Disruptive technologies for promoting financial inclusion in South Africa

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Table of Contents

Abstract:

This research study seeks to examine the dynamics of financial inclusion in South Africa via the prism of disruptive technologies, to detect stakeholder stances and suggest strategies for inclusive growth. Following an interpretive philosophy, the study used an inductive technique, conducting semi-structured interviews with 14 stakeholders from diverse industries. Thematic analysis was used to investigate the qualitative data, which yielded substantial results.

The study's key results shed light on critical challenges. Stakeholders underlined the significance of inclusive policies targeted to different socioeconomic groups, as well as regulatory frameworks that encourage innovation while addressing economic concerns. Discussions focused on how economic factors like high interest rates and taxation affect entrepreneurship and technological innovation. Sustainable development became a key issue, emphasising the link between technical breakthroughs and global sustainability objectives. Furthermore, the study emphasises the government's responsibility to promote innovation and modernisation, pushing for strategic planning and more efficient bureaucratic processes. The implementation of Shariah law principles was noted as a noteworthy discovery, providing an opportunity to improve financial participation while lowering the dangers of indebtedness. Furthermore, the study emphasises the importance of talent transfer and cooperation as long-term growth drivers, as well as the benefits of information exchange and capacity building.

These discoveries have far-reaching and complex ramifications. The study gives vital insights into consumer preferences, allowing banks to adjust their services to meet a wide range of demands. Policymakers might use the data to rethink existing restrictions and create initiatives that encourage innovation and financial inclusion. Socially, companies and schools may use the findings to promote economic empowerment and digital literacy. Overall, the research makes specific suggestions to South African stakeholders on how to create fair growth, boost innovation, and move forward with socioeconomic development goals.

Chapter 1 - Introduction

This introductory chapter provides the background to the study, the research problems, the aim of the study as well as research objectives and questions.

1.1 Background to the study

Financial systems that operate well exist to promote the use of financial products and services offering financial benefits to all those they serve and in return gain from the mutually beneficial relationship with customers. With the current levels of income inequality, financial disparities, and a lack of financial education that exists among global economies, the formal financial systems have become exclusive to those individuals who can provide basic requirements to gain access to a broad range of financial services to meet their needs (Abubakar, 2015). Disadvantaged or poor groups are faced with multiple price and non-price barriers as products and services offered by the formal financial systems are unsuitable, inaccessible, or unaffordable. This lack of financial inclusion causes a continuation of informal savings and other borrowing/lending mechanisms to enable the disadvantaged, lower-income, and less-educated groups to invest in education, business, or to meet basic needs (Abubakar, 2015).

Financial inclusion is defined as a process that ‘ensures the ease of access, availability, and usage of formal financial services’ (Sarma et al., 2011). While countries such as South Africa have undergone some developments in improving accessibility to financial products and services in the form of entrepreneurial funding and credit service offerings, a vast majority of the populace remains unbanked and non-consumers of formal financial products and services. In 2017, there was over 66 percent of adults in Sub-Saharan Africa (which includes South Africa) without a bank account, according to the World Bank's Global Findex database, which contains information on financial inclusion.

Innovations in the new digital era such as mobile money, are paving the way for easy accessibility to transact in payments or receipt of funds for products or services. These are examples of positive disruption benefitting the financially excluded groups (Abubakar, 2015). However, considering Africa in the context of the Sustainable Development Goals (SDG) 2063 Agenda Report, emphasis is placed on the need for greater action to meet the targets of which Quality Education (SDG 4) and

Partnerships (SDG 17) may contribute to the elimination of barriers that disable financial inclusion. The report indicates the need for Africa to bolster its financial flows through proper planning, enhanced Information and Communication Technology infrastructure, and the rollout of innovative financial instruments to drive the achievement of its goals (World Bank, 2022).

Innovative financial instruments refer to the application of new technologies disrupting traditional banking or financial services and distribution channels. Digital financial services have contributed to breaking barriers in support of financial inclusion through financial platforms that eliminate the need for physical bank branches, agents, and ATMs. Research by Lauer and Lyman (2015) demonstrated that the launch of digital financial services across more than 80 countries globally resulted in millions of fully or semi-excluded individuals transitioning from cash-based usage to formal financial services (Barruetabeña, 2020).

To highlight the importance of promoting financial inclusion using disruptive technologies, statistical evidence in the SDG demonstrates that without renewed efforts to meet SDG targets, nearly 492 million Africans will be left in extreme poverty with a minimum of 350 million remaining in this condition until 2050 (World Bank, 2022). Other report estimates indicate that approximately 1.7 billion adults experience financial exclusion on account of non-access to a basic functional account preventing them from using financial services such as payments, credit, or savings (Myagmarsuren and Choong Lyol 2015). The cost of this exclusion is not only social but also economic, as greater financial accessibility generates greater wealth and economic growth, in turn reducing inequalities and eliminating poverty (Myagmarsuren and Choong Lyol 2015).

1.2 Problem Statement

According to the World Bank's Global Findex database (2021), access to financial institutions among the global adult population has increased by 25 percentage points over the last decade, from 51% in 2011 to 76% in 2021, indicating a growing emphasis on financial inclusion via digital financial services (Okuoro, 2022).

Mobile money platforms, which were created for peer-to-peer transactions, have grown into full financial service providers, considerably contributing to financial

inclusion by providing fundamental services such as savings and credit (Okuoro, 2022).

Sub-Saharan Africa has seen an extraordinary increase in mobile money usage, with over 606 million registered accounts by 2021, supporting an estimated US$698 billion in transactions, demonstrating the revolutionary potential of digital financial services (GSMA, 2022). While financial inclusion in Africa has increased over the last decade, there is still room for improvement, necessitating the ongoing development of digital financial services and supportive legislation (Okuoro, 2022).

Mobile devices and the internet have played critical roles in increasing financial inclusion, as acknowledged by both the World Bank and the Alliance for Financial Inclusion (Demirgüç-Kunt et al., 2018; AFI, 2011).

Despite technological developments, hurdles to financial inclusion remain in Africa, with identity concerns being especially problematic, as evidenced by millions of people in Sub-Saharan Africa lacking formal identification (Agency, 2018). Furthermore, legislative limits, regulatory frameworks, and insufficient digital infrastructures impede financial inclusion initiatives, disproportionately harming women, and young people (Agency, 2018).

Disruptive technologies, such as Blockchain, show promise for improving financial services, but their ramifications are unknown, demanding more study to comprehend their possible results (Salmon and Myers, G. 2019).

More study is needed in South Africa to understand the influence of disruptive technologies on financial inclusion. Current studies generally focus on worldwide patterns (Demirgüç-Kunt & Klapper, 2012; Barruetabeña, 2020). This study attempts to solve data gaps in linking disruptive technologies to financial inclusion (Barruetabeña, 2020).

Barruetabeña (2020) emphasizes the importance of addressing possible dangers linked with new financial platforms, enabling widespread access to digital mediums, and providing proper digital financial education to prevent exclusions.

Digital advances have the potential to considerably promote financial inclusion by lowering entrance barriers, cutting expenses, and increasing accessibility (Demirgüç-Kunt & Klapper 2012).

The value of this study stems from its ability to enlighten researchers, policymakers, and academics by offering useful insights and rigorous data to build on and improve knowledge of technology's influence on financial inclusion in South Africa (Ahmad et al., 2020). While some literature exists on novel techniques for boosting financial inclusion in Africa as described in research by Davidson and McCarty, (2012) notably through mobile money, additional empirical research is required, particularly in the South African context.

1.3 Aim of the study

This study aims to explore the use of disruptive technologies to promote financial inclusion in South Africa. The study seeks to assess the current level of financial inclusion in the country and to add to research that identifies disruptive technologies that promote financial Inclusion. The study also aims to explore the factors that influence the adoption of disruptive technologies in South Africa and evaluate the role of disruptive technologies on financial inclusion. Ultimately, the study aims to provide recommendations for policymakers and stakeholders on the use of disruptive technologies to achieve financial inclusion in South Africa.

1.4 Research Objectives

1. To examine disruptive technologies that promote financial inclusion in South Africa.
2. To explore the factors that influence the adoption of disruptive technologies in South Africa.
3. To discuss existing policies and provide recommendations for policymakers and stakeholders on the use of disruptive technologies and their application to financial inclusion in South Africa.

1.5 Research Questions

1. What disruptive technologies can be used to promote financial Inclusion in South Africa?
2. What are the factors that influence the adoption of disruptive technologies in South Africa?
3. What policies and strategies can be put in place to promote the use of disruptive technologies for financial inclusion in South Africa?

1.6 Justification for the Study

The 2012 Global Findex database gave indications by tracking how many individuals in 148 economies saved, borrowed, paid, and managed risk (Demirguc-Kunt & Klapper, 2012). According to the key findings of a study published by Ozili (2021), financial inclusion affects and is influenced by the level of financial innovation, poverty levels, financial sector stability, the state of the economy, financial literacy, and regulatory frameworks that differ across countries. The significance of African financial systems has grown during the last two decades, however, the disparity with emerging countries remains a source of worry, leading to persistent income inequality and slower economic development (Demirgüç-Kunt and Klapper, 2012).

Poor households' capacity to insure against or withstand severe economic shocks is crucial, and a variety of coping techniques have been developed to address this (Berrone et al., 2020). Heltberg et al. (2013) define positive ('good') options as the use of savings or loans, the sale of consumer items such as appliances, informal risk-sharing through family or social networks, and migration to pursue employment. Adverse ('bad') measures include selling productive assets such as cattle or limiting consumption, notably in food, healthcare, and education (Ahmad et al., 2020).

Emerging technology, such as mobile money, helped to increase access to financial services, including savings and payment services. However, many African nations' financial systems remain weak in comparison to other emerging economies (Demirgüç-Kunt and Klapper, 2012).

