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Digital transformation in the banking sector and its effects on the financial inclusion of the unbanked population in Tzaneen, Limpopo

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Digital transformation in the banking sector and its effects on the financial inclusion of the unbanked population in Tzaneen, Limpopo.

Research Report

by

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Abstract

The study explores the role of digital transformation in enhancing financial inclusion, focusing on mobile banking and digital financial services for unbanked individuals in Tzaneen, South Africa. Barriers include limited access, low digital literacy, security concerns, high transaction fees, and lack of trust.

The study suggests that mobile banking can enhance financial services access, especially for unbanked individuals in underserved areas. However, challenges remain in technological access, trust, and affordability. Short-term strategies include digital literacy programs, affordable smartphones, simplified interfaces, security, and cost reduction. The research examines the barriers hindering the adoption of digital banking technologies, including limited access to smartphones, low digital literacy, security concerns, high transaction fees, and a lack of trust in digital platforms.

The study employs a qualitative research methodology, using semi-structured interviews with unbanked individuals in Tzaneen to gain insights into their perceptions, experiences, and challenges regarding digital banking services. The unbanked population were from the region of Limpopo in Tzaneen. This group of individuals were between 21 - 65 years age, with a target number of 20 respondents.

The findings highlight the potential of mobile banking to improve access to financial services, particularly for unbanked individuals in underserved areas. However, participants also emphasized persistent challenges related to documentation requirements, limited rural infrastructure, and the need for more user-friendly and culturally relevant digital solutions. The study recommends improving digital access, literacy, security, and affordability for the unbanked in the short term, while focusing on financial education, network expansion, local support, scalable platforms, and adaptable solutions in the long term.

Declaration

I, H. Mokoto, hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university. I authorise the University to reproduce for research either the whole or any portion of the contents in any manner whatsoever.

Signature:  Date: 13/03/2025

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List of Acronyms

BANKSETA	Banking Sector Education and Training Authority
FICA	Financial Intelligence Centre Act
FSCA	Financial Sector Conduct Authority
KYC	Know Your Customer
MPESA	Mobile Payment Service (M-Pesa)
NGO	Non-Governmental Organization
SACCO	Savings and Credit Cooperative Organization
TAM	Technology Acceptance Model
WEF	World Economic Forum

Chapter 1: Introduction

1.1 Introduction

Financial inclusion has been an increasing concern in academia and society. The spread of digital technologies through the fourth industrial revolution is anticipated to have a positive impact on the unbanked population's access to mainstream financial services. Even with numerous initiatives to provide access to banking services to all, statistics still show a gap, particularly in less developed communities.

1.2 Statement of Purpose

This study aims to explore digital transformation in the banking sector and its effects on the financial inclusion of the unbanked population. This study uses the comparatively less developed area of Tzaneen in the province of Limpopo, South Africa, as a basis to gather insights and frame the possible intervention, to contribute to the body of knowledge.

1.3 Background to the study

Financial inclusion is the provision and use of financial opportunities that are affordable, available, and presented equally to individuals, organizations, and sectors of society where there is a need but lack of sufficient provision of such financial services (National Treasury, 2020). One of the things causing people to be unbanked is the absence of this facility. People who do not have formal bank accounts and who live and work in a cash economy but have limited ability to save money, apply for loans, or make minor payments are referred to as "unbanked" in this context (Szopiński, 2019).

According to Loyns and Kass-Hanna (2019), financial inclusion is now widely accepted as a crucial instrument for decreasing income inequality and poverty while improving economic growth. The current literature reveals a global trend of countries focusing on policies based on financial inclusion as a tool to assist growth. According to the World Economic Forum (WEF) (Willige, 2023), mobile banking is the most common form of digital banking in many developing economies, particularly in Africa. As illustrated by Willige (2023), airtime transfers between mobile accounts were the initial intent of mobile banking in Africa. However, since many countries still need solid national banking institutions, this service rapidly replaces the more conventional ways to send money.

Nearly 75% of all African online traffic is attributed to mobile devices (Komminoth, 2023), with approximately 145 million people, or 11% of unbanked adults in developing nations, received cash payments for agricultural produce (Demirgüç-Kunt, Klapper, Singer, & Ansar, 2021), which shows how significant this method is. Studies have shown that the digitalization of payments for the sale of agricultural products presents a potential avenue for increasing account ownership.

For example, 7% of the adult population in Rwanda is unbanked (National Bank of Rwanda, 2020). FinScope data indicates a doubling in the use of formal financial products among Rwandans, possibly due to the Umurenge SACCO initiative, which facilitates saving and borrowing. However, only 61% of the population has adopted mobile money accounts, attributed to limited product awareness and interest (Rwanda, 2020). Contrary in Kenya, mobile money through the introduction of MPESA has significantly decreased the unbanked population from 17,1% in 2019 (Arthur, Musau, & Wanjohi, 2020), to 16% in 2021 (Cowling, 2023). Looking into Nigeria, home to an estimated 37 million micro, small, and medium-sized enterprises, or MSMEs, significantly contributing to job creation and economic expansion. To improve financial accessibility, the Central Bank of Nigeria recently launched the National Collateral Registry with support from the World Bank Group. Additionally, it is helping Nigeria develop a modern credit reporting system (The World Bank, 2017). The Reserve Bank of Zimbabwe (2020) acknowledges their role in promoting inclusivity goals. Zimbabwe has committed to financial inclusion since August 2016 across a number of policy areas, including micro-insurance, data and measurement, consumer protection, digital financial services, financial literacy, and infrastructure. Mobile money providers such as One-money, Tel-cash, and Eco-cash pledge to promote inclusive financing in Zimbabwe.

Financial inclusion in South Africa demonstrates strong performance, with 91% adults possessing access to formal financial products and services. Approximately 7% of the adult population still needs to be included in such crucial economic participation (National Treasury, 2023). Due to the rise of new banks and bank mergers with technology-based financial services like Vodacom's VodaPay, the banking industry is undergoing fast change. In order to recruit lower-income individuals, the big five banks are being forced to put more focus on expanding their customer bases through creative product offerings. Big banks are being forced to step up their efforts to modernize their technological platforms in order to

meet the demands of their clients, as the industry is being disrupted by competition from recently created banks, such as Discovery Bank, Bank Zero, and TymeDigital (Seta, 2023). South Africa's degree of financial inclusion in relation to financial development is somewhat low, even while it compares favorably to other major emerging economies like Brazil, Russia, India, China, and others in terms of overall product take-up (National Treasury, 2023).

1.4 Problem Statement

While the banking industry is undergoing digital transformation and collaborating with telecommunication providers to enhance digital financial services, efforts to financially include the unbanked population have not fully addressed the underlying challenges which include security, access limitation due to lack of documentation and education. An estimated 3.6 million South Africans remaining unbanked (National Treasury, 2023). The problem with being unbanked is the absence of generatable data needed to establish creditworthiness; this means that unbanked people will not have access to financial resources, will not realize opportunities for economic growth, and will be forced to pay high fees for financial services.

1.5 Research Objectives

This research has the following objectives:

1. To explore the impact of digital transformation within the banking sector on enhancing financial inclusion for unbanked individuals in Tzaneen, South Africa.
2. To assess the uptake of digital technologies facilitating financial inclusion initiatives within Tzaneen, South Africa.

1.6 Research Questions

1. How does digital transformation within the banking sector in Tzaneen, South Africa, contribute to enhancing financial inclusion for unbanked individuals?
2. What is the uptake of digital technologies facilitating financial inclusion within Tzaneen, South Africa?

1.7 Rationale of the Study

Deloitte (2019) highlights that traditional banking is rapidly evolving, often converging with telecommunications providers to deliver innovative financial technologies aimed at serving

underbanked and unbanked populations. However, there remains a significant gap in understanding how extensively these technologies are being adopted by unbanked communities, particularly in the Tzaneen province. This study seeks to address that gap by examining the extent and patterns of adoption of such disruptive technologies among the unbanked in this region. The findings will not only provide valuable insights for the financial sector but also contribute to the broader academic discourse on financial inclusion. Specifically, the research aims to explore whether these technological advancements effectively reduce inequalities in access to financial services.

