The adoption of financial technology solutions by lower-income earners in South Africa

Nthabiseng Manamela

Student number 2390227

Student email 2390227@students.wits.ac.za

Supervisor

Ayanda Magida

A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Management in the field of Digital Business

Johannesburg

February 2023

ABSTRACT

Over the years, it has become clear that FinTech solutions benefits lower-income earners more due to the cost-effective nature of their services, its potential to improve financial inclusion and promotion of economic growth, particularly for lower-income earners who may face barriers to accessing traditional financial services.

The aim of the study was to gain an understanding of the factors that drives financial technology (FinTech) adoption by lower-income earners in South Africa. This study focuses on the lower-income earner's behaviour with regards to the adoption of FinTech solutions. The conceptual framework for this study is drawn from the theoretical frameworks deployed in the study to form the research variables. Qualitative research method was used for this study. Data was collected using interviews in a semi-structured format and the data was analysed using thematic data analysis.

The study found that there was a general lack of understanding of FinTech solutions. The findings showed that the most common FinTech solutions adopted were from the Banking industry, suggesting that there is a knowledge gap of the different FinTech solutions available for consumption. The study found 6 enabling factors to FinTech adoption; Trust, economic benefit, digital literacy, and brand and 4 barriers to FinTech adoption; Associated cost, perceived risks, income levels and education levels.

The study concludes that addressing these factors requires a multi-pronged approach. It recommends that FinTech providers, policy makers and government adopt the enhanced FinTech adoption model to improve their understanding on the factors that enable or deter the adoption of FinTech solutions by lower income. It is further recommended that FinTech providers must accelerate marketing efforts to raise awareness of FinTech and use of a hybrid contact approach. The study emphasises the need to expedite policies and regulations that addresses high cost of mobile data. The study also urges government to play

a role in the adoption of FinTech solutions by investing in ICT infrastructure needed to support the adoption of FinTech solutions.

KEYWORDS

Fintech adoption, Lower-Income earners, TAM, Perceived Risk Theory, South Africa

DECLARATION

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

Name: Signature:

Signed at ……

On the …….. day of …… 20…..

DEDICATION

This study is wholeheartedly dedicated to my beloved mother, who has been my source of inspiration and gave me strength when I thought of giving up, who continually provide her moral, spiritual, and emotional support.

ACKNOWLEDGEMENTS

Lord, I thank you for giving me life, strength, and wisdom. I also thank you for being with me during the days of my life, especially during my journey with this master's Programme.

A very big thank you to my dearest mother, Salome Manamela, for your unwavering love and prayers. I appreciated all the sacrifices and steadfast support during my journey.

To my friend and life partner, Sipho Sibanda, I want to express my gratitude for your unfailing love, support, and motivation throughout this period.

My sister, Clara Msiza, you have always pushed me to be the best version of myself. I appreciate that.

To my accountability partner, Dipuo Nkutha, thank you for supporting me every stage of this process, your assurance and encouragement is not lost to me.

Ms. Ayanda Magida, my supervisor, thank you for all your support, guidance, and patience. Your extraordinary commitment to making this journey an easy one did not go unnoticed.

I would want to offer my sincere gratitude to all my extended family and friends. I appreciate you giving me the time and room I needed to properly engage in this process.

Finally, I want to thank each and every one of the participants for their time and careful input into the study.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS

ATM	Automated teller Machine
BigTech	Big Technology
DFS	Digital Financial Services
EIGE	European Institute for Gender Equality
EY	Ernst and Young
FinTech	Financial Technology
FMT	FinMark Trust
FS	Financial Services
FSCA	Financial Services Conduct Authority
FSB	Financial Services Board
GSMA	Global Survey of Mobile Adoption
IFC	International Finance Corporation
IMF	International Monetary Fund
InsureTech	Insurance Technology
IoT	Internet of Things
IRT	Innovation Risk Theory
M&A	Mergers and Acquisitions
National Treasury	The South African National Treasury
Neo Banking	Online Banking
P2P	Peer-to-peer
PEOU	Perceived Ease of Use
PRT	Perceived Risk Theory
PU	Perceived Use
RQ	Research Question
SA	South Africa
SASSA	South African Social Security Agency
SIM	Subscriber Identity module
SME	Small and medium Sized enterprises
SMS	Short Message Service
SSA	Sub-Saharan Africa
TAM	Technology Accepetance Model
TV	Television
US	United States
USD	United States Dollars
USSD	Unstructured Supplementary Service Data
UTAUT	Unified theory of acceptance and use of technology
UX	User experience
VC	Venture Capital
WBS	Wits Business School