With considerable mobile subscriptions noted in reports written by Asongu et al., (2020), this indicates the increased penetration of mobile device access and usage

across Sub-Saharan Africa. The proposed study aims to understand the barriers to financial inclusion with consideration of technologies and the enabling of disruptive technologies supported by appropriate regulatory frameworks, principles, authorities, and literacy or education to bridge this gap.

Blockchain, mobile banking, and artificial intelligence are examples of disruptive technologies that can completely change the financial services industry and provide accessibility for underprivileged groups. Businesses may use these technologies to expand their market reach and promote overall socioeconomic growth in addition to opening new commercial prospects. The study investigated how these advances might be strategically applied to remove obstacles to financial inclusion in South Africa.

New technological advances and procedural disruptions have recently emerged in the financial services business. Both the industry as a whole and many fintech start-ups are searching for fresh ideas that lead to the development of profitable business models, the improvement of customer experiences, and the transformation of services. (Gomber et al., 2018).

The emphasis on financial inclusion through disruptive technologies makes sense from a strategic management standpoint since it helps companies adjust to the demands of their customers and shifting market dynamics. The practical study will yield important insights into how companies may successfully incorporate these technologies into their operations, guaranteeing that the economy as a whole and the disadvantaged people alike get the rewards of financial inclusion. This strategy is in line with the shared value creation tenets, which link social improvement with economic success.

1.7 Delimitations of the study

The focus of the paper will be on financial technology, financial literacy, and financial principles specifically emphasising the barriers to achieving financial inclusion. The study will be cross sectional and therefore be limited to the short time period allowed by the University for such projects.

The study is qualitative in nature and therefore, the sample size is small. Based on the small sample size in this qualitative research, the findings cannot be generalised to the entire population.

The study was limited to South Africa and did not include other geographical areas.

1.8 Operational Definitions

These operational definitions are focused on the use of disruptive technologies in South Africa to promote financial inclusion:

1.8.1 Disruptive Technologies:

Disruptive technologies are developments that fundamentally affect how consumers, industries, or enterprises operate (Smith, 2020).

1.8.2 Financial Inclusion:

Financial inclusion refers to individuals and companies having access to usable and affordable financial goods and services that fit their requirements, such as transactions, payments, savings, credit, and insurance (World Bank, 2022).

1.9 Structure of the paper

Chapter 1 of this proposal provided the background and research problem, along with the research objectives and questions. The significance of the study was also highlighted. The second chapter covers the theoretical framework that underpins the current study, a review of the literature relevant to the study, and a conceptual framework to summarise the literature reviewed. Chapter three covers the research design and methodology adopted for the study, including the philosophical stance, the approach taken, and the research method adopted. The target population and sample are also provided in Chapter 3 along with the data collection process and the approach to analysing the data. Chapter 4 is used to present and discuss the findings emerging from the qualitative data collected. This chapter also includes the analysis of the data which is noted through a thematic analysis using both codes and themes. Finally, chapter five covers the conclusion and recommendations of the research paper.

Chapter 2 - Systematic Review of Literature

2.1 Introduction

The purpose of this literature review is to ensure that scholarly literature is critically analysed in the field of the topic: “Disruptive technologies for promoting financial inclusion in South Africa”. This topic has been researched extensively by scholars in recent times, however, the Southern African region remains impacted by the current statistics of the financially excluded in comparison to several developed economies (Sha’ban et al., 2020).

Financial inclusion may mean many things to various readers, which by its nature is a wicked problem that contains many layers. According to Ozili (2020), Financial inclusion may be referred to as the ability for members of a society to be included in the formal banking systems of that society, and when not included in those banking systems we consider those members as excluded from the financial systems (Ozili, 2020).

Before delving into the review of literature on the subject, the following theoretical framework that underpins the proposed study is first presented. The theoretical framework will include a discussion of three theories, namely, the theory of disruptive innovation, disruptive technologies, and the diffusion of innovation theory.

The literature review has relied heavily on the knowledge of financial management, technology and operational processes. The transdisciplinary integration of management theories has allowed the research to align practically to what can be considered as possible findings and recommendations, without the integration of managements practices the research is read out of the economic context it requires.

2.2 Theoretical Framework

Herein is a discussion of the theories that will inform the proposed study.

2.2.1 Theory of Disruptive Innovation

Few other concepts have had the same impact on corporate consciousness as Christensen's thesis (1995) on disruptive innovation. The Economist referred to the notion as "one of the most significant modern business theories" in a review of classic business literature.

The theory's effect has surpassed the confines of business. Disruption has been advocated by Christensen and his colleagues as a paradigm for thinking about difficult societal issues like poverty, unemployment, illiteracy, and a lack of access to healthcare. In relating this analogy to the topic, this paper will attempt to tie the benefits achieved by organisations with societal benefits as per Christensen's vision of the theory and its impacts on society.

As this theory may be applied in the context of many problems, the intent should be pragmatic in addressing the challenges in financial inclusion. According to an article written in Harvard Business Review (2015), the idea, or variations of the theory, have been employed in so many contexts that Christensen himself has voiced discontent with some of the applications in the past.

In an interview with the editor-in-chief of the Harvard Business Review Christensen stated, "I never thought... that the word disruption has so many connotations in the English language, that people would then flexibly take an idea, twist it, and use it to justify whatever they wanted to do in the first place" (King & Baatartogtokh,2015). So, how should the disruptive innovation hypothesis be applied? What constitutes its essential components, and how accurate is it?

Four factors from Christensen's theory:

1. Sustaining innovation – For established companies that want to maintain their products and services through incremental improvements.

2. Exceeding customer needs – Looking at what the existing offerings are not providing.

3. The introduction of a disruptive innovation to which incumbents can adapt – Applying a different approach or technology to an industry.

4. Incumbent enterprises fail when they are disrupted. – Incumbent companies can fail to adapt to innovations.

These points that analyse the elements of the theory of disruption from Christensen confirm that agility is one of the key requirements to ensure you can survive in today's disruptive society. By applying the steps in this theory of Disruptive Innovation, we find that financial Inclusion is a market in which the customers have significant value to be attained whilst any business that can solve this problem statement will also achieve value towards their shareholders.

Theory of Disruptive Innovation and Its Application to Financial Inclusion

Identify the underserved market: Financial services in South Africa may be considered an established industry. However, as this study and many other studies confirm, the unbanked and underserved population is significant. There are several reasons for this: the financial literacy of the population, technological challenges that do not promote the Inclusion elements, and financial principles that serve as deterrents. It's key to understand the challenges that have prevented existing service providers from advancing in this field of the market segment of the underserved.

Develop a simpler or more affordable product: As the topic is financial inclusion, this paper aims to understand the market and acceptable price points for services along with their understanding of the technology enablers and how those can be positioned in simpler ways. This may mean a product that is an MVP to go to the market, but based on the value to be delivered a high-end product would not be necessary.

Scale up rapidly: The scalability of the product is significant as the product is meant to serve the masses of the underserved market. This would require distribution channels and investment into advertising and marketing to ensure that the product is adopted through trust and transparency of a new financial Inclusion product for the underserved market.

Improve the product rapidly: As financial literacy would be key in the adoption of this product; the MVP should be applied with simplicity and direct input capability. However, as the customer matures in their financial literacy levels, the product should be improved and evolved to a more value-derived system with accommodating functions and features based on the customers' literacy evolution.

Disrupt the established market: At this point and finally, in the evolution of the product, there is an expectation that the product would infringe on the existing market and start

taking a share of that market. This evolution must be expected and prepared for with additional iterations of the product for the existing market.

2.2.2 Disruptive Technologies Theory

Bower & Christensen (1995) wrote a separate theory relating to disruptive technologies. The key factors mentioned by Bower & Christensen (1995) in this theory are:

Technological discontinuities: The technological challenges that established companies may face when trying to serve the financially excluded market include the ability to take risks and explore technology iterations and new technologies or to retire existing tech that is not serving the emerging market.

Emerging markets: Disruptive technologies are typically focused on the underserved markets as this playing field is open to innovation and changes that a serviced market may not be willing to explore.

Lower performance expectations: New technologies are generally in the market as MVP products especially when servicing an underserved market. Here the product is focused on simplicity, affordability, and convenience and these factors can relate to an emerging market appropriately.

Over-served customers: Financial exclusion may exist as larger companies serve a market that is profitable to them. In doing so they may unintentionally ignore the unserved markets. This leaves room for disruptive technology in the financial technology space to gain market share.

Incremental improvement: As a disruptive technology in the financial technology space, an acceptable process of incremental improvements is expected.

Application of Disruptive Technologies Theory to Financial Inclusion

According to Klepper and Simons, (2000); & Utterback, (1994), markets that are created because of supply-push processes have the following characteristics: Newly established markets are invaded by hordes of new participants, often numbering in the hundreds, despite tremendous technological and product uncertainty. Amazingly, this

increase in business population occurs before the size of the new market even begins to increase. Hundreds of new businesses have entered the market, and the range of products has increased to astonishingly high levels. The pace of innovation during a market's inception is the highest it will ever be.

Once the initial wave of entrants has subsided, there may occasionally be a sharp, unexpected, and extremely significant shakeout that causes most of the early pioneers to perish. The shakeout is linked to the market's emergence of a dominating design, which denotes the start of the industry's growth. It takes a while for everything to come together. As a result, during the majority of the first few years, new markets' structures are extraordinarily fluid, and when they do ultimately stabilize, many more firms enter and exit the market instead of those that remain.

As a result, it is uncommon for the early innovators who develop these industries that are brand-new to the world to also expand them up from small niches to large, mainstream markets. Companies that eventually expand into new areas do so just as the dominant design is beginning to take hold. But entering the market at the proper time is not enough to win it. The final winners not only perfectly time their debut into the market, but also take several steps to turn it from a specialized industry into a mainstream one (Dan, Y., & Chieh, H. C., 2008, July).

