality for large populations	Sampling becomes a practical approach when dealing with infinite or large substantial populations. It is impractical to study all elements comprehensively, making sampling a feasible and manageable method for data collection.

Table 4.2 provides an overview of the primary benefits of sampling in research (Oranga and Matere, 2023). These advantages encompass time efficiency, cost-effectiveness, and the practicality of handling large populations. Each advantage is accompanied by a concise description underscoring its importance within the realm of research methodology.

In summary, the deliberate selection of the age group, the inclusion of security personnel, and the determination of the participant number were all thoughtfully considered to enrich the study’s insights and align with the research objectives within the community of Hammarsdale, Mpumalanga Township. This approach enhances the study’s ability to capture diverse perspectives and e-banking dynamics among senior citizens.

4.3.5 Informed Consent

Before engaging in the research, potential participants were presented with comprehensive details outlining the study’s purpose, methodologies, potential risks, and anticipated benefits (Carter et al., 2023). This pre-engagement phase was crucial in ensuring transparency and informed decision-making on the part of the participants. They were afforded ample time and opportunity to thoroughly understand the nature and objectives of the study, allowing them to make informed decisions regarding their participation. The participants were encouraged to raise any questions or concerns they may have had about the research procedures or their involvement in the study. This open dialogue facilitated a transparent exchange of information between the researcher and the

participants, fostering a sense of trust and mutual understanding (Worthington, 2013). By providing participants with the necessary information and addressing any queries or uncertainties they may have had, the researcher ensured that participants could make autonomous and informed decisions about their participation, ultimately enhancing the ethical integrity of the research process.

4.3.6 Confidentiality and Anonymity

To safeguard the confidentiality and anonymity of participants, stringent measures were put in place throughout the research process. First, participants' personal information and responses were treated with the utmost confidentiality. To maintain anonymity, each participant was assigned a pseudonym, dissociating their responses from their true identities (Creswell et al, 2007). This measure was crucial in protecting participants' privacy and ensuring their sensitive information remained undisclosed to unauthorised parties (Maxwell et al., 2009). Furthermore, all data collected during the study has been securely stored in compliance with the University of KwaZulu-Natal research data protection regulations. This entails implementing robust security protocols to prevent unauthorised access, data breaches, or inadvertent disclosure of participants' information. By adhering to these measures, the researcher aimed to uphold ethical standards and preserve the trust and confidentiality of participants, thus reinforcing the integrity of the research process (Carter et al., 2023).

4.3.7 Data Collection Methods

The study employed a diverse set of qualitative data collection methods, adhering to the triangulation principle to enhance the strength of the research findings. According to Oranga and Matere (2023), primary data collection techniques encompassed gathering original data first hand through diverse methods, including interviews, document analysis, and observations.

This study conducted interviews with senior residents aged 60–75 years old who receive SASSA grant payments, facilitating an in-depth exploration of their perspectives, experiences, and concerns regarding e-banking security threats. This approach allowed for an in-depth understanding of this demographics' challenges and vulnerabilities. Additionally, document analysis was utilised to examine relevant documents such as security alerts and government documents, providing valuable supplementary insights into e-banking security issues within the community. Observations were carried out during grant-payment dates over three months

(September–November 2023) to directly observe senior citizens' behaviours and interactions with e-banking services in real time. This observational approach yielded rich qualitative insights into their engagement with e-banking platforms and their lived experiences with e-banking security threats. The study aimed to triangulate findings and ensure a comprehensive understanding of e-banking security dynamics among senior citizens in Hammarsdale, Mpumalanga Township by integrating multiple data collection methods.

In addition to primary data collection techniques, secondary data sources were also utilised to supplement the study's findings (Choy, 2024). Secondary data collection involved gathering existing data from sources such as the South African Police Service official annual reports, academic accredited journal articles, government publications, and SASSA old age grant pensioners reports and policies related to e-banking security, crime statistics of Hammarsdale, Mpumalanga Township community. These secondary sources provided valuable context and background information on the broader issues surrounding e-banking security threats senior citizens face, helping to enrich the understanding of the phenomenon.

By employing a combination of primary and secondary data collection techniques, the study ensured a comprehensive approach to data collection, allowing for triangulation and validation of the research findings. This approach facilitated a deeper understanding of the complexities of e-banking security threats among senior citizens in Hammarsdale, ultimately enhancing the credibility of the study's conclusions.

4.2.4.1. Interviews

The principle of interviews involves engaging participants in structured or semi-structured conversations to gather rich, detailed insights into their perspectives, experiences, and attitudes related to the research topic (Roulston and Choi, 2018). Interviews aim to uncover information that may not be readily apparent through other data collection methods, allowing the researcher to explore complex phenomena and understand participants' underlying motivations and perceptions (Hopf, 2004).

The researcher ensured that the key principles were adhered to, which were essential for gathering rich and insightful data, by utilising the method of conducting interviews. Fundamental principles were to first ensure that interviews employed open-ended questions, enabling participants to freely express their thoughts and experiences without the constraints of predefined options (Creswell et

al., 2007). This principle was maintained by creating a semi-structured interview question guide. Second, it ensured integral flexibility, allowing researchers to adapt questions and probes based on participants' responses and facilitating the exploration of emerging themes or areas of interest. Third, which was the central premise of interviews is the participant-centred approach, prioritising participants' perspectives and experiences while aiming for an in-depth exploration of the research topic, which the researcher maintained throughout the interview duration (Roulston et al., 2018).

Interviews foster trustworthiness by establishing trust with participants and creating a safe and respectful environment conducive to open communication and honest sharing. During the interviews, the researcher developed and maintained trust with participants by constantly assuring them that this was solemn for research purposes. These principles collectively guide the interview process, ensuring the collection of high-quality data that is detailed, reflective of participants' experiences, and aligned with the research objectives (Choy, 2014). Initially, a semi-structured interview question guide was developed, incorporating open-ended questions designed to elicit detailed responses from participants, which assisted the researcher in probing interactive questions that enabled more information shared by the participant. The interview guide was tailored to address the study's aim of understanding the experiences and perspectives of senior citizens aged 60-75 regarding e-banking security threats in the Hammarsdale, Mpumalanga Township community. Interviews were conducted face-to-face in the comfort of the participant's home or community hall, depending on participants' preferences and logistical considerations. Interviews continued until data saturation was achieved (Cervone et al., 2022). This involved conducting interviews iteratively and analysing the data collected after each interview session to identify emerging themes and insights. Data saturation was reached when no new information or themes emerged from subsequent interviews, indicating that a comprehensive understanding of participants' experiences and perspectives had been attained (Worthington, 2013).

The research environment was tailored to individuals aged 60-75 to address potential physical and mental challenges associated with advancing age. Recognising the unique considerations of senior citizens, the researcher designed interviews specifically for this demographic, fostering comfort and ease among participants (Cervone et al., 2022). This approach facilitated open dialogue, allowing participants to express their views freely. The research environment prioritised sensitivity to the targeted age group's characteristics, promoting meaningful conversations without unnecessary impediments.

Focusing on individuals aged 60-75 demonstrates sensitivity to potential limitations faced by older participants and aligns with the study's core objective — delving into the experiences and perceptions of this age group concerning e-banking security threats. The interview method accommodates individuals who may encounter challenges with reading, writing, or independently completing questionnaires (Swanepoel et al., 2008). The personal nature of one-on-one interviews allows for a more in-depth and tailored examination of participants' perspectives, ensuring that their unique insights are captured in a way that might not be achievable through standardised methods (Mweshi et al., 2020).

4.2.4.2 Data Analysis for Interviews

Following the methodology outlined by Muzari et al. (2022), the data from the interviews were transcribed and classified into emerging themes. To ensure a rigorous analysis, the researcher employed reflective thematic analysis, a method designed to mitigate biases and scrutinise personal judgments, practices, and belief systems encountered during data collection (Oranga and Matere, 2023). The resulting themes were utilised to draw conclusions and formulate recommendations.

Interviews played an essential role as the primary source of data collection in this research. The participant responses were accurately organised under thematic headings that closely aligned with key research concepts, research issues, and the established theoretical framework (Chambers et al., 2020). This systematic categorisation allowed for a comprehensive exploration of diverse facets of e-banking security threats within the specified age group. The researcher employed a thorough analytical approach, combining descriptive methods to unveil detailed patterns and recurrence techniques to identify prevalent themes within the dataset. This rigorous analysis revealed the specific challenges and perceptions voiced by participants and contributed to an understanding of the broader issues encapsulated in the theoretical framework. Methodological accuracy in data organisation and analysis is foundational in deriving meaningful and reliable insights that contribute substantively to the study's overarching objectives (Serry and Liamputtong, 2013). As a qualitative study, the data analysis for interviews followed a stepwise process. Table 4.3 outlines six critical steps in thematic analysis, a qualitative research method commonly used to identify and interpret patterns or themes within data (Braun et al., 2023).

Table 4.3 Tabulated data analysis steps

Step	Description
1st Step: Becoming familiar with the data	The researcher systematically addresses each research objective, concurrently documenting emerging concepts from the theoretical framework. This stage involved immersing oneself in the collected data, making notes, and recording initial impressions to ensure a foundational understanding before proceeding to subsequent analytical steps.
2nd Step: Generating initial codes	The researcher organises data systematically, creating codes to refine large volumes of information into manageable segments. This process involves determining the coding method based on the broad research perspective and specific study questions, ensuring a deliberate and purposeful approach to analysis.
3rd Step: Searching for themes	The researcher thoroughly explores, actively probing for patterns or themes within data that encapsulate noteworthy aspects related to the collected data and overarching research questions. In-depth interviews uncover unexpected themes, enriching the depth and breadth of findings.
4th Step: Reviewing themes	Identified themes undergo examination, modification, and development to refine them into comprehensible and relatable forms. Practical tools such as Microsoft Word or Excel are employed to systematically organise and list these themes, ensuring coherence and clarity.
5th Step: Defining themes	A comprehensive examination is conducted to identify the essence of each theme, investigating what each theme conveys, seeking sub-themes, and scrutinising how prevalent themes interact and relate to the general theme. This exploration ensures that refined themes capture the dataset's core significance and intricate interconnections.
6th Step: Write-up/Report	Findings are transformed into an interpretable piece of writing, crafting a comprehensive report using compelling extract examples linked to identified themes, research questions, and existing literature. The report presents an analysis grounded in empirical evidence, aiming to convey thematic insights convincingly and demonstrate the validity of the research.

4.2.4.3 Document Analysis

According to Creswell (2005), document analysis is a qualitative method employed in academic research to systematically scrutinise and interpret written and non-written materials to gain insights into various social, historical, or organisational phenomena. This method involves the careful examination of a diverse range of documents, including official records, policy documents, correspondence, newspapers, diaries, images, videos, and other artifacts (Morgan, 2022). The primary objective of document analysis is to uncover patterns, trends, or specific details that address research questions or objectives (Patton, 2002; Creswell, 2005).

Researchers follow a systematic procedure, identifying relevant documents, categorising them, and extracting data through a content review. This process often includes coding, categorisation, and thematic analysis to identify recurring themes and relationships within the documents (Sankofa, 2023). To enhance the validity and reliability of findings, document analysis is frequently employed in conjunction with other research methods, such as interviews or observations, in a triangulation approach (Creswell, 2005). Contextualisation is critical, requiring researchers to understand the circumstances in which documents were created and consider historical and cultural aspects that may influence interpretation (Morgan, 2022).

Ethical considerations, including confidentiality and informed consent, are paramount, especially when dealing with sensitive or confidential documents. Document analysis is a valuable method for studying historical events, policy implementation, organisational cultures, and societal changes, providing researchers with a rich source of data that contributes depth and context to their investigations (Creswell, 1998; Wellington, 2000). Document analysis is a crucial methodological component employed in this research study to investigate the security threats associated with e-banking services on pensioners in Hammarsdale, KZN. This section outlines the instruments and procedures utilised for document analysis in the pursuit of comprehensive data collection.

4.2.4.4 Document Analysis Process

The research study incorporates document analysis as a crucial component to comprehensively examine and interpret pertinent documents related to e-banking services, particularly concerning pensioners. This analytical approach aims to identify potential security threats and assess the effectiveness of existing security measures within KZN. Within this methodological framework, various documents are scrutinised, including security policies and incident reports detailing security breaches, legislative and regulatory documents governing e-banking services, and educational materials designed to inform pensioners about safe e-banking practices (Serry et al., 2013).

Through systematic collection from diverse sources such as governmental agencies and online repositories, the study ensures comprehensive coverage of relevant documentation (Sankofa, 2023). Documents were then categorised based on security policies, incident reports, legislative frameworks, and educational materials, facilitating a focused analysis of specific aspects related to e-banking security threats for pensioners. Thus, this content analysis involves extracting

essential information on security measures, reported incidents, legal requirements, and educational initiatives from each document (Kutsyuruba, 2023). Importantly, findings derived from document analysis are -cross-verified with insights gained from interviews conducted as part of the broader research methodology, thereby ensuring the reliability and validity of the study's outcomes. This integrated approach to document analysis enhances the study's capacity to yield pertinent and context-specific insights into the complex landscape of e-banking security for pensioners within KZN (Serry et al., 2013).

4.2.4.5. Document Analysis Instruments

During the document analysis phase of the research, an array of documents was scrutinised to glean insights into e-banking security threats confronting pensioners in KZN. These documents encompassed various scholarly articles, guidelines, incident reports, legislative provisions, and educational resources pertinent to e-banking security. Among the sources utilised for analysis were scholarly works such as Taljaard's (2008) examination of security policies in South Africa; Barker's (2020) exploration of proactive communication strategies for e-banking fraud prevention; and Ajibade and Mutula's (2020) investigation into big data and e-banking systems applications in the South African and Nigerian contexts. Additionally, the scrutiny extended to authoritative guidelines such as the Security Incident Management Guidelines Version 1.2 (2018), as well as empirical studies such as the examination of incident response in the context of cyber insurance and breach attorneys (Woods et al., 2023). Furthermore, scholarly contributions by Lattanzio and Ma (2023) on cybersecurity risk and corporate innovation and Jena's (2023) empirical study on factors influencing senior citizens' adoption of e-banking post-COVID-19 pandemic were incorporated. Moreover, incident reports accessed on https://www.resbank.co.za/en/home/what-we-do/Prudential_regulation, detailing security breaches, legislative mandates, and regulatory directives sourced from the South African Reserve Bank website served as crucial references. These documents collectively provided a comprehensive foundation for the analysis, offering perspectives on e-banking security challenges pertinent to elderly pensioners in the region.

For instance, security policies outlined measures such as multi-factor authentication and encryption to protect pensioners' financial information. Incident reports emphasize on hacking and phishing scams, while legislative documents provided legal frameworks for e-banking security (Jena, 2023). Educational materials aimed to educate pensioners on safe e-banking practices. Through content analysis, key findings, such as the prevalence of phishing scams and patterns,

such as the need for more robust regulatory oversight, such as the prevalence of phishing scams and patterns, such as the need for more robust regulatory oversight, emerged. Discrepancies were observed in implementing security measures across institutions and variations in the accessibility of educational materials (Woods et al., 2023). Document analysis provided valuable insights into the complex landscape of e-banking security threats for pensioners in Hammarsdale, KZN.

As a critical component of data collection, document analysis has provided a comprehensive understanding of the security threat landscape surrounding e-banking services for pensioners in Hammarsdale, KZN. Findings from this analysis contribute valuable insights to the research study, informing recommendations for enhancing the security of e-banking services for regional pensioners.

4.3.1. Observation Analysis

Observation analysis constitutes a methodological approach in academic research wherein researchers systematically collect and interpret data through direct observation of phenomena, behaviours, or processes within specific contexts (Lichtman, 2014). Positioned within qualitative research, observation analysis aims to provide an authentic and personal account of the researched subject, fostering a deeper understanding of human behaviour, social dynamics, or organisational processes (Maxfield et al., 2001). This method involves the non-intrusive collection of data in natural settings, guided by structured observation protocols that outline specific elements to be observed. Contextualisation plays an important role, with researchers considering environmental, social, and cultural factors that may influence observed behaviours.

Data collected through observation is recorded using various mediums, such as field notes, audio, and voice recordings (Lichtman, 2014). Thematic coding was subsequently employed to identify patterns, themes, or categories within the observed behaviours, contributing to a better interpretation of the phenomenon (Wood et al., 2020). Comparative analysis may be utilised to discern variations across different settings or groups. Furthermore, Maxfield et al. (2001) emphasise that integrating observational data with findings from other research methods, such as interviews or document analysis, enhances the validity and reliability of research conclusions. Observation analysis, through its emphasis on real-world contexts and behaviours, is a valuable tool for gaining in-depth insights and enriching the depth of academic research across disciplines (Lichtman, 2014).

Observation analysis constitutes a vital component of the comprehensive data collection methodology employed in this research study, which seeks to investigate security threats associated with e-banking services on pensioners in Hammarsdale, Mpumalanga Township, KZN, South Africa. This section defines the instruments and procedures used for observational analysis, exploring the behaviours, interactions, and contextual factors surrounding the security practices of pensioners engaging with e-banking services.

4.3.2 Observation Analysis Instruments

The principal objective of observation analysis is to collect personal insights into the security behaviours and challenges pensioners face while utilising e-banking services. By directly observing their actions, decision-making processes, and interactions within the e-banking environment, this method aims to capture aspects that may not be fully evident through other means of data collection (Sankofa, 2023).

Two main instruments were employed to achieve this objective. First, on-site ATM e-banking facility observations were conducted, wherein the researcher directly observed the physical layout, accessibility features, and security measures at e-banking facilities, particularly ATMs frequented by pensioners in the Hammarsdale community, in KZN.

Second, the researcher undertook user interaction observations, focusing on pensioners' behaviours and interactions with e-banking interfaces, including ATMs and e-banking platforms. This systematic observation encompassed activities such as PIN entry, navigation through digital interfaces, and responses to security prompts, aiming to provide comprehensive insights into the e-banking experiences of pensioners in the specified context.

Another observation made by the researcher during the on-site e-banking facility observations pertains to the presence and functionality of signage and instructional materials at the ATMs. It was noted that while some ATMs had clear and comprehensible signage, providing instructions in multiple languages, and using easily understandable symbols, others lacked such guidance. This discrepancy in the provision of instructional materials may impact the ability of elderly pensioners, particularly those with limited literacy or digital literacy skills, to navigate the e-banking interface effectively and conduct transactions securely. In instances where signage was inadequate or absent, pensioners appeared to rely more heavily on trial and error or assistance from bystanders, potentially compromising their privacy and security. Therefore, ensuring the availability of clear,

user-friendly signage and instructional materials at e-banking facilities is essential for enhancing the usability and accessibility of e-banking services for elderly users, ultimately contributing to a more secure and inclusive e-banking environment.

4.3.3 The Procedure of Observations Conducted

The selection of observation sites in this study was guided by the aim to capture diverse e-banking environments that pensioners engaged with, encompassing ATM locations, and community centres where educational workshops on e-banking were conducted. This approach ensured representation across various settings where pensioners interact with e-banking services, facilitating a comprehensive exploration of their experiences (Sankofa, 2023). To maintain consistency and consistency, the researcher adhered to structured observation protocols, clearly delineating the aspects to be observed and voice recorded. These protocols encompassed predefined categories related to security practices, user behaviours, and observable challenges encountered by pensioners, facilitating systematic data collection (Kutsyuruba, 2023). To mitigate interference with natural behaviours, observations were conducted in a non-intrusive manner, with the researcher maintaining a discreet presence to ensure that pensioners' interactions with e-banking services remained unaffected. Additionally, observations were contextualised by noting environmental factors, time of day, and external influences, providing valuable contextual information that enriched the understanding of observed behaviours and contributed to the depth of analysis.