CHAPTER 1. INTRODUCTION

1.1 Statement of purpose

The purpose of this qualitative study was to gain an understanding of the factors that drives financial technology (FinTech) adoption by lower-income earners in South Africa.

1.2 Background of the study

The financial crisis in 2008 was detrimental to the financial services sector as it resulted in many employees being retrenched and some cashing up their pensions. The detriment of the 2008 financial crisis hit all industries, and this led to the need for economic growth and the financial industry was one of those industries that was looked upon to assist in global economic growth (Olanrewaju, 2016). This crisis led to the birth of financial technology (FinTech) companies that identified a gap in providing cost effective financial services (Hornuf, 2016). Since 2008, the world has seen a big shift in the traditional or formal financial services industry. The industry has been forced to adapt to the technological advancements brought by FinTech which are affecting the existing traditional business models of financial services providers.

According to the South African National Treasury, FinTech can be defined as organisations that alter how financial services are delivered by introducing new business models and applications (National Treasury, 2020). Schueffel (2016) refers to FinTech as a new financial industry that uses technology to improve financial activities (Schueffel, 2016). The purpose of FinTech is to address transactional costs, information asymmetry and provide financial services to those that were previously excluded by traditional financial services providers (Alt & Puschmann, 2012). FinTech 's role in the industry is crucial as they can reduce costs and economic risks due to their innovation nature. The technological advancements brought by FinTech does not only aim to disintermediate

traditional financial services providers but also promises to address socio-economic issues such as financial inclusion and economic development.

Lower-Income earners

One of the key drivers of economic growth is providing affordable financial services to either the disadvantaged or lower-income population groups or both (World Bank Group, 2022; Kim et al., 2018).

The European Institute for Gender Equality defines disadvantaged groups as groups of persons that experience a higher risk of poverty, social exclusion, discrimination (EIGE, 2019). These groups are normally classified as lower-income earner. This study thus focuses on the provision of financial services to lower-income earners. Lower-income earners are either “unbanked” and “underbanked”. Unbanked refers to “customers who do not have a bank account or a transaction account at a formal institution”. Underbanked, on the one hand, has been defined as “customers who may have access to a basic transaction account offered by a formal financial institution but still have financial needs that are unmet or not appropriately met”(GSMA, 2014, p. 74).

Lower-income customers makes up the most of financial services users however product designs of financial products are focused on middle and upper income customers (World Bank Group, 2018). Thus, this group (lower-income earners) needs solutions, products or services that suit their socio-economic and geographic conditions. This is evident in the global statistics, by 2014, a bank account was held by 62% of the adult population globally with Easy Asia and the Pacific contributing the most at 69.1% whilst Sub-Saharan Africa (SSA) has the lowest figure with only 32% of the adults being banked (Demirguç-Kunt et al., 2017). Despite the low penetration of unbaked adults in SSA, South Africa is an exception with 70.3% of the adults being banked as at 2014 (Demirguç-Kunt et al., 2017).

Although a number of lower-income earners have bank accounts, these bank accounts are underutilised as per the below image (World Bank Group, 2018).