Financial technology is a disruptor in the technology space as you will find many financial service providers who have not migrated to the new technologies and have remained on older versions of SAP for example. The reason for this slow adoption rate in the Financial Service space could be due to governance and bureaucratic challenges with larger organisations. Organisations such as banks have many complex systems and sometimes find that they would much rather keep systems working instead of risking downtime with sensitive client data.

2.2.3 Diffusion of Innovation Theory

Everett Rogers first proposed the Diffusion of Innovation Theory in 1962 to describe how novel concepts, goods, or services gradually filtered through a society. The theory describes how innovations are adopted by both people and groups and identifies important variables that affect adoption speed and rate (Rogers, 2003).

As proposed by Rogers, (1962) published in her book titled "Diffusion of Innovations." This paper aims to match her theory and how financial inclusion is the notion that everyone, regardless of income or socioeconomic level, should have access to financial services and products.

The five stages of the Diffusion of Innovation Theory can be used to examine the implementation of financial Inclusion:

Knowledge: At this stage, people have gained knowledge about the potential advantages of having access to financial services and products as well as the necessity for financial Inclusion.

Persuasion: At this point, people start to show an interest in financial inclusion and look for more details to assess the advantages and disadvantages of it, such as easier access to credit, savings, and insurance.

Decision: At this step, people decide whether or not to adopt financial Inclusion based on their assessment of its advantages and disadvantages, such as the price of services or the dependability of financial institutions.

Implementation: During this phase, people start utilising financial services and products, incorporating them into their personal and professional lives. Examples of this activity include opening a bank account, making mobile payments, or investing in stocks.

Confirmation: Individuals review the outcomes of their adoption of financial inclusion at this stage and decide whether to keep using it or stop, for example, by checking their credit score, keeping track of their spending, or comparing interest rates.

The Diffusion of Innovation Theory's five guiding principles can also have an impact on the acceptance of financial inclusion. Here is how these factors apply:

Relative Advantage: The extent to which financial inclusion is viewed as preferable to the available option, such as unofficial lenders or cash-based exchanges.

Compatibility: The extent to which one perceives financial inclusion as being consistent with one's values, experiences, and needs—such as one's demand for privacy, security, and ease.

Complexity: The extent to which financial inclusion is regarded as being challenging to comprehend and use, such as complex legislation or financial jargon.

Trialability: Financial Inclusion's trialability refers to the extent to which it may be tried out and evaluated before adoption, for example by utilising a free online budgeting tool or going to a financial literacy program.

Observability: How quickly others can see and understand the advantages of financial inclusion, such as enhanced financial stability, decreased debt, or better business prospects.

Application of Diffusion of Innovation Theory to Financial Inclusion

To attain optimal adoption rates fast, financial inclusion must be approached using the Diffusion of Innovation theory. This requires properly describing and explaining the advantages of financial inclusion. Additionally, it is necessary to provide convincing information about services and goods to ease complexity for clients. Providing an opportunity for customers to trial these financial products is critical since it provides for observability and promotes uptake.

For effective spread, it is also essential to comprehend the features of the innovation and the South African social structure. Innovative technologies that support financial inclusion must be compatible with the nation's cultural, economic, and regulatory framework. Customising communication tactics is essential, given South Africa's heterogeneous demographic terrain. Information can become more convincing by using local languages and culturally appropriate messaging, which also makes it more relatable to various demographic groups.

Another critical component is identifying and communicating with major early adopters or opinion leaders in South African communities. These individuals have substantial influence over how disruptive financial technologies are viewed and used. The diffusion process can be accelerated by carefully identifying these influencers since their support can spread like wildfire, motivating others to adopt cutting-edge financial solutions. Collaboration with local governments, government agencies, and organisations can enhance the quantity of information provided and boost trust in these novel technologies.

Finally, the Theory of Innovation Diffusion stresses the significance of feedback loops. Creating platforms for continual input from early adopters and the larger community aids in the refinement and improvement of financial inclusion efforts. This iterative process enables the identification and resolution of issues, ensuring that technology

improves to match the specific demands and preferences of the South African community. Regularly analysing the diffusion process via feedback loops allows policymakers, financial institutions, and technology providers to make required adjustments, hence improving the overall effectiveness of disruptive technologies in promoting financial inclusion in South Africa.

2.3 Review of Empirical Literature

The literature review will be grouped into sub-sections that will help make understanding the topic easier.

The empirical literature on the use of disruptive technologies to achieve financial inclusion in South Africa is an important part of understanding the field's practical applications and outcomes. Several studies have been conducted to investigate the impact of disruptive technologies on financial inclusion in various contexts, offering insight into both triumphs and challenges.

Nkosi et al., (2019) conducted a study on the effect of mobile banking applications in increasing financial inclusion in South Africa. The researchers performed a large-scale survey in both urban and rural areas, assessing adoption rates as well as socioeconomic factors impacting the use of mobile banking services. The findings demonstrated a positive relationship between mobile banking app accessibility and enhanced financial inclusion, particularly among previously underserved populations. The study did, however, identify problems such as digital literacy limitations and connectivity issues that hampered the full realisation of the potential advantages.

In a separate study, Govender and Dlamini (2021) investigated the influence of blockchain technology on financial inclusion in South Africa. The study investigated how blockchain, with its decentralised and secure structure, could deliver financial services to people who were previously excluded from traditional banking institutions. The report recognised blockchain's potential to establish transparent and accessible financial systems but also recognised the need for regulatory frameworks to safeguard consumers and limit potential risk.

These studies demonstrate the complexities of disruptive technologies in the South African financial inclusion scene. While mobile banking applications show promise in terms of broadening access, issues of equity and digital literacy persist. Furthermore,

blockchain technology has the potential to create equitable financial institutions, but it must be carefully regulated to ensure responsible usage.

From the literature, the South African environment presents obstacles and potential for the use of disruptive technologies to promote financial inclusion. The studies addressed lay the groundwork for additional investigation and analysis, directing current research in identifying gaps, refining methodology, and developing recommendations for the optimal integration of disruptive technologies in the South African financial sector. The empirical evidence is a crucial resource for understanding the real-world consequences of the proposed study and refining theoretical frameworks.

2.3.1 The Global Partnerships for Financial Inclusion

G20 was created in 2010 by the Group of Twenty (G20) to coordinate and carry out the Financial Inclusion Action Plan (FIAP). At the Brisbane 2014 G20 Leaders' Summit, the FIAP was amended. The FIAP recognises the importance of Fintech and promises to put the G20 Principles for Innovative Financial Inclusion into action under a shared goal of universal access (BIS and WB, 2016). The COVID-19 outbreak has increased the need for Fintech services by reducing in-person access to banks and other financial institutions, as well as a desire to minimize person-to-person relationships (Morgan, 2022).

According to Morgan (2022), financial technologies may be broken into specific categories of services being delivered. The services are aimed at certain customer needs such as payments and settlements, lending and borrowing, insurance as well as investments.

Payments and settlements may be seen as a means of simplifying the users' experience by allowing them to process transactions instantaneously without the need for physical cash. In a study done in India by Fatima & Ahmad (2019), an ideal cashless economy is one where all transactions are carried out electronically or by using cards and there is very little use of actual money in circulation. India conducts far too many transactions in cash and is known to be one of the highest in the world, at 12.42 percent in 2014, compared to 9.47 percent in China and 4 percent in Brazil, which is the ratio of cash to gross domestic product. Additionally, there are significantly

more currency notes in use than in other developed nations. In comparison to the United States, which had 34.5 billion currency notes in circulation, India had 76.47 billion. In his 2016 budget speech, India's current finance minister discussed the goal of creating a society where there is less need for cash (Fatima & Ahmad, 2019).

2.3.2 Deterrents in Financial Inclusion

According to Ezzahid & Elouaourti (2021), eight deterrents will need to be analysed and broken into mutually exclusive and comprehensively exhaustive segments to understand financial Inclusion. These eight include access (remoteness), high-cost challenges, lack of documentation required to transact, no trust for the banking systems, parents already have an account, no current need for any additional products like financial services, no money, and for religious reasons.

These deterrents once understood provide us with a starting point to establish the correlation between the deterrents and market segments. For example, in the study conducted by Ezzahid & Elouaourti (2021) looking at the Moroccan market, it was understood that age plays a part in religious reasons for not opening a bank account. Furthermore, the study confirms that gender shows that a woman’s reasons for not opening an account in Morocco include a lack of money and no current need for financial services (Ezzahid & Elouaourti, 2021).

This paper aims to understand social financial competence, the lack of knowledge about financial services and products, low levels of literacy, particularly financial literacy, and social isolation. These are investigated to understand if they are the main obstacles from the demand side. Is there much effort made to produce financial products that are fit for the needs of the poor, and are the many generic financial goods suitable for them? Is there a perception of cold and callous treatment of bank consumers and does this have a big impact on the lack of demand for financial services? Is there a perception of exorbitant and frequently opaque fees, in addition to onerous terms and conditions associated with the financial products, and do these perceptions also reduce demand?

2.3.3 Governance

Bureaucratic governance has proven to be a deterrent to financial Inclusion based on its requirements for documentation in KYC and FICA processes. People are reluctant to spend time and effort in administrative activities and would much rather continue with the status quo. In addition, several participants of this study have highlighted the lack of available documentation that members of the public are experiencing such as proof of residence for rural area participants in South Africa.

According to a study by Akudugu (2013), the likelihood of participation in the official financial market was shown to be inversely correlated with paperwork in Ghana. At 1%, it is statistically significant, and this implies that those unkeen to engage in the required paperwork have a lower likelihood of participating in Ghana's official financial system. As a result, an adult who lacks the necessary documentation has a 0.14 percent lower chance of being included in the formal financial market than an adult who does (Akudugu, 2013).

Connolly et al., (2011) describe financial exclusion as a situation where individuals lack access to appropriate and affordable financial products and services. Sain et al., (2016) highlight that for a financial system to be considered good, it should serve a vital purpose, offering savings, credit, payment, and risk management products to people who have diverse needs.