In the analysis phase, data derived from observational notes underwent thematic coding to identify recurring themes pertaining to security practices, challenges encountered, and variations in behaviours across various observation sites in Hammarsdale, Mpumalanga Township (Sankofa, 2023). According to Khoa et al. (2023), thematic coding facilitated the organisation and interpretation of observational data, allowing for the identification of overarching patterns and trends. Additionally, Shaw (2023) outlines comparative analysis as a method employed to discern differences and similarities in observed behaviours among pensioners engaging with different e-banking interfaces. This comparative approach enabled an understanding of security practices within diverse e-banking contexts, highlighting variations in user behaviours and interactions. Furthermore, integrating observational findings with data from document analysis and interviews provided a comprehensive and multi-dimensional perspective on the security threats faced by pensioners utilising e-banking services.

This integrative approach enriched the analysis by synthesising insights from multiple data sources, offering an understanding of the challenges and opportunities inherent in e-banking security for elderly users (Shaw, 2023). Observation analysis has proven instrumental in capturing real-time insights into the security behaviours and challenges faced by pensioners utilising e-banking services in the Hammarsdale, Mpumalanga Township, KZN. Data obtained through direct observation enrich research findings, contributing to a comprehensive understanding of security threats and informing recommendations for improving the safety of e-banking services for pensioners.

4.3.4 Methods to Ensure Trustworthiness

According to Dixon, Singleton and Straits, (2016) and Kamal (2019), reliability in research revolves around the concepts of stability and consistency. It poses the question of whether applying a given definition repeatedly under similar conditions yields consistent results. In qualitative research, the term ‘dependability’ is used interchangeably with reliability, as Kumar (2011) noted. Ritchie et al. (2003) assert that reliability remains pertinent in qualitative research when researchers transparently demonstrate the procedures leading to specific conclusions. In their view, presenting the audience with the processes involved enhances the dependability and consistency of the raw data and the meanings attributed to it by the respondents.

The data in the study under consideration were rigorously and consistently interpreted, ensuring that both the raw data and the meanings attached to it by the respondents were dependable and consistent. This approach aligns with the assertion made by Kamal (2019), who suggests that, for many qualitative research approaches, reliability is either improved or guaranteed through triangulation. The researcher employed triangulation in data collection, utilising interviews, document analysis, and observations. This methodological choice enhances the reliability of the research by cross-verifying information obtained from different sources, contributing to a more robust and dependable interpretation of the findings.

4.3.4.1 Conformability

As defined by Trochim and Donnelley (cited in Kumar, 2011), conformability refers to the extent to which research results can be confirmed or corroborated by others. Similar to reliability in quantitative research, conformability relies on both researchers following an identical process to enable comparisons of results (Kumar, 2011). In the study under consideration, the results

demonstrated conformability, as the researcher found outcomes that echoed the sentiments of researchers. The researcher's conclusions aligned with those of their peers, confirming the reliability and consistency of the study's findings.

4.3.4.2 Dependability

Dependability shares similarities with the concept of reliability in quantitative research. According to Trochim and Donnelley (cited in Kumar, 2011), dependability is whether consistent results would be obtained upon observing the same phenomenon multiple times. Maxwell et al. (2009) elaborate that researchers must assess whether the research process is logically presented and well-documented to ensure dependability. As an alternative to reliability, dependability involves accounting for changing conditions in the chosen research phenomenon. In the study, dependability was ensured through a piloting process, wherein the actual study yielded results consistent with those obtained in the pilot study. As the phenomenon under investigation was not new, the researcher adopted the perspectives of other researchers, conducting observations and achieving comparable results. This approach further supports the dependability and reliability of the study's outcomes.

4.3.4.3 Credibility

Credibility, as outlined by Trochim and Donnelley (cited in Kumar, 2011), revolves around establishing that the results of qualitative research are credible or believable from the participant's perspective. Given that qualitative research explores perceptions, experiences, feelings, and beliefs, it is essential to ascertain whether the respondents' feelings reflect opinions and feelings accurately. Maxwell et al. (2009) emphasise that credibility is an alternative to internal validity. In the context of credibility, the aim is to demonstrate that the research was conducted to ensure accurate identification and description of the participants. Various strategies can be employed to enhance the credibility of qualitative research, including prolonged engagement and persistent observation in the field, triangulation of different methods, utilisation of formalised qualitative methods, and member checks. These practices contribute to the credibility of the research by aligning the findings with the participants' perspectives and experiences, reinforcing the study's trustworthiness.

Given that this study examines the perceptions, experiences, and feelings of old-age grant pension recipients, the credibility of the research hinges on the participants' ability to attest to the

authenticity of the findings. Participants, in this case, the pensioners, are regarded as the primary judges of whether the research accurately reflects their opinions and experiences regarding the phenomenon of receiving old age grant pensions. The careful selection of respondents, specifically pensioners with experience and expertise in the subject matter, further underscores the researcher's commitment to accuracy (Worthington, 2013). By targeting individuals with personal experience as recipients of old age grant pensions, the researcher ensures that the chosen respondents are well-versed in the subject's particulars. This strategic selection enhances the likelihood that the study findings are a genuine reflection of the challenges, perceptions, and feelings faced by individuals in the unique position of being old-age grant pension recipients.

In essence, the credibility of the research is reinforced by the researcher's selection of participants, demonstrating a thoughtful approach to ensuring that those with direct experience provide insights that contribute to a more accurate and authentic portrayal of the phenomenon under investigation (Muzari et al., 2022). This alignment between the researcher's objectives and the lived experiences of the chosen respondents adds depth and credibility to the qualitative exploration of old age grant pension recipients' perspectives.

4.3.4.4 Transferability

Transferability, as defined by Trochim and Donnelley (cited in Kumar, 2011), pertains to the extent to which the results of qualitative research can be generalised or applied to other contexts or settings. Sandelowski (cited in Liamputtong, 2013) emphasises that transferability involves conveying theoretical knowledge from qualitative research to similar individuals, groups, or situations. Maxwell et al. (2009) describes transferability as an alternative to external validity or generalisability, prompting researchers to question whether the findings can be transferred from one specific situation to another.

In the context of this study, characterised by a diminutive sample size, generalisation to a broader population is acknowledged as not permissible due to the study's focus on a specific group of old age grant pension recipients within a particular context, which may make it challenging to extrapolate findings to a more diverse or varied population (Schoonenboom, 2023). Factors unique to the studied context may not be applicable or relevant in different settings. However, insights gained from the research can potentially be applied to similar individuals, groups, or situations. While the study's methods might be replicated to investigate the same topic in different settings

with varying demographics of old-age grant pension recipients, the emphasis is on the applicability of the insights rather than broad generalisability.

4.4.1 Ethical Considerations

The subsequent discussion presents the ethical considerations undertaken by the researcher and their implications for the respondents. A comprehensive exploration is provided regarding obtaining informed consent to conduct the research. The researcher details the steps to secure informed consent and specifies the individuals from whom this consent was required (Negrin et al., 2022). In delineating the ethical framework, the researcher elucidates the protocols followed to obtain informed consent, ensuring transparency and respect for the participants' autonomy. By clearly outlining the informed consent process, the researcher underscores a commitment to ethical research practices, emphasising the importance of participant understanding and willingness to engage in the study.

This transparent approach not only aligns with ethical standards but also safeguards the rights and well-being of the respondents (Muzari et al., 2022). It reflects the researcher's conscientious effort to establish trust and cooperation with the participants, fostering a research environment that prioritises ethical conduct throughout the study (Kutsyuruba, 2023).

Table 4.4 Ethical adherence

Ethical Principle	Description
Informed Consent	Participants were provided with detailed information about the study, including its purpose, objectives, potential risks and benefits, and the voluntary nature of participation. For example, elderly pensioners were informed about the research’s aims to explore their experiences with e-banking security threats. Additionally, participants were presented with a written consent form outlining the terms of participation and requiring their explicit agreement to take part.
Anonymity	To protect participant identities, pseudonyms or codes were used instead of real names in any reporting or publication of results. For instance, if a participant shared a personal experience during an interview, their name would be replaced with a pseudonym such as “Mr A” or “Mrs F” in research publications.
Confidentiality	The researcher ensured secure data storage practices to maintain the confidentiality of any personal or sensitive information shared by participants. Data for this study is stored in password-protected databases and encrypted files. Furthermore, confidentiality was ensured by restricting access to participant information to essential research members only, such as the supervisor guiding the study.
Discontinuance	Participants were assured of the voluntary nature of their participation and informed that they could withdraw from the study at any time without facing adverse consequences. This principle of voluntary participation underscored the importance of respecting participants’ autonomy, particularly considering the potential vulnerability of elderly pensioners.
Appropriate Referrals	Information about support resources available to participants, such as counselling services or helplines, was provided to address any emotional distress or security concerns during or after participation. Clear contact information for the researcher or designated support personnel was also provided, allowing participants to seek assistance or clarification on any aspect of the study, thereby ensuring their well-being throughout the research process.

By incorporating these practices proposed by the Nuremberg Code of Ethics (1998), the researcher demonstrated a commitment to ethical standards, safeguarding the rights, well-being, and privacy of the participants involved in the qualitative research study on e-banking security threats for pensioners in KZN, South Africa.

4.4.2 CONCLUSION

The research methodology chapter provided a detailed overview of the chosen research design, a qualitative phenomenological approach deemed appropriate for exploring the lived experiences of pensioners in Hammarsdale concerning e-banking services. The rationale behind this choice was carefully justified, aligning with the study's objective of capturing the subjective perspectives of participants. Additionally, adopting a non-probability purposive sampling technique was justified, emphasising its suitability for selecting the most relevant and vulnerable participants for the study.

The chapter explained the rationale behind adopting an interpretive research paradigm, underscoring the importance of studying human behaviour within real-life contexts. The strategic selection of Hammarsdale, Mpumalanga Township, as the study location, driven by prevalent crime targeting senior citizens during grant pay dates, underscored the timeliness and urgency of the research topic. The qualitative case study design was justified, aiming to comprehensively explore pensioners' nuanced experiences regarding e-banking security threats.

Moreover, the sampling strategy, including security personnel and pensioners aged 60–75, has been detailed, with a deliberate effort to surpass the point of data saturation for comprehensive insights. The proposed data collection methods, comprising interviews, document analysis, and observation, have been justified based on their alignment with the study's objectives and the nature of the research question. Lastly, the chapter outlined the steps involved in thematic analysis for interviews, ensuring a systematic and rigorous approach to data interpretation. This comprehensive research methodology has a robust foundation for the empirical investigation, aligning theoretical frameworks, research design, and data collection methods with the study's goals and objectives.

CHAPTER FIVE: DATA PRESENTATION AND DISCUSSION OF FINDINGS

5.1 INTRODUCTION

This chapter presents the results of the data analysis through interviews, observations, and document analysis. Additionally, the chapter gives an analysis and comprehensive discussion of the presented findings. Through scrutiny of these findings, the researcher examined the security threats faced by pensioners in e-banking, which contributed to a deeper comprehension of the challenges and opportunities in ensuring financial security for the elderly. The critical aspect of this chapter is that it provides an understanding of the nature, responses, and effectiveness of measures implemented to safeguard e-banking services for pensioners in the Hammarsdale region of KZN, South Africa. To achieve this, the chapter commences with a presentation of the participants' demographic information. Thereafter, it delves into the presentation of data specific to the accomplishment of the aim of the study in three main sections, which are understanding the nature of e-banking security for pensioners, perceptions of pensioners' utilisation of e-banking services and security officers' measures for protecting pensioners. The last section of the chapter, before the conclusion, focuses on the application of the theories of the study to the findings, as well as the discussion.

The findings presented in this chapter are in the form of broad themes that were formulated through the process of reflective thematic analysis. Reflective thematic analysis is a qualitative data analysis method used to identify patterns or themes in collected data (Ningi, 2021; Oranga and Matare, 2023). In this study, an iterative approach to reflective thematic analysis was followed, which involved continuously repeating the steps outlined in the methodology to ensure the alignment of the themes and the research questions. The themes presented in this chapter were obtained through a coding process during which segments of data relevant to the study were systematically labelled. It is these codes that were then grouped together, based on relation and refined into themes.

While analysing and reporting data, ethical concerns like confidentiality were carefully addressed by anonymising all participant identifiers. Every individual received a distinct code, and any identifiable details were either eliminated or changed to avoid identification. The researcher had exclusive access to raw data, and secure storage techniques were used to safeguard against

unauthorised access. The presentation of results in this chapter involves using caution to prevent unintentionally disclosing specific identities. In addition, participants were notified of how their data would be utilised and reassured that their consent was required to include their information in the research.

To substantiate the findings and the themes developed from reflective thematic analysis, participants' responses are presented verbatim (with the effective use of the abovementioned codes for each participant) for the sake of authenticity and may contain inadvertent linguistic errors (Creswell and Poth, 2016). This is because the interviews were conducted in the isiZulu language, with which the participants were conversant. The transcriptions were then translated into English by someone who was proficient in both languages. Where necessary, the chapter also incorporates the use of tables and figures to enhance the understanding of the study findings.

To guide the investigation, the researcher relied on the four research questions presented in Chapter One of the research study, which were derived from a thorough examination of the related literature found in Chapter Two. These questions served as a strategic framework for the study, providing direction and focus. Therefore, the collection and analysis of data were all informed by these research questions. The following research questions are also addressed by the findings presented in this chapter:

1. What are the lived experiences regarding e-banking services for old-age pensioners receiving SASSA grants?
2. How do old-age grant pensioners perceive e-banking services as a method of receiving SASSA grants?
3. How can security personnel improve security risks associated with pensioners' e-banking clients?

The findings presented in this chapter not only contribute to the academic understanding of the topic but also hold practical implications for policymakers and other stakeholders involved in ensuring the security and accessibility of digital banking services for elderly populations. Data analysis yielded five forms of security threats prevalent in the selected community. These are fraud and scams, data breaches, account hacking, phishing attacks and identity theft. It also led to the identification of various causes of e-banking security threats, the perspectives of security guards stationed near ATMs, perceptions of old age grant pensioners in utilising the e-banking services

and strategies used to mitigate the issue. This information could be critical in the development of initiatives aimed at reducing the security threats faced by the elderly using e-banking services.

No.	Themes	Sub-themes
Understanding the Nature of e-banking Security for Pensioners		
1.	The Complexity of the User Interface	E-Banking Awareness: Sources of Information
2.	Security Concerns	Fear of Using E-Banking Due to Security Risks Balancing Convenience and Security in E-Banking
3.	Accessibility Issues	
Perceptions of Pensioners' Utilisation of E-Banking Services		
4.	Banking Has Become More Complicated for the Elderly	
5.	Contentment with E-Banking and Forward Thinking	Readiness for the Fourth Industrial Revolution in E-Banking
6.	Pensioner Perspectives: Unveiling Incidents and Concerns in Personal Experiences	
7.	Security Perspectives on E-banking Security Threats	
8.	Fortifying Finances: Pensioners' Strategies Against E-Banking Security Threats	Vigilance Against Phishing Attempts Regular Password Updates Clear Communication with Banks Double-Checking Transactions Seeking Assistance and Education
Empowering e-banking Safety: Security Officers Measures for Protecting Pensioners		
7.	Security officers suggested coping strategies	
8.		

APPLICATION OF THEORIES TO THE STUDY FINDINGS AND DISCUSSION		
9.	Application of the Diffusion of Innovation Theory	Adopter Categories Rate of Adoption Innovation-Decision Process Communication Channels Social Networks Applying the Rational Choice Theory

5.2 PARTICIPANTS' DEMOGRAPHIC INFORMATION

In this section, the demographic information of the participants who took part in this study is given. As indicated in chapter four, where the methodological process followed in the study was outlined, these participants were obtained through purposive sampling. Since the study was located in Hammarsdale and focused specifically on pensioners, obtaining the appropriate participants for the study was a targeted approach that was based on predetermined criteria. There are, therefore, two groups of participants who took part in the study. The first group comprised pensioners who are currently earning old age grants. This was the target population as this group of people according to Maduku (2014) and Stats SA (2022) were most affected by security threats within the e-banking services. The second group comprised security guards with valuable insights into the experiences of the elderly with e-banking services, particularly the security threats they face.

Figure 5.1. shows the demographic data of the pensioners who participated in the study.

5.2.1 Demographic Information for Pensioners

This section specifically focuses on the demographic information about pensioners namely age, gender, and the number of years as a pensioner.

5.2.1.1 Age of participants

This section of the study established the age of the 10 pensioners who participated in the study.

The findings are presented in Figure 5.1:

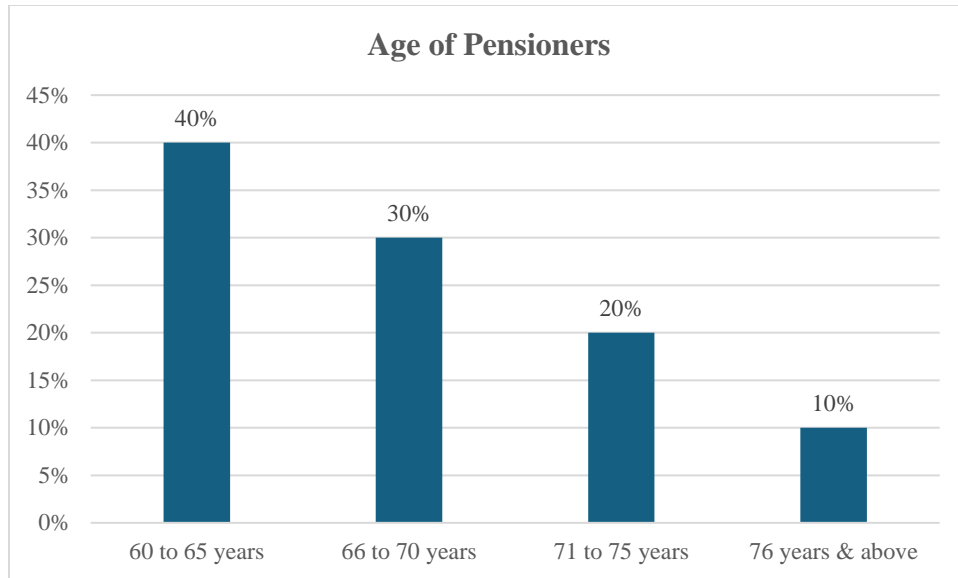


Figure 5.1 Age of pensioners

The findings as illustrated in Figure 5.1 show that 40% of the participants were in the age range of 60 to 65 years and 30% were in the age range of 66 to 70 years. In addition, 20% and 10% of the pensioners were between the age range of 71 to 75 years and 76 years and above respectively. The results indicate that the majority of Hammarisdale's pensioners are elderly, and many of them probably struggle with digital literacy and technology adoption. Since these pensioners are less familiar with online banking procedures, this age group is especially susceptible to security risks like fraud and identity theft as e-banking becomes more and more integrated into financial management. The reluctance or challenge of this group to utilise safe online platforms emphasises the need for focused interventions, such as training in digital literacy and more secure, user-friendly financial services designed for senior citizens. The report also emphasises the dangers of financial marginalisation in the absence of sufficient support networks.