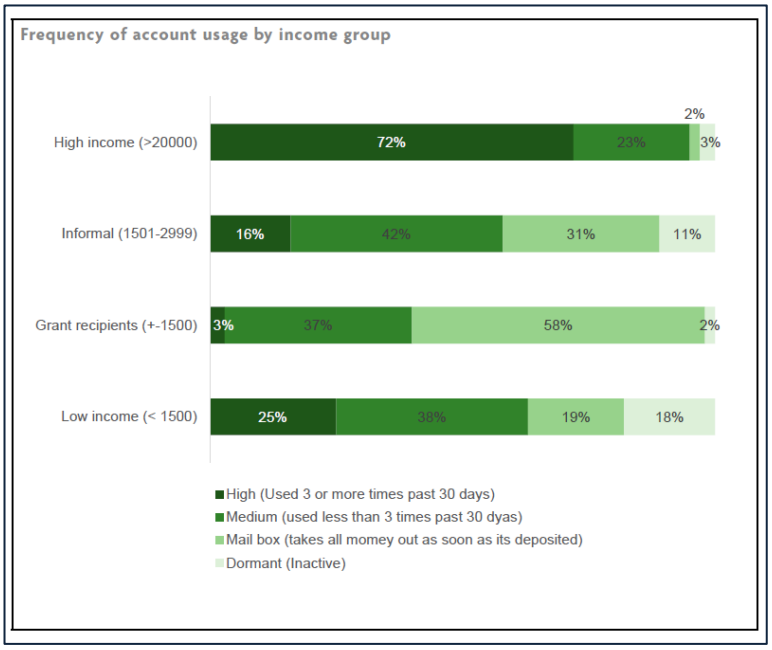

Figure 1:1Bank account usage by income group (Authority, 2022, p. 23)

The main contributing factor to the underutilisation of bank accounts is the high reliance of cash by lower-income earners. According to the World Bank Group (2018), cash transactions still accounted for 52% of total value of consumer transactions of lower-income earners (World Bank Group, 2018). The reliance on cash for payments results in lower-income customers frequently withdrawing cash for payments; however, banks charge them exorbitant prices for cash withdrawals (World Economic Forum, 2017). This creates a greater propensity of a single withdrawal of any available balance after receiving a payment. Hence the low utilisation of bank accounts and, subsequently other financial services solutions. The money-in and money-out behaviour creates a challenge for financial services providers to capture data of these customers as there is no trail of most of their transaction thus creating difficulty in designing or developing products and services that meets their needs (FinMark, 2018).

Lower-income earners in South Africa

South Africa Economic inequality in South Africa has been at the core of the transition to democracy. According to Statistics South Africa, more than 50% of

the South African population live below the upper-bound poverty line of R1183 per person per month (Statistics South Africa, 2018). Statistics South Africa has provided a definition for income levels. These income ranges were calculated using the sum of consumption and net worth changes (Statistics South Africa, 2018).

Table 1:1 Income level categories

Annual income	Income category
R1 – R36 000	Low-income
R36 001 – R307 200	Middle-income
R307 201 and above	Upper income

According to the above table, lower-income earners earn R36 000 per annum which translates to R3 000 per month. Thus, for purposes of this study, lower-income earners refer to individuals earning R3 000 per month.

South Africa currently has a socio-economic divide between banked (formal) and unbaked (informal) (FinMark, 2020). This requires greater focus on providing formal financial services to the disadvantaged to assist them in reaping the same benefit that middle - and upper-income earners currently receives. To this end, these populations must be provided with financial services that will enable them to manage their money better and ensure that they are part of the financial system. Focusing on this population will also result in the sustainability of the country's economy with greater benefit to the financial services providers.

Contributing factors to the underutilisation of bank accounts by lower-income earners in South Africa, is due to some of the dynamics that exists in the country. From a customer perspective access to financial services by lower-income earners is hindered by the high dependence of cash, inadequate financial resources, high costs of financial services, geographical restrictions, mistrust, and a lack of paperwork (identity document and a proof of residence) (Mungai & Bayat, 2018). Financial illiteracy and access to mobile device can also be noted as barriers (National Treasury, 2020).