Financially disadvantaged groups or people can benefit from financial systems that provide a wide range of products and services with no price barriers to their use. In the absence of inclusive financial institutions, these individuals rely on their modest resources to fund their education and business (Simpson & Buckland, 2009). Similarly, tiny businesses rely on little revenue to seek enticing growth possibilities. With this self-reliance due to limited access to financial products and services, persistent income disparity grows, slowing economic development (Simpson & Buckland 2009).

Beck & Dermiguc-Kunt (2008) mention that financial exclusion can also be due to faith-based or religiously driven laws governing individuals from current financial systems, as is the case with Muslims who voluntarily eliminate themselves from the financial products and services that some can afford. For Muslims, Islamic-compliant products are those that comply with the principles of Islamic Law, known as Shariah. Shariah prohibits any form of financing in payment or receipt of interest (Kovács et al., 2020).

2.3.4 Supply and Demand

Other factors that contribute to financial exclusion as mentioned by Beck & Dermiguc-Kunt (2008) are societal, supply and demand. With the liberalisation of financial markets, more sophisticated, complex products on offer are available to those considered wealthy, while increasing the access gap for the lower income individuals. Technological advancements also contribute to financial exclusion in the transformation from traditional to modern banking forms especially for the older generation Beck & Dermiguc-Kunt (2008).

Supply factors contributing to financial exclusion can be summed up as access based on geographical or physical barriers of the disadvantaged, conditional exclusion such as historical checks, minimum deposit terms, and low-income levels creating high risk and uncredible persona (Howell & Wilson, 2005) as well as other identity requirements hindering the process to accessing bank accounts. Price-based exclusions in the form of bank charges applied to low-income earners cause deterrence due to affordability. Demand factors refer to the cultural and psychological perceptions individuals have about banking systems and financial institutions due to a lack of knowledge, resulting in mistrust of the system (Kovács et al., 2020).

Anderloni et al., (2006) argue that marketing strategies employed by financial institutions are catered towards increasing demand from affluent individuals, resulting in alienation and exclusion of the lower income groups.

2.3.5 Religious Reasons

According to Allen et al. (2012), a research working paper issued by the World Bank in December 2012 revealed that 5% of respondents from 123 countries did not have official financial institution accounts owing to religious views. It is reasonable to expect that in countries where Islamic finance does not exist, a certain segment of the Muslim population will refuse to use conventional banking facilities to avoid dealing with usury or interest (Riba) due to Islamic principles, and thus self-exclude from the existing financial products and systems on offer (Kovács et al., 2020).

Like conventional banking, Islamic finance features banks, capital markets, fund managers, investment firms, and insurance companies providing access to home and vehicle financing, education, and small business financing tailoring the type of financial

product on offer to Muslim and non-Muslim categories of individuals according to Islamic principles (Kovács et al., 2020). Credit facilities are based on the application of “benevolent lending” meaning a loan without the interest charges.

The phenomenon of Islamic finance principles as mentioned by Sain, et al. (2016) is proving to be an alternative and viable solution for conventional finance to contribute to greater financial inclusion.

With an emphasis on asset-backed financing and risk-sharing features, it could provide support for micro, small, and medium-sized enterprises (Kovács et al., 2020). These risk-sharing features and prohibition of speculation suggest that Islamic finance may, in principle, prove less systemic risk than conventional finance and may be further explored to support the practical implementations for such (Kovács et al., 2020). To do this effectively, focus and emphasis need to be drawn towards improving regulatory and financial infrastructures to promote the enablement of these financial principles (Kovács et al., 2020).

2.4 Financial Literacy to Help Achieve Financial Inclusion

According to a 2015 poll conducted by Standard & Poor's finlit, just 33% of people globally are financially literate, implying that 77% of adults worldwide may struggle with financial management. Financial literacy refers to financial skills, knowledge, and practices, as well as their application to financial well-being (Birea et al., 2019).

According to research, financial literacy adds 32% to financial inclusion and 33% to financial training, highlighting its significance (Birea et al. 2019). Growing financial literacy is critical due to the abundance of financial products accessible today, needing financial intelligence for successful asset management (Mosley and Hulme, 1998).

Increased financial literacy leads to increased use of financial institutions, which results in more economic transactions and growth (Prete, 2013; Mosley & Hulme, 1998). Education, income, and job type all have an impact on financial literacy levels, with more education and income associated with greater financial literacy (Prete, 2013; James, 2007).

Financial inclusion strives to increase access to banking services, particularly for low-income and rural areas, using a variety of initiatives, including improved savings programs and financial literacy surveys (Hendro et al., 2014).

Financial literacy has a direct influence on financial inclusion, and financial training can mitigate this link, emphasizing the need to increase financial literacy for better inclusion (Birea et al., 2019).

Research on the influence of financial literacy on economic decision-making might help improve efforts to promote entrepreneurship and increase access to financial products (Abubakar, 2015). Governments and development partners play critical roles in promoting financial literacy and entrepreneurship through supportive policies and intervention programs (Abubakar, 2015).

Challenges in accessing financing and markets, as well as governmental support and entrepreneurial culture, all influence African entrepreneurial development and highlight the necessity of financial literacy. As financial literacy grows, technological advances are critical to equitable financial systems and economic growth (Salampasis et al., 2018). Financial exclusion is inextricably tied to social reliance, emphasizing the necessity for novel approaches, such as Fintech, to solve financial inclusion concerns (Salampasis et al., 2018).

2.5 Identification of gaps in current literature

This paper intends to address the gaps identified by ensuring the Inclusion objectives and methods to achieve the objectives align with the intended benefits. General financial principles as an example do contain certain elements which are prohibitive towards Inclusion or may be detrimental to the sustainable long-term benefits of financial Inclusion.

In addition, the use of technology will promote Inclusion as a means of wide-spread access and availability and simplification of literacy. However, these technology solutions are dependent on the macro environment and infrastructure whilst the principles of finance must be clearly defined in the build and roll-out of the technology solutions.

The systematic literature review above demonstrated the viability of the current topic being a current question that authors and scholars are asking themselves. The challenge of Financial Inclusion should be addressed from a macro-environmental view. Further to this analysis, gaps have been identified in existing theory.

Both financial technology and financial literacy have partial effects on financial inclusion. Applied as individual solutions will have some effect. However, as displayed in the study by Lubis et al., (2019), this further demonstrates that these two elements of technology and literacy should be applied simultaneously for maximum effect. The study does contain a gap by not researching the principles of finance and how these are prohibitive or promotive in financial Inclusion which this paper will help add to the research in this area.

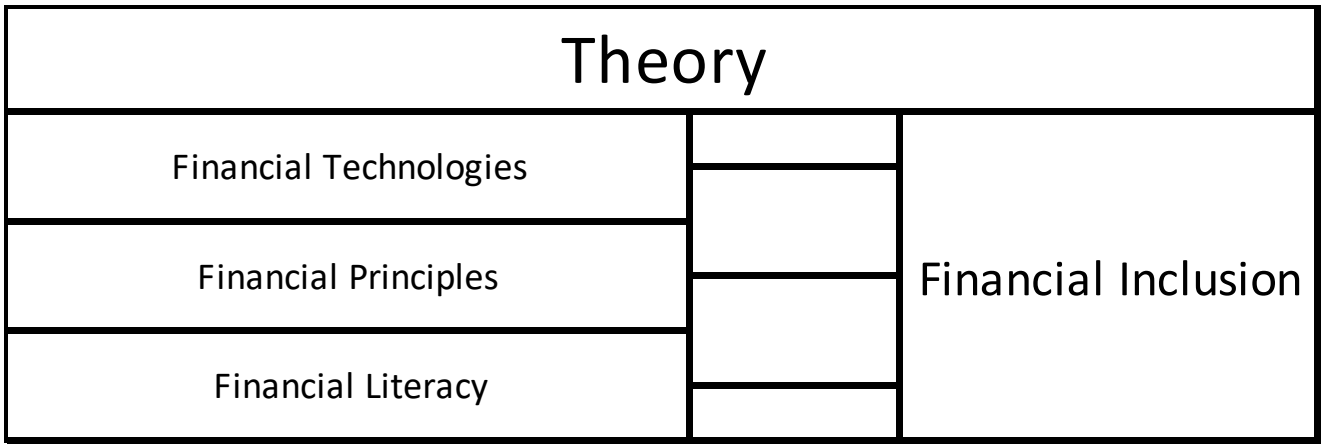

Figure 1.

Theoretical Framework for Financial Inclusion.

Note: Created by the author (Aziz, 2023).

The effect of financial inclusion has significant impacts on health, life expectancy rates, and education. For this reason, financial inclusion is a key priority in resolving other elements of the current challenges experienced by emerging economies (Roser, 2013).