5.2.1.2 Gender of participants

This section of the study established the gender of the 10 pensioners who participated in the study. The findings are presented in Figure 5.2:

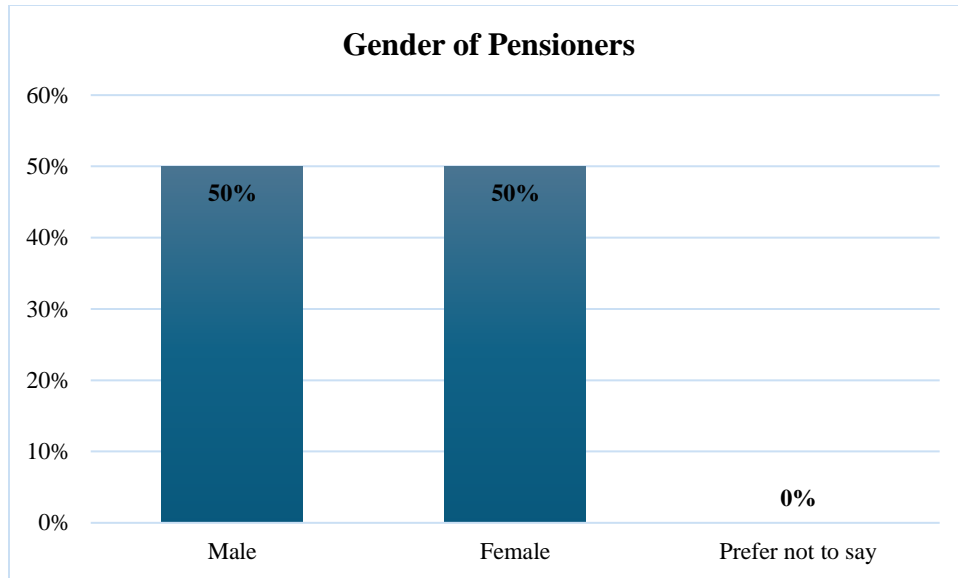


Figure 5.2 Gender of participants

The findings as indicated in Figure 5.2 show that 50% of the participants were male and the remaining 50% were female. There was no participant were preferred not to say. The results show that there was a gender balance among the participants, with 50% of the participants being male and 50% being female. In terms of participation, this implies that the study has a gender-neutral sample, enabling a more thorough examination of security risks in e-banking services for both sexes. The fact that there were no participants who selected "prefer not to say" suggests that respondents were at ease sharing their gender, which may have added to the data's inclusion and resilience.

5.2.1.3 Years of Receiving Old Age Grant

This section of the study established the gender of the 10 pensioners who participated in the study. The findings are presented in Figure 5.3:

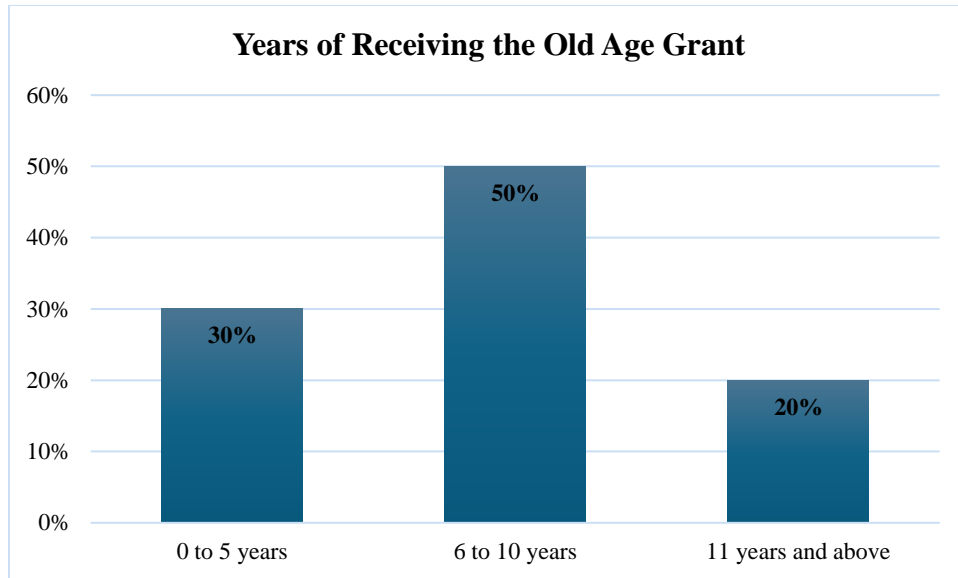


Figure 5.3 Years of receiving old age grant

Figure 5.3 above shows that 30% of the participants have been receiving the old age grants for 0 to 5 years, 50% have been receiving the grant for 6 to 10 years and 20% have been receiving the grant for 11 years and above. The results show that participants' experiences with old age grants vary, but most have been beneficiaries for a long time, indicating familiarity with the grant system and perhaps even established money management routines. However, a sizable fraction of participants are relatively new to the program, which may indicate that they are still getting used to the system and may encounter difficulties successfully managing their funds, particularly about e-banking services. The older group may be more used to their financial habits because they have been receiving the award for more than ten years, but their prolonged dependence on traditional banking systems may also expose them to greater security threats.

5.2.1.4 Prior occupation of pensioners

This section of the study established the prior occupation of the 10 pensioners who participated in the study. The findings are presented in Figure 5.4 below:

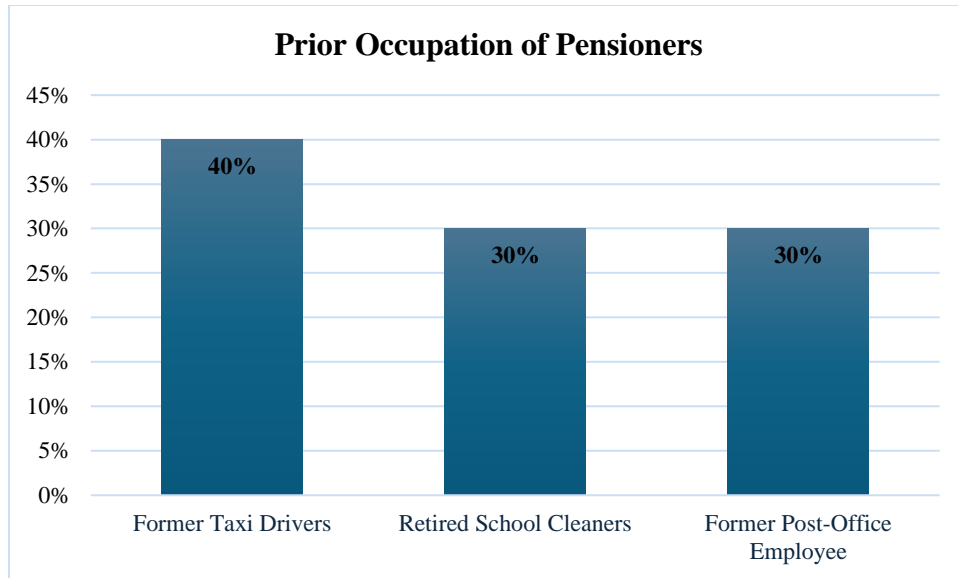


Figure 5.4 Prior occupation of pensioners

The findings of the study as illustrated in Figure 5.4 show that 40% of the participants were former taxi drivers, 30% were retired school cleaners and the last 30% were former post office employees. These disparate previous employments are important when taking into account the participants' use of e-banking services and level of digital literacy. It may be more difficult for pensioners with less formal or organised employment histories such as taxi drivers and school cleaners to adjust to the digital environment, which leaves them more susceptible to security risks. Former post office workers, on the other hand, could be more accustomed to formal financial services and hence more comfortable utilising e-banking systems.

5.2.2 Demographic Information for Security Officers

The demographic information for the security officers that was collected in the study included age, gender, and years of work experience.

5.2.2.1 Age of the Security Officers

This section of the study established the age of the 20 security officers who participated in the study. The findings are presented in Figure 5.5:

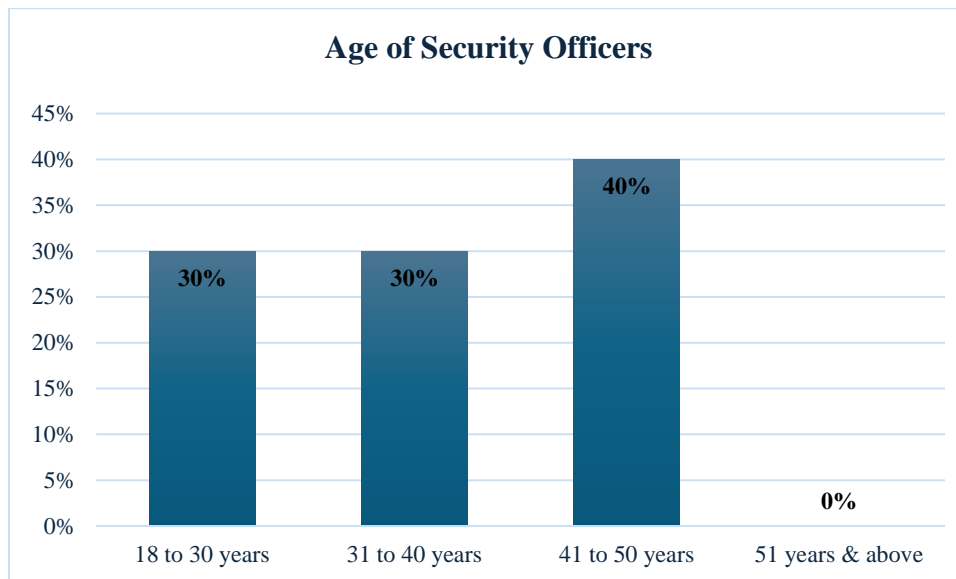


Figure 5.5 Age of security officers

The findings presented in Figure 5.5 show that 30% of the participants were in the age range of 18 to 30 years, and another 30% were in the age range of 31 to 40 years. In addition, 40% and 0% of the participants were in the age range of 41 to 50 years and 51 years and above respectively. The results show that most participants are younger adults, indicating a group that is probably more accustomed to and at ease using digital technology, such as e-banking services. This age group may have fewer obstacles to embracing digital financial instruments because they are generally better at using Internet platforms. The lack of participation from participants in the older age groups reveals a knowledge gap on the difficulties and experiences of older people, who may be more susceptible to security risks because they lack digital literacy or are unfamiliar with e-banking systems.

5.2.2.2 Gender of the Security Officers

This section of the study established the gender of the 20 security officers who participated in the study. The findings are presented in Figure 5.6:

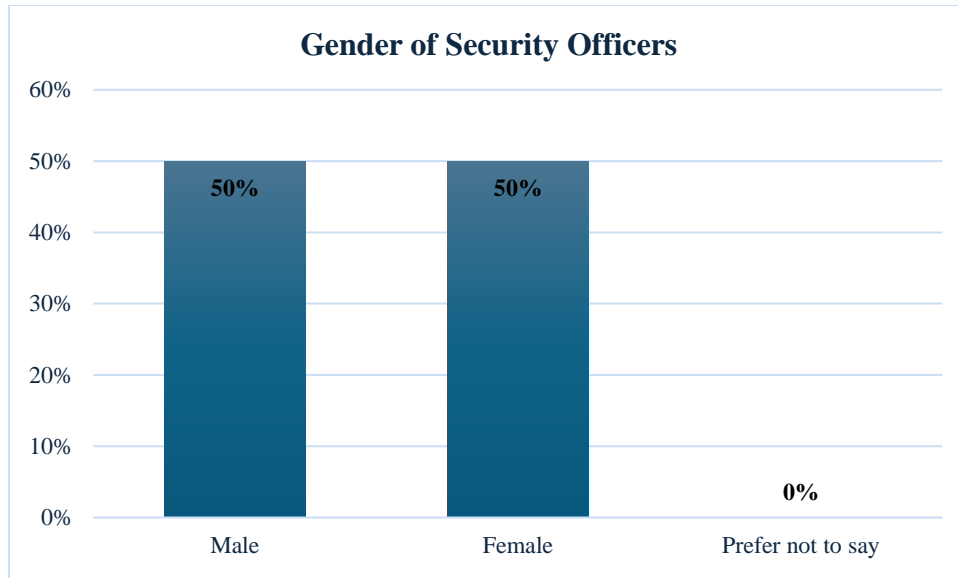


Figure 5.6 Gender of security officers

The findings of the gender of security officers as depicted in Figure 5.6 show that 50% of the security officers were male and female participants were also 50% whereas 0% preferred not to say. The results demonstrate gender parity within this specific category, with equal representation of male and female security officers. The lack of respondents who selected "prefer not to say" further implies that there was no hesitation or uncertainty in revealing gender, indicating a clear-cut and unambiguous demographic distribution. The fact that there are equal numbers of men and women among security officers suggests that, when it comes to e-banking services, gender does not seem to have a big influence on how security staff are deployed or perceived. This balance could also indicate that male and female officers handle security issues on an equal basis, which might lead to a more impartial and inclusive strategy for protecting e-banking sites.

5.2.2.2 Years of Work Experience as Security Officers

This section of the study established the years of work experience of the 20 security officers who participated in the study. The findings are presented in Figure 5.7:

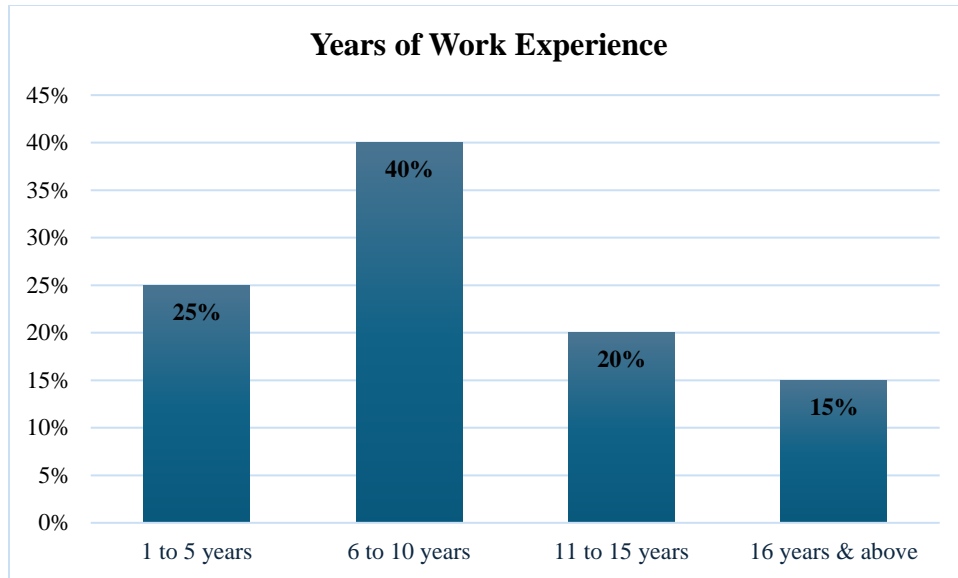


Figure 5.7 Years of work experience

The findings as depicted in Figure 5.7 show that 25% of the participants worked as security officers for 1 to 5 years: and 40% for 6 to 10 years. Furthermore, 20% and 15% of the participants worked for 11 to 15 years and 16 years and above respectively. The results show that the security officers have a range of experience levels; most have been in the industry for several years, indicating that they are a seasoned bunch with a firm grasp of security procedures. Some officers have comparatively fewer years of experience, which might mean that they are still learning how to handle complicated security situations. Some seasoned individuals probably provide advanced knowledge and skills to the security management process, as shown by the presence of a small group with a lot of experience. The effectiveness of security officers' responses to e-banking security risks may be impacted by their varying degrees of expertise. Officers with greater experience could be better at seeing and reducing threats, while less experienced officers would need more guidance and assistance to cope with the changing demands of digital banking security. This demonstrates the necessity of continual mentoring and professional development for security personnel to uphold a high level of safety for e-banking services.

5.3 UNDERSTANDING THE NATURE OF E-BANKING SECURITY FOR PENSIONERS

The first objective of the study was to understand the lived experiences of old-age pensioners receiving SASSA grants regarding e-banking services. It is only through these lived experiences that an informed understanding of the nature of e-banking security for pensioners can be achieved. It should be noted that the nature of security threats to e-banking services on pensioners within the framework of the case study in Hammarsdale, Mpumalanga Township, KZN, involves comprehensive scrutiny of potential risks and vulnerabilities specific to this demographic. The study explored an array of threats that pose challenges to the security of financial transactions for pensioners. Three themes were identified from the analysis of data. These are the complexity of the user interface, security concerns and accessibility issues that pensioners experience while using e-banking services.

5.3.1 The Complexity of the User Interface

According to participants, the introduction of the e-banking system for pensioners in Hammarsdale, Mpumalanga Township, KZN, was not conducted in a manner that equipped pensioners with the knowledge that is needed to navigate e-banking. The research participants had difficulty navigating the user interface, which is complex for older adults who lack the technological know-how of younger generations. The verbatim quotes from the participants are illustrated as follows:

According to Mr B, *“Trying to navigate the new system without proper guidance has been confusing and stressful. I think if there had been more support and information provided from the start, the transition to e-banking would have been much smoother for all of us.”*

Mr B expressed this by further commenting that *“The introduction of the e-banking system has been a challenging experience for us pensioners here in Hammarsdale. We were excited about the prospect of more convenient financial services, but the reality has been quite daunting. When the system was first introduced, we received very little information about how it works or what to expect. There were communication gaps, and it left many of us feeling lost and unsure.”*

Mrs F had this to say *“The directions on the banking app are really difficult for me to grasp. They seem to assume you already understand how it operates. Even the help section isn't clear enough, so I have to keep looking at it. Half of the terms are so technical that I have no idea what they imply”.*

Mr. A noted that *“I was never taught how to utilise internet banking. I don't really understand how it works, but I just began using it since my kids told me to. There are moments when I feel like I'm just pushing buttons without understanding what they accomplish. I wish someone could walk me through each stage of the process”*.

Mrs H. stated that *“There are moments when I'm not even sure what each button means. I find the terminology to be very technical. I wish there were clearer symbols or phrases that would describe what each one accomplishes, but I'm left in the dark.”*

Mr. C said *“I have attempted to use internet banking, but it was too difficult. In the end, I asked someone else to complete it. It simply seems like too much effort, and I'm worried that I could make a mistake and lose my money, so I doubt I'll attempt again”*.

The responses of these participants show that the pensioners have found the switch to e-banking difficult because of psychological obstacles, complicated user interfaces, and a lack of instruction. Many elderly people have trouble understanding complicated instructions, technical jargon, and multi-step procedures, which leaves them perplexed and exposed to security threats. It is also discovered that anxiety is made worse by inadequate training and support, which causes some people to give up using e-banking or turn to others for assistance. Older consumers' demands are frequently ignored by e-banking systems, which do not take into consideration their physical constraints and lower levels of computer literacy. Banks should offer digital literacy programs, make sure customer assistance is available, streamline interfaces, and provide step-by-step instructions to increase adoption. Pensioners would feel more comfortable and confident handling their money online because of this.

These primary research results intertwine with the literature review findings where information presented by Msweli et al. (2020), proves that the elderly in countries like South Africa tend to have limited digital literacy, which is exacerbated by a lack of access to smartphones and computers, particularly in rural areas. Consequently, they are unable to access critical information on how to access and safely use e-banking services. Likewise, according to Mncwabe (2018), The transition to e-banking has been indeed a challenging journey for pensioners in Hammarsdale, Mpumalanga Township, KZN, as they were provided with minimal information regarding this new method of financial transactions. The introduction of the e-banking system was accompanied by

communication gaps, leaving pensioners with limited details on the particulars of the digital platform (Ningi, 2022).

5.3.1.1 E-Banking Awareness: Sources of Information

The majority of the participants highlighted that pensioner faced uncertainties and difficulties navigating the new system due to the lack of comprehensive information provided during its introduction. The minimal guidance resulted in a sense of confusion and unease among pensioners, making the adaptation to e-banking less than smooth. The participants said they became aware of this new method of banking through informal ways. The verbatim quotes from the participants are presented as follows:

Mrs F articulated her experience, stating *“It was mostly word of mouth that promoted the introduction of such an initiative, leaving us puzzled with unanswered questions. Over time, I had to figure it out as we went along.”*

Mr. D stated, *“We were more accustomed to and comfortable with e-banking after learning about it through billboards, different trainings, and one-on-one help”*.