1.8 Delimitations of the study

- The respondents live in the rural South Africa, with a particular focus in Tzaneen.
- The study targets only the unbanked population, to allow for a deeper understanding of the needs and behaviours of the target population.
- Data collection analysis will be conducted in English and other widely spoken languages in Tzaneen.

1.9 Assumptions

- All respondents are unbanked and represent a broader unbanked population in terms of demographic characteristics, socio-economic status and technological access.
- Participants will share their experiences willingly and accurately.
- The research instrument will accurately measure the construct.

1.10 Digital Transformation and Financial Inclusion

This section presents an overview of how digital transformation is reshaping financial inclusion by leveraging technological innovations to broaden access to financial services, especially for underserved populations (Ozili, 2018).

1.10.1 Definition and Importance

Digital transformation refers to the integration of digital technology across all areas of business, fundamentally changing how organizations operate and deliver value. In the financial sector, digital transformation is essential for increasing productivity, efficiency, and

competitiveness, although it introduces challenges that require adaptive strategies (Kraus et al., 2021).

1.10.2 Mobile Banking as a Driver of Inclusion

Mobile banking enables access to financial services via mobile devices and is especially transformative in regions with limited traditional banking infrastructure. In Africa, mobile money transfer technologies provide mobility and instant access, revolutionizing transactions and offering an accessible entry point for the unbanked to participate in the formal financial system (Tobbin et al., 2011). Money, serving as both a store of value and a means of exchange, is now accessible via digital platforms, though adoption relies on technological literacy and perceived utility.

1.11 Conclusion

In conclusion, the Chapter established a clear foundation for the study, highlighting the significance of exploring digital financial inclusion in rural South Africa. The chapter emphasized the potential of mobile banking to bridge the financial inclusion gap and provided a roadmap for the subsequent chapters to further investigate these issues.

Chapter 2: Literature Review

2.1 Introduction

This chapter reviews key concepts and theoretical frameworks that underpin the study of how digital transformation, specifically mobile banking affects financial inclusion in South Africa. The review focuses on technology adoption, perceived usefulness, ease of use, trust, risk, innovation, and customer engagement, while contextualizing these within the South African banking sector and unbanked population.

2.2 Theoretical Framework

This section introduces the theoretical framework that underpins the study, providing a structured set of ideas and concepts derived from existing theories to guide the research process. A theoretical framework is defined as the foundation from which all knowledge is constructed for a research study, serving as a systematic guide to examine relationships between variables and interpret findings within an established scholarly context (Grant & Osanloo, 2014).

2.2.1 Technology Acceptance Model (TAM)

TAM posits that two main factors, perceived usefulness and perceived ease of use determine user adoption of technology (Davis, 1982). Perceived usefulness is defined as the extent to which a person believes that using a system improves their task performance, while perceived ease of use refers to the degree to which one believes that using the system will be free of effort.

2.2.2 Trust and Risk Theories

Trust is fundamental in digital financial services, especially where personal data security is critical. The Trustor-Trustee relationship highlights customers' need for confidence in both the service provider and the technology (Saputra, 2020; Siau & Shen, 2003). Perceived risk relates to the uncertainty and potential adverse consequences associated with mobile transactions; reducing such risk fosters adoption (Bauer, 2005).

2.2.3 Stakeholder Analysis in the Context of Financial Inclusion

Stakeholder analysis is a strategic tool used to identify individuals, groups, and institutions that can affect or be affected by an initiative (Bryson, 2018). In the context of financial inclusion, stakeholder mapping enables researchers and policymakers to understand the diverse interests, levels of influence, and potential contributions of key actors (Freeman, 2010). The identification of stakeholders in this study draws on both generic stakeholder theory and sector-specific literature on financial inclusion in South Africa (BankservAfrica, 2023; South African Reserve Bank, 2022; World Bank, 2022). The table below presents a stakeholder analysis framework adapted for the unbanked population in Tzaneen, highlighting their roles, influence, and possible interventions to address barriers identified in the Technology Acceptance Model and trust/risk theories.

Table 1.1: Stakeholder Analysis for Financial Inclusion of the Unbanked in Tzaneen

Stakeholder	Role/Interest	Influence Level	Potential Actions/Interventions
Commercial Banks	Provide formal banking services; comply with KYC and regulatory requirements (South African Reserve Bank, 2022).	High	Develop simplified KYC-compliant accounts, mobile-friendly platforms, and outreach programs for rural/undocumented customers (BankservAfrica, 2023).
Mobile Money Operators	Offer alternative, lower-barrier financial services via mobile networks (World Bank, 2022).	Medium–High	Partner with NGOs and community leaders to expand agent networks in underserved areas; integrate local languages and USSD services (GSMA, 2021).

Regulators (SARB, FSCA)	Ensure compliance with financial laws, protect consumers, and encourage innovation (South African Reserve Bank, 2022).	High	Introduce flexible KYC guidelines, support sandbox trials for low-cost inclusion products (National Treasury, 2021).
Non-Governmental Organisations (NGOs)	Advocate for financial inclusion, deliver literacy programs (FinMark Trust, 2022).	Medium	Facilitate trust-building workshops, mediate between banks and undocumented communities (FinMark Trust, 2022).
Informal Money Lenders	Fill gaps in access where formal services are absent (Collins et al., 2009).	Low–Medium	Collaborate in transitioning clients toward formal systems; share insights on local credit behaviour (Collins et al., 2009).
Community Leaders	Influence local perceptions and adoption of financial services (BankservAfrica, 2023).	Medium	Champion banking inclusion efforts, communicate benefits, assist in identity verification drives (FinMark Trust, 2022).
Government Departments (Home Affairs, Social Development)	Issue identity documents, provide social grants (Department of Home Affairs, 2021).	High	Expedite ID processes, link social grants to basic accounts to encourage uptake (South African Social Security Agency, 2022).

2.3 Factors Influencing Mobile Banking Adoption

Several factors influence the adoption of mobile banking, including perceived usefulness, perceived ease of use, trust and security, perceived risk, and continuous innovation and customer engagement. Perceived usefulness plays a significant role as individuals are more inclined to adopt mobile banking when they see it as beneficial and convenient for their daily financial transactions, enhancing efficiency and accessibility (Msweli & Mawela, 2021). Similarly, perceived ease of use is essential, particularly for rural and unbanked populations who may have limited technological literacy; a simple, intuitive interface increases confidence in using mobile banking platforms (Becker, Stolper & Walter, 2022). Trust and security are equally critical, as users must believe that both the banking institution and the technology will protect their personal and financial information, with strong security measures reinforcing this trust (Rashidi et al., 2022). Furthermore, the perception of risk, such as concerns about fraud or system complexity can deter adoption; reducing these perceived risks encourages more users to embrace mobile banking (Alsabawy et al., 2022). Lastly, continuous innovation and customer engagement ensure that mobile banking services remain relevant and responsive to user needs, as ongoing feedback and enhancements foster loyalty and satisfaction (Sjodin et al., 2020).

2.4 Digital Transformation in the South African Banking Sector

South Africa has seen substantial advancements in digital banking, but challenges remain in reaching the unbanked population (Financial Sector Conduct Authority, 2022). The spread of mobile money services, investments in digital infrastructure, and collaboration between regulators and providers are driving greater inclusion. However, barriers such as limited digital literacy, concerns about data privacy, and infrastructural gaps persist (BANKSETA, 2025).

According to the World Bank Global Findex (2017), financial inclusion has grown markedly: 1.2 billion adults opened bank or mobile money accounts between 2011 and 2017, with the global share of adults with access to such services rising from 62% to 69%. In South Africa, these trends are mirrored by increasing mobile banking penetration and greater access to transactional accounts (Center for Financial Inclusion, 2025). Still, about 11% of South Africans remained unbanked as of the last comprehensive survey, with exclusion disproportionately

affecting rural and low-income communities (FinMark Trust, 2023). Government and industry initiatives ranging from biometric identification for low-cost accounts to mobile wallet partnerships, continue to play a vital role in addressing these gaps and enabling financial inclusion.

2.5 Innovation and Customer Engagement

Innovation in business models, products, and delivery channels is central to value creation in the financial sector. Research demonstrates that sustained interaction between organizations and customers is vital to co-create solutions that meet user needs (de la Peña et al., 2022; Tarhini). Successful banks not only focus on generating ideas internally but also testing them with end-users, ensuring that products remain relevant and accessible especially for the unbanked population (El-Masri & Serrano, 2024).