From a financial services provider perspective, a hindering factor to providing financial services to lower-income earners is access to market data due to their transactional behaviour being mainly cash. This poses a challenge for financial services providers specifically FinTech to design products and services that meet the needs of these customers as there is limited data on them. It is important to note that the success of growing FinTech lies in understanding the factors that drives or hinders the adoption of FinTech however in the South African context since there is little scholarly research and writing on the use of fintech. (Slazus, 2022).

FinTech for lower-income earners in developing countries

FinTech contributes to economic growth and financial inclusion by disrupting the financial services industry for the greater benefit of the disadvantaged population (World Bank, 2021). Over the years, FinTech has disrupted the financial services sector by introducing blockchain technologies, cryptocurrencies, and mobile finance service applications such as M-Pesa in Kenya. FinTech have been successful in other developing countries, however the potential success of FinTech catering for lower-income earners in south Africa cannot be guaranteed and can only be determined with a certain degree of probability against a suitable framework (National Treasury, 2018).

As at 2019, there was a total of 217 active operational FinTech companies in South Africa (National Treasury, 2020). FinTech have already started addressing the problem of cash in South Africa, this is evident as the biggest segment of FinTech is the payment segment.

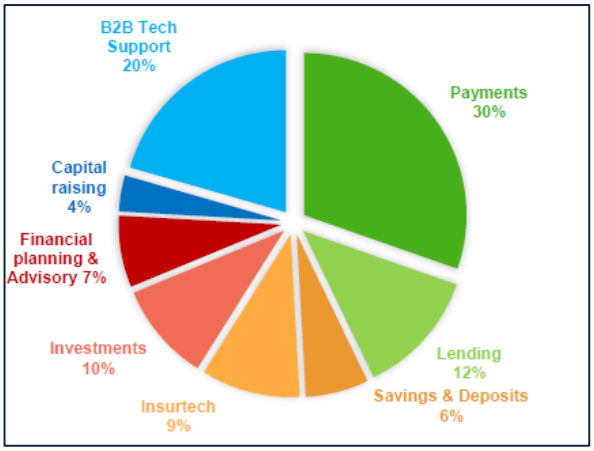

Figure 1:2 Segmentation of FinTech in South Africa(National Treasury, 2020, p. 5)

In South Africa, the payments segment has been disrupted by new entrants like Snapscan and Yoco (National Treasury, 2020). However, the impact of these new entrants still needs to be unpacked. Digital finance is key to remove the barriers for lower income earning earners' access to financial services. Few examples of successful FinTech in developing countries is noted. In Ghana, a mobile money provider called Tigo Cash went into partnership with the International Finance Corporation (IFC) in order to grow its active customer base, Uganda introduced Airtel, Kenya's success is witnessed with M-Pesa, China introduced WeChat's payments module whilst India has Paytm (IFC, 2017).

It is clear from the above that there has been success of FinTech that caters for lower-income earners in developing countries, although it is context specific. All these have their dynamics that cannot be replicated. M-Pesa's success is attributable to the distribution network of agents willing to hold client withdrawals in cash (Consultative Group to Assist the Poor, 2011); Paytm in India received significant support from the government (Reserve Bank of India, 2019); and WeChat's payments module in China made use of the big data acquired previously (Colombia Journalism Review, 2018).

1.3 Research problem

FinTech contributes to sustainable economic development by providing easy and affordable financial services to the unbanked population in the market (Kimiri, 2018). This can be achieved by providing affordable FinTech solutions to previously disadvantaged groups such as lower-income earners. In South African, the smartphone penetration is sitting at 69% (National Treasury, 2020). 30% of these users use their smartphone FinTech solutions, thus, 70% of the South African population does not use their smartphones to manage their financial lives (FMT, 2019).