Mrs G said. *“We weren't fully informed about e-banking in Hammarsdale. There were few avenues for communication, and it was challenging to locate easily available and intelligible materials.*

Mr. C highlighted that *“E-banking was mostly introduced to us by friends, neighbours, or other seniors. Not much official contact took place”*.

Mr. A had this to say *“Due to age-related reading and comprehension problems, we had trouble understanding the brochures that were distributed during award collecting days”*.

The findings from a study conducted by Foster (2023) indicate that pensioners said that they learned about e-banking through billboards, various trainings, and one-on-one assistance, effectively making them comfortable and familiar with e-banking. However, in the community of Hammarsdale, the study participants were not thoroughly educated about e-banking. They mentioned that the communication channels were limited, and they struggled to find accessible and understandable resources to learn about e-banking. This lack of comprehensive education contributed to their apprehension and reluctance to fully embrace e-banking services. Participating pensioners in this study revealed that they primarily learned about the approaching introduction of e-banking through informal sources, such as friends, neighbours, or fellow pensioners. In cases

where formal communication occurred, pamphlets were distributed on grant collection days from cash-in-transit vans. However, elderly participants encountered difficulties in comprehending these pamphlets due to age-related physical as well as intellectual challenges.

This underscores the crucial need for effective communication and support mechanisms during the implementation of new technologies, particularly for demographics less accustomed to digital platforms. Addressing these communication gaps is essential not just for the successful rollout of e-banking but also for ensuring that pensioners feel well-informed and at ease engaging in secure financial transactions through digital channels. Literature provided by Kumar (2018) and Jager (2023) supports communication strategies and tailored educational initiatives imperative in empowering pensioners to navigate the complexities of e-banking with confidence and security. By providing accessible and comprehensible resources, such as interactive workshops and personalised assistance, financial institutions and policymakers can bridge the knowledge gap and foster a culture of digital literacy and inclusivity among pensioners. In doing so, it not only enhances the adoption and utilisation of e-banking services but also promoting the overall financial wellbeing and autonomy of this demographic.

5.3.2 Security Concerns

The second theme that emerged as part of the lived experiences of old age pensioners who use e-banking pertains to the constant threat of the breach of security on such platforms. Drawing from literature review in chapter two of this study, various types of cyber threats were explored, such as account hijacking, data theft and phishing attacks where pensioners might be targeted through deceptive communication to disclose sensitive information (Han et al., 2021; Foster, 2023; Frik et al., 2019; SABRIC, 2022; William et al., 2013).

Identity theft emerged as a focal point within this study, warranting thorough examination due to its potential impact on pensioners engaging in e-banking services. This phenomenon, as explored by various scholars such as Smith (2019) and Chen (2020), poses significant risks to individuals' financial security and personal wellbeing. Smith (2019) underscores the pervasive nature of identity theft in the digital age, highlighting how cybercriminals exploit weakness in online platforms to steal personal information and perpetrate fraudulent activities. Chen (2020) further delves into the specific vulnerabilities faced by pensioners in the context of identity theft, emphasising their susceptibility to phishing scams, data breaches, and other forms of cybercrime.

Pensioners, often less familiar with digital technologies and security protocols, may inadvertently disclose sensitive information or fall victim to deceptive tactics employed by cybercriminals.

Miss J. mentioned to have fallen victim to phishing scams, indicating that: *“I received an email that appeared to be from my bank, asking me to update my account information urgently. Without realising it was a scam, I clicked on the link and provided my personal details. Later, I discovered that my bank account had been compromised, and unauthorised transactions were made.”*

Mr D mentioned: *“It is alarming how identity theft is becoming more sophisticated. During my time working at the Post Office, we never really had cases of such nature, until recently when I heard from my ex-colleagues of cases whereby people came forward to make financial claims on behalf of the deceased only to later pick up that they presented fault information. I never realised the extent of the threat to our personal information until this study brought it to light.”*

Miss H. said *“We didn't deal with these types of problems when I was younger. As I become older, I see how simple it is for our personal information to be taken, which worries me because I don't always recognise the risks or know how to stay safe”.*

Mrs G. notes that *“The idea that someone may hijack our identities without our knowledge is unsettling. There have been cases when people's information has been exploited to obtain money for departed family members, and it's startling how readily that can occur without our knowledge”.*

The digital divide pinpointed by Mweli et al. (2020) is a critical culprit in the susceptibility of the elderly to such things as identity theft when they engage in e-banking. A critical examination of this factor shows the link between security threats and the lack of adequate information among pensioners in Hammarsdale. When the elderly are not equipped with adequate information, not just on how to use e-banking, but also on the different kinds of threats to security they may encounter, they become vulnerable users that are easily targeted by criminals within that landscape. Moreover, with advanced age, there is also the experience of age-related cognitive decline and social isolation, both of which can exacerbate the vulnerability of pensioners, rendering them prime targets for exploitation. The pensioners who participated in this study had an age range of 65-75; hence this is well beyond the cognitive prime of human beings. The participants highlighted the significant concern of identity theft among elderly members of the community. They shared instances where unauthorised individuals gained access to personal information, potentially

leading to identity theft and ultimately, financial fraud. These experiences, there was a discernible display of emotions. They exhibited signs of sadness and disappointment, underscoring the personal impact and emotional toll that the rising cases of identity theft had on him. This observation adds a poignant layer to these testimonies, emphasising not only the tangible consequences of identity theft but also the emotional distress it can evoke in those who have experienced it or witnessed its effects personally.

5.3.2.1 Fear of Using E-Banking Due to Security Risks

The participants indicate that pensioners sometimes prefer to altogether avoid using such services, to protect themselves. The following interview extracts provide evidence of this tendency among the elderly to avoid using e-banking, because of the security risks associated with it.

Mr A reported that, *“I usually don’t use any, I ask my children to transact for me when having to buy electricity or load airtime. I prefer this method because I trust my children are aware and educated more than me when it comes to these everyday technological advancements. In this way, I avoid being at risk of being a victim of fraud or my identity being stolen by a stranger.”*

Miss E said, *“I am comfortable with withdrawing my actual money and knowing where and how I am spending it, because with these online banking applications there is a lot of money that vanishes without any explanation or anyone to be held accountable.”*

Mrs F also reported that, *“I worry about losing my money or getting scammed with every button I touch; I worry about ATMs being cloned and being a victim instantly. It makes me feel helpless and dependent on others for something as basic as accessing my own money, which makes me feel less of a person just because of my age and the challenges that come with aging. Many of my friends feel the same way, we sometimes even wish we could turn back the hands of time, back to when we were young and vibrant.”*

Miss I. said. *“I have absolutely no faith in internet banking. Too many individuals have told me about losing their money and being unable to stop it. I would like to visit the bank in person or take out cash from the ATM. At least when I can see and feel my money, I know it's secure”.*

Mr. A. indicated *“I think it's all too confusing sometimes. I have no idea how to keep myself safe on the internet. I am aware of these frauds and believe that I am prone to error regardless of my level of caution. I'd prefer to let someone else take care of it and avoid the entire situation”*.

The results show that pensioners in Hammarsdale are living in constant fear of the security risks that are rampant in e-banking. The challenge with living with this fear is that it inhibits pensioners from using e-banking because they do not want to be victims. This fear is brought on by worries about online dangers including fraud, identity theft, and transaction interception, which are made worse by the intricacy of e-banking systems. Due to their limited digital literacy, many seniors feel exposed and find it difficult to identify security concerns or learn how to safeguard their accounts. Therefore, people tend to shun online banking or depend on family members to handle their transactions. Their concern is exacerbated by the lack of easily available, understandable information and unambiguous instructions, which makes them feel cut off from the advantages of online banking. Financial independence is hampered by this reluctance to use e-banking, which emphasises the need for focused training and assistance to enable seniors to use these platforms safely and confidently. As indicated by Kuitto et al. (2023), Payne et al. (2021) and Rajapakse (2017), e-banking was developed for the purpose of customers' increased, as well as convenient access to banking services. But, due to the prevalence of security risks highlighted by Han et al. (2021), Foster (2023), Frik et al. (2019), SABRIC (2022) and William et al. (2013) the elderly as indicated by the results of this study sometimes prefer to altogether avoid using such services, to protect themselves.

Figure 5.3 depicts what has been mentioned from the perspectives of Mr A, Miss E, and Mrs F, offering varied insights into their preferences and concerns regarding banking methods. Mr A used a traditional approach, relying on his children for transactions, trusting their technological awareness and education.



Figure 5.8 Illustrations depicting forms of challenges experienced by pensioners

Source: Google Photos

5.3.2.2 Balancing Convenience and Security in E-Banking

Despite the security concerns, another subtheme emerged where some pensioners have embraced and successfully used e-banking services while taking the necessary measures to mitigate security threats. The verbatim quotes of the participants are presented as follows:

Miss H reported the following: *“I choose using the mobile banking app since it is convenient, and I make sure that I have a fingerprint locking system on my banking app to minimise chances of strangers accessing my app, however, my greatest fear is being phished. I don’t know how I can be saved from such or how I can prevent such phishing from taking place from my devices. Another reason why I choose to use this option is because I won’t have to go out when in need of airtime or loading of electricity. For me, online banking apps (applications) are the best in terms of convenience.”*

Mr. A said *“As someone who has been using mobile banking for some time, I truly appreciate how simple it is to transfer money and pay bills. The only issue is that I always question if my information is secure. I’ve heard of instances when folks lost everything after their accounts were hacked. I’m just not sure how to be absolutely certain that my information is safe”*.

Mrs G. articulated that *“Using my phone for banking is more than simply convenient for me; it allows me to keep in touch without leaving the house. However, I still have some doubts about the system. Since I can see everything in person, I sometimes believe it would be preferable to take out cash and make the payment in person. The fact that I can’t see the transaction taking place in front of me when I pay online bothers me”*.

Miss J. said *“Although it’s quick and simple, I don’t feel completely comfortable doing the majority of my banking on my phone these days. I’ve read a lot about the dangers of fraud and cybercrime, and it truly worries me when I have to make big purchases. I would rather not use my card online since I’m afraid my information may be compromised”*.

These diverse perspectives underscore the importance of providing a range of banking options to accommodate varying preferences and concerns. While some favoured the convenience and security features of digital transactions, others placed greater trust in traditional methods for a sense of control and accountability. The banking industry should continue to address and bridge gaps in trust and understanding to ensure that individuals, feel secure and informed about their financial transactions, regardless of the chosen method.

By concentrating on this specific geographical context, this study recognised the localised nature of security threats, considering regional economic conditions, cultural influences, and the regulatory environment in Hammarsdale, KZN. For example, Jones et al. (2019) emphasise the importance of understanding the socio-economic context when addressing security challenges in e-banking services. Similarly, Smith and Johnson (2020) highlight the role of cultural factors in shaping individuals' perceptions of online security risks. By building upon this literature, the current research aimed to contribute valuable insights that can inform targeted strategies for enhancing the security of e-banking services tailored to the needs and challenges of pensioners in this region.

5.3.3 Accessibility Issues

The challenges with the accessibility of e-banking services were identified as one of the challenges advanced age users must navigate as part of their lived experiences. The responses of the participants are presented as follows:

Mr. E: *"I've encountered issues with internet connectivity. There have been times when I've needed to access my funds urgently, but due to poor internet connection or technical difficulties, I couldn't complete my transactions..."*

Mr. D: *"There have been occasions when a shaky internet connection prevented me from completing my transactions. The connection abruptly stopped working as I was attempting to send money to a relative. It's annoying, particularly if you're in dire need of money".*

Miss J. *"Due to bad connectivity, I've experienced issues with my banking app on many occasions. I occasionally try to pay a bill or check my balance, but the app simply won't load. It gives me the impression that I have no control over my finances".*

Mr. A *"The issue is not with the device. I have a smartphone, but if the signal is weak, I can't use it for banking. Occasionally, the transaction simply stalls in the middle, leaving me unsure of whether it was successful or not. It makes me anxious that I could experience problems or lose money in the future".*

Mr. C *"Although the internet is often a pain, the phone functions flawlessly. I feel as though my time is being wasted when the connection is poor. I even attempted to pay, but the signal was so poor that I had to leave before I could finish".*

The results show that one of the biggest obstacles to Hammarsdale pensioners adopting e-banking services is inadequate internet access. Participants frequently complained about poor or erratic connections that made it difficult for them to transmit money or check their account balances, among other tasks. These connectivity issues add to customers' irritation and sense of helplessness over their money by creating confusion about whether their transactions were successful. Additionally, the problem increases fear of possible financial loss. Since banks have little control over connectivity problems, financial institutions and network providers must cooperate together to provide more dependable internet access and enhance the whole e-banking experience for seniors. In the literature review, Msweli et al. (2021) was quite specific in explaining that accessibility issues are normally prevalent in underdeveloped countries. Within that context, Msweli et al. (2021) alluded to lack of access to devices through which e-banking can be conducted, mainly smartphones and computers. However, in the context of this study, it was discovered that participants in the study were in possession of smartphones that enabled them to access e-banking conveniently. Therefore, while accessibility was identified as one of the living realities of the elderly in Hammarsdale, compatible devices were not the issue. Rather, the results led to the identification of one of the issues that is also discussed by Msweli et al. (2021), which is internet connectivity. Essentially, participants reported that their access to e-banking services was sometimes affected by poor or lack of internet connectivity. One of the participants in the study reported the following:

In summary, regarding the first research question and objective of the study, for pensioners who are receiving the SASSA grant, their secure use of e-banking services is affected by the complexity of the user interface to, the concerns they have over security, as well as poor access, mainly because of internet connectivity. These have resulted in fear, frustration, as well as anxiety among the elderly in Hammarsdale regarding e-banking, thus most of the participants in the study expressed that they preferred to trade in cash, while enlisting the help of younger people to assist with banking tasks that extended beyond the mere use of ATMs to withdraw money.

5.4 PERCEPTIONS OF PENSIONERS' UTILISATION OF E-BANKING SERVICES

This section is primarily aligned to the second research question which focuses on the perceptions of pensioners, regarding e-banking services as a method of receiving SASSA grants. In the rapidly evolving landscape of financial technologies, this sub-topic probes into the comprehensive

exploration of old-age grant pensioners' perceptions as they navigate the digital banking environment, with a specific focus on their experiences with e-banking. This exploration aimed to unravel the intricate dynamics that shape the attitudes, preferences and behaviours of this unique demographic in their interactions with digital financial platforms. The overview aims to provide insights into aspects of how old-age grant pensioners engage with e-banking services within the broader context of the digital banking landscape. The investigation of the perceptions of pensioners with respect to the second research question through thematic analysis, led to the identification of two main themes. These are, that e-banking has made banking more complicated for them, as well as contentment with e-banking and forwards thinking for others. Apart from these two themes, included within this section and again in alignment with the second research question are perspectives from both pensioners and security guards, based on specific incidences, together with a discussion of some of the strategies that the participants are using to secure their finances.

5.4.1 Banking Has Become More Complicated for the Elderly

Of 10 old-age grant pensioners who participated in this study, eight participants were of the notion that the e-banking system has introduced more problems and complexities which leads to uncertainties regarding the safety of their grant earnings. The perceptions of the participants who reported that banking was more complicated for them because of e-banking were primarily premised on the measures necessary to securely access one's funds, particularly the use pin codes.

Mr. B said, *"I would have preferred to utilise the old method of collecting money from cash-in-transit vans because now, one has to constantly remember random numbers unlike using my finger to access my money and forgetting about pin codes"*.

Miss H shared similar sentiments with Mr B, expressing frustrations based on the constant need to remember a pin code: *"I sometimes write down in my diary full of people's contact numbers then later forget and let my grandchildren go through my diary when I need them to dial a number for me, in this way, my PIN then gets exposed to any of them..."*

Miss J added that *"The thought of needing to memorise so many different PINs bothers me. I used to be able to pick up my money immediately from the bank. I feel like I'm under constant pressure to remember these codes these days, and I can't take it anymore"*.

Mrs. A noted that *“I become anxious at the thought of utilising pin codes. I'm frightened of inputting the incorrect code too often, and sometimes I can't even remember which code corresponds to which account. I feel like I may lose access to my money at any moment”*.

Mrs B highlighted that *“I would prefer that my money be collected the old-fashioned way. It's very difficult, and I don't trust this e-banking system. I'm stuck if I lose my pin code, and I'm not sure who I may ask for assistance”*.

These results reveal a contradiction between the idea behind the creation of e-banking services and the perceptions of the elderly, based on their experiences. In the literature review, there was consensus among scholars like Kuitto et al. (2023), Payne et al. (2021) and Rajapakse (2017), regarding the convenience that e-banking has brought to banking systems. This idea of convenience is embedded in the notion that clients no longer have to visit banks and stand in queues for transactions among other services. The perceptions of the pensioners who participated in this study however reveal that e-banking is not a convenience to most of them, but rather a complexity that is causing negative feelings. The reason for this contradiction again in the digital divide that is spoken of by Msweli et al. (2020), which is inhibiting the elderly from enjoying using e-banking. It is apparent that without the necessary skills and knowledge to navigate e-banking, the elderly will continue to prefer old methods of conducting transactions. In this instance, there is a reiteration of arguments raised in the previous section, particularly based on Georgieva (2019) who highlighted how the successful adoption of e-banking among the elderly in developed countries was made possible by government support, as well as educational initiatives aimed at thoroughly equipping this population group. At this juncture, it is therefore necessary to recommend that financial institutions need to develop educational programmes that are specifically aimed at assisting elderly members of society to navigate new technologies (including the good management of pin codes or the use of alternative security features, like fingerprints). Government would need to support such programmes as part of the national initiative to combat criminal activities. There is also an empirical gap for researchers to come up with strategies that would help banking institutions to equip the elderly with knowledge and skills for e-banking.

Apart from the inability to manage pin codes, it also emerged that e-banking has made the elderly vulnerable to theft of funds from their own family members. Previously, there was a discussion on how some of them due to their concerns over security enlist the help of family members to help

them to complete their transactions. However, as indicated by Miss H, those enlisted to help, being in full possession of the required banking information can themselves decide to steal from the vulnerable elderly. Miss H shared that she has several grandchildren and should one of them decide to use her card and pin without permission, it would almost be impossible to figure out which one of them was the culprit: She said, *“I am grateful that for now, none of my grandchildren have thought of misusing my card and pin otherwise, I would be more stressed living in fear of being robbed right under my nose, by people I call mine”*.

Unfortunately, this is not an issue that was discussed in the literature review, thus other studies in this line of research can delve deeper into it. The fact that Miss H alluded to this issue is substantial evidence that there could be instances where the elderly are defrauded by their own family members and relatives; hence this is a promising line of inquiry.

5.4.2 Contentment with E-Banking and Forward Thinking

Through conducting interviews with each participant, a noteworthy finding emerged that two participants expressed contentment with the e-banking system. These participants, just like Kuitto et al. (2023), Payne et al. (2021) and Rajapakse (2017) see the value of e-banking, particularly in making banking convenient for clients. This optimistic group not only embraced the current technological advancements but also demonstrated a forward-looking perspective, expressing readiness for the potential impact of the 4th Industrial Revolution.

Mr A said, *“Should God grant me more days under the sun, I am ready for a face recognition type of ATM, whereby we are free from the potential loss of our bank cards for possible cloning and hacking of online banking services through losing/ misplacing personal electronic gadgets with saved passwords.”*

Mr. C noted *“I believe that technologies like facial recognition will make banking considerably safer in the future. Having my phone would allow me to feel secure knowing that no one could use it to take my card or personal information”*.

Mr B said *“I'm completely in favour of making banking safer if it can be done. Given the difficulties we currently encounter, perhaps the next technologies such as facial recognition and fingerprint scanning can make our lives simpler.”*

Miss J. *"I am eager for the new technology to simplify banking. I've heard of facial recognition software and fingerprint sensors. I will feel much secure making online payments and money transfers if such are implemented"*.