2.6 Digital transformation Trends in South Africa

Digital transformation in South Africa has been marked by significant trends and challenges across various sectors, driven by both governmental initiatives and private sector innovation. Recent peer-reviewed academic sources highlight several key trends shaping the digital transformation landscape in South Africa. A study by Adekomaya and Dhliwayo (2024) emphasizes digital transformation as a critical enabler for small business sustainability. Digital tool adoption for marketing, customer relationship management, and operational efficiency has been positively correlated with business growth and resilience. However, challenges such as limited digital literacy, financial resource constraints, cybersecurity risks, and disparities between urban and rural technology adoption remain significant barriers (Adekomaya & Dhliwayo, 2024).

South Africa's government is actively pursuing a unified approach to digital transformation, as reflected in the Roadmap for the Digital Transformation of the South African Government launched in 2025. This strategic plan aims to integrate fragmented digital initiatives to enhance public service delivery, improve accessibility, and build a national digital identity system. Major priorities include digital payments, data exchange frameworks, and zero-rated digital services to ensure inclusivity and ease of access for all citizens (Malatsi, 2025; Presidency, 2025).

The growth of South Africa's digital economy hinges on substantial investments in digital infrastructure. Over the past five years, over $11 billion USD has been invested in fiber optic networks, data centers, and expanding 4G/5G mobile connectivity. South Africa remains a predominantly mobile-first economy, with over 74% internet penetration reported in early 2024. Yet, infrastructural challenges persist, especially in rural areas where connectivity and access to reliable technology lag behind, affecting the effectiveness of digital public services (International Trade Administration, 2024; Maremi et al., 2025). Local municipalities face hurdles such as technological infrastructure deficits, limited funding, digital literacy gaps, and cultural resistance, which hinder the full adoption of digital services. Research highlights the importance of digital literacy programs, public-private partnerships, and citizen engagement to enhance e-government uptake and trust in digital government services (Netshirando et al., 2024).

Higher education institutions in South Africa are undergoing digital shifts influenced by the Fourth Industrial Revolution. Challenges include resistance to change, inequality in access to digital tools, and lack of skills training. Nonetheless, opportunities for improved student engagement, curriculum redesign, and inclusive education through Massive Open Online Courses (MOOCs) are prominent (Mabidi, 2024; Ajani & Maphalala, 2023). Cities such as Johannesburg, Cape Town, and Durban are establishing themselves as tech hubs driving innovation, particularly in FinTech, HealthTech, and EdTech sectors. Government and private sector synergy fosters a thriving startup ecosystem vital for sustaining digital transformation growth (International Trade Administration, 2024).

2.7 Unbanked Population

The "unbanked population" refers to individuals who lack access to formal banking services such as savings or checking accounts, loans, or credit facilities from regulated financial institutions. These individuals often rely on cash transactions or informal financial services, which may be costlier and less secure (World Bank, 2022; OECD, 2022).

Globally, an estimated 1.4 billion adults remain unbanked as of 2021–2022, with the majority concentrated in low-income countries, rural areas, and marginalised groups (Demirgüç-Kunt et al., 2022). Women and rural populations are disproportionately affected: in Sub-Saharan Africa, 75% of rural women lack a bank account, and rural areas account for more than half

of the global unbanked population (World Bank, 2022). Educational attainment is also a factor, with about 30% of unbanked adults having not completed primary school (OECD, 2022).

In South Africa, despite a relatively high account penetration rate of around 80% among adults, approximately 9% of the population remains unbanked (South African Reserve Bank, 2023). The typical financially excluded South African often has a matric-level education, earns between R6,000 and R10,000 per month, is more likely to be female, and resides in urban provinces such as Gauteng or KwaZulu-Natal (SARB, 2023). Key barriers include poverty, preference for cash, account maintenance costs, and limited financial literacy (IMF, 2023).

The unbanked face multiple interconnected challenges that perpetuate financial exclusion and economic vulnerability. A significant barrier is their exclusion from essential financial products such as credit, insurance, and formal savings mechanisms, which limits opportunities for upward economic mobility and contributes to the persistence of poverty (Demirgüç-Kunt et al., 2022). Without access to these services, unbanked individuals are more vulnerable to economic shocks, often forced to rely on predatory lending practices or liquidate assets to meet urgent needs (BIS, 2021). The digital divide further exacerbates this exclusion, as limited internet connectivity and inadequate digital skills hinder participation in online financial services (IMF, 2023). Mistrust of banking institutions, rooted in past negative experiences or perceptions of unfair practices, also deters engagement with formal financial systems (OECD, 2022). Additionally, high or unpredictable account fees and minimum balance requirements discourage low-income individuals from opening or maintaining accounts (BIS, 2021). Geographic barriers remain particularly acute in rural or underserved areas, where physical access to banking infrastructure is limited, making it even harder for individuals to engage with formal financial services (World Bank, 2022).

2.8 Gaps in Literature

Digital transformation, chiefly via mobile banking, is a powerful driver of financial inclusion in South Africa. While adoption has accelerated, persistent gaps in trust, infrastructural access, and digital literacy remain. This chapter highlighted the importance of theoretical frameworks like TAM and Trust Theory in understanding technology adoption and identified the need for more qualitative research linking these frameworks to the South African context. The next

chapter will address these gaps by detailing the study's methodology and how it builds on the literature reviewed here.

2.9 Conclusion

The chapter underscored that digital transformation through mobile banking has the potential to significantly enhance financial inclusion for the unbanked, provided that issues such as trust, ease of use, and security are adequately addressed. It also highlighted the need for a customer-centric approach to ensure that mobile banking services are accessible, effective, and tailored to the needs of the unbanked population.

Chapter 3: Research Methodology

3.1 Introduction

This chapter outlines the methodology used in this study to answer the questions and propositions raised earlier in Chapter 2, and to aid in data collection methods, including the population and sample to be used. A qualitative method was employed to gain a deeper understanding of the participants' experiences, perceptions, and behaviours.

3.2 Research Design

Qualitative research aids in the comprehension of the human condition in various circumstances and the perception of a situation (Bengtsson, 2016). Given (2018) advises that a semi-structured interview is a technique for gathering qualitative data in which the researcher asks informants a sequence of predefined but open-ended questions. Therefore, the research instrument methods were interviews. The advantage of this research is that people's stories were heard as they shared their experiences. Questions were used to collect data, which is then organised into codes, topics, categories, or greater dimensions using open-ended questions. According to Aadland and Ylvisaker (2015), the sources of data are usually considered a measure of reliability. Through rigorous analysis, recurring themes, outliers, and contradictions were identified, providing an understanding of the research phenomenon (Lewis, 2015). The study adopted a qualitative research methodology because it is grounded in the belief that rich, detailed accounts of participants' lived experiences are best captured through in-depth engagement rather than numerical measurement (Creswell & Poth, 2018). This approach aligns with the exploratory nature of the research, which sought to understand the nuanced barriers, motivations, and perceptions influencing mobile banking adoption among the unbanked population.

3.3 Data Collection

Data collection as a main stage in research can overshadow the quality of achieving results by decreasing the possible errors that may occur during a research project. Therefore, alongside a good design for the study, plenty of quality time should be spent in the collection of data to gain appropriate results since insufficient and inaccurate data prevents assuring the accuracy of findings (Kabir, 2016). Data can be categorised using different ways, including quantitative and qualitative. Qualitative data answers "how and why" questions in a research study and

mostly covers data regarding feelings, perceptions, and emotions using unstructured approaches such as interviews for data collection. Qualitative methods encompass three main categories, including observations, document reviews, and in-depth interviews in despite of the fact that there are less common ways to gather qualitative data. The study adopted interviews for qualitative data collection. This method was chosen as it enables the researcher to probe deeper into individual experiences, perceptions, and barriers related to mobile banking adoption—especially among unbanked and undocumented participants, whose financial behaviours may not be fully captured by quantitative surveys. Semi-structured interviews are particularly effective in building rapport and trust, which was essential for eliciting honest responses from a population that may be wary of formal institutions due to legal or socio-economic vulnerability (Opdenakker, 2006).