According to FinScope (2019), several barriers have led to FinTech adoption as per the below figure:

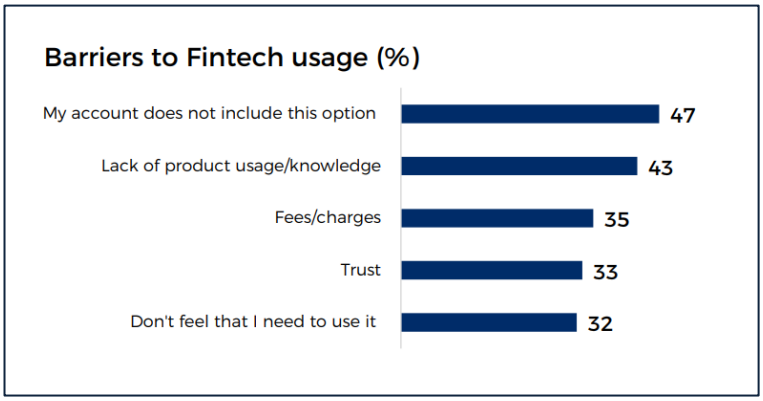

Figure 1:3 Barriers to FinTech usage

(FMT, 2019, p. 12)

From the above figure it is evident that lack of product knowledge is the main barrier to an increased use of FinTech (FMT, 2019).

The National Treasury of South Africa has also alluded to several issues that have led to the low adoption of FinTech solutions in South Africa. These includes the cost of a smartphones and of data in South Africa which is still expensive for low-income earners, who cannot have a contract and buy data on pre-paid (National Treasury, 2020). Further, National Treasury (2020) states that there are factors that are inherent to the nature of lower-income earners that affects the adoption of FinTech solutions. These are categorised according to the main

segments of the FinTech industry. First one being the payment segment, this segment forms part of 30% of the FinTech market (National Treasury, 2020). This growth is however geared toward middle- and upper-income customers. This is because lower-income earners mainly transact via cash due to the slow-growing payment ecosystem that primarily accepts cash as a means of payment. Lower-Income earners mostly use taxis or minibuses to commute, they regularly engage with street vendors to purchase necessities such as fruits and vegetables and these entities only accept cash as the means of payment. The reliance on cash thus presents a challenge for the adoption of FinTech solutions such as digital payments.

The second biggest segment in FinTech is the credit segment (National Treasury, 2020). This segment is also geared towards toward middle - and upper-income segment customers. This is because lower-income earners use informal credit providers to obtain credit. Thus, the reliance on informal lenders by lower-income earners also poses a challenge for adopting FinTech credit solutions. The Savings and Deposit segment is another segment of FinTech experiencing adoption challenges. According to the 2022 Financial Outlook study, lower-income earners prefer utilising informal channels such as stokvels to save money. Stokvels refers to community-based savings and credit groups (Authority, 2022).

In summary, several dynamics contribute to the low adoption of FinTech solutions by lower-income earners. According to National Treasury (2019), all these dynamics present a demand constraint for FinTech services, especially by lower-income earners. Therefore, the research problem for this study is that there is a low adoption rate of FinTech solutions by lower-income earners in South Africa. To address the research problem, it is imperative to understand the factors that drive or detract lower-income earners from adopting FinTech solutions. This is important as it will enable FinTech to fully understand the dynamics of lower-income earners, their financial needs, the factors that drive their adoption of FinTech solutions, the factors that deter their adoption of FinTech solutions, and the perceived risks associated with FinTech solutions. This will assist FinTech providers to fully capitalise on those factors that drive adoption or overcome those that deter the adoption of lower-income earners.

1.4 Research questions

The key research question of this study is: What factors drive the adoption of FinTech solutions by lower-income earners in South Africa?

The sub-questions for the study are:

1. What factors enable the use of FinTech solutions?
2. What are the barriers to the use of FinTech solutions?
3. What are perceived risk factors for adoption/lack of adoption of FinTech solutions among the lower-income earners?

1.5 Rationale

An increase in FinTech literature has been noted, and it continues to develop. However, it was noted that limited research focuses on the adoption of FinTech solutions by lower-income earners, specifically in South Africa. Hence this study aims to add to the body of knowledge in South Africa considering the substantial number of people in the country that are lower-income earners. The success of M-Pesa in Kenya has shown that financial services providers can play a crucial role in catering for those who would not have ordinarily had access to those services (Chigada & Hirschfelder, 2017). With new entrants like Tyme Bank, Bank Zero and Discovery Bank that aims to capture the lower-income earners in South Africa, understanding the factors that drive the adoption of financial technology solutions becomes key to enable the new entrants and incumbents to experience the same if not the similar success as Kenya.