Mrs G. *"Though I'm not yet familiar with all the changes, I've heard that technology will simplify things. Instead of always memorising a pin or password, I prefer the concept of being able to use my finger or face"*.

The results indicate that older people have a great desire for the use of cutting-edge banking technology like fingerprint scanning and face recognition. These technologies are viewed as answers to current problems, such as the inability to remember PINs, the possibility of losing bank cards, and worries about internet security. Many think that by decreasing the need for conventional techniques like passwords and PIN codes, these technologies would improve banking's convenience and security. There is general optimism on the adoption of new, easier, and safer banking techniques, notwithstanding some ambiguity regarding the specifics of these developments. The goal is to increase senior users' access to and security of money management.

In their investigation of the function of biometric identification systems in financial institutions, Chawla & Gohil (2018) contend that elderly persons who might have trouble memorising PIN numbers or passwords would benefit most from technology like fingerprint and face recognition. The authors contend that biometric systems are appealing options for senior citizens because they provide improved security and user ease.

5.4.1.1 Readiness for the Fourth Industrial Revolution in E-Banking

From the previous findings, the researcher took note of an unexpected emerging theme within the study. This emerging theme encompassed the anticipation and influence of the 4th Industrial Revolution on the e-banking system in South Africa. While exploring participants' perspectives on e-banking, it became apparent that a subset of individuals expressed forward-looking sentiments, foreseeing the potential impact of the 4th Industrial Revolution on the banking sector. This unanticipated theme reflects the participants' awareness and readiness for the impending technological advancements associated with the 4th Industrial Revolution. Their statements, such as being *"ready for the 4th Industrial Revolution, God willing"* underscore an optimistic stance towards embracing future technological shifts within the e-banking landscape.

This theme suggests that, for some participants, the discussion about e-banking transcends the immediate present, extending into a futuristic outlook influenced by the anticipated evolution of technology. The unexpected emergence of this theme adds a layer of complexity to a future research study, highlighting the need to explore not only current perceptions of e-banking but also participants' aspirations and expectations concerning the broader technological landscape in the banking sector.



Figure 5.9 Image of money delivered in cash envelopes

Source: Participant, Mrs C

The anticipation surrounding the Fourth Industrial Revolution has undoubtedly catalysed a transformative shift in South Africa's socio-economic landscape, particularly in the realm of financial transactions. This paradigmatic transition is underscored by a poignant juxtaposition between the country's historical practices of receiving payments in envelopes and cash on hand, and the contemporary embrace of digital banking solutions emblematic of the Fourth Industrial Revolution. Historically, South Africa, like many other nations, relied heavily on traditional methods of wage delivery, with employees often receiving their salaries in physical envelopes or as cash payments. This entrenched practice not only reflected a reliance on manual processes but also underscored broader socio-economic disparities and challenges, including issues of security, transparency, and financial inclusion.

The unanimity of the current study's participants sentiments related to the 4th Industrial Revolution and the history of South African banking system was further highlighted when Mrs C mentioned;

Mr A: *“I used to work at a clothing firm and every Friday our ‘Bass-John’ would personally hand deliver our wages from a brown box, as the picture I have shown you (Figure 5.9). That process came with having to walk holding your handbag closely towards you to avoid it being snatched since it was known community-wide that we were paid on a Friday afternoon in brown envelopes, therefore this e-banking channel has come about with positivity of privacy (money in reports straight into your cell phone).”*

Mrs C expressed relief, stating, *“I’m glad we no longer have to deal with the hassle of carrying cash or worrying about losing envelopes with our wages. E-banking has definitely made things easier.”* However, they also voiced concerns, adding, *“But I still worry about the security of e-banking. There are so many scams out there, and I’m always afraid of falling victim to them. It’s hard to trust that our money is safe online.”*

Miss D echoed similar sentiments, saying, *“I’m grateful for the convenience of e-banking. It’s much more convenient than having to go to the bank or deal with cash. But I can’t shake off the feeling of insecurity. There are just too many stories of people getting scammed or hacked online.”*

Mr F further emphasised, *“I think there needs to be more done to protect us pensioners. We shouldn’t have to worry about our money every time we log in to our bank account.”*

The participants consistently advocated for change and innovative methods in the realm of banking. In essence, the overall number of participants in this study call for change and innovation within the banking sector. Their experiences encapsulate the dual realities of convenience and apprehension that define the contemporary e-banking landscape. Reflecting on their insights, it becomes evident that, while e-banking has revolutionised the way finances are managed, it also brings with it a new set of challenges and vulnerabilities that must be addressed.

Therefore, it is imperative to navigate these challenges with foresight and diligence, leveraging technology to enhance the security, accessibility, and inclusivity of digital banking solutions. This requires a concerted effort from all stakeholders, including policymakers, regulators, financial institutions, and technology providers, to collaborate and innovate in pursuit of a safer, more resilient banking ecosystem. Moreover, the experiences shared by participants serve as a powerful reminder of the importance of human-centric design in the development of financial technologies. Harnessing of the transformative potential of e-banking should encompass the diverse needs,

preferences, and concerns of all individuals, particularly vulnerable populations such as pensioners.

5.4.2 Pensioner Perspectives: Unveiling Incidents and Concerns in Personal Experiences



Figure 5.10 *Concerns of pensioners regarding e-banking*

Source: Researcher's illustration

The research methodology involved engaging each participant in the study, specifically pensioners, with a targeted and probing question of “*Have you ever faced any security-related issues or harboured concerns while utilising e-banking services? Kindly share specific incidents or experiences?*”. This inquiry aimed to initiate a detailed exploration into the personal experiences and encounters of pensioners within the sphere of e-banking security. This line of inquiry was particularly informed by studies reviewed, most notably, Sayar and Wolfe (2020), as well as Pavlov (2010) who expressed that the crux of the security issues surrounding e-banking is privacy. From posing this question, a notable observation emerged that several participants had encountered security-related issues, raising concerns about the e-banking system. A pattern of shared experiences revealed common trends in security-related challenges, encompassing aspects such as unauthorised access to accounts, phishing attempts, and instances of fraudulent activities. As a point of emphasis, it is critical to note that again breach of privacy as indicated by Sayar and Wolfe (2020), as well as Pavlov (2010), emerges as a paramount issue. Most importantly, the experiences

of the participants concur with the findings of Brink (2023), together with Rasmussen and Knutsen (2024), regarding the forms of e-banking crimes used against the elderly. The participants expressed apprehensions about the protection of their personal information, highlighting concerns about the potential vulnerability of their financial data to cyber threats. The prevalence of these recurring issues underscores the need for a robust and user-friendly e-banking system that prioritises the security and peace of mind of its users. Addressing these shared concerns will be crucial in enhancing the overall effectiveness and reliability of e-banking services for this demographic.

The following extracts from the data are based on incidences that pensioners who participated in the study were involved in. It is imperative to note that the inclusion of these incidences in this chapter provides a foundation for the themes presented in this chapter in respect to all three research questions. This is because these incidences are the lived experiences of pensioners in Hammarsdale, they shape the perceptions and attitudes expressed by participants regarding the e-banking and they also inform recommendations made in this study regarding how the security risks associated with pensioners in e-banking can be mitigated.

Mr B stated *“I fell victim to a scam where someone called, claiming to be from the bank, and convinced me to share my account details. It was devastating to discover fraudulent transactions later. Banks need to do more to protect us from such sophisticated scams.”*

Miss I, mentioned that, *“There was a case in our neighbourhood where someone’s identity was stolen, and they made unauthorised transactions. It made me rethink how secure these e-banking platforms are. We need assurance that our information is safe, and I have also had a scary incident where I received a suspicious email claiming to be from my bank, asking for my account details. Thankfully, I remembered the warning about phishing from a radio advert, and I immediately contacted my bank to verify. It turned out to be a scam, but it left me quite shaken.”*

Mr C shared sentiments of being appreciative of some bank security measures such as sending warning SMSs or notifications on the banking app as warning measures for phishing and scams: *“I appreciate the security features, but sometimes I worry about the data breaches we hear about. The bank needs to continuously update its security protocols to stay ahead of these threats and reassure customers like me because there was a time when I mistakenly shared my PIN over the*

phone, thinking it was the bank calling. It turned out to be a scam, and I lost some money. Now, I am extremely cautious and double-check everything before sharing any information.”

Mrs G. mentioned “I had a strange incident where I received a text message asking for my one-time password. I immediately contacted my bank, and they confirmed it was a phishing attempt. It’s a constant battle against these threats, and banks should actively educate us on spotting them. I’ve had no major security issues, but the constant updates to the app confused me initially. Banks need to provide clear instructions and support for older users like me who may find technological changes a bit overwhelming. With all these online transactions, I often wonder if my money is safe. I wish the banks would invest more in educating us about the latest fraud tactics and how we can better protect ourselves.”

Mr A stated “I love the convenience of e-banking, but I once had an issue with a transaction that didn’t go through properly. It took a while to resolve, and I felt anxious during that time. Clear communication from the bank would have eased the situation. I’ve been using e-banking for years without any issues. Security is crucial to me, so I always make sure to update my passwords regularly. It’s about being proactive and staying informed to keep your finances safe.”

The responses obtained from the participants served as a rich source of qualitative data, offering insights into the practical, day-to-day realities faced by pensioners in the digital banking landscape. Understanding their experiences and the approaches they adopted in addressing security concerns contributes to a more comprehensive understanding of the dynamics involved in e-banking security, ultimately informing potential strategies for improvement and support tailored to the needs of this demographic.

This research uncovered not only the technological literacy challenges faced by this demographic but also their perceptions regarding the usability and security considerations of e-banking. By capturing the voices of old-age grant pensioners, this study aspires to contribute valuable insights that can inform tailored strategies and enhancements, ensuring a more accessible and user-friendly digital banking environment for this specific group in the South African context.

5.4.3 Security Officers’ Perspectives on E-Banking Security Threats

In the realm of digital finance, the security of e-banking services is paramount, especially for vulnerable groups such as pensioners. In respect to this, Brink (2023) and Rasmussen and Knutsen (2024) highlighted that there are cyberattacks that are specifically targeted towards the elderly,

including identity theft and fraud. If anything, the experiences of participants given in the subsection above bear testament of this. Therefore, Hammarsdale, Mpumalanga Township situated in KZN, presents challenges faced by pensioners throughout the country navigating the complexities of online banking. Security officers, positioned at the forefront of community protection, offer valuable insights into the specific security threats encountered by pensioners in this digital landscape.

Including security officers in this study was imperative for gaining comprehensive insights into the e-banking security threat challenges faced by pensioners in Hammarsdale, Mpumalanga Township, KZN. Their expertise and experience in identifying and mitigating security risks provided valuable perspectives on the concerns of pensioners navigating online financial transactions. As frontline observers of community safety, security officers offered personal observations of pensioners' interactions with e-banking services and any security incidents that may arise. Furthermore, their engagement with the community allows them to understand the unique challenges and vulnerabilities faced by pensioners regarding e-banking security. By including security officers in the study, the researcher was able to gain different perspectives and develop targeted interventions to enhance the safety and security of e-banking services for pensioners in Hammarsdale.

From engaging with security officers and conducting observations, the researcher noted that pensioners in Hammarsdale, Mpumalanga Township, KZN, face significant e-banking security threat challenges. The following extracts give substance to this notion.

Mrs Eight remarked *“Many pensioners we encounter express fear of falling victim to online fraud, especially when it comes to disclosing personal information or navigating unfamiliar banking platforms.”*

Mr Twelve added *“Some pensioners I’ve spoken to feel overwhelmed by the technological aspect of e-banking and worry about making mistakes that could compromise their financial security.”*

These observations underscored the vulnerability of pensioners to various forms of online fraud and highlighted the need for more accessible and user-friendly e-banking platforms. Additionally, Miss Two and Mr Thirteen emphasised the importance of personalised assistance and support from banks in addressing pensioners' security concerns effectively.

Miss Four commented *“Pensioners often express frustration with the lack of personalised assistance and support from banks in addressing their security concerns related to e-banking, highlighting the need for more responsive customer service.”*

Furthermore, another officer, Mr Seventeen, noted *“Many pensioners are hesitant to use e-banking due to concerns about phishing scams and identity theft, and they often rely on traditional banking methods for their transactions.”*

Through their frontline roles, security officers provided valuable insights into the specific risks and vulnerabilities faced by pensioners in Hammarsdale, Mpumalanga Township e-banking landscape.

Expanding on the observations and comments of security officers, it is evident that the e-banking security threat challenges for pensioners in Hammarsdale, Mpumalanga Township, KZN, are deeply rooted in the intersection of technological complexity and financial vulnerability. Pensioners often find themselves navigating unfamiliar digital platforms without adequate support or guidance, leading to heightened anxieties and apprehensions about potential risks. Furthermore, the prevalence of online scams and fraudulent activities exacerbates these concerns, instilling a sense of distrust and uncertainty among pensioners regarding the safety of their financial transactions. Considering these challenges, security officers emphasise the importance of comprehensive education and outreach initiatives aimed at empowering pensioners with the knowledge and skills needed to navigate e-banking services securely.

Another factor that was mentioned by security officers was the aspect of digital literacy which emerged as a significant barrier for many pensioners, with some struggling to grasp the technical aspects of e-banking platforms. Mrs Ten, an ex-security officer, drawing from extensive community engagement, highlighted the prevalence of online scams and fraudulent activities targeting pensioners: *“In my experience working with the community, I’ve encountered numerous instances where pensioners have fallen victim to online scams and fraudulent activities.”*

An ex-security officer noted *“Many of them lack the necessary knowledge and skills to identify potential threats or protect themselves against cybercrime.”*

This sentiment underscores the urgent need for proactive measures to enhance the digital literacy and awareness of pensioners regarding e-banking security.

Miss Five noted *“We often encounter pensioners who are unfamiliar with basic digital skills required for e-banking, such as navigating websites or using mobile applications.”*

Miss Three added *“Limited access to technology and lack of training further compound the challenges faced by pensioners in adopting e-banking services.”*

These comments again draw the conversation towards the studies conducted by Georgieva (2019), Msweli et al. (2020) and Omotayo and Tolulope (2020) regarding the lack of digital literacy among the elderly who are expected to navigate digital platforms without adequate support. They emphasise the importance of addressing digital literacy gaps among pensioners to facilitate their successful engagement with e-banking platforms. Moreover, it again underscores the need for comprehensive educational initiatives and support programmes aimed at enhancing pensioners’ digital skills and confidence in utilising e-banking services securely. By addressing both security concerns and digital literacy barriers, stakeholders can work towards creating a more inclusive and accessible e-banking environment for pensioners, ultimately empowering them to manage their finances effectively in the digital age.

Reflecting on the insights shared by both current and former security officers, it becomes evident that pensioners in Hammarsdale, Mpumalanga Township, KZN, face considerable challenges in adopting e-banking services. With many pensioners lacking the knowledge and skills to identify potential threats, educational initiatives become essential in empowering them to protect themselves online. Financial institutions must heed the advice of former security officers and prioritise the development of comprehensive educational programmes tailored to the specific needs of pensioners. By equipping pensioners with the necessary tools and information, stakeholders can mitigate the risks associated with e-banking and safeguard the financial well-being of this vulnerable demographic.

5.4.4 Fortifying Finances: Pensioners’ Strategies Against E-Banking Security Threats

This subsection is unique, because it is rooted in the first two objectives of the study on the lived experiences and perceptions of pensioners, concerning the security e-banking services. Building on the insights gathered in the previous sections, where the focus was on understanding the perceptions, lived experiences, and challenges faced by pensioners in the realm of e-banking, this subsection examines the strategies pensioners employ to mitigate these challenges and enhance the security of their financial transactions. Pensioners, having encountered various security-related

concerns, some strategies that were suggested by pensioners to safeguarding their money and maintaining their peace of mind include;

5.4.4.1 Vigilance Against Phishing Attempts

Pensioners need to remain alert to phishing attempts, where malicious actors try to trick individuals into revealing sensitive information. By being aware and cautious, they actively avoid falling prey to such deceptive tactics. The experience shared by Mrs G, which has already been highlighted in this chapter shows how being vigilant always can save pensioners from being defrauded. Mrs G who received an SMS asking for her pin avoided being a victim by immediately contacting her back regarding that communication, which led to the realisation that it was a phishing attempt. According to studies by Demba et al. (2019) and Deterding and Waters (2021), retirees are particularly vulnerable to phishing scams when they are created to look authentic, such as imitating official correspondence from banks or other financial organisations. For instance, retirees can get emails or texts asking them to update their account details or confirm a recent transaction that seems to be from their bank. Older folks are more likely to become victims of these scams because they lack the information necessary to differentiate between legitimate and fraudulent communications.

5.4.4.2 Regular Password Updates

Recognising the importance of password security, pensioners frequently update their passwords to strengthen the defence against unauthorised access. This practice serves as a proactive measure to enhance the overall security of their e-banking accounts. The experience of Mr A shows how password updates are important in securing one's money. After a computer malware was sent to his computer, he was forced to change his passwords to secure his accounts. He reported that, “... *there was a time when my computer was infected with malware unknowingly, which compromised my e-banking login credentials. I only discovered this when I noticed unusual activity on my account. I promptly ran antivirus scans on my device and changed all my passwords to secure my accounts.*”

According to a study by Dupuis and Tsotsos (2018), changing passwords frequently is crucial for protecting against a variety of dangers, including malware and phishing scams. According to Aloul, not changing passwords regularly might make a person more susceptible to unwanted access, particularly when hackers use malware or keylogging to capture login information. These

cybersecurity best practices are consistent with the proactive password-updating strategy seen in the study.

5.4.4.3 Clear Communication with Banks

Pensioners value open and clear communication with their banks. In instances of suspicious activities or uncertainties, they promptly reach out to their financial institutions, seeking clarification and resolution. It is this kind of communication that saved Mr A from being scammed. He reported the following: *“Another incident that raised concerns was when I received a phone call from someone claiming to be from my bank's fraud department. They asked for my account details and PIN to verify some suspicious transactions. Thankfully, I was skeptical and hung up immediately. I called my bank using the official number from their website and learned that it was a scam attempt. They assured me that they would never ask for sensitive information over the phone.”* This direct engagement contributes to a sense of trust and security. According to Frik et al. (2019), social engineering is the practice of tricking people into disclosing private information. Customers who receive clear, regular communication from their banks about common fraud strategies are more likely to identify and steer clear of such frauds.

5.4.4.4 Double-Checking Transactions

Ensuring the accuracy of transactions is a common strategy employed by pensioners. They take the time to review and verify each transaction, minimising the risk of errors or unauthorised activities going unnoticed. One of the participants, who reported taking time to check transactions is Mr A. He said, *“I try to use it at least once a week, usually to manage bills or check recent transactions. It's become a regular part of managing my finances...”* According to Datta et al. (2019) customers who keep a close eye on their transactions are more likely to spot irregularities and take prompt action to avoid losing money. For older persons, who could be more susceptible to identity theft or financial fraud, this approach is especially important. People who regularly check their finances, such as by looking over their bank accounts or transaction history, are more likely to make wiser financial decisions (Frik et al., 2019).

5.4.4.5 Seeking Assistance and Education

Pensioners actively seek assistance from their banks and stay informed through educational resources. By staying abreast of the latest security measures and potential threats, they empower themselves to make informed decisions in navigating the digital banking landscape. The

experience of Miss J reveals the importance of this. She was able to gain valuable information on using e-banking and protecting herself from digital crimes through an educational programme offered by her bank. She reported that, *“Yes, I have received some education and training on e-banking security from my bank. They offered a workshop specifically for seniors, which I attended. The workshop covered important topics like recognizing phishing scams, creating strong passwords, and safe online practices.”* Targeted educational training on e-banking security procedures increases the likelihood that people would identify possible threats, including phishing scams, and take preventative action to protect their online accounts (Cosman, 2023). Such educational initiatives are an essential tool for raising knowledge and fostering confidence in digital banking environments for older adults, who may encounter difficulties because of their lack of experience with new technology (Cohen et al., 2017).