3.4 Population

Population represents a narrower group of individuals who possess specific characteristics or meet certain criteria (Bhandari, 2022). The target population for this study comprised 20 unbanked individuals residing in the rural areas of Tzaneen in the Limpopo province with ID documents or those with none. The participants included street vendors, gardeners, domestic workers, cleaners, farm workers, informal traders, and individuals who pay rent using cash. These groups were people who typically engage in cash-based transactions and have limited or no access to formal banking services. The participants were between the ages of 21 and 65 years; language, race and gender were not considered as selection criteria.

3.5 Sample and sampling method

Sampling is the process of employing a portion of a population to represent the entire population in survey research. There are some instances where data sampling techniques help in clarifying (Afifah et al., 2022). The participants were approached in the local language to form rapport, to explain the reasons for the approach and to ask for permission for them to be interviewed. The sample of this research was 20 participants, comprising of (3) street vendors, (3) gardeners, (3) domestic workers, (3) cleaners, (3) farm workers, (3) informal traders, and (2) individuals who pay for rent using cash, all in Tzaneen, Limpopo. A request was made for the interview to take place at any place of their convenience.

3.5.1 Purposive Sampling

The study adopted this sampling method. People who are not banked were deliberately chosen, taking into consideration the region, age, income, and degree of digital literacy. This guaranteed that the sample encompasses a wide variety of viewpoints and experiences pertinent to the study's goals.

3.5.2 Snowball Sampling

Following the identification of the initial participants, it was necessary to ask them to recommend more unbanked individuals who would be interested in taking part in the study. Using a snowball sampling technique made it possible to include a greater variety of views and opinions while also reaching those who might be more challenging to find, using more conventional methods.

3.6 Research Instrument

Following Weatherall (2019)’s suggestion that when the researcher wishes to learn about the respondent's sentiments, behaviour, preferences, attitude, knowledge, and opinions an interviews must be conducted. A semi-structured interview guide was utilised to gather data in the study. As noted by Nyathi (2021), semi-structured questionnaires are particularly effective in qualitative research for eliciting rich, in-depth data while maintaining consistency across participants. This helped in greater explanation, comprehension, and exploration of viewpoints. The interview guide was structured to cover a topic relevant to the research objectives, and questions related to exploring the following:

- Participants' perceptions of digital banking technologies, usage patterns, and the benefits and challenges associated with digital banking platforms.
- Access to formal banking services, their perceptions of barriers to financial inclusion, and strategies to overcome them.
- Addressing the socio-economic factors influencing digital adoption and financial inclusion, such as income levels, educational attainment, geographic location, and access to technology infrastructure.
- Recommendations for improving digital banking services, enhancing financial inclusion efforts, and addressing the needs of the unbanked population.

3.7 Data analysis strategy and interpretation

Framework Analysis was chosen for this study due to its structured and transparent approach, which is particularly suited for applied research with specific objectives. Framework analysis provides investigators with a well-defined structure for handling data, while also offering the flexibility inherent in qualitative research (Goldsmith, 2021). Unlike other methods, such as Thematic Analysis, it allows for a matrix-based organisation of data that facilitates both inductive and deductive coding. This framework consists of four stages.

The stages of framework analysis are as follows:

i) Matching the research question for the study with the interview questions;

ii) Creating an inquiry-based approach that strikes a balance between inquiry and conversation to make the interviewee feel at ease;

iii) getting feedback on the interview protocols; and

iv) testing the interview protocols on a small sample of interviewees to improve the approach (Castillo-Montoya, 2016).

However, in the initial discussion, the mapping and interpretation stage of the Framework Analysis process was inadvertently omitted. This stage is crucial for identifying patterns, relationships, and themes in the data, as well as for interpreting findings in light of the study's research objectives.

3.8 Limitations and Delimitations

Qualitative methodology, particularly when working with transcript data, presents greater analytical challenges compared to quantitative methods that rely on numerical data (Castleberry & Nolen, 2018). Effective analysis requires not only rigorous methodological skills but also a strong understanding of the research topic to interpret nuanced responses accurately. Additionally, social desirability bias may influence participants to provide responses they perceive as more acceptable or favourable, which can compromise the authenticity and reliability of the data collected. Recall bias may also affect the accuracy of participants' accounts. Furthermore, external factors such as the availability of technological infrastructure, prevailing sociocultural norms, and the regulatory environment may shape both participants' responses and the overall study findings, potentially limiting the

generalizability of the results. This study is delimited to the unbanked population residing in Tzaneen, Limpopo, and does not include individuals from other regions or those already using formal banking services. Additionally, the research focuses on mobile banking and digital financial services, excluding other forms of financial inclusion such as microfinance, informal savings groups, or traditional banking products.

3.8.1 Quality Assurance

Trustworthiness in qualitative research is established through four key principles: credibility, transferability, confirmability, and dependability (Stahl & King, 2020). Credibility assesses the coherence and logical consistency of findings, similar to internal validity in quantitative research, while transferability concerns whether results can apply to different but similar settings through detailed contextual descriptions. Transferability was ensured by providing a detailed description of the research setting and employing judgmental sampling to support the application of findings to similar environments. While cross-verifying participant responses and maintaining alignment between the data collected and the interpretations made was done to ensure credibility. Confirmability ensures that findings reflect participants' responses without researcher bias, supported by transparent documentation of methods and analysis (Lincoln & Guba, 1985; Patton, 2002). In this study, it was ensured by thoroughly documenting all research methods and offering a transparent account of each data analysis stage to justify interpretations. Lastly, dependability relates to the consistency and reliability of results over time, allowing for potential replication by other researchers (Naeem & Ozuem, 2021). In this study, dependability was ensured by applying consistent data collection and analysis procedures, allowing others to replicate the study under similar conditions.

3.9 Ethical Considerations

Ethical considerations in this study were carefully addressed to ensure the integrity of the research process and the protection of participants. Informed consent was obtained from all participants through a signed consent form, following the principle that participation must be voluntary and based on clear understanding (Mantzorou & Fouka, 2011). To prevent harm, the researcher avoided emotionally sensitive questions and ensured that interviews were conducted at times and places convenient for participants (Creswell, 2014). Confidentiality and anonymity were preserved by not disclosing personal information and by securely storing

data, ensuring that responses could not be traced back to individuals (De Vos et al., 2011). Additionally, formal permission was obtained from the Ethics Committee and the Greater Tzaneen Local Municipality to access participants, with the assurance that participation was entirely voluntary.

3.10 Conclusion

This chapter explained the methodology, research design, sample strategy, data collection tool, data validation procedure, and data analysis strategy chosen for the study, as well as how they were implemented. The following chapter will go into detail about the findings from the primary data analysis. The results of the study will be presented and explained in the following chapter.

Chapter 4: Analysis & Discussion

4.1 Introduction

The study's methodology and techniques were discussed in the previous chapter; this chapter presents the study's findings in an organised and sequential manner through a discussion of research data. It begins by presenting the demographic results of the study's sample population, followed by a discussion and analysis of the primary data gathered during the interviews of the unbanked population from the region of Limpopo in Tzaneen.