2.6 Conceptual framework

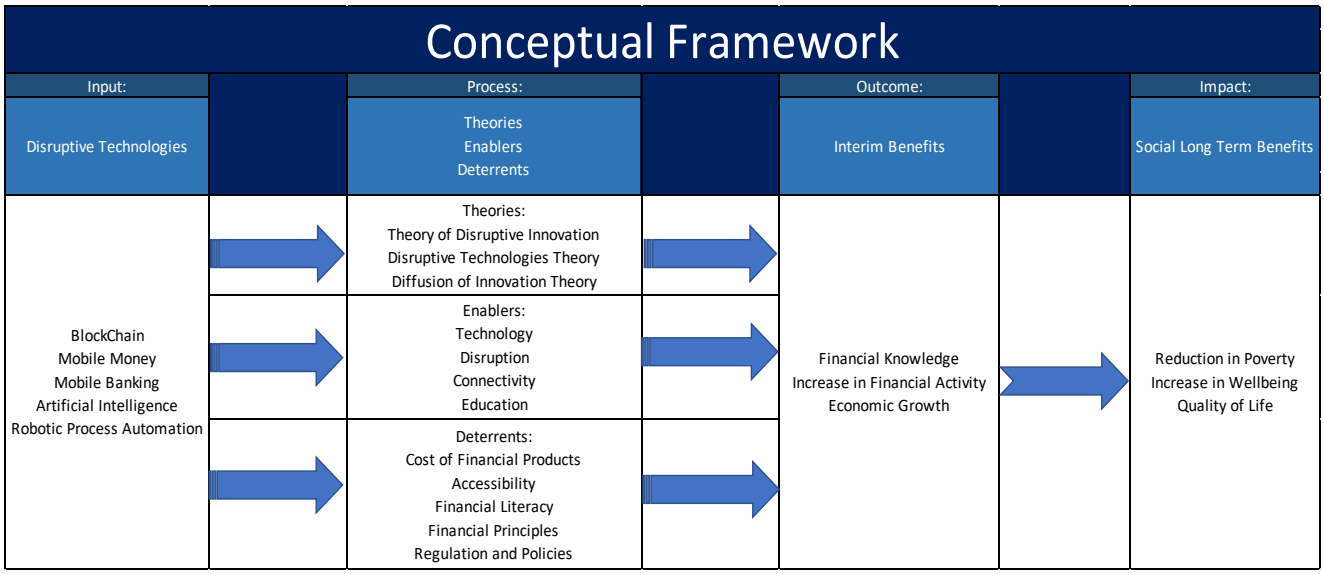

Figure 2.

Conceptual Framework for Financial Inclusion

Note: Created by the author (Aziz, 2023).

The idea of disruptive innovation investigates the five categories and how they relate to the issue statement. This study aims to determine if deterrents result from a lack of educational access or other circumstances, whereas facilitators are predicted to lead to desirable outcomes.

The conceptual framework explains the study's inputs, processes, outputs/outcomes, and effect parts, all of which contribute to the overall goal of financial inclusion. It stresses the interconnectedness of these factors to gain a thorough picture of the issue statement and potential recommendations from disruptors and enablers based on previous research.

This study investigates the explored disruptive technologies to better understand proposed methods and accomplishments in reaching financial inclusion goals.

The theoretical frameworks provided in Section 2.2 of this chapter provide more information on the relationship between current theories and financial inclusion, while Enablers and Deterrents reflect the findings of the literature study.

The outcomes and implications of using technology to develop processes show significant advantages, which agree with the study's understanding of the issue statement.

Finally, this conceptual framework guides the selection of theories, literature evaluation, methodology, and sample, ensuring that stakeholders impacted and influenced by financial inclusion are adequately represented.

2.6.1 Input factors: The purpose of this literature review is to illustrate that standalone initiatives to promote financial inclusion are ineffective. The conceptual framework suggests an integrated strategy that includes Disruptive Technologies, Financial Literacy, and a review of Financial Principles.

2.6.2 Process factors: Integrating these features means creating technology for quick payments, AI-powered credit scoring, and Blockchain-enabled access to investment possibilities. Literacy promotion should be promoted via a mobile interface, and financial principles should be evaluated to eliminate debt processes that promote negative behaviours.

2.6.3 Output factors: The conceptual framework strives to give unbanked persons the appropriate literacy levels while also promoting an inclusive economy within regulatory bounds.

2.6.4 input loop: Continuous input from mobile surveys and kiosks guarantees that the structure and procedures perform properly.

2.6.5 Enabling factors: The regulatory environment and collaboration with data and mobile service providers are critical facilitators. Involving Fintech and Edutech teams in regulatory talks allows for faster identification and implementation of relevant actions.

2.6.6 Mediating variables: Mobilizing social networks through go-to-market methods and community involvement platforms increases acceptance while also promoting education and literacy about the benefits of suggested solutions.

2.7 Chapter 2 Conclusion

Providing services that are accessible, easy to use, and cheaper are enablers of financial inclusion, however, simply addressing these points has not been effective in the past as evident in the statistics highlighted earlier in this literature review.

A key takeaway is the integration of the key enabling elements of disruptive technologies, financial literacy, and financial principles. With the integration of these elements and a conceptual roadmap, the gap in the body of knowledge and stakeholders' feasibility in the process will certainly benefit from this research and its findings.

Chapter 3 – Research Design and Methodology

3.1 Introduction

This study aimed to investigate the use of disruptive technologies to promote financial Inclusion in South Africa. This research seeks to align previous research on this topic to determine how these theories have promoted financial Inclusion or exclusivity for that matter. In achieving the objective of the study, the research draws on statistical results which have been justifiable through qualitative measures. The research design that has been adopted is exploratory.

3.2 Research Philosophy

The research theory that underpins this study recognises the economic premise of market forces while emphasizing the relevance of resource availability for human life. However, this notion is challenged when self-preservation turns into greed, resulting in inequities in wealth distribution. Qualitative data collection gives insights into societal norms and defines financial inclusion boundaries.

Interpretivism was used to examine qualitative data, allowing for a better understanding of the ideas and reasons that drive financial exclusion. This method enabled more nuanced interpretation across socioeconomic categories.

Positivism promotes scientific inquiry but may miss social issues, whereas critical realism recognises incorrect data and is better suited to quantitative study.

Pragmatism promotes evolution but ignores the importance of financial inclusion difficulties, which cannot be passively monitored until self-correction happens.

Gemma (2018) describes positivism, interpretivism, and critical theory as three well-known philosophical research paradigms that guide research methodology and analysis. The capacity to justify one's decision to accept or reject a philosophy should be part of the research basis. As a result, understanding these paradigms, their history, and guiding principles is critical in determining which one would best serve the design, methodology, and analysis of research. Ryan, G. (2018).

3.3 Research Approach

An inductive approach has been adopted to analyse the data for this study. According to Thomas (2006) Inductive approaches are used to (a) condense raw textual data into a succinct, summary format; (b) establish clear links between the evaluation or research objectives and the summary findings derived from the raw data; and (c) develop a framework of the underlying structure of experiences or processes that are evident in the raw data, Thomas, D. R. (2006). This has allowed the research to draw on universal explanations for the phenomena of financial inclusion through compilations of qualitative data which is drilled down until consistency and elimination of hypothetical conclusions. Here we started with a rough definition of the problem and continued to a hypothetical explanation and final examination. Through inductive measures, the study excluded instances of insistency and focused on the hypothesis that carries the merit of the study. Ultimately inductive reasoning facilitated the process.

3.4 Research Strategy

Interviews were the key component of this research strategy using qualitative data collection processes. In-depth interviews were facilitated through sample populations whilst the interview questions were prescribed in an open-ended manner to ensure that the study allowed the interviewees to provide details that may not have been considered during the topic identification process.

3.5 Choice of Research Method

The study has taken a qualitative nature. Key to note is that this phenomenon exists due to many layers of causes, a qualitative study will produce meaningful data that may conclude attributing reasons as to why the phenomenon exists. This process specifically for the topic of financial inclusion provides a natural setting and element to the research that quantitative will not provide. A qualitative study ensured that observing and interacting with participants of the research was captured accordingly with the greatest value derived from the study. This study was prescribed as a mono approach.

3.6 Time horizon

In this cross-sectional study, the research on financial Inclusion was carried out over a short period to understand the phenomenon of financial inclusion through interviews of both the impacted stakeholders and stakeholders with the ability to achieve success in the objective.

3.7 Population

According to *Worlddata* (2021), the total population of South Africa consists of 59.39 million people. Research on financial inclusion requires the population to be broken into affected parties, such as the 23.5% unbanked in the South African region (Oxford Business Group, 2022). On a larger scale, only 54 percent of adults in developing countries have a bank account (Demuric-Kunt et al., 2015). On the other end of the spectrum, the focus was also on organisations using financial technology in the region that creates financial inclusion which includes entities such as mobile money and banks with the necessary offerings for the unbanked. NPOs also formed part of the solution and population with a specific mandate to ensure the distribution of wealth across the financially excluded population.

The population was made up of 14 stakeholders in roles such as CIOs, CEOs, Platform Owners, Executives Senior Managers from the fintech industries, and Community Leaders of communities that are affected by the lack of information on the subject.

3.8 Sampling Method, Size, and Unit of Analysis

Purposive sampling was used to select the sample. According to Raj et al., (2015), “purposive sampling offers a variety of sample strategies that can be applied to such qualitative research designs, including homogenous sampling, critical case sampling, expert sampling, and others, this is one of the main advantages of purposive sampling.” The sample was made up of 14 individuals made up of CIOs, CEOs, Platform Owners, Executives, and Senior Managers from fintech, NPOs, and major institutions. These individuals have worked on the topic of financial inclusion and the interviews were performed with the intent to understand their experiences, challenges, and lessons learned on the topic. Furthermore, community leaders of the financially excluded population were interviewed to understand the challenges faced with the current financial principles and offerings and how these have proven to be a deterrent in the past. The unit of analysis was individual participants in the research.

3.9 Research Instrument

The instrument used for this study was a semi-structured interview guide. The interview guide contained open-ended questions to ensure that the feedback received allowed stakeholders to share the relevant information without the interview questions guiding them too much in a specific direction. Questions in the interview guide were informed by the research questions.

3.10 Data collection process

Most interviews were conducted online in a teleconference setting with some face-to-face and observations made of anything worth noting, interviews were recorded to ensure natural feedback is achieved. Telephonic interviews were used for cases where in-person interviews were not feasible. The interviews were audio recorded and transcribed in readiness for analysis.

3.11 Data analysis

The thematic method was used for this data analysis process from the interview data that was collected. The thematic process allowed the recording and examination of

patterns in the form of codes and themes within the data. This was facilitated through the analysis of expressive explanations from the feedback from stakeholders of financial Inclusion.

The analysis for this study followed the methodology as prescribed by Castleberry, A. & Nolen, A. (2018). This method of analysis includes five steps that led to the identification of themes, in line with the method adopted. When using these five steps the data was prepared for complete analysis, step two required familiarisation of the data, followed by the coding and sorting steps, and thereafter the study generated its themes to conclude.