Based on the preliminary review of the literature it is clear that there is no study yet that looked at factors that drive FinTech adoption by lower-income earners from a South African perspective. Thus, it can be concluded that this study is important as it will assist the financial services sector, policy makers, FinTech players and the government to understand the factors that drive the adoption of financial technology solutions by lower-income earners. This will enable them to fully understand the needs of lower-income earners, positively contribute to catering for disadvantaged groups and ensure that they have access to financial

solutions. Broadly, the significance of this study immensely contributes to the debate around how FinTech can solve for lower-income earners and how they can do so successfully.

The study will further provide a guideline example that can be used to understand better this market to accelerate the growth of FinTech adoption in South Africa. The understanding and insights gathered in this study can inform what FinTech's must focus on when designing financial solutions, services, and products for this market. The study seeks to offer examples of best practices that might be used to effectively coordinate and advance the FinTech industry in South Africa. It highlights the crucial success criteria for the development of FinTech, this information can be used to advice how government policies might be structured. Lastly, this study contributes to the body of literature by conducting interviews to provide insights on the adoption of FinTech by lower-income earners in South Africa.

Empirical contributions

- There is currently limited research looking at the FinTech adoption by lower-income earners in the developing countries, specifically South Africa. Therefore, this study will potentially enhance the body of knowledge in South Africa.

1.6 Delimitations of the study

To enable the researcher to conduct an effective and suitable study, delimitations have been identified. This study focuses on the research in South Africa therefore this presents a delimitation. This study only refers to learnings from developing countries with emerging economies and a sizable number of disadvantaged populations such as Kenya (Chigada & Hirschfelder, 2017), Malaysia (Alwi et al., 2019) and India (Baporikar, 2021) where FinTech firms have been successful. This therefore presents a delimitation as it organically excludes obtaining learnings of successes from FinTech in developed countries.

The study is not focusing on all sectors of the FinTech industry. The focus of the study is mainly on FinTech solutions in the Banking, Payment, Lending, Savings, and Insurance sector. This excludes Investments, Financial Planning and Advisory as well as Capital rising. The last delimitation is that the interviews will not be conducted with all employed markets but only lower-income earners earning below R3 00 per month.

1.7 Definition of terms

Table 1:2 Definition of terms

Term	Definition
Unbanked	"Customers who do not possess a transaction account or a bank account with a financial institution" (GSMA, 2014, p. 74).
Underbanked	"Customers who hold a transactional banking account provided by a licensed financial institution, but whose financial needs are nonetheless unmet or not sufficiently met" (GSMA, 2014, p. 74).
Disadvantaged population	"Groups of persons that experience a higher risk of poverty, social exclusion, discrimination" (EIGE, 2019, p. 1)
FinTech	"A new financial industry that applied technology to improve financial activities" (Schueffel, 2016, p. 45).

Term	Definition
Financial Inclusion	"The availability and equality of opportunities to access financial services. It refers to a process by which individuals and businesses can access appropriate, affordable, and timely financial products and services" (Giusta & Kambhampati, 2008, p. 3)
Lower-Income earners	Low-income earners refers to people who belong to a societal group with limited income (Correa et al., 2022).

1.8 Assumptions

The assumptions are primarily based on the quality of the interviews to be conducted. The participants may not fully understand the financial technology solutions.

Key assumptions made in conducting the study are:

i. Lower-income earners form part of the disadvantaged population.
ii. By only interviewing key personnel earning less than R3 000 per month, it is assumed that they form part of lower-income earners.
iii. Lower-Income earners are currently either unbanked or underbanked in South Africa.
iv. There is an assumption that some of the factors found in the research have not been identified by exiting FinTech.
v. South Africa has a high financial inclusion rate, however lower income earners are not entirely catered for in the market.
vi. Level of financial literacy of lower-Income earners is low.
vii. There has not been any FinTech in South Africa that has fully understood the lower-income market.
viii. Lower-income earners may have the need for financial services but not the knowledge of how FinTech can meet their needs.