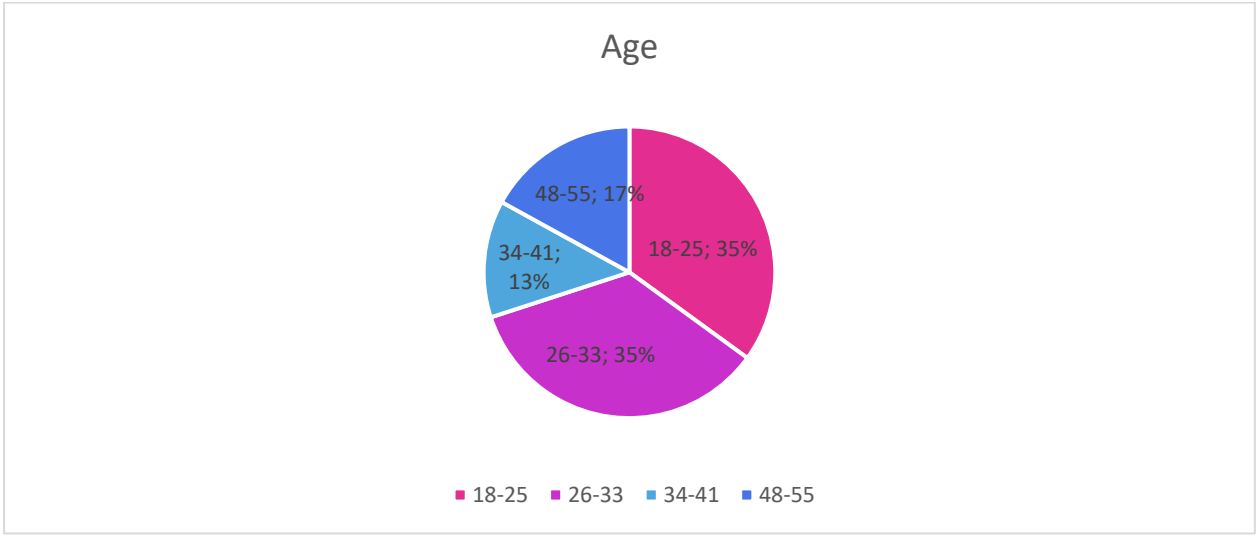
4.2 Response rate

As stated in the preceding chapter, the study's target population was limited to 20 research participants, who handed consent forms once the appropriate approvals were received. Thus, 20 consent forms were issued to research participants, and only 15 were signed and returned before the interview process began. As a result, the study received 75% of its responses.

4.3 Demographic Information

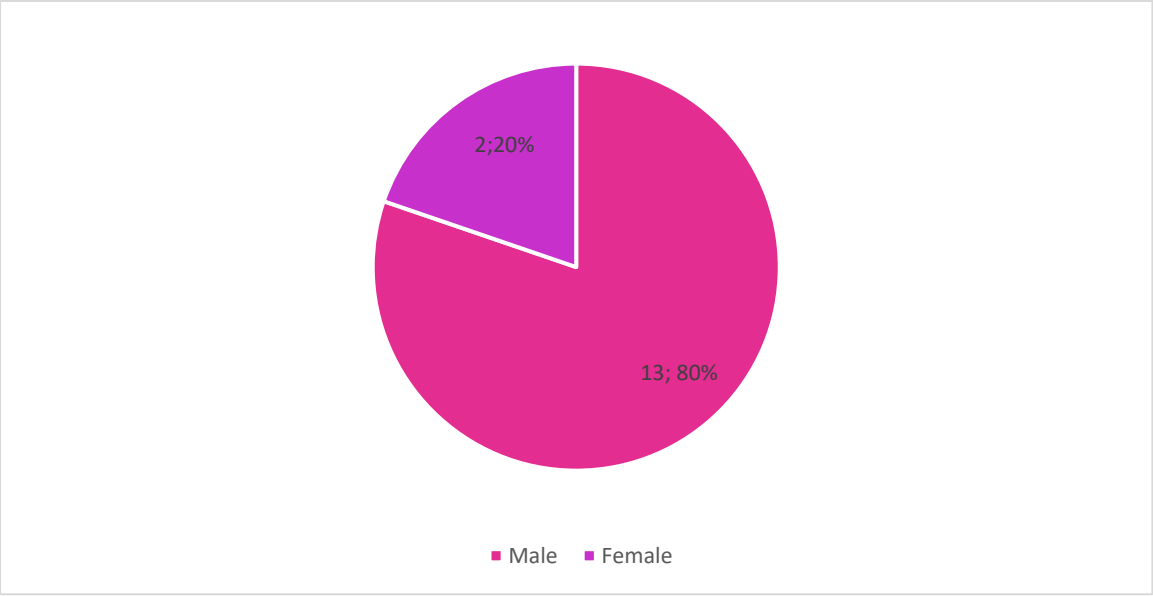
The study analysed demographics of Tzaneen participants by examining age, gender, and nationality, excluding occupation, education, and race. It identified areas with little to no banking penetration, ensuring equal representation of the unbanked population and detecting participation trends.

Figure 4.1: Age of Participants



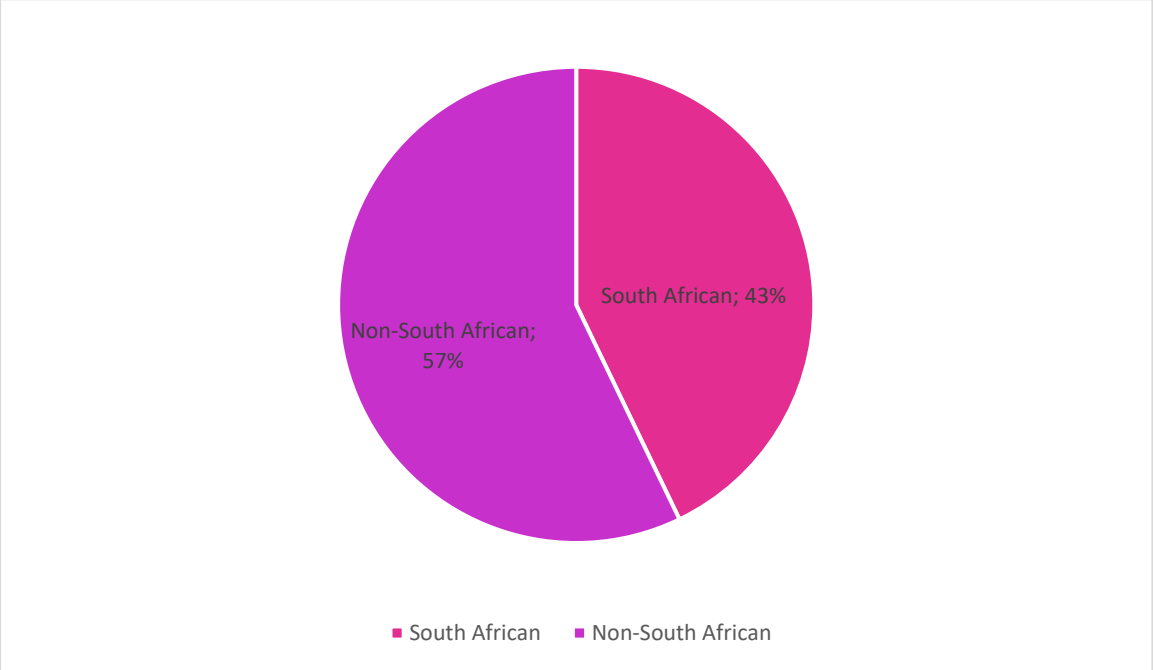
The study included participants across various age categories: 18–25, 26–33, 34–41, 48–55, and those above 60. Specifically, 35% of the participants were of legal age (18–25), which equates to 7 out of 20 participants. Additionally, 17% of the participants, or 3 individuals, were aged between 48 and 55, while 13%, representing 2 participants, were above the age of 60. The age diversity in the sample enriches the understanding of financial inclusion dynamics across the lifespan in the Tzaneen region.

Figure 4.2: Gender Distribution



The study surveyed 80% male participants and 20% female participants, asking about their gender and citizenship, to gather demographic information. Out of the total sample of 20 participants, this corresponds to 16 males and 4 females. This gender imbalance reflects a predominance of male participants in the study, which may be indicative of the socio-economic context in Tzaneen, where men may be more engaged in economic activities or more accessible for research participation in certain communities.

Figure 4.3: Nationality



As illustrated in Figure 4.3 above, 57% of the research participants were non-South African and 43% were South African. Out of the total sample of 20 participants, this equates to 11 non-South African participants and 9 South African participants. This demographic distribution suggests that the sampled population included a significant proportion of foreign nationals residing in the area of study. The high representation of non-South Africans may reflect the broader socio-economic dynamics of the region, such as migration patterns, employment opportunities, or cross-border mobility that influence settlement in Tzaneen.

4.4 Analysis of Qualitative Data

The study aimed to explore the impact of digital transformation in the banking sector and its effects on the unbanked population. Below is a presentation of primary data focusing on how these changes can promote financial inclusion and how these innovations can bridge the gap for those excluded from traditional financial systems.

4.4.1 Objective 1: To explore the impact of digital transformation within the banking sector on enhancing financial inclusion for unbanked individuals in Tzaneen, South Africa.

Figure 4.4: Word Cloud on Research Objective One Results



The study investigates the unbanked's engagement with digital banking, identifying barriers, opportunities, and potential benefits of digital transformation. It explores reasons for lack of bank account ownership, financial transaction methods, and perceptions of digital banking among the unbanked.