This exploration into the strategies employed by pensioners offers valuable insights into their resilience and adaptability in managing e-banking security challenges. These practices not only contribute to the protection of their financial assets but also underline the importance of ongoing education and communication in ensuring a secure and user-friendly e-banking experience for this demographic.

5.5 EMPOWERING E-BANKING SAFETY: SECURITY OFFICERS MEASURES FOR PROTECTING PENSIONERS

Within the scope of the study, this sub-topic is aligned with the third research question, which focuses on how security personnel can improve the security risks associated with pensioners’ use of e-banking. In the study, there was close collaboration with security officers to explore actionable recommendations aimed at improving security measures for elderly clients engaged in e-banking. The valuable expertise of security officers is leveraged to formulate strategic and practical suggestions tailored to the unique needs and potential vulnerabilities of this demographic. Recognising the importance of security officers in comprehensively understanding and addressing the evolving threat landscape, the goal has been to provide financial institutions with guidance that goes beyond conventional security measures.

Security officers play a crucial role in conducting risk assessments specific to elderly clients, identifying potential areas of vulnerability, and proposing tailored solutions. Their insights contributed significantly to the formulation of effective security enhancements that consider the

digital behaviours, concerns, and capabilities of elderly individuals navigating the e-banking environment. This sub-topic serves as a crucial avenue for proposing concrete steps that the community and banks in collaboration with security officers, can take to fortify the security infrastructure surrounding their e-banking services for elderly clients. By emphasising the collaborative role of security officers, this study aimed to ensure a comprehensive and holistic approach to addressing the unique security challenges faced by elderly individuals in the rapidly advancing digital landscape of e-banking. Security officers can play a pivotal role in enhancing the safety and security of e-banking services for elderly clients.

Data obtained from security guards revealed five different types of security threats for pensioners. These are as follows:

Fraud and scams: In the study it was identified that pensioners are targeted by criminals pretending to be bank representatives. These criminals often send SMSs or make calls meant to lure pensioners into revealing confidential information like account pin codes.

Data breaches: These are orchestrated by cybercriminals with the expertise to gain access to databases. An example of this can be drawn from the experience of Mr A which was mentioned earlier in this chapter. Cybercriminals were able to send malware to his computer to gain access to his passcodes. Pensioners who have already been identified as lacking technological information can easily be defrauded using this method.

Account hacking: This pertains to unauthorized access to an individual's bank account. In this study, it was evident that this is one of the significant risks for pensioners, most of whom are unable to take the necessary measures to safeguard their accounts.

Phishing attacks: Pensioners are susceptible to phishing because in some instances they are unable to determine whether the emails and messages they receive are legitimate. They are vulnerable also because they can easily be tricked into opening links contained in these phishing messages, resulting in breaches to their security information.

Identity theft: The results indicated that this is one of the prevalent forms of crime against pensioners. Because they often require others to help them complete their transactions, their banking information can easily be accessed, as well as misused by those people.

Table 5.1 encapsulates the complex approach proposed by security officers to mitigate e-banking security threats for old age grant pensioners in Hammarsdale, Mpumalanga Township, KZN. Informed by both professional expertise within the security field and personal observations, these strategies address the unique vulnerabilities and challenges faced by this demographic in navigating the digital financial landscape. Through a combination of educational initiatives, enhanced authentication measures, proactive fraud monitoring, and accessible customer support services, security officers aim to empower pensioners with the knowledge and tools needed to safeguard their financial transactions online. Their insights underscore the importance of not only technological solutions but also ongoing education, support, and collaboration among stakeholders to ensure the security and well-being of pensioners as they engage with e-banking services.

Table 5.1 Security officers suggested coping strategies

Strategy	Description	Comments by Security Officers
Education and Awareness	Conducting educational workshops and awareness campaigns to inform old age grant pensioners about common e-banking security threats.	<i>“Education is key. We need to empower pensioners with knowledge about the risks they may encounter online and how to stay safe. For instance, during our workshops it was mentioned that we’ve noticed that many pensioners are unfamiliar with phishing emails and often fall victim to fraudulent schemes.”</i>
	Providing guidance on safe e-banking practices, such as creating strong passwords, recognising phishing attempts, and safeguarding credentials.	<i>“Many pensioners are unaware of the dangers online. We need to teach them simple yet effective ways to protect themselves. For example, we’ve seen cases where pensioners use easily guessable passwords, making their accounts vulnerable to unauthorised access.”</i>
Enhanced Authentication	Multi-factor authentication (MFA) mechanisms to enhance the security of e-banking transactions for old age grant pensioners.	<i>“MFA adds an extra layer of security, making it harder for unauthorised users to access accounts, even if passwords are compromised. For instance, I have witnessed instances where pensioners’ accounts were compromised due to weak passwords, highlighting the need for additional security measures like MFA.”</i>
	Utilising biometric authentication methods, such as fingerprint or facial recognition, to add an extra layer of security.	<i>“Biometrics are user-friendly and difficult to replicate. Pensioners can feel more confident knowing their unique traits are being used for authentication.”</i>
Fraud Monitoring Systems	Deploying fraud monitoring systems to detect suspicious activities and unauthorised transactions in real-time.	<i>“Real-time monitoring would allow for identification and responding to fraudulent activities swiftly, minimising potential losses for pensioners. Our or the bank fraud monitoring system flagged a suspicious transaction made from a pensioner’s account, allowing for early intervention before any significant loss occurs.”</i>
	Collaborating with financial institutions and law enforcement agencies to investigate and mitigate potential fraud incidents.	<i>“Coordination is key. By working together with banks and law enforcement, we can strengthen our response to fraud and hold perpetrators accountable. For example, we collaborated with the local police to apprehend a fraudster targeting pensioners, demonstrating the effectiveness of our joint efforts in combating fraud.”</i>
Customer Support Services	Offering dedicated customer support services tailored to the needs of old age grant pensioners, including assistance with account security.	<i>“Pensioners need to know they have someone to turn to 24/7 if they encounter issues or have security concerns. Providing accessible support channels is crucial. The need for security officers to be trained and skilled for such assistant services is really needed.”</i>
	Providing accessible helplines, email support, and in-person assistance for addressing security concerns and resolving issues promptly.	<i>“Accessibility is important. Pensioners may not be comfortable with technology, so offering multiple support options ensures they can seek help in a way that suits them best.”</i>
Secure Communication	Ensuring secure communication channels for e-banking transactions, utilising encryption protocols and secure messaging platforms.	<i>“Encrypting communications adds an extra layer of protection, ensuring sensitive information remains confidential during online transactions. I encountered numerous cases where pensioners’ sensitive information was compromised due to unencrypted communication channels, emphasising the importance of encryption.”</i>
	Advising old age grant pensioners to avoid conducting sensitive transactions over unsecured Wi-Fi networks or public computers.	<i>“Pensioners should be cautious when using public Wi-Fi or shared computers, as these may be vulnerable to hackers. Encouraging safe practices can prevent unauthorised access to their accounts. I have witnessed instances where pensioners unknowingly conducted transactions over public Wi-Fi, resulting in unauthorised access to their accounts by malicious actors.”</i>
Regular Security Updates	Keeping old age grant pensioners informed about the latest security updates, software patches, and best practices for securing their devices.	<i>“Staying up-to-date is crucial in the ever-evolving landscape of cybersecurity. Regular updates help patch vulnerabilities and protect pensioners from emerging threats.”</i>
	Encouraging regular software updates and antivirus scans to mitigate vulnerabilities and protect against malware threats.	<i>“Software updates and antivirus scans are like regular check-ups for devices. They help identify and remove potential threats, keeping pensioners’ devices and accounts secure.”</i>

The tabulated responses in Table 5.1 show the strategic design devised by security officers to fortify e-banking security for old age grant pensioners in Hammarsdale, Mpumalanga Township,

KZN. Grounded in personal experiences and astute observations, these strategies represent a holistic approach to address the complex challenges posed by digital financial transactions. From educational initiatives aimed at empowering pensioners with knowledge to the implementation of robust authentication measures and vigilant fraud monitoring systems, each strategy is tailored to mitigate specific threats while enhancing the overall security posture. The inclusion of concrete examples underscores the practical applicability and efficacy of these measures in real-world scenarios, reaffirming their pivotal role in safeguarding pensioners' financial well-being. By amalgamating technological innovations with empathetic support services, these strategies epitomise a concerted effort to foster digital resilience and financial inclusivity among older adults, ensuring that they can navigate the e-banking landscape with confidence and security.

Figure 5.11 depicts some practical recommendations that were suggested by security officers.

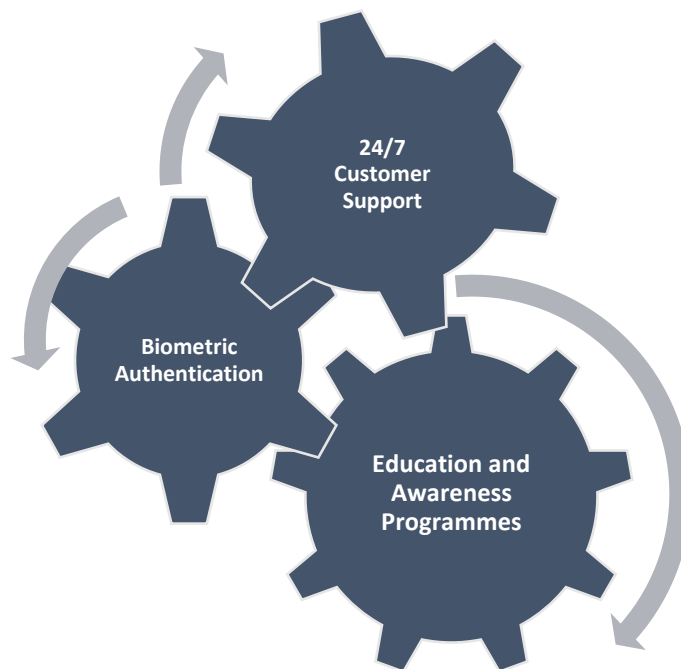


Figure 5.11 Proposed strategies by security officers stationed near ATMs

Source: Researcher's illustration

In the modern era, e-banking has revolutionised financial transactions, offering convenience and accessibility to users worldwide. However, with the proliferation of e-banking services comes an array of security threats, presenting significant challenges, particularly for vulnerable populations such as old age grant pensioners. Figure 5.11 shows a visual representation and concise overview of the comprehensive set of strategies proposed by security officers. These strategies are

specifically tailored to address the unique challenges faced by old age grant pensioners in navigating the e-banking landscape, ensuring their financial security and well-being in Hammarsdale, Mpumalanga Township, KZN.

5.5 APPLICATION OF THEORIES TO THE STUDY FINDINGS AND DISCUSSION

The application of theoretical frameworks to study findings and discussions serves as a cornerstone in understanding complex phenomena and guiding informed interventions. In the research on security threats of e-banking services among pensioners, theories provide lenses through which researchers can analyse and interpret data, uncover underlying patterns, and formulate practical recommendations. This section delineates the significance of applying theoretical frameworks to this study's findings and discussions regarding e-banking security threats among pensioners, particularly within the context of Hammarsdale, KZN.

Theoretical frameworks offer systematic frameworks for understanding the complex nature of e-banking security threats and the factors influencing pensioners' adoption and utilisation of digital financial services. By applying theories such as the DOI theory and the rational choice theory, the researcher was able to elucidate the intricate relationship between individual perceptions, social dynamics, and environmental factors in shaping e-banking behaviours and outcomes. Furthermore, theoretical frameworks provide a manner to organise and interpret findings within a coherent conceptual framework (Bezeidenhout, 2011; Gunter, 2019; Mohajan, 2018). By grounding their analyses in established theories, researchers can identify key variables and draw meaningful conclusions from empirical data. Moreover, theoretical frameworks facilitate cross-disciplinary dialogue and knowledge integration, allowing researchers to draw upon insights from diverse fields, such as sociology and economics, to enrich understanding, in this case of e-banking security threats among pensioners.

In this context, the application of theoretical frameworks to study findings and discussions holds immense promise for advancing both theoretical understanding and practical interventions in the domain of e-banking security for pensioners. By synthesising empirical evidence with theoretical insights, the researcher generated insights, developed targeted interventions, and contributed to the development of effective policies and practices aimed at enhancing the security and usability of e-banking services for pensioners in Hammarsdale and beyond. Thus, this study explored and applied relevant theoretical frameworks to the study findings and discussions on security threats

of e-banking services among pensioners, by advancing knowledge and informing actionable strategies in this critical domain.

5.5.1 Application of the Diffusion of Innovation Theory

The DOI theory, developed by Everett Rogers (1988), is a framework used to understand how new ideas, technologies, or innovations spread and are adopted within a population over time. It posits that the adoption process follows a bell curve, with different categories of adopters ranging from innovators to laggards (Rogers, 2003). The DOI identifies key factors influencing the adoption process, including the characteristics of the innovation itself, communication channels, social networks, perceived benefits, and barriers to adoption.

In the context of the current study, the DOI can be applied to gain insights into the adoption patterns and dynamics of e-banking services among pensioners in the specified region by focusing on the following premises of the DOI.

5.5.1.1 Adopter Categories

The DOI categorises adopters into five groups based on their readiness to adopt innovations: innovators, early adopters, early majority, late majority, and laggards (Kamaski, 2011; Rogers, 2003). By identifying to which category of adopters' pensioners in Hammarsdale, KZN, belongs, the researcher was able to understand the distribution of adoption and tailor interventions accordingly. For example, innovators and early adopters may require different strategies compared to the late majority or laggards. In the context of this research study, understanding the adopter categories among pensioners helps inform the development of targeted interventions to address security threats and promote the adoption of e-banking services. For instance, innovators and early adopters may benefit from initiatives that emphasise the advanced security features and benefits of e-banking, while the late majority and laggards may require more personalised, individual support and education sessions to overcome barriers to adoption, such as fear of technology or lack of trust in digital banking platforms.

Moreover, the current study found that the reluctance of pensioners to adopt new technologies stems from various factors, notably their illiteracy and apprehension about experimenting with unfamiliar tools due to their age and the challenges associated with aging. This demographic often finds themselves relying heavily on the younger generation, such as grandchildren, or even seeking assistance from strangers when navigating technological innovations. Furthermore, the prevalence

of security threats adds another layer of complexity to their apprehensions. These concerns range from online scams to identity theft, contributing to the pensioners' cautious approach towards embracing digital advancements. Understanding these intricacies is crucial for crafting tailored interventions aimed at closing the divide between pensioners and technological advancements while addressing their specific needs and concerns.

5.5.1.2 Rate of Adoption

During the data collection process for the research study on e-banking security threats among pensioners in Hammarsdale, KZN, relevant observations were made that align with the principles of the DOI theory. These observations clarify the varying rates of adoption of e-banking services among pensioners and the factors influencing their adoption decisions. A notable observation was the range of perceptions and attitudes towards e-banking services among pensioners. A small portion of two participants out of the ten pensioner participants expressed enthusiasm and eagerness to adopt digital banking methods, citing perceived benefits such as convenience and security. These individuals appeared to be more open to embracing technological innovations and were willing to explore new ways of managing their finances.

Conversely, eight out of ten pensioner participants exhibited hesitancy or reluctance towards e-banking services, citing concerns about complexity, compatibility with existing practices, and risks associated with digital transactions. For instance, some pensioners expressed apprehension about navigating online banking platforms or mistrust towards the security measures implemented by banks. These observations underscore the influence of factors, such as perceived benefits, compatibility, complexity, trialability, and observability, on the adoption rates of e-banking services among pensioners in Hammarsdale, KZN. Participants' perceptions of the benefits and risks associated with e-banking, as well as their comfort level with technology, played a significant role in shaping their adoption decisions.

5.5.1.3 Innovation-Decision Process

Initially, many pensioners exhibit limited knowledge about e-banking security measures, reflecting gaps in understanding and potential misinformation. As they progressed through the persuasion stage, pensioners encountered negative persuasive messages regarding e-banking security and fear-inducing messages which often outweigh negative influences, fostering hesitancy towards adoption. During the decision stage, concerns about security risks, usability barriers, and the

trustworthiness of e-banking platforms majorly impacted pensioners' adoption decisions. Subsequently, experiences during the implementation stage, such as difficulties navigating online platforms or encountering security breaches, further shaped pensioners' perceptions of e-banking security. Essentially, successful implementation experiences may lead to confirmation and widespread adoption, while negative encounters can reinforce concerns and discourage further adoption efforts.

5.5.1.4 Communication Channels

The DOI theory emphasises the importance of communication channels in disseminating information and influencing adoption decisions. The researcher explored the effectiveness of different communication channels (such as educational workshops, community outreach programs, digital literacy training) in promoting e-banking security awareness among pensioners in Hammarsdale, KZN. Pensioners mentioned that they heard about e-banking transactions from various sources, such as the Post Office, through referrals from friends and relatives, and from training conducted by bank employees. However, the pensioners noted that these training sessions were often short and scarce, making it challenging for them to remember and learn everything at once. Therefore, identifying preferred channels of communication can enhance targeted outreach efforts and improve information dissemination, ensuring that pensioners receive the necessary support and education to overcome barriers to e-banking adoption and address security concerns effectively.

5.5.1.5 Social Networks

The DOI theory recognises the influence of social networks and interpersonal relationships on innovation adoption. The researcher in this study investigated how social networks within the pensioner community in Hammarsdale shaped attitudes and behaviours towards e-banking services. A total number of ten pensioners involved in this study often expressed feelings of apprehension and uncertainty when it came to adopting e-banking services, influenced in part by the experiences shared within their social circles. Positive experiences shared by early adopters or trusted individuals within these networks facilitated diffusion and encouraged others to embrace e-banking services. However, study findings indicated that while there was a willingness among some pensioners to embrace e-banking, there remained a significant proportion who remained hesitant. This group voiced concerns about security, privacy, and the perceived complexity of digital platforms, which acted as significant barriers to adoption. Some pensioners recounted

stories of scams and fraud perpetrated online, heightening their fears of potential risks associated with e-banking. Additionally, the rapid pace of technological advancement contributed to feelings of overwhelm and inadequacy, particularly among older individuals who did not have grown up with digital technology.

By applying the DOI theory to the current study, the researcher gained valuable insights into the factors motivating or inhibiting the adoption of e-banking services within the demographic of pensioners in Hammarsdale, KZN. The DOI theory provided a framework for understanding how innovations such as e-banking services spread and are adopted within a community over time. It allowed the researcher to analyse the various stages of adoption among pensioners, ranging from innovators and early adopters to the late majority and laggards.

Through the DOI theory, the researcher was able to identify key determinants influencing e-banking adoption, such as the perceived complexity of technology, concerns about security and privacy, and the influence of social networks. For instance, early adopters within the pensioner community played a pivotal role in encouraging others to embrace e-banking through positive experiences and testimonials. Conversely, factors inhibiting adoption, such as fear of technology, lack of trust in digital platforms, and limited access to comprehensive training, were also illuminated.

Furthermore, the theory highlighted the importance of tailored interventions based on the readiness of adopters. For innovators and early adopters, initiatives emphasising the benefits and security features of e-banking could be effective. In contrast, the late majority and laggards may require personalised support and education sessions to overcome barriers to adoption. Overall, applying the DOI theory provided a comprehensive framework for understanding the dynamics of e-banking adoption among pensioners and informed the development of targeted interventions to promote adoption and address barriers within this demographic.