1.9 Chapter Outline

The below table outlines what will be covered in each chapter of the study.

Table 1:3 Chapter outline

Chapter	Content
Chapter 1: Introduction	Chapter 1 outlines the purpose of the study, the background of the study, the research problem, research questions, the rationale of the study, delimitations of the study, and definition of terms and assumptions made in the study.
Chapter 2: Literature Review	Chapter 2 delves into the study's literature review. The chapter starts with the historical background of FinTech, comprehensive definitions of FinTech, the FinTech landscape in South Africa, the adoption of FinTech in developing and developed countries, as well as the dynamics of lower-income earners. This chapter will also explore the factors that enable the adoption of FinTech, barriers to the use of FinTech solutions and analyse theoretical models for the adoption of technology. Lastly, the chapter will construct a conceptual research framework for adopting FinTech.
Chapter 3 The Methodology of the Study	Chapter 3 outlines the study's methodology, covering the research design, research method, population and sampling, credibility and dependability, data collection, limitations, and ethical considerations.

Chapter	Content
Chapter 4 Presentation of findings	Chapter 4 describes and presents the results of the study, starting off with presentation of the demographics of the participants, followed by the presentation of the findings based on the interviews conducted relating to proposition one, two and three as outlined in Chapter 2.
Chapter 5 Discussion of the findings	Chapter 5 discusses and explains the results of the study within the context of the literature review, draws conclusions and provides recommendations.
Chapter 6 Conclusions and recommendations	Chapter 6 integrates the findings about the propositions and the sub research questions outlined in Chapter 1 and answers each question, presents the recommendations, and concludes the study.

CHAPTER 2. LITERATURE REVIEW AND THEORETICAL FRAMEWORK

2.1 Introduction

This chapter will review the existing theoretical literature on the factors that drive the adoption of FinTech solutions. The chapter starts with the definition of FinTech, then goes into the origin and history of FinTech to provide a brief background of how the FinTech industry was formed and the evolution thereof, thereafter, proceed to discuss the recent trends in FinTech from a global, regional, and local perspective. The chapter will then provide a brief definition and context of the research subject (lower-income earners) to provide an overview of the profile and dynamics of the subject. A theoretical review will follow, starting off with the definition of adoption, which will provide the basis for answering the research question.

The chapter will then move to answer the research questions by evaluating empirical literature, which will lead to identifying factors that promote or deter the use of FinTech to answer research questions 1 and 2, respectively, by formulating "propositions" as well as identifying the perceived risk factors to adoption/lack of adoption of FinTech solutions. Next, the chapter will reinforce the factors that promote or deter the use of FinTech by evaluating three theoretical frameworks: the Technology Acceptance Model (TAM), Perceived Risk Theory (PRT) and (IRT). The chapter will then employ a conceptual framework that predicts the adoption or non-adoption of FinTech, thereby providing an answer to the primary research question. The chapter will conclude by summarising the entire literature review and reinforcing the propositions formulated.

2.2 Definition of topic or background discussion

2.2.1 The Concept of Financial Technology (FinTech)

Over the years, scholars have defined Financial Technology or “FinTech”. The term’s origin can be traced to the early 1990s and referred to the “Financial Services Technology Consortium”, a project initiated by Citigroup to facilitate technological cooperation efforts (Legowo et al., 2021). The literature does not have one definition of FinTech (Solarz & Swacha-Lech, 2021). FinTech is defined as providing financial solutions using technology (Tun-Pin et al., 2019). Another definition refers to FinTech as an innovation aiming to improve financial services (Leong & Sung, 2018). This definition correlates with another Scholar who defines FinTech as technology-enabled financial services (Vijai, 2019).