- ***What challenges do unbanked individuals face when accessing digital banking platforms?***

The study explored factors contributing to individuals' decision not to own a bank account, including trust issues, financial exclusion, and limited access to banking services. It identified obstacles to digital banking adoption and the importance of bridging the gap between internal and customer innovation for successful innovation.

Participant 3: *I believe having a bank account would make saving and managing money easier in the future… but I rely on trusted people to send and receive money.*

Participant 7: *…I send and receive money through trusted people…I use a piggy bank to save money, and it is risky because I live with people.*

Participant 9: *I don't have a permit or an ID… send money through people who have a bank account or an ID.*

The research data shows that participants lack the FICA standard required documents, such as ID and a permit, leading to their lack of bank accounts. However, they believe having a bank account would improve financial inclusion and security. This belief that a bank account would enhance financial inclusion and security is echoed by Rashidi et al. (2022), who assert that trust and security are critical, as users need confidence that both the banking institution and the technology will safeguard their personal and financial information.

- ***To what extent do unbanked individuals trust digital financial services compared to traditional banking?***

The research data shows that participants lack the FICA standard required documents, leading to their lack of bank accounts. However, they believe having a bank account would improve financial inclusion.

Participant 8: *I once had a bank account with my asylum, but it was blocked, and I don't know why.*

Participant 4: *I had one back home, they required it where I was working so that I could get paid in it... I left it back home when I came here (SA).*

Participant 1: *No, I have never had one.*

The research indicates that some participants have no experience with formal banking services, rely on informal methods, and have lost access to their accounts due to relocation to South Africa. These findings align with the National Treasury (2023), which highlighted that 7% of the adult population remains excluded from crucial economic participation through formal financial services.

- ***What specific digital banking services are available to unbanked individuals in Tzaneen?***

The study analysed the unbanked's reliance on non-traditional financial methods like cash transactions, mobile money, and informal money transfer systems, aiming to assess the potential of digital banking services for secure, efficient, and inclusive financial inclusion.

Participant 10: *I used Shop2shop or flash to transact or to pay for something…If you come and say you want to buy something in my shop, you will swipe, and that money will be transferred into Flash, and if I want to buy stock for the shop, then I will swipe using Flash.*

Participant 2: *I use an account of someone who has it, or I can go and ask someone who had an ID book to send money for me…It's the same way, if I want to receive money, I will provide the account number of someone I know so that I receive money there.*

Participant 15: *I give it to someone I trust so that that person can get it to where it's supposed to go, and if I want to receive money, they'll send it to that person to come give it to me.*

Participants primarily use informal methods like trusted individuals' bank accounts and services like Shop2shop or Flash for financial transactions, highlighting their lack of direct access to bank accounts. This reliance on informal methods reinforces the National Treasury's (2023) observation that a significant percentage of adults still lack access to formal financial products, underscoring persistent gaps in financial inclusion.

- ***What challenges do unbanked individuals face when accessing digital banking platforms?***

This question assessed the familiarity and comfort of the unbanked population with digital banking, identifying barriers like technological literacy, internet access, and trust in digital platforms. This insight helped evaluate how digital transformation could be tailored to meet their needs.

Participant 13: *Yes, I use my phone to make payments...I also use Flash or Shop2shop with my phone, it's easier that way.*

Participant 6: *I've never used a phone for banking transactions.*

Participant 11: *I've never used a phone for banking.*

The research data indicates a significant divide in digital banking usage among participants, with some familiar with mobile banking, a common form in developing economies, particularly Africa, and others not yet using such systems. This divide in digital banking usage underscores the point made by de la Peña et al. (2022), who emphasise that sustained interaction between organisations and customers is essential to co-create solutions that effectively address user needs.

- ***To what extent do unbanked individuals trust digital financial services compared to traditional banking?***

The study examined the unbanked population's attitudes towards digital banking, assessing potential challenges like scepticism and privacy concerns. It aimed to understand their openness to digital banking solutions and suggest ways to improve their offerings.

Participant 14: *Using a phone to do banking is good because it's easier and more convenient. You can do it anywhere.*

Participant 6: *I'm not sure about using a phone for banking because I've heard of people losing money through scams or having their accounts hacked.*

Participant 11: *I think it would be helpful, but I would be worried about losing my money if something goes wrong.*

The participants showed mixed feelings about phone banking, with some seeing it as convenient and positive, while others had concerns about security and risks, highlighting the need for education and security measures. This concern about security and the need for education is echoed in the findings of FinMark Trust (2023), which reveal that about 11% of South Africans remained unbanked as of the last comprehensive survey, with rural and low-income communities being the most affected by this exclusion.

- ***What policies or initiatives have banks implemented to facilitate digital financial inclusion in Tzaneen?***

The study aimed to enhance digital banking technology to better support the unbanked population, identifying areas for improvement like user-friendly interfaces, affordable services, and accessibility.

Participant 12: *Banks could make it easier for people without bank accounts to send and receive money by introducing services where we don't need an ID or a permit.*

Participant 7: *Banks should have more branches in smaller areas, closer to where people live. This way, it will be easier for people to open accounts and use other services like withdrawals and deposits.*

Participant 1: *I think it would help if banks introduced a way to do transactions via text messages or voice commands, as not everyone can read or use smartphones easily.*

Research indicates that inclusivity, rural access, and simplified technology are crucial for effective money management, emphasising the need for accessible and convenient banking options. This emphasis on accessible and convenient banking is reinforced by Loyns and Kass-Hanna (2019), who argue that financial inclusion is now widely acknowledged as a key tool for reducing poverty and income inequality while driving economic growth.

- ***How has the adoption of digital banking services impacted the economic participation of unbanked individuals in the region?***

The study surveyed participants to predict the future of banking for the unbanked, identifying emerging trends like mobile banking, digital currencies, and community-based solutions, and identifying digital transformation initiatives for their financial inclusion.

Participant 7: *I think in the future, more people without bank accounts will be able to access banking services easily. Banks might work together with the government to help us get IDs or permits, and then we can open accounts.*

Participant 12: *I don't think it will change soon. It will take a while for banks to make things easier for people like us who don't have IDs or permits. But I believe one day it will be better.*

Participant 3: *I think with technology growing so fast, it won't be long before people without bank accounts will be able to use mobile phones for everything—sending money, saving, and even accessing loans.*

The study interviewed participants to predict the future of banking for the unbanked, identifying emerging trends like mobile banking, digital currencies, and community-based solutions, and identifying digital transformation initiatives for their financial inclusion. This prediction, however, must be viewed with caution, as Willige (2023) highlights that the original purpose of mobile banking in Africa was simply to transfer airtime between mobile accounts, suggesting that its evolution into broader financial inclusion tools was not initially intended.

- ***How do banks in Tzaneen collaborate with telecommunication companies to reach unbanked populations?***

The study interviewed the participants on the effectiveness of digital transformation in reshaping banks' services to better support individuals with limited access to traditional

banking systems, focusing on changes like mobile banking apps and low-cost financial products.

Participant 5: *I think banks are still not doing enough to help people like me. They offer things like loans, but without an account, it's hard to access those services. They should find a way for people without bank accounts to get loans or savings options.*

Participant 9: *Banks now have easier ways to deposit and withdraw money. It's less stressful because you can just use your phone or go to the shops to withdraw money. Before, it wasn't that simple.*

Participant 11: *I've noticed that banks are now offering mobile apps and e-wallets, which make it easier for people to send and receive money. It's not as complicated as it used to be. And with mobile banking, even people without bank accounts can send money.*

Some of the participants express frustration about banks' need to provide more assistance, particularly in accessing loans and savings options. This frustration aligns with findings from the World Bank Global Findex (2017), which noted significant growth in financial inclusion, yet highlighted persistent gaps: although 1.2 billion adults opened bank or mobile money accounts between 2011 and 2017, many still struggle to access essential services like loans and savings.

- ***What specific digital banking services are available to unbanked individuals in Tzaneen?***

Through this question, the study analysed innovative banking solutions like mobile wallets, agent networks, and digital payments platforms for the unbanked, highlighting their role in digital transformation and expanding financial inclusion without traditional banking access.