5.5.2 Applying the Rational Choice Theory

Rational choice theory underscores the importance of individual preferences and incentives in decision-making (Thomas et al. 2022; Nagy and Groves, 2021). The implication for this study is that in the adoption of e-banking, pensioners go through the cognitive process of evaluating both their preferences and the incentives being offered for using such innovations. For pensioners considering e-banking adoption, the theory suggests that their decisions are influenced not only by

objective factors, such as security features and ease of use, but also by subjective factors, such as trust in technology and perceptions of risk. Pensioners may weigh the perceived benefits of e-banking, such as the convenience of conducting transactions from home and the potential for reduced fees, against the perceived costs, including concerns about fraud, privacy breaches, and the learning issues associated with new technology. Due consideration to the findings presented in this chapter reveals that for most pensioners, there was a strong preference for old-fashioned methods of conducting transactions. This preference was being fuelled by the abovementioned objective, as well as subjective factors associated with e-banking. There was also an awareness and observed consideration among pensioners for the benefits of using e-banking, such as convenience. The results further revealed that most pensioners believed the negative factors associated with e-banking, and which increased the threat of falling prey to criminal activities outweighed the benefits. Hence, the continued insistence by the majority of participants who took part in the study that they preferred to conduct their banking activities the old-fashioned way.

Rational choice theory further acknowledges that decision-making is not purely rational but also influenced by cognitive biases and social factors. In the case of e-banking adoption among pensioners, cognitive biases, such as loss aversion and status quo bias, may lead individuals to remain with traditional banking methods out of fear of potential losses or discomfort with change. Additionally, social influences from family members, peers, and trusted advisors can shape pensioners' perceptions of e-banking and influence their decision-making process. Positive testimonials from peers who have successfully adopted e-banking may encourage others to adopt e-banking, while negative experiences or warnings from trusted sources may deter adoption.

Moreover, within the framework of the rational choice theory, it is imperative to acknowledge the subjective perceptions and concerns of pensioners regarding e-banking adoption. Pensioners expressed an inherent fear that engaging in e-banking poses a significant security threat to their hard-earned savings. They worry about the vulnerability of their funds to online scams, hacking, and identity theft, leading to a reluctance to transition to digital banking platforms. Additionally, pensioners often cite discomfort and unease with the technological aspects of e-banking, feeling overwhelmed by the need to remember bank PINs, navigate complex digital interfaces, and adhere to stringent security protocols. The cognitive burden of managing these new processes can add stress and anxiety to pensioners' daily lives, detracting from their overall sense of wellbeing. In this context, the rational choice theory emphasises the importance of understanding and addressing

these subjective perceptions and concerns in designing interventions to promote e-banking adoption among pensioners.

In discussing the study findings through the lens of the rational choice theory, it is evident that effective interventions to promote e-banking adoption among pensioners must address both the rational considerations and the emotional and social factors that influence decision-making. Providing clear information about the benefits and risks of e-banking, offering personalised support to address concerns and build confidence in using digital tools, and leveraging social networks to disseminate positive experiences and testimonials can all contribute to facilitating informed and empowered decision-making among pensioners regarding e-banking adoption. By understanding and accommodating the diverse preferences and motivations of pensioners, policymakers and financial institutions can encourage greater uptake of e-banking services and enhance financial inclusion for this demographic.

5.6 CONCLUSION

The synthesis of findings from this study, enriched by insights gleaned from theoretical frameworks and existing literature, offers a comprehensive understanding of the dynamics surrounding e-banking adoption among pensioners in Hammarsdale, KZN. The application of theories such as the DOI and rational choice theory provides valuable lenses through which to analyse factors influencing pensioners' decisions regarding e-banking adoption.

The theories elucidated the stages of adoption, from innovators to laggards, highlighting the diverse readiness levels within the pensioner community. They also underscored the rational decision-making processes that exist, wherein pensioners weigh the perceived benefits of e-banking against concerns about security, privacy, and technological complexity. Moreover, the theories illuminated the significance of social networks and subjective perceptions in shaping attitudes and behaviours towards e-banking adoption. Consulting the rich literature on financial inclusion, digital literacy, and geotechnology, this study contextualised pensioners' experiences within broader socio-economic and technological landscapes. It clarified the unique challenges faced by pensioners, such as limited access to education and support, infrastructure barriers, and concerns about trust and autonomy in digital transactions.

The integration of theories and literature not only provided a theoretical framework for analysis but also enriched the discussion by offering insights and perspectives from diverse disciplines. It

facilitated understanding of the complex interplay between individual, social, and structural factors influencing e-banking adoption among pensioners. Findings of this study accentuate the imperative for tailored interventions that address the needs and concerns of pensioners. By leveraging insights from theories and literature, policymakers, financial institutions, and community organisations can design targeted strategies that promote e-banking adoption and foster trust, inclusion, and empowerment among pensioners.

In essence, the role of theories and literature in this study has been instrumental in illuminating the pathways to e-banking adoption among pensioners, guiding the development of evidence-based interventions, and advancing collective understanding of digital financial inclusion in aging populations.

CHAPTER SIX: CONCLUSIONS AND RECOMMENDATIONS

6.1 INTRODUCTION

This chapter summarises the conclusions derived from the study's findings and makes suggestions considering them. The purpose of the study was to investigate elderly South Africans' attitudes, experiences, and concerns regarding the use of e-banking technology. The study emphasised several important issues, such as the need for inclusive, accessible banking solutions for older persons, security concerns, convenience vs vulnerability, and the expectation of technological developments. This chapter summarises the main conclusions drawn from this data and offers helpful suggestions for legislators, financial institutions, and technology developers.

6.2 FINDINGS FROM THE LITERATURE REVIEW

To detect patterns and trends that support or contradict the results of the current study, we reviewed previous research, publications, and theoretical frameworks. The study is better placed within larger conversations on digital inclusion, technology adoption, and the digital divide thanks to this comparison of research findings and literature, especially in the context of South Africa. The main takeaways from the research are discussed in the next subsections, offering a more thorough comprehension of the variables affecting the uptake of e-banking and the particular difficulties older people encounter.

6.2.1 Understanding the Nature of E-Banking Security for Pensioners

To summarise the findings from the literature review about the understanding of the nature of e-banking security for pensioners, three themes will be discussed namely user interface, security concerns, and accessibility issues that pensioners experience while using e-banking services.

6.2.1.1 User interface

Msweli et al. (2020), proves that the elderly in countries like South Africa tend to have limited digital literacy, which is exacerbated by a lack of access to smartphones and computers, particularly in rural areas. Consequently, they are unable to access critical information on how to access and safely use e-banking services. Likewise, according to Mncwabe (2018), The transition to e-banking has been indeed a challenging journey for pensioners in Hammarsdale, Mpumalanga Township, KZN, as they were provided with minimal information regarding this new method of financial transactions. The introduction of the e-banking system was accompanied by

communication gaps, leaving pensioners with limited details on the particulars of the digital platform (Ningi, 2022).

6.2.1.2 E-Banking Awareness: Sources of Information

The findings from a study conducted by Foster (2023) indicate that pensioners said that they learned about e-banking through billboards, various trainings, and one-on-one assistance, effectively making them comfortable and familiar with e-banking. Kumar (2018) and Jager (2023) supports communication strategies and tailored educational initiatives imperative in empowering pensioners to navigate the complexities of e-banking with confidence and security. By providing accessible and comprehensible resources, such as interactive workshops and personalised assistance, financial institutions and policymakers can bridge the knowledge gap and foster a culture of digital literacy and inclusivity among pensioners.

6.2.2 Security Concerns

The digital divide pinpointed by Mveli et al. (2020) is a critical culprit in the susceptibility of the elderly to such things as identity theft when they engage in e-banking. Smith (2019) underscores the pervasive nature of identity theft in the digital age, highlighting how cybercriminals exploit weakness in online platforms to steal personal information and perpetrate fraudulent activities. Chen (2020) further delves into the specific vulnerabilities faced by pensioners in the context of identity theft, emphasising their susceptibility to phishing scams, data breaches, and other forms of cybercrime. Pensioners, often less familiar with digital technologies and security protocols, may inadvertently disclose sensitive information or fall victim to deceptive tactics employed by cybercriminals.

6.2.2.1 Fear of Using E-Banking Due to Security Risks

As indicated by Kuitto et al. (2023), Payne et al. (2021) and Rajapakse (2017), e-banking was developed for the purpose of customers' increased, as well as convenient access to banking services. But, due to the prevalence of security risks highlighted by Han et al. (2021), Foster (2023), Frik et al. (2019), SABRIC (2022) and William et al. (2013) the elderly as indicated by the results of this study sometimes prefer to altogether avoid using such services, to protect themselves.

6.2.2.2 Balancing Convenience and Security in E-Banking

Jones et al. (2019) emphasise the importance of understanding the socio-economic context when addressing security challenges in e-banking services. Similarly, Smith and Johnson (2020) highlight the role of cultural factors in shaping individuals' perceptions of online security risks. By building upon this literature, the current research aimed to contribute valuable insights that can inform targeted strategies for enhancing the security of e-banking services tailored to the needs and challenges of pensioners in this region.

6.2.3 Accessibility Issues

In the literature review, Msweli et al. (2021) were quite specific in explaining that accessibility issues are normally prevalent in underdeveloped countries. Within that context, Msweli et al. (2021) alluded to the lack of access to devices through which e-banking can be conducted, mainly smartphones and computers. However, in the context of this study, it was discovered that participants in the study owned smartphones that enabled them to access e-banking conveniently. Therefore, while accessibility was identified as one of the living realities of the elderly in Hammarsdale, compatible devices were not the issue. Rather, the results led to the identification of one of the issues that is also discussed by Msweli et al. (2021), which is internet connectivity.

6.2.4 Perceptions of Pensioners' Utilisation of E-Banking Services

6.2.4.1 Banking Has Become More Complicated for the Elderly

In the literature review, there was consensus among scholars like Kuitto et al. (2023), Payne et al. (2021) and Rajapakse (2017), regarding the convenience that e-banking has brought to banking systems. This idea of convenience is embedded in the notion that clients no longer have to visit banks and stand in queues for transactions among other services. The perceptions of the pensioners who participated in this study however reveal that e-banking is not a convenience to most of them, but rather a complexity that is causing negative feelings. The reason for this contradiction again in the digital divide that is spoken of by Msweli et al. (2020), which is inhibiting the elderly from enjoying using e-banking. It is apparent that without the necessary skills and knowledge to navigate e-banking, the elderly will continue to prefer old methods of conducting transactions. In this instance, there is a reiteration of arguments raised in the previous section, particularly based on Georgieva (2019) who highlighted how the successful adoption of e-banking among the elderly

in developed countries was made possible by government support, as well as educational initiatives aimed at thoroughly equipping this population group.

6.2.4.2 Contentment with E-Banking and Forward-Thinking

Kuitto et al. (2023), Payne et al. (2021), and Rajapakse (2017) see the value of e-banking, particularly in making banking convenient for clients. In their investigation of the function of biometric identification systems in financial institutions, Chawla & Gohil (2018) contend that elderly persons who might have trouble memorising PIN numbers or passwords would benefit most from technology like fingerprint and face recognition. The authors contend that biometric systems are appealing options for senior citizens because they provide improved security and user ease

6.2.5 Pensioner Perspectives: Unveiling Incidents and Concerns in Personal Experiences

Sayar and Wolfe (2020), as well as Pavlov (2010), expressed that the crux of the security issues surrounding e-banking is privacy. As a point of emphasis, it is critical to note that again a breach of privacy as indicated by Sayar and Wolfe (2020), as well as Pavlov (2010), emerges as a paramount issue. Most importantly, the experiences of the participants concur with the findings of Brink (2023), together with Rasmussen and Knutsen (2024), regarding the forms of e-banking crimes used against the elderly.

6.2.6 Security Officers' Perspectives on E-Banking Security Threats

Brink (2023) and Rasmussen and Knutsen (2024) highlighted that there are cyberattacks that are specifically targeted towards the elderly, including identity theft and fraud. Georgieva (2019), Msweli et al. (2020) and Omotayo and Tolulope (2020) regarding the lack of digital literacy among the elderly who are expected to navigate digital platforms without adequate support. They emphasise the importance of addressing digital literacy gaps among pensioners to facilitate their successful engagement with e-banking platforms. Moreover, it again underscores the need for comprehensive educational initiatives and support programmes aimed at enhancing pensioners' digital skills and confidence in utilising e-banking services securely. By addressing both security concerns and digital literacy barriers, stakeholders can work towards creating a more inclusive and accessible e-banking environment for pensioners, ultimately empowering them to manage their finances effectively in the digital age.

6.2.7 Fortifying Finances: Pensioners' Strategies Against E-Banking Security Threats

6.2.7.1 Vigilance Against Phishing Attempts

According to studies by Demba et al. (2019) and Deterding and Waters (2021), retirees are particularly vulnerable to phishing scams when they are created to look authentic, such as imitating official correspondence from banks or other financial organisations. For instance, retirees can get emails or texts asking them to update their account details or confirm a recent transaction that seems to be from their bank. Older folks are more likely to become victims of these scams because they lack the information necessary to differentiate between legitimate and fraudulent communications.

6.2.7.2 Regular Password Updates

According to a study by Dupuis and Tsotsos (2018), changing passwords frequently is crucial for protecting against a variety of dangers, including malware and phishing scams. According to Aloul, not changing passwords regularly might make a person more susceptible to unwanted access, particularly when hackers use malware or keylogging to capture login information. These cybersecurity best practices are consistent with the proactive password-updating strategy seen in the study.

6.2.7.3 Clear Communication with Banks

According to Frik et al. (2019), social engineering is the practice of tricking people into disclosing private information. Customers who receive clear, regular communication from their banks about common fraud strategies are more likely to identify and steer clear of such frauds.

6.2.7.4 Double-Checking Transactions

According to Datta et al. (2019) customers who keep a close eye on their transactions are more likely to spot irregularities and take prompt action to avoid losing money. For older persons, who could be more susceptible to identity theft or financial fraud, this approach is especially important. People who regularly check their finances, such as by looking over their bank accounts or transaction history, are more likely to make wiser financial decisions (Frik et al., 2019).

6.2.7.5 Seeking Assistance and Education

Targeted educational training on e-banking security procedures increases the likelihood that people would identify possible threats, including phishing scams, and take preventative action to protect their online accounts (Cosman, 2023). Such educational initiatives are an essential tool for raising

knowledge and fostering confidence in digital banking environments for older adults, who may encounter difficulties because of their lack of experience with new technology (Cohen et al., 2017).

6.2.8 Empowering e-Banking Safety: Security Officers Measures for Protecting Pensioners

Choy (2014) claims that elderly persons are especially vulnerable to scams because they might not be up to date on the newest fraud techniques or might not have the technical know-how to spot phone interactions. Demba et al., (2019) research also highlights the frequency of frauds targeting senior citizens, such as phone SMS messages and phone calls posing as financial organisations.

Cybercriminals frequently utilise malware to take advantage of flaws in out-of-date software or unprotected devices, which are prevalent among older persons who might not update their security measures on a regular basis or be aware of the most recent risks on the internet (Datta et al., 2019). According to research by Cosman (2023)., weak passwords, ignorance of account security features, and a lack of familiarity with multi-factor authentication (MFA) make older persons more vulnerable to account hacking. Additionally, older persons might be more likely to use easy-to-guess passwords, which raises the risk of unwanted access to their online banking accounts.

According to Cosman (2023), seniors are especially susceptible to phishing since they might not always be able to tell the difference between authentic and fraudulent messages. These assaults can be sent to users via pop-up notifications, SMS messages, or emails that point them to phone websites intended to steal financial information and login credentials. According to Datta et al., (2019), older persons are more vulnerable to identity theft, especially if they depend on others to help them with their financial activities. In these situations, personal data is frequently disclosed without the necessary security measures, which facilitates fraudsters' ability to abuse it.

Cosman (2023) found that older adults often experience anxiety and frustration when using digital technologies, especially when they encounter security issues or are unsure of their ability to protect their online accounts. For this reason, the value of empathetic customer service cannot be overstated. By providing them with customised support, troubleshooting assistance, and guidance through digital banking procedures, older users' concerns can be alleviated and their adoption of safe online banking practices encouraged.

6.2.9 Application of Theories to E-Banking Security Among Pensioners

The DOI theory and rational choice theory are two important theoretical frameworks that were used in this study to analyse the factors influencing retirees' adoption of e-banking and their

security concerns. The diffusion of new technologies, such as e-banking, among populations is explained by the DOI theory. To help identify different adoption rates, it divides adopters into innovators, early adopters, early majority, late majority, and laggards. According to the report, the majority of retirees were hesitant to use e-banking because they were worried about its complexity, security issues, and lack of confidence. Although they were frequently insufficient, the study also showed that social networks and communication channels, such educational seminars, had an impact on adoption. The approach highlights the necessity of focused interventions that consider the social influences and adoption readiness of retirees. According to the rational choice theory, people consider both the advantages and disadvantages of their options. Pensioners were reluctant to embrace digital banking because they were more concerned with perceived threats (such as fraud and identity theft) than with advantages like ease of use and lower costs. Their decision to continue using traditional banking was also influenced by cognitive biases such as status quo prejudice and loss aversion. Peer and family social forces also influenced their choices.

6.3 FINDINGS FROM THE PRIMARY RESEARCH

The first objective of the study was to understand the lived experiences of old-age pensioners receiving SASSA grants regarding e-banking services. The nature of security threats to e-banking services on pensioners within the framework of the case study in Hammarsdale, Mpumalanga Township, KZN, involves comprehensive scrutiny of potential risks and vulnerabilities specific to this demographic. The study explored an array of threats that pose challenges to the security of financial transactions for pensioners. Three themes were identified from the analysis of data. These are the complexity of the user interface, security concerns, and accessibility issues that pensioners experience while using e-banking services.

6.3.1 The complexity of the User Interface

The findings revealed that pensioners have found the switch to e-banking difficult because of psychological obstacles, complicated user interfaces, and a lack of instruction. Many elderly people have trouble understanding complicated instructions, technical jargon, and multi-step procedures, which leaves them perplexed and exposed to security threats. It is also discovered that anxiety is made worse by inadequate training and support, which causes some people to give up using e-banking or turn to others for assistance. Older consumers' demands are frequently ignored by e-banking systems, which do not take into consideration their physical constraints and lower

levels of computer literacy. Banks should offer digital literacy programs, make sure customer assistance is available, streamline interfaces, and provide step-by-step instructions to increase adoption. Pensioners would feel more comfortable and confident handling their money online because of this.

6.3.1.1 E-Banking Awareness

In the community of Hammarsdale, the study participants were not thoroughly educated about e-banking. The communication channels were limited, and they struggled to find accessible and understandable resources to learn about e-banking. This lack of comprehensive education contributed to their apprehension and reluctance to fully embrace e-banking services. Participating pensioners in this study revealed that they primarily learned about the approaching introduction of e-banking through informal sources, such as friends, neighbours, or fellow pensioners. In cases where formal communication occurred, pamphlets were distributed on grant collection days from cash-in-transit vans. However, elderly participants encountered difficulties in comprehending these pamphlets due to age-related physical as well as intellectual challenges.

6.3.2 Security concerns

The participants highlighted the significant concern of identity theft among elderly members of the community. They shared instances where unauthorised individuals gained access to personal information, potentially leading to identity theft and ultimately, financial fraud. These experiences, there was a discernible display of emotions. They exhibited signs of sadness and disappointment, underscoring the personal impact and emotional toll that the rising cases of identity theft had on him. This observation adds a poignant layer to these testimonies, emphasising not only the tangible consequences of identity theft but also the emotional distress it can evoke in those who have experienced it or witnessed its effects personally.