3.12 Ethical considerations

As highlighted during the justification of the study and based on the lack of data identified during the literature review, the research has certainly added value to the proceeding. All participants were informed of the purpose of the study to collect data and information and derive findings to add to bodies of knowledge on the topic.

Furthermore, participants were informed that anonymity and confidentiality could not be guaranteed, however, the participant's personal information was omitted from the study. Participants were allowed to decline involvement as a few had opted to do so. In addition, participants were informed that they could withdraw their involvement at any time should they choose to do so.

3.13 Limitations

One of the main limitations was the geographical presence of the participants, even though most of the interviews were conducted online, the was a challenge in reaching participants who were not from the metropolitan area.

The intent to facilitate most of the interviews in person also posed a limitation due to the season during which the research was conducted, as most of the interviews were done between October to January, and participants preferred online sessions rather than in-person meetings.

Finally, the plan had been to conclude all interviews by the end of November 2023. However, as participants got busy on projects during the final push of the year, they opted to carry out their interviews into December and January.

Chapter 4: Presentation and Discussion of Findings

4.1 Participant Description:

Fourteen participants were interviewed in this research, including Chief Executive Officers, Chief Information and Technology Officers, Executive Leaders, and Senior Managers across various companies in industries such as Fintech, Financial Services, Technology, Telecommunications, Non-Governmental Organisations, Transportation, and Real Estate. Participant levels of experience ranged from start-up phase experience to 40 years of industry knowledge with an average experience of 20 years across all participants.

The following section has been arranged by research question for ease of reference, where the findings will be presented followed by evidence and discussions against the relevant themes in the format of a thematic analysis.

Research question #1: "What disruptive technologies can be used to promote financial inclusivity in South Africa?"

The research question was meant to understand the role of technology in fostering financial inclusion in South Africa. The goal was to discuss disruptive technologies that might help improve financial inclusion in South Africa.

With the help of this research question, the study aims to provide insights into how technology can be used to overcome the challenges of financial exclusion in South Africa, as well as recommendations for policymakers, financial institutions, and other stakeholders to promote financial inclusion in the country. By responding to this research issue, the study seeks to add to the greater conversation on the role of technology in increasing financial inclusion in emerging economies.

In analysing the responses to this research question, the study developed twenty-five codes and fifteen code groups from which three themes emerged.

The themes established in this research question are listed as follows:

- Disruptive Technologies
- Navigating Disruptive Technologies
- Navigating Mobile Money Adoption

Whilst these themes contain overlapping characteristics, they each contribute to showing a holistic view as described by participants and understanding their focus areas for consideration when discussing the impact of certain technologies and how these technologies could be used in the context of South Africa to promote financial inclusion.

It is important to note that not all study participants were technology experts, and hence their input was key in understanding the route to adoption of disruptive technologies even for non-technical members of society.

Theme #1. Disruptive Technologies:

This wide issue of disruptive technologies examines how the topic changes attitudes and can revolutionise society while promoting innovation. It delves into the varied world of disruptive technologies, giving several viewpoints on their influence, which ranges from disrupting existing systems to enabling non-traditional routes. It examines the societal effect and transformation caused by modern technologies, which challenge established standards and seek to streamline transactions. It further discusses the inventive character of disruptive technologies, their transformational significance in numerous industries, and the importance of adaptability.

P9 described disruptive technologies as developments that challenge existing conventions in a statement; *"a new and emerging technology that challenges the established way of doing things"* like the *"shift from fax machines to email"*. P9 stated that disruptive technologies are the *"disruptive force that has the power to challenge and reshape existing norms".*

Disruptions are *"Innovations that revolutionise traditional industries"* as explained by P9*,* whilst P6 also highlighted the *"transformative power of disruptive technologies"*.

Christensen (1995) advocates for disruption and the positive impact it has on traditional norms, this aligns with Participants 9 and 6 responses that discuss how disruption can both revolutionise, reshape, and transform. Christensen and Bower (1995) discussed a second theory and how technology may be a disruptor which aligns

with the concepts discussed by the participants in this theme linking technologies to being a disruptive force.

Theme #2. Navigating Disruptive Technologies:

The theme discusses overcoming challenges and understanding financial sensitivity, whilst bridging the literacy gap. It highlights the many problems connected with the adoption of disruptive technologies, such as infrastructure, financial hurdles, trust, and reluctance to change. It also examines the economic sensitivity of disruptive technology adoption, with a focus on cost concerns, financial constraints, and the impact on employment. Finally, it looks at the importance of education in managing disruptive technologies, closing literacy gaps, and fostering informed decision-making.

Some codes identified during the analysis of this theme were elements that discussed infrastructure and access-related barriers, alternative solutions, trust, confidence, competing technologies, and the ability of technology to expand adoption through meeting people where they are.

Participants discussed infrastructural concerns such as reliable energy, internet connection, inexpensive gadgets, as well as user-friendly operating systems. P11 mentioned the *"issue of access to infrastructure" and "stable electrical power"* were some of the challenges in navigating disruptive technologies whilst P13 highlighted *"affordable and high-speed internet access"* along with *"operating systems that are user-friendly"* could be some solutions to the challenges as mentioned by P6.

Interviews discussed the plethora of competing technologies and recommended meeting people where they are to encourage adoption with P5 raising the point of *"competing technologies"* and the Participant further highlighted the importance to technology companies to *"meet people where they are"* to ensure adoption.

The literature by Nkosi et al., (2019) does emphasise the significance of access to technology and internet connectivity in developing financial inclusion, and the consideration of infrastructure concerns corresponds with that. In addition, the idea of competing technologies and the significance of meeting people where they are coincides with the diffusion of innovation theory relating to the need to understand local settings and preferences in technology adoption.

Theme #3. Navigating Mobile Money Adoption:

This theme delves into unpacking trust dynamics from a comparative perspective. It continues to highlight the delayed adoption of mobile money in South Africa by diving into the strength of the existing banking system, focusing on the heritage and established infrastructure of major banks. It also discusses the trust gap and psychological obstacles as important variables influencing mobile money adoption, such as skepticism and fears about potential losses. This section offers a comparative perspective by contrasting South Africa with other African countries, emphasising disparities in banking systems, trust levels, and economic reliance on cash.

During the interviews, it was established from codes that mention a strong banking system and legacy, trust deficits and psychological barriers, educational and visionary factors, comparisons to other African countries, economic disparities, and existing banking infrastructure.

P10 indicated that the *"banking system in our country is quite robust"* mentioning the *"top four banks, including their mobile apps"* and highlighting the *"demand for disruptive financial technologies has been relatively low".* The participant attributed South Africa's slow adoption of mobile money to the sturdy and resilient character of the existing banking system, with a concentration on heritage and established infrastructure.

In addition, these quotes from interviews within this theme discuss the importance of education, creative entrepreneurs, and enthusiasm for the success of mobile money efforts, emphasising a real desire to effect significant change. P2 said *"education system has played a substantial role"* and P7 believed the adoption of mobile money in Africa was due to the leadership describing them as *"beyond the typical entrepreneur"*.

The literature by Beck & Dermiguc-Kunt (2008) in this study emphasises the financial infrastructure as being quite complex and sophisticated, which correlates with the topic of the robustness of the existing banking system. The comparison with other African nations is consistent with the study by Abubakar (2015) of contextual variables impacting financial inclusion, such as disparities in banking systems and the economic relevance of cash-based transactions. Finally, the debate on the significance of education and visionary founders is consistent with the literature's emphasis on the

value of education and leadership in promoting innovation and transformation as correlated by the study performed by Birea et al., (2019).

Research question #2: "What are the factors that influence the adoption of disruptive technologies in South Africa?"

Based on the understanding and the importance placed on technology from the previous research section, this question aligns with the uses and adoption of disruptive technologies in South Africa. More specifically, this research question seeks an understanding of the factors that either impede or promote technology adoption. By understanding the factors that influence the adoption of disruptive technologies, this section aims to provide policymakers and stakeholders in the industry with viable data and information that will assist in the uptake of beneficial technology stacks.

In analysing the responses to this research question, the study developed twenty-five codes and fifteen code groups from which three themes emerged.

The themes established in this research question are listed as follows:

- Building Inclusive Financial Futures
- Fostering Inclusive Tech Adoption
- Inclusive Technology Access

As noted, the research question and individual interview questions discussed the current challenges and how these impact the adoption of technology. However, as seen in the themes derived from participants' responses, participants were more focused on the future growth aspect and how technology may be built in a more fit-for-purpose manner moving forward.

Whilst not all participants were familiar with technology stacks and their components, they had responses on the challenges relating to technology adoption and how these can be overcome from an end-user perspective.

Theme #1. Building Inclusive Financial Futures:

To build an inclusive financial future, this theme analysed navigating challenges and fostering collaboration. The theme advocates for thorough rules, highlights the value of education in comprehending disruptive technology, and encourages collaboration

between regulators and companies, efficient processes, and government assistance to improve financial inclusion.

The codes identified during this thematic analysis include regulatory challenges and a lack of education, educational gaps, the digital divide, rigid lending practices, interest-free loans, challenges faced by unbanked populations, streamlined processes, and collaboration with regulators.

When discussing challenges, the theme references the conflict between financial principles and the adoption of inclusive solutions. This is further mentioned by P9 as *"there seems to be a clash between financial principles and the economic philosophy which impacts new technology and its uses, almost forcing new technology to maintain the existing divide, only more efficiently."* P14 in a similar discussion highlights existing financial principles that are deterrents towards inclusivity and mentions the development of technology adopting existing principles may lose its value to the market, and hence promotes designing new solutions with reviewed concepts, *"In Shariah finance, the concept of loaning with an interest (riba) is forbidden, as it can lead to exploitation"* and hence promotes the practice of *"implementing partnership based finance which would be attractive to those with the funds as there is a reward for their capital."*

In addition, this theme explores the educational gaps and the digital divide which emphasises the lack of strong technology policies in schools, the digital gap in rural regions, and the importance for legislators to understand the potential benefits of a technology-driven economy. P2 mentioned the need for enhanced technology policies in school *"absence of robust policies regarding technology in schools"* whilst citing this as being one of the causes of the *"digital divide that is particularly stark in these rural areas*" and finally pointing out that their perspective leans towards a concern that *"government hasn't fully embraced the transformative power of technology"*.