Participant 15: *Banks have started offering services like e-wallets, which help us send and receive money. It's easy and quick. Even without a bank account, I can use a phone to do transactions, which was not possible before.*

Participant 7: *Some banks now allow people to receive money without having an account, using things like Shoprite or USave services. It's much easier now to get money even if you don't have a bank card.*

Participant 3: *I haven't seen anything truly innovative yet that helps people like me without a bank account. They might offer services to those who have accounts, but it's still hard to access many of the things that others can.*

The primary data shows that certain participants recognised the value of mobile wallets and e-wallets as innovations that have made banking more accessible. Similarly, Komminoth (2023) emphasises the significance of these digital solutions in enhancing access, noting that 75% of African online traffic comes from mobile devices. Nonetheless, some participants expressed that banks still need to pursue further innovation to better serve non-banking customers, highlighting a gap that persists despite these advancements.

4.4.2 Objective 2: To assess the uptake of digital technologies facilitating financial inclusion initiatives within South Africa.

Figure 4.5: Word Cloud on Research Objective Two Results



The study examines the impact of digital tools on unbanked individuals' financial inclusion and management, aiming to assess whether these technological advancements have addressed unique challenges faced by this population.

- ***What specific digital banking services are available to unbanked individuals in Tzaneen?***

In this question, the study examined the accessibility of bank loans for the unbanked population, focusing on the impact of digital banking technologies like mobile banking and online loan applications, thereby assessing the effects of digital transformation on financial inclusion.

Participant 4: *I don't have a bank account, so I'm unable to take any loans from a bank. If I had an account, it might be different.*

Participant 13: *I have never taken a loan before, and I'm not sure how it works. If I had a bank account, I think I would be able to access loans, but I don't know how they would offer it without an account.*

Participant 1: *I have tried to apply for a loan in the past, but because I didn't have an ID or the necessary documents, I was not able to get one.*

The research indicates that none of the participants have successfully taken a bank loan, with most valuing a bank account for accessing loans. However, some face documentation challenges. This reflects the findings of the National Treasury (2023), which reports that South Africa's level of financial inclusion remains relatively low in terms of financial development, despite performing well compared to other major emerging economies like Brazil, Russia, India, and China in overall financial product uptake.

- ***How has the adoption of digital banking services impacted the economic participation of unbanked individuals in the region?***

The study surveyed unbanked individuals about their expectations of digital banking, identifying areas for improvement such as convenience, cost reduction, and enhanced access to financial services, thereby assessing the potential for financial inclusion.

Participant 3: *If I had a bank account, it would help me save my money securely, and I wouldn't have to worry about carrying cash around. My life would be easier if I could just use my bank card for everything.*

Participant 8: *If I could open a bank account, it would help me avoid the risks of sending money through people. I could send and receive money easily and safely, without the fear of losing it or being robbed.*

Participant 11: *The banking industry could make life easier for people like me by providing accounts that don't require a lot of documents. They could help by opening more accessible branches and mobile banking services.*

The study's participants emphasised the need for easier access to banking services, highlighting the convenience and security of bank accounts, while also addressing challenges of documentation and access. Similarly, Seta (2023) notes that in response to such demands for greater accessibility and convenience, established banks are being compelled to modernise their technological platforms to remain competitive, particularly as new entrants like Discovery Bank, Bank Zero, and TymeDigital disrupt the industry with more user-friendly and accessible solutions.

- ***What policies or initiatives have banks implemented to facilitate digital financial inclusion in Tzaneen?***

The study assessed the unbanked population's willingness to engage with banks about emerging banking technologies, aiming to assess trust and interest in digital transformation, ensuring services align with their preferences and concerns for greater financial inclusion.

Participant 2: *Yes, I would like to be consulted because I don't know much about how technology works in banking. If I can learn more, it will help me understand how I can better manage my money.*

Participant 6: *Yes, I would like to be consulted. If there's technology that could make it easier to access a bank account, I would want to know about it. It will help people like me who struggle to get one.*

Participant 11: *No, I don't think I need to be consulted about new technology. I don't use banking apps or anything, and it's hard for me to understand how they work.*

The research data shows that some of the participants are open to being consulted on new banking technology, as they see potential benefits in learning about it to improve their financial inclusion and access. On the other hand, some participants feel disconnected from

technology, indicating a potential barrier to engagement with new banking solutions. In response to such mixed levels of readiness, Tarhini, El-Masri & Serrano (2024) emphasise that successful banks not only generate ideas internally but also actively test them with end-users, ensuring that new products address both the curiosity and reservations of the unbanked population.

- ***To what extent do unbanked individuals trust digital financial services compared to traditional banking?***

The study aimed to understand the perceived security concerns of the unbanked population regarding digital banking technologies, assessing whether fraud, privacy, or technological failure hindered adoption and financial inclusion.

Participant 15: *No, I don't feel safe. There are so many scams out there, and I'm scared that I might accidentally give my details to the wrong person. It's hard to trust when everything is online.*

Participant 7: *Yes, I feel safe, especially if I can set up a PIN and face recognition. It makes me feel like my account is secure, and I can access my money without worrying about someone stealing it.*

Participant 8: *I think it's safe as long as I know how to use it. But sometimes I worry about making a mistake or someone hacking into my account. If there's proper training on how to use it, I'd feel more secure.*

Research data indicates a need for improved education and security measures to boost trust in digital banking among unbanked populations, with some embracing security features like PINs, while others remain cautious due to fraud concerns. These trust issues are further compounded by barriers such as limited digital literacy, concerns about data privacy, and infrastructural gaps, as highlighted by the study conducted by BANKSETA (2025).

- ***What challenges do unbanked individuals face when accessing digital banking platforms?***

With this question, the study aimed to identify barriers such as lack of digital literacy, technical issues, or usability problems that might prevent individuals from fully benefiting from digital banking services. The responses helped the research evaluate the effectiveness

of digital transformation in improving financial inclusion and pinpoint areas where further innovation or support might be needed to overcome these obstacles.

Participant 15: *Yes, I had trouble with the e-wallet at first. The system wasn't clear on how to transfer money, and I didn't know what to do when the transaction didn't go through.*

Participant 6: *I have never tried using anything like an e-wallet or banking apps. It's too confusing for me. I don't know how to do it, and no one has shown me.*

Participant 7: *The app crashed when I tried to make a payment, and I had to wait a long time before I could access my account again. I was frustrated because I needed the money urgently.*

Participants encountered difficulties with e-wallets, unfamiliarity with digital banking services, and technical issues with online apps, highlighting common challenges such as unclear instructions, lack of education, and technical glitches.

- ***What challenges do unbanked individuals face when accessing digital banking platforms?***

The study evaluated the accessibility and user-friendliness of digital banking for the unbanked population, focusing on the challenges and improvements in customer service since the introduction of mobile and online banking. In this context, perceived ease of use becomes critical, as rural and unbanked populations with limited technological literacy are more likely to engage with mobile banking when platforms offer a simple, intuitive interface that builds user confidence (Becker, Stolper & Walter, 2022).

Participant 10: *It has become much easier for me to send and receive money. I can now use my phone to do transactions without going to the bank, which is very convenient. The only challenge is when I need to send a larger amount of money, and I don't know the process well, so sometimes I have to ask someone for help.*

Participant 3: *It's been hard for me to learn how to use the phone for transactions. I don't have a phone, so I have to rely on others to send and receive money for me. If I had my phone, I think it would be easier.*

Participant 9: *It's been easier for me in terms of access because I don't have to go to a physical bank. But sometimes the systems are confusing, and I need help to understand how to use*

them. The good part is that I can go to a local shop that helps me with the process, but it's still not perfect.

The primary data indicates that while digital banking offers convenience, it also presents challenges such as technological barriers, confusion, and the need for external assistance, highlighting the need for a balance between ease of use and understanding of complex transactions. Addressing these challenges through continuous innovation and customer engagement ensures that mobile banking services evolve to meet user needs, with ongoing feedback and enhancements helping to reduce barriers and improve user satisfaction (Sjodin et al., 2020).

4.5 Conclusion

The chapter presented and analysed data on the impact of digital transformation on financial inclusion in Tzaneen and the uptake of digital technologies in South Africa. Findings showed that despite digital banking growth, trust issues, digital literacy gaps, and service accessibility limit inclusion among the unbanked. Adoption of technologies like mobile banking is growing but remains uneven, especially in rural areas due to infrastructure and affordability challenges. Overall, success in financial inclusion requires addressing trust, access, affordability, and digital skills. The next chapter presents conclusions and recommendations of the study.