6.3.2.1 Fear of Using E-Banking Due to Security Risks

The results show that pensioners in Hammarsdale are living in constant fear of the security risks that are rampant in e-banking. The challenge with living with this fear is that it inhibits pensioners from using e-banking because they do not want to be victims. This fear is brought on by worries about online dangers including fraud, identity theft, and transaction interception, which are made worse by the intricacy of e-banking systems. Due to their limited digital literacy, many seniors feel exposed and find it difficult to identify security concerns or learn how to safeguard their accounts.

Therefore, people tend to shun online banking or depend on family members to handle their transactions. Their concern is exacerbated by the lack of easily available, understandable information and unambiguous instructions, which makes them feel cut off from the advantages of online banking. Financial independence is hampered by this reluctance to use e-banking, which emphasises the need for focused training and assistance to enable seniors to use these platforms safely and confidently.

6.3.2.2 Balancing Convenience and Security in E-Banking

The results underlined the importance of providing a range of banking options to accommodate varying preferences and concerns. While some favoured the convenience and security features of digital transactions, others placed greater trust in traditional methods for a sense of control and accountability. The banking industry should continue to address and bridge gaps in trust and understanding to ensure that individuals, feel secure and informed about their financial transactions, regardless of the chosen method. By concentrating on this specific geographical context, this study recognized the localised nature of security threats, considering regional economic conditions, cultural influences, and the regulatory environment in Hammarsdale, KZN

6.3.3 Accessibility Issues

The results show that one of the biggest obstacles to Hammarsdale pensioners adopting e-banking services is inadequate internet access. Participants frequently complained about poor or erratic connections that made it difficult for them to transmit money or check their account balances, among other tasks. These connectivity issues add to customers' irritation and sense of helplessness over their money by creating confusion about whether their transactions were successful. Additionally, the problem increases fear of possible financial loss. Since banks have little control over connectivity problems, financial institutions and network providers must cooperate to provide more dependable internet access and enhance the whole e-banking experience for seniors.

6.3.4 Perceptions of Pensioners' Utilisation of E-Banking Services

The investigation of the perceptions of pensioners concerning the second research question through thematic analysis led to the identification of two main themes. These are, that e-banking has made banking more complicated for them, as well as contentment with e-banking and forward-thinking for others.

6.3.4.1 Banking Has Become More Complicated for the Elderly

The perceptions of the pensioners who participated in this study however reveal that e-banking is not a convenience to most of them, but rather a complexity that is causing negative feelings. It is apparent that without the necessary skills and knowledge to navigate e-banking, the elderly will continue to prefer old methods of conducting transactions. Apart from the inability to manage pin codes, it also emerged that e-banking has made the elderly vulnerable to theft of funds from their family members. Previously, there was a discussion on how some of them due to their security concerns enlist the help of family members to help them to complete their transactions.

6.3.4.2 Contentment with E-Banking and Forward-Thinking

The results indicate that older people have a great desire for the use of cutting-edge banking technology like fingerprint scanning and face recognition. These technologies are viewed as answers to current problems, such as the inability to remember PINs, the possibility of losing bank cards, and worries about internet security. Many think that by decreasing the need for conventional techniques like passwords and PIN codes, these technologies would improve banking's convenience and security. There is general optimism on the adoption of new, easier, and safer banking techniques, notwithstanding some ambiguity regarding the specifics of these developments. The goal is to increase senior users' access to and security of money management.

6.3.4.3 Readiness for the Fourth Industrial Revolution in E-Banking

The participants consistently advocated for change and innovative methods in the realm of banking. In essence, the overall number of participants in this study call for change and innovation within the banking sector. Their experiences encapsulate the dual realities of convenience and apprehension that define the contemporary e-banking landscape. Reflecting on their insights, it becomes evident that, while e-banking has revolutionised the way finances are managed, it also brings with it a new set of challenges and vulnerabilities that must be addressed.

6.3.5 Pensioner Perspectives: Unveiling Incidents and Concerns in Personal Experiences

The responses obtained from the participants served as a rich source of qualitative data, offering insights into the practical, day-to-day realities faced by pensioners in the digital banking landscape. Understanding their experiences and the approaches they adopted in addressing security concerns contributes to a more comprehensive understanding of the dynamics involved in e-banking

security, ultimately informing potential strategies for improvement and support tailored to the needs of this demographic.

This research uncovered not only the technological literacy challenges faced by this demographic but also their perceptions regarding the usability and security considerations of e-banking. By capturing the voices of old-age grant pensioners, this study aspires to contribute valuable insights that can inform tailored strategies and enhancements, ensuring a more accessible and user-friendly digital banking environment for this specific group in the South African context.

6.3.6 Security Officers' Perspectives on E-Banking Security Threats

Reflecting on the insights shared by both current and former security officers, it becomes evident that pensioners in Hammarsdale, Mpumalanga Township, KZN, face considerable challenges in adopting e-banking services. With many pensioners lacking the knowledge and skills to identify potential threats, educational initiatives become essential in empowering them to protect themselves online. Financial institutions must heed the advice of former security officers and prioritise the development of comprehensive educational programmes tailored to the specific needs of pensioners. By equipping pensioners with the necessary tools and information, stakeholders can mitigate the risks associated with e-banking and safeguard the financial well-being of this vulnerable demographic.

6.3.7 Empowering e-banking Safety: Security Officers Measures for Protecting Pensioners

The findings show the strategic design devised by security officers to fortify e-banking security for old age grant pensioners in Hammarsdale, Mpumalanga Township, KZN. Grounded in personal experiences and astute observations, these strategies represent a holistic approach to address the complex challenges posed by digital financial transactions. From educational initiatives aimed at empowering pensioners with knowledge to the implementation of robust authentication measures and vigilant fraud monitoring systems, each strategy is tailored to mitigate specific threats while enhancing the overall security posture. The inclusion of concrete examples underscores the practical applicability and efficacy of these measures in real-world scenarios, reaffirming their pivotal role in safeguarding pensioners' financial well-being. By amalgamating technological innovations with empathetic support services, these strategies epitomise a concerted effort to foster digital resilience and financial inclusivity among older adults, ensuring that they can navigate the e-banking landscape with confidence and security.

6.4 CONCLUSIONS

The study concludes that pensioners find e-banking systems difficult to understand. Because of the multi-step processes and technical jargon, many people find the interfaces intimidating and incomprehensible. This ignorance raises susceptibility to security risks and causes anxiety, especially when combined with a lack of training and assistance. Some retirees stop using e-banking or turn to others for help, which emphasises the need for better education and more accessible, user-friendly platforms. Their hesitancy is further exacerbated by the community's low awareness of e-banking, as they frequently receive inadequate or ambiguous instructions on how to utilise these services.

Many elderly express concerns about identity theft, fraud, and financial fraud, making security a significant hurdle. Anxiety and sadness brought on by the increase in online threats were highlighted in participant testimonials, which demonstrated the emotional toll of these security issues. Due to this anxiety, many retirees choose to rely on family members to conduct transactions or avoid using e-banking at all. They are even more concerned because of the intricacy of e-banking security procedures and their low level of digital knowledge.

The study also concludes that accessibility, especially inadequate internet connectivity, was another major barrier that made it difficult for seniors to conduct financial transactions. Their annoyance was increased by Hammarsdale's unstable internet, which raised concerns about potential money loss and cast doubt on the success of transactions.

Additionally, the study found that retirees' opinions on e-banking were not entirely consistent. Others indicated curiosity about emerging technology, such as fingerprint scanning and face recognition, which they view as answers to issues like memorising PINs and maintaining security, even if some people find it more complicated than convenient. Though some are still unsure of how these technologies might function, there is general excitement about their potential to increase senior users' convenience and security.

The importance of security threat education was brought to light by security personnel' observations. Many retirees are not knowledgeable enough to recognise and safeguard themselves against online threats. Security authorities advised strong identification procedures, extensive instructional programs, and fraud monitoring to protect the financial stability and general well-

being of seniors. For older persons to have a safe and welcoming online banking experience, these tactics are thought to be crucial.

6.5 RECOMMENDATIONS

Based on the findings of the study, the recommendations of the study are as follows:

6.5.1 Simplification of the User Interface

Developing streamlined, user-friendly interfaces for senior citizens should be a top priority for banks. This entails eliminating complicated technical language, employing larger fonts, and reducing the number of steps needed to finish tasks. Make sure that users with different levels of digital literacy such as those with low computer skills or physical disabilities like poor vision or motor control issues can utilise both desktop and mobile platforms. E-banking platforms should help pensioners by providing audio and visual instructions that lead users through several banking procedures, making sure they comprehend each one before moving further.

6.5.2 Enhance Digital Literacy and Awareness

Regular workshops or digital literacy programs that are especially designed for senior users should be offered by local banks and financial institutions in partnership with community organisations. These programs ought to concentrate on instructing seniors on the fundamentals of securely utilising e-banking, such as how to create accounts, finish transactions, and recognise security risks. Materials like instructional videos, leaflets, and brochures should be created with large font and plain, easy-to-understand language. At important touchpoints like local community centres, branches, and SASSA grant collecting days, these must be given out. Provide individualised, one-on-one training sessions to seniors who might require more specialised support. Community centres or branch offices might host these events, giving participants a safe space to experiment using the platforms and ask questions.

6.5.3 Reinforce Security

For senior citizens, banks should make security features like biometric logins, transaction notifications, and multi-factor authentication more visible and easily accessible. There should be clear and understandable explanations of how these features operate and how they safeguard consumers. Banks should look into safe and user-friendly biometric authentication options (facial recognition, fingerprint scanning), as retirees frequently find security protocols like PIN management too complicated. Conduct frequent efforts to inform seniors about the dangers of

fraud, phishing schemes, and identity theft in their communities and online. These should contain useful advice on how to safeguard personal data as well as real-world examples.

6.5.4 Enhance Accessibility to Technology and Internet Services

To increase access in places where seniors reside, especially in underdeveloped areas like Hammarsdale, banks should collaborate with internet service providers. This could entail improving local infrastructure or providing senior people with free or heavily discounted internet access. Banks should look into creating offline banking options, including SMS-based services or USSD codes, for people who often struggle with internet connections. This would enable pensioners to conduct simple financial tasks without requiring a steady internet connection.

6.5.5 Provide Committed Customer Support

Banks must set up in-branch support and special helplines for senior citizens. These services should be manned by qualified experts who can offer patient, understandable support for e-banking problems. Convenient places should also offer in-person assistance, particularly on busy days like grant collection days. For assistance with e-banking, some retirees turn to family members. For added security and peace of mind, banks should think about letting dependable family members supervise or manage a pensioner's online banking activity with the pensioner's consent.

6.6 AREAS OF FURTHER RESEARCH

6.6.1 Impact of Digital Literacy Programs on E-Banking Adoption

The success of specific digital literacy initiatives for seniors could be the subject of future studies. Studies might specifically assess how these initiatives boost retirees' usage of digital banking services, boost their confidence, and lessen their apprehension about using e-banking. The usefulness of various formats and delivery modalities (such as in-person workshops, online tutorials, or phone-based guidance) could also be investigated in the study.

6.6.2 Exploring the Role of Trusted Family Members in E-Banking Adoption

Future studies should examine the role of family members or carers in helping older persons manage their finances online, as many of these users depend on them for help with e-banking. This study could examine the effects on the financial stability and independence of the elderly as well as the efficacy of including dependable family members in the training process.

6.6.3 Comparative Studies on E-Banking Adoption Across Different Regions

A comparative analysis of South Africa's rural and urban areas could yield important information about how location, internet availability, and local economic circumstances affect pensioners' experiences using e-banking services. Research of this kind could assist in developing regionally specialised policies that are more sensitive to the particular difficulties that retirees in various regions of the nation experience.

6.7 CONCLUSION

Drawing from primary research as well as the literature, this chapter summarised the research findings. It brought to light important difficulties such the intricacy of user interfaces, security worries, and accessibility obstacles that retirees encounter while implementing e-banking. The chapter also presented the conclusions drawn from the data and provided helpful suggestions for enhancing senior citizens' access to e-banking services. Future study directions were also proposed in order to better examine the requirements and experiences of senior citizens in the context of online banking.

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APPENDICES

Appendix A: Ethical Clearance Letter from the University of KwaZulu-Natal



14 August 2023

Nondumiso Ayanda Ndlovu (214536865)
School Of Applied Human Sc
Howard College Campus

Dear NA Ndlovu,

Protocol reference number: HSSREC/00005472/2023

Project title: Investigating security threat of E-Banking services on pensioners: A case study of KwaZulu-Natal Province, South Africa

Degree: PhD

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 14 February 2023 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted FULL APPROVAL.

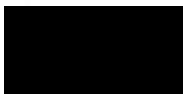
Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

This approval is valid until 14 August 2024.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

HSSREC is registered with the South African National Health Research Ethics Council (REC-040414-040).

Yours sincerely,



Professor Dipane Hlalele (Chair)

/dd

Humanities and Social Sciences Research Ethics Committee

Postal Address: Private Bag X54001, Durban, 4000, South Africa

Telephone: +27 (0)31 260 8350/4557/3587 Email: hssrec@ukzn.ac.za Website: <http://research.ukzn.ac.za/Research/Ethics>

Founding Campuses: ■ Edgewood ■ Howard College ■ Medical School ■ Pietermaritzburg ■ Westville

INSPIRING GREATNESS

Appendix B: Gatekeepers Approval Letter from the Hammarsdale Ward Councillor



COUNCILLOR

Mezzanine Floor, Shell House
Cnr Antun Lembede & Samora Machel Street, Durban, 4001
P O Box 1014, Durban, 4000
Tel: 031 - 322 7030
www.durban.gov.za

Nondumiso Ayanda Ndlovu
University of KwaZulu-Natal Howard College

Subject: Permission Granted to Conduct Research Study

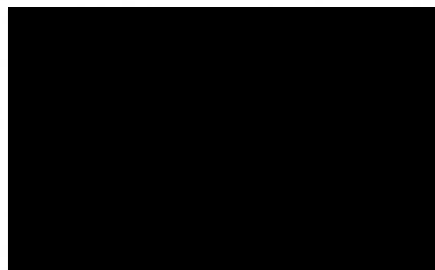
Dear Nondumiso Ayanda Ndlovu (214536865),

I hope this letter finds you well. I have received your request to conduct a research study titled "Investigating the Security Threat of E-Banking Services on Pensioners: A Case Study of KwaZulu-Natal Province, South Africa" within the community of Hammarsdale, KwaZulu-Natal. After careful consideration, I am pleased to grant you permission to conduct this study within our community.

As a ward councillor, I recognize the importance of academic research and the potential benefits it can bring to our community. Your study addresses a crucial aspect of our society, as crime and cyber-related fraud incidents have become significant concerns for our pensioner population. I believe your research has the potential to offer valuable insights and contribute to the well-being and security of our elderly residents who utilize e-banking services. I commend your dedication to academic excellence and your commitment to addressing critical societal issues. If you require any further assistance or have any questions during the research process, please do not hesitate to reach out to my office.

Thank you for choosing Hammarsdale as the site for your research study, and I wish you success in your endeavor to bring forth valuable insights that can benefit our community and beyond.

Sincerely,



Appendix C: In-Depth Interview Question Guide

Interview Questions

In-depth Interview Questions

Pensioners

1. What are your thoughts about the new way of banking? (New way being the use of ATMs, E-banking etc.)
2. Do you think it is safe for you? (Please elaborate)
3. Do you think it is a good change? (Please elaborate)

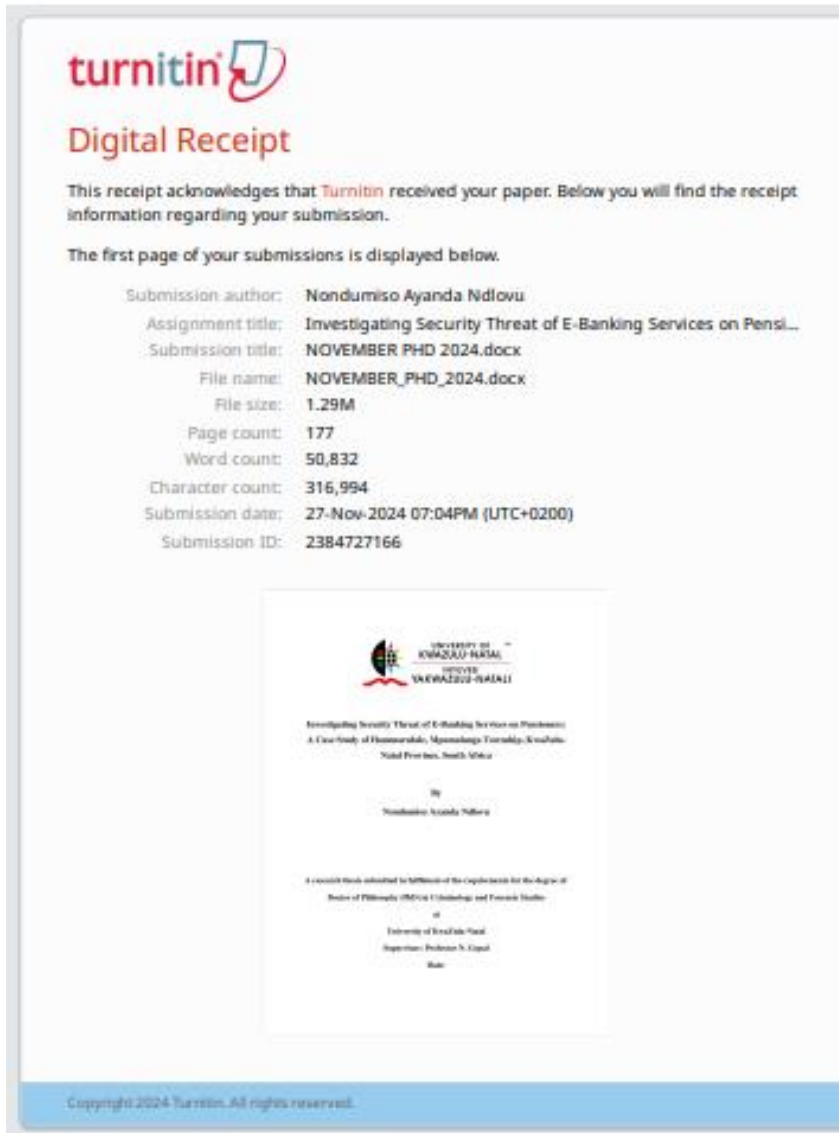
Security Guards

1. How often are you stationed to guard ATMs within the community of Hammarsdale?
2. What has been your experience/ observation when tasked to guard ATMs?
3. What modifications would you suggest to be made in order for better use of ATM bank services?

Bank Officials

1. What is your opinion regarding safety when utilizing e-banking services and ATMs?
2. Do you think the shift from cash-in-transit grant payments to using e-banking and ATMs was beneficial for pensioners? Why?
3. As a bank employee, what challenges have you faced with regards to pensioners utilizing e-banking and ATMs?

Appendix E: Plagiarism Report




turnitin
Digital Receipt

This receipt acknowledges that Turnitin received your paper. Below you will find the receipt information regarding your submission.

The first page of your submissions is displayed below.

Submission author: Nondumiso Ayanda Ndlovu
 Assignment title: Investigating Security Threat of E-Banking Services on Pensi...
 Submission title: NOVEMBER PHD 2024.docx
 File name: NOVEMBER_PHD_2024.docx
 File size: 1.29M
 Page count: 177
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Investigating Security Threat of E-Banking Services on Pensioners:
A Case Study of Hammarsdale, Mpumalanga Township, KwaZulu-
Natal Province, South Africa

By
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A research study submitted to the Faculty of the Department for the Degree of
Doctor of Philosophy (PhD) in Communication and Foreign Studies
at
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Supervisor: Professor N. Cigala
Date

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