The discussion of regulatory concerns is consistent with the literature by Sain et al., (2016) highlighting the need for clear legislation. The emphasis on education aligns with the literature written by Prete (2013) and James (2007). Discussion on the lack of strong technology policy in schools and the digital divide correlates with studies on inequality in technology access and the necessity of technology education as highlighted by Hendro et al., (2014). Finally, in certain research participant responses

to the discussion on the rigidity of traditional banking establishments resonate with literature on entrepreneurship by Abubakar (2015) highlighting the problems of acquiring credit for unorthodox company ideas.

Theme #2. Fostering Inclusive Tech Adoption:

This theme discusses partnerships, demystification, and skill development whilst advocating for inclusive technology adoption through collaboration partnerships, and regulatory involvement, with an emphasis on financial inclusion. It emphasizes the need to demystify technological expenses, making technology more accessible, and bridging the gap between people and technology. Whilst looking at a skills development approach, social entrepreneurship, internships, and the possibility of collaborating with large enterprises or digital companies to improve financial inclusion.

The codes as identified during the analyses include partnerships and collaborations for technology adoption, corporate lending and the evolution of telecommunications companies, demystifying technology costs and bridging the gap, integration, and commercial demands in fintech, skill development, and corporate internship programs.

Participant 1 made several recommendations relating to partnerships saying *"Consider partnering with a company like ours"* and collaborations in technology adoption through *"collaborative effort and which would contribute to building a foundation of trust"* and how organisations and technology-focused companies should partner to create custodial solutions and infrastructure, with a focus on collaboration and trust-building in mentioning *"establishing similar infrastructures could greatly benefit the local ecosystem"*.

P2 makes mention of the current perceptions of technology and refers to understanding technology costs in highlighting the *"perceived mystery around the expenses associated with accessing technology"* and *"breaking down this perceived mystery and bridging the gap"* through a process of *"intellectual demystification of technology costs"*.

In reviewing the interview questions against the literature review, this study found relationships between businesses and technology-focused enterprises which correlate with literature on collaborative efforts for technology development and uptake as highlighted in the diffusion of innovation theory. Furthermore, the discussion on demystifying technology prices and bridging the gap between people and technology

connects to Hendro et al., (2014) emphasising the need to make technology accessible and understood. Skills development and corporate internship programs are consistent with the research on the importance of education and training in encouraging literacy and inclusiveness as highlighted by Birea et al., (2019). Corporations acting as lenders and the transformation of telecommunications firms into fintech organisations connects to the theory of disruptive innovation exploring convergence, which relates to the role of corporations in financial services.

Theme #3. Inclusive Technology Access:

This theme promotes equality via education and innovation and discusses the need to give equitable opportunities, particularly through educational initiatives, and lowering the cost of technology to encourage wider involvement. It advocates for early technological education, integrating children in the educational process, and utilising gamification, particularly in line with the natural interests of the younger generation. It also mentions the use of visual material and e-learning programs, particularly video tutorials, in improving technological literacy, particularly in schools and distant areas.

Some of the codes that we identified during this thematic analysis included equal opportunities and educational programs, tripartite relationships for technology access, gamification and early education, government relinquishing control and digital literacy, and visual content and e-learning for technology literacy.

P10 in the interview process discussed equal opportunity and educational programs in stating we should *"leverage technology to provide educational programs in rural areas"* which would mean *"focus should be on equal opportunities".* In addition, the innovative solutions referenced *"self-guided learning centres across the country".*

Further discussions referenced tripartite partnerships for technology access which promoted the need to lower technological costs, boosting access, and building tripartite connections between the private sector, government, and intermediaries to encourage widespread involvement. P4 mentioned the *"cost of technology must decrease"* through focused groups and *"tripartite relationships involving the private sector, government, and intermediaries"* ultimately *"establishing a public-private partnership (PPP) type relationship".*

Participants 10 greatly support the use of technology to spread educational programs in remote locations, which is consistent with the literature by Hendro et al., (2014)

which places an emphasis on guaranteeing equitable access to education. Furthermore, the emphasis on developing collaboration among the corporate sector, government bodies, and intermediaries aligns with the G20 (2010) that emphasised the value of multi-stakeholder partnerships in improving technology accessibility. Furthermore, the argument for introducing technology education at a young age and adding gamification tactics is consistent with the theory of diffusion of innovation arguing for novel approaches designed to effectively engage.

Research question #3: "What policies and strategies can be put in place to promote the use of disruptive technologies for financial inclusivity in South Africa?"

The purpose of this research question in the study was to establish an understanding of participants' perspectives about the policies and strategies South Africa has put in place that promote financial inclusion through technology. The understanding of this study is aimed to provide future policymakers and strategists with insight and data into the topic and allow for more informed decisions to be made.

In analysing the responses to this research question, the study developed twenty-five codes and fifteen code groups from which three themes emerged.

The themes established in this research question are listed as follows:

- Strategic Policy Framework
- Navigating Economic Landscapes
- Government's Role in Fostering Innovation and Modernisation

Theme #1. Strategic Policy Framework:

Research participants provided specific responses that led to discussions around strategic policy frameworks for promoting technology and inclusion. Their perspectives and thoughts gave the relevance of topics in education policy, establishing technology as a foundation and arguing for policies that encourage the study of vital 21st-century subjects. They also explored the difficulty of developing policies that cater to various socioeconomic strata and levels of society, highlighting the need to strike a balance that satisfies the population's diverse requirements.

Codes identified during this thematic analysis include an emphasis on a complex wealth gap, policy challenges, challenges for fintech, government control, and licensing issues.

Research P3 referenced complex wealth disparities and policy challenges. They explored the complexities of developing policies that appeal to South Africa's ultra-wealthy, middle-class, and economically disadvantaged populations. They highlighted the difficulties of implementing a one-size-fits-all strategy for different strata or levels of society. P3 discussed the need for *"crafting policies that cater to the super-wealthy"* and highlighted concerns around the country's strategy *"to have a one-size-fits-all policy".* Furthermore, P12 mentions the *"difficulties for small informal businesses"* and their perception of a lack of policy that promotes financial inclusion.

Further discussions were held that covered regulatory challenges for fintech companies in South Africa, particularly those involving new technology solutions. P9 referenced making rules and regulations agile to accelerate the implementation of new solutions. P9 mentioned a *"prolonged timeframe for the implementation of policies"* and *"navigating through these processes"* do *"call for a more flexible approach in policy making".*

Exploring the complexities of developing inclusive policies that accept different socioeconomic origins is consistent with research by Salampasis et al., (2018), which emphasises the challenges of satisfying varied social requirements. In the context of South Africa's fintech sector, overcoming barriers and developing adaptable regulatory frameworks parallels Christensen's disruptive innovation theory which argues for adaptability to promote innovation.

Theme #2. Navigating Economic Landscapes:

This theme relates to navigating economic landscapes and transportation challenges. This examines how high interest rates, taxation, and a stringent environment affect entrepreneurs and technology companies, prompting them to create operations in more advantageous tax regimes. The theme also encourages legislation involvement and compliance inclusivity for SMEs and start-ups in the banking and fintech industries. It advocates for government participation to streamline procedures and increase accessibility. Finally, it highlights limits in transportation when certain bank

cards are required for top-ups, highlighting issues caused by discrepancies in recommendations across banks.

Some of the key codes mentioned the effect of high interest rates and taxation on tech companies, compliance for SMEs and start-ups, challenges in the financial and fintech sectors, as well as transportation-related limitations imposed by various banks.

Research participants discussed the effect of high interest rates and taxation on companies and how high loan rates and taxation in South Africa have prompted many entrepreneurs to start digital businesses in more tax-friendly jurisdictions, therefore affecting financial inclusion. Research Participant 1 mentioned *"high-interest rates and taxation"* as a key challenge and the reason entrepreneurs chose to *"establish tech companies in more tax-friendly environments"* and highlighted specific instances where companies *"shifted their operations to the Isle of Man".*

The limitations imposed by different banks on transportation were emphasised as the constraints imposed by various banks in the field of transportation, as certain transport firms only accept top-ups with certain bank cards. P11 discussed the issues that arise because of banks' lack of consistent criteria. Research P11 mentioned instances where *"limitations were imposed by different banks"* resulting in the *"transport company only accepting top-ups using a specific bank card".*

Discussing how high interest rates and taxation influence entrepreneurs to establish businesses in more tax-friendly environments aligns with the literature by Abubakar (2015) highlighting the need for policymakers to be aware of business decision-making criteria.

Theme #3. Government's Role in Fostering Innovation and Modernisation:

Theme number four discusses the government's role in promoting innovation and modernisation as it highlights the government's role in supporting innovation by allowing technology to evolve and adopting long-term strategies. This further emphasises the importance of promoting rather than inhibiting innovation. It discusses inefficiencies in operations, advocating for contemporary technologies such as Adobe Sign to simplify and digitise operations. It advocates for strategic planning that aligns with global interests. While identifying obstacles and issues with earlier tactics, such as disproportionate emphasis on personal gain.

During the analysis of this theme, some of the codes identified were the government's role in fostering innovation, inefficiencies in processes and modern solutions, challenges, and issues in previous strategies.

Research P8 described the government's role in fostering innovation by requesting for the government to let technology evolve, emphasising the importance of long-term thinking and encouraging innovation. P8 mentioned that the *"government should allow technology to grow"* and that *"bold decisions are necessary",* as well as *"focus should be on fostering innovation".* P8 further calls on financial inclusion and systemic changes and examines the *"lack of effective financial inclusivity through technology"*, identifying hurdles in financial systems.