The terms "finance" (financial services) and "technology" were combined to generate the term "FinTech " (information technology) (Gimpel et al., 2018). It is thus defined as ‘marriage of finance and technology’ (Zavolokina et al., 2016). The general definitions by scholars focus on these two elements. Solarz and Swacha-Lech (2021) identify FinTech as financial services that offer innovative products or services designed to disrupt the industry. Other Scholars define FinTech as the application of innovative technology, mobile and the Internet of Things (IoT), to deliver efficient and effective financial services (Chuang et al., 2016; Kim et al., 2016). There is however a contrasting definition that defines FinTech by differentiating it from traditional financial services; the definition states that FinTech is not a combination of financial services and technology but rather an incorporation of technology into conventional financial services to increase breadth (Arner et al., 2015).

Most scholars that have defined the term choose to mention the benefits of FinTech (Solarz & Swacha-Lech, 2021). An example defines the term as a technology that provides finance in better use and improved competitiveness (Tang et al., 2020). FinTech refers to delivering financial services using advanced technology, such as big data, cloud computing, and mobile

technologies, to improve customer experience and operational effectiveness (Hu et al., 2019).

Financial Stability Board (FSB) refers to FinTech as the technology of financial services that results in new business models, applications, processes or products (FSB, 2019). On the other hand, International Monetary Fund (IMF) refers to FinTech as technology developments that provide financial services through new business strategies, tools, procedures, and products (IMF, 2018). Whilst another Scholar states that FinTech results in new companies that focus on developing new processes, products and services (Frame et al., 2009). It is responsible for empowering users by providing affordable, convenient and simple financial products and services (Zavolokina et al., 2016). FinTech disrupts financial services by introducing services that disrupts financial services through introducing solutions like Online banking, online payments, InsureTech, P2P, cryptocurrency, mobile payments and crowdfunding (Ryu, 2018b).

2.2.1.1 Origin and History of Financial Technology (FinTech)

Since 2008, the new era of FinTech has been on the rise in the developing and developed world (Legowo et al., 2021). Scholars have identified three phases of FinTech evolution (Legowo et al., 2021; Thakor, 2020). The evolution is discussed below:

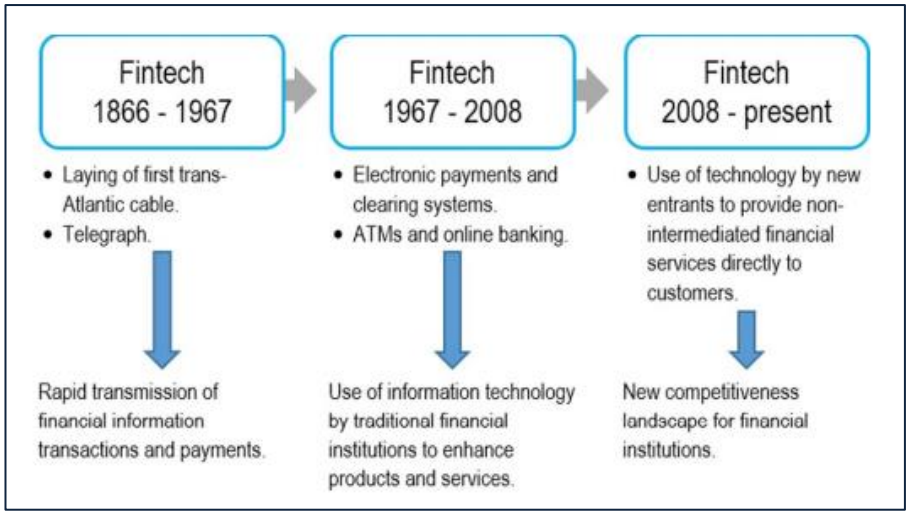

Figure 2:1 The evolution of FinTech (Thakor, 2020, p. 4)

FinTech 1.0 – 2.0 This era is refers to the development of enabling technologies (Legowo et al., 2021). This period was the period where there was a dire need for transmission of information, including financial across borders (Thakor, 2020). This included the introduction of first