CHAPTER FIVE: CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In the previous chapter, the study's results were presented and interpreted, followed by a discussion that integrated these findings with the literature reviewed in Chapter Two. This chapter concludes the findings of the study and provides recommendations, shedding light on the role of financial technology in enhancing access to financial services for underserved communities.

5.2 Findings from the Study

This section is organised into two key parts: findings from primary data and findings from the literature. The first part presents the results gathered from the primary data collection, which includes surveys, interviews, and other direct engagements with stakeholders within the banking sector at Tzaneen in Limpopo, South Africa. These findings offer an empirical perspective on the impact of digital transformation on financial inclusion, with a specific focus on how financial technology has affected the accessibility of banking services to the unbanked population. The trends, patterns, and key insights obtained from the responses provide a clear understanding of the current landscape and the influence of digital innovations on financial inclusion.

The second part of this section synthesises the findings derived from the literature reviewed in Chapter Two. It examines existing theoretical and empirical studies on digital transformation in the banking sector, particularly its role in enhancing financial inclusion and addressing the needs of the unbanked. By reviewing these findings, the study gains a broader context for understanding how technological advancements in the banking sector have shaped financial services and created opportunities for greater access to banking. The comparison of the primary data with the literature findings helps to contextualise the study's results within the wider body of knowledge, providing a deeper understanding of the subject matter.

5.2.1 Findings from the Literature Review

Persistent trust deficits, infrastructural gaps, and digital literacy limitations were identified as ongoing barriers, with calls for more localised, qualitative studies on adoption challenges. Below are the findings from the literature review:

- **Digital Transformation and Financial Inclusion**

Literature confirmed that digital transformation, especially mobile banking, is a crucial enabler of financial inclusion (Ozili, 2018). Mobile technologies offer access to financial services in underserved regions, but their success is conditioned by technological literacy, trust, and perceived utility.

- **Factors Influencing Mobile Banking Adoption**

Key determinants include perceived usefulness, ease of use, trust, perceived risk, and continuous innovation (Msweli & Mawela, 2021; Rashidi et al., 2022). Digital transformation, particularly through mobile banking and mobile money services, has been shown to significantly enhance financial access for unbanked individuals. In regions like Tzaneen, South Africa, where traditional banking infrastructure is limited, mobile banking offers a practical solution by enabling users to store value, transfer money, and make payments using only their mobile phones. This is particularly impactful for rural communities where physical bank branches are scarce (Tobbin et al., 2011).

- **Digital Transformation in the South African Banking Sector**

While digital banking infrastructure is advancing, 11% of South Africans remain unbanked, especially in rural and low-income areas (FinMark Trust, 2023; National Treasury, 2023). Competitive dynamics from digital-first banks like TymeDigital are disrupting the sector (Seta, 2023).

- **Innovation and Customer Engagement**

Engagement and co-creation with users ensure banking solutions are relevant and effective for marginalized groups (de la Peña et al., 2022; Tarhini et al., 2024). Digital technologies for financial inclusion require mutual value creation and capture between developers and consumers. Understanding the balance between profitability for financial institutions and accessibility for consumers is an ongoing research area (Shilpana, 2019).

5.2.2 Findings from Primary Research

The primary data revealed several critical barriers and challenges faced by unbanked individuals in accessing digital financial services. A prominent obstacle identified was the lack of FICA-compliant documentation, such as valid identification or permits, which prevented many participants from opening bank accounts. This highlights a significant regulatory exclusion, where strict documentation requirements inadvertently exclude vulnerable groups from formal banking systems.

In the absence of formal banking access, participants relied heavily on informal financial practices, including the use of services like Shop2Shop and Flash, or depending on trusted intermediaries, typically friends or family members, to send and receive money on their behalf. These informal methods, while functional, often expose individuals to security risks and limited financial control.

Another recurring theme was mixed levels of digital literacy among participants. While some were familiar with mobile payments and could perform basic digital transactions, others found digital banking platforms confusing, risky, or inaccessible, often citing fears of scams, fraud, and technical challenges. This divide in technological proficiency was exacerbated by security concerns, with some participants expressing confidence in protective measures such as PIN codes and biometric authentication, while others remained sceptical and fearful of potential data breaches or account hacks.

Participants also raised concerns about service accessibility, emphasising the need for more simplified banking technologies. Suggestions included text-based or voice-command banking options, which would better accommodate individuals with low literacy or limited familiarity with smartphones. Lastly, participants identified notable policy gaps, calling for initiatives such as establishing more localised bank branches in rural areas, collaborative efforts between banks and government to assist individuals in obtaining necessary documentation, and the development of digital platforms specifically designed for users with low digital literacy. These findings underscore the importance of both technological innovation and policy reforms to enhance financial inclusion in underserved communities.

5.3 Conclusions

Although the literature review mainly covered Objective 1, primary data comprehensively addressed Objective 2 on the uptake of digital technologies across South Africa. Participants' accounts reflected growing, but uneven, adoption due to infrastructural and socio-economic constraints. The study concludes that while digital transformation, especially mobile banking, has advanced financial inclusion in South Africa, significant barriers remain. Key challenges include the lack of formal documentation (IDs, permits), reliance on informal financial practices, low digital literacy, and concerns about security and fraud. Participants expressed the need for simpler, more accessible banking solutions and better support in obtaining documentation. Overall, the success of digital financial services depends on addressing these structural barriers through policy reforms, user-friendly technologies, and financial education to effectively include the unbanked population.

5.4 Recommendations

Based on the findings of this study, the following recommendations are provided to enhance the development and adoption of an inclusive digital platform for the unbanked population in Tzaneen, South Africa, categorised into short-term and long-term actions.

- **Short-Term Recommendations:**

The study recommends implementing digital literacy programs to educate the unbanked population on mobile phone and digital banking usage. Access to affordable smartphones should be increased through partnerships with mobile providers and NGOs. Security concerns need to be addressed by enhancing security features on digital platforms and educating users on fraud prevention. Mobile banking app interfaces should be simplified to ensure ease of use for low-tech users. Reducing transaction fees is necessary to make digital financial services more affordable for the unbanked population. Additionally, the introduction of micro-transactions or lower-cost digital financial products is recommended to better serve low-income individuals.

- **Long-Term Recommendations:**

The study recommends establishing comprehensive financial education initiatives to teach users about financial management and digital banking. There is a need to expand mobile

network coverage in rural areas to improve accessibility to digital financial services. Building a local support network, including agents and community hubs, is essential to provide in-person assistance with digital banking. The development of a scalable model for digital platforms is advised, enabling adaptation and implementation across various rural regions in South Africa. Stronger partnerships between government, financial institutions, and mobile service providers should be fostered to enhance digital financial inclusion. Lastly, it is important to ensure that digital platforms are flexible enough to cater to the specific needs of different regions, incorporating local languages, cultures, and socio-economic conditions.

5.5 Areas of Further Research

- **Digital Literacy and Financial Inclusion:** Examine the impact of digital literacy programs on the adoption of mobile banking services, focusing on methods that effectively increase digital skills in rural communities.
- **User Experience and Accessibility in Rural Areas:** Investigate challenges faced by unbanked individuals in rural settings regarding digital platform usability, including internet access, smartphone availability, and language/cultural barriers.
- **Comparative Studies of Digital Financial Inclusion:** Conduct a study on Digital transformation in the banking sector and its effects on the financial inclusion of the unbanked population in other provinces across South Africa.

5.6 Conclusion

This study investigated the impact of digital transformation on financial inclusion for the unbanked population in Tzaneen, Limpopo, South Africa. It focused on the challenges faced by this population and the potential role of digital financial services in addressing them. The literature review explores the role of digital transformation, mobile banking, and financial inclusion in improving access to financial services. The research methodology details the data collection and analysis process. The findings highlight the increased access to financial services through mobile banking, the perceived ease of use and trust in digital platforms, and the challenges faced by the unbanked population. The study concludes with recommendations for improving digital financial inclusion, such as implementing digital literacy programs, reducing transaction costs, and enhancing security features.

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