Advocating for the government to stimulate innovation is consistent with Lubis et al., (2019) on the importance of technological development. This is consistent with rising worries about the efficiency of present payment methods, which correlates with Fatima & Ahmad (2019) on financial system issues and the need for innovation. Furthermore, analysing the lack of successful financial inclusion through technology is consistent with Simpson & Buckland (2009) emphasising the necessity of overcoming obstacles in financial systems. This unified narrative emphasises the connection between stimulating innovation, strengthening financial institutions, and encouraging diversity in technology breakthroughs.

5. Chapter 5: Conclusion and Recommendations

5.1 Essence of the Study

This paper investigates the vital intersection of financial inclusion and disruptive technologies in South Africa. Recognizing the worldwide wealth disparity and financial

literacy issues, it investigates how formal financial systems exclude vulnerable communities. The research attempts to increase access to financial goods by emphasizing the transformational power of disruptive technologies such as mobile money and digital financial services. It emphasizes the relevance of laws and regulatory frameworks in promoting widespread access to digital media and multi-channel financial services. Furthermore, it urges for more study to better understand the impact of disruptive technologies on financial inclusion, while also fostering interdisciplinary collaboration.

Furthermore, the study intends to use disruptive technologies to accelerate financial inclusion in South Africa, influencing policy decisions and spurring innovation to create a more inclusive and sustainable financial environment.

5.2 Methodology

This qualitative study assesses the impact of disruptive technologies on financial inclusion in South Africa. It uses interpretivism to guide its inductive research procedures, which principally include in-depth interviews with 14 stakeholders. The purpose of these online interviews was to get insight into the dynamics of financial inclusion. Thematic analysis was used to uncover patterns and themes in qualitative data. Ethical issues were highlighted, including participant anonymity and informed consent.

5.3 Summary of Findings

Key findings underline the need for inclusive policies and regulatory frameworks for accelerating technology rollout. Economic considerations, such as high loan rates and taxation, influence financial access, but connecting technological aims with global goals can promote sustainable growth. Government assistance, talent transfer through international cooperation, and adaptable strategies are all crucial for long-term growth and development.

Furthermore, the research emphasizes the necessity of merging technological aspirations with global aims, such as the United Nations Sustainable Development Goals, to promote sustainable development and relieve socioeconomic challenges.

Participants emphasized the need to link technological achievements to global goals such as zero hunger, campaigning for policies to help achieve these goals, and adjusting to overcome challenges. Government support and strategic planning were highlighted as vital to fostering innovation, modernization, and operational efficiency.

Finally, the findings highlight the need for comprehensive legal frameworks, government assistance, and collaborative initiatives to promote financial inclusion and socioeconomic progress in South Africa.

5.4 Credibility and trustworthiness

To enhance reliability, validity, credibility and trustworthiness, the researcher triangulated by obtaining data from interviews as well as through document analysis. In addition, a peer debrief meeting was held with selected colleagues to get a sense of their read of the findings and the process undertaken. Feedback from these informal conversations helped ensure researcher bias was minimised. The participants were also given the opportunity to confirm the transcribed text of their interviews to enhance trustworthiness of the study.

5.5 Key Insights

Key insights highlight the need for a strategic policy framework that considers South Africa's diversified socioeconomic condition. Sustainable development, government support for innovation, and talent transfer are seen as essential drivers of inclusive growth. Embracing flexible and adaptable methods based on successful global models is critical to achieving financial inclusion through disruptive technologies.

The report also emphasizes the importance of government aid and strategic planning in fostering innovation, modernization, and operational efficiency. The key themes of the debate were the government's role in supporting innovation, allowing technology to adapt, and putting in place long-term policies to encourage rather than limit innovation.

Furthermore, talent transfer and cooperation have emerged as key drivers of long-term success. Participants stressed the importance of information exchange and mentorship programs for creating human capital and advancing technological innovation.

5.6 Implications

The study's ramifications cut across industries, providing insights for banks, legislators, entrepreneurs, educators, and community leaders. It offers banks actionable information to tailor services and optimize procedures for digital financial services. Policymakers may utilize the data to create an atmosphere that fosters innovation and inclusive growth. Entrepreneurs and educators may use these insights to promote economic empowerment and skill development.

Furthermore, the study's findings emphasize the importance of collaboration and stakeholder engagement, underlining the need for a multi-sectoral approach to policy development that ensures interventions are comprehensive and responsive to the needs of diverse demographic groups.

Overall, the research underlines the potential of disruptive technologies to foster equitable growth and resilience in South Africa, while also recognizing the importance of cross-sector collaboration.

5.7 Recommendations

To begin with, further research efforts are required to gather data-driven insights on poverty reduction tactics and the operation of traditional financial models such as Stokvels. Such research should concentrate on understanding the unique socioeconomic settings of underrepresented populations and developing effective strategies to improve financial literacy and accessibility.

Further research may also be necessary to cover a wider population and geographical area that the current study did not include.

A thorough education campaign is required to provide individuals from various groups with the necessary digital literacy and financial knowledge. This endeavour should include personalised educational initiatives that address the individual demands and problems encountered by various groups of the population. For example, programs might be tailored to different age groups, socioeconomic backgrounds, and levels of educational attainment to guarantee optimal impact and relevance. These instructional resources may be extensively distributed and easily accessed by people across the country by utilising digital channels such as internet platforms, mobile applications,

and interactive tools. Finally, this broad educational endeavour should seek to not only improve individuals' capacity to traverse the complexity of contemporary finance, but also to enable them to make educated decisions, explore economic opportunities, and make important contributions to the country's socioeconomic progress.

In addition, authorities should consider implementing tax breaks and incentives to encourage investment in local innovation hubs and technological infrastructure. By encouraging private sector participation, South Africa can cultivate indigenous talent and entrepreneurial ecosystems, resulting in long-term economic prosperity.

Furthermore, prioritising investment in domestic technological solutions over costly imports from other nations is critical. Supporting indigenous innovation promotes economic growth while also cultivating technical self-reliance and resilience in the country's digital ecosystem.

Incorporating Shariah law concepts to enhance financial inclusion provides a unique opportunity to increase economic participation while reducing the danger of indebtedness. By promoting and implementing partnership transactions inspired by Shariah-compliant finance, South Africa may provide alternative financial solutions that are ethical and inclusive. These products might include profit-sharing agreements, equity-based lending, and Islamic microfinance choices that promote risk-sharing and equitable wealth distribution. Implementing such measures not only makes financial services more accessible to marginalised groups but also fosters a culture of ethical and sustainable financial behaviour. This strategy not only solves the urgent demand for financial inclusion but is also consistent with worldwide trends toward ethical and socially responsible financial institutions.

Addressing the absence of documentation among underprivileged communities is critical for furthering financial inclusion initiatives. Streamlining paperwork processes and introducing digital identity solutions can help those who lack traditional forms of identification obtain access to financial services.

Tailored education solutions for the elderly and other vulnerable groups should also be created to close the digital gap and enable them to use technology for financial inclusion. To guarantee efficacy and inclusion, these programs should promote user-friendly interfaces and participatory learning approaches.

There should also be a strategic move toward technology-centric solutions to lessen dependency on in-person contacts and physical infrastructure. Investments in digital banking platforms, mobile money services, and online payment systems can improve accessibility and ease, especially in distant and underprivileged communities.

Collaboration and collective action are critical in carrying out these initiatives, highlighting the need to leverage multiple stakeholders' aggregate wisdom, resources, and skills. South Africa can achieve significant change by encouraging collaboration among government agencies, financial institutions, technology businesses, universities, civil society organisations, and community groups. Embracing creativity and diversity in problem-solving can result in unique solutions that address the various barriers to financial inclusion. For example, projects that entail co-creation with local communities and utilise indigenous knowledge systems help guarantee that interventions are culturally appropriate and sensitive to the needs of disadvantaged people.

Furthermore, a long-term perspective is required to ensure the sustainability and scalability of actions targeted at increasing financial inclusion. While some efforts may produce immediate results, others may need ongoing investment and dedication to create long-term impact. As a result, governments and stakeholders should emphasise efforts that create the basis for long-term systemic change, such as infrastructure investment, regulatory framework strengthening, and creating an atmosphere conducive to innovation and entrepreneurship. By taking a deliberate, forward-thinking approach, South Africa may position itself as a leader in inclusive finance and accelerate progress toward larger socioeconomic development objectives.

5.8 Conclusion

In conclusion, this study sought to explore the nexus of disruptive technologies and financial inclusion in South Africa, shining light on critical observations with substantial consequences for diverse stakeholders. Several key discoveries resulted from an in-depth review of the data collected. The research highlighted the transformational potential of disruptive technologies in expanding financial inclusion by empowering individuals and levelling the playing field. It has emphasised the need for education to

provide individuals with the digital literacy and financial understanding required to manage the changing financial environment. The research also stressed the necessity of strategic policy frameworks and government support for supporting innovation and modernisation to enhance financial inclusion.

Furthermore, the study highlighted specific recommendations to close current gaps and promote significant change. These proposals include investing in research on data-driven insights regarding poverty reduction, implementing personalised training programs to improve digital literacy and financial awareness, and encouraging collaboration among the various stakeholders to promote action. Furthermore, the research proposes looking at other financial mechanisms, such as partnership transactions inspired by Shariah law, to boost financial inclusion and minimise debt.

Overall, the study's objectives have been met, and the results offer useful insights that stakeholders in South Africa's financial industry, government, academia, and civil society may use to guide policy choices, stimulate innovation, and achieve the objective of financial inclusion. By accepting these observations and recommendations, South Africa may position itself as a leader in inclusive finance, opening the path for overall socioeconomic progress and prosperity for all sectors of society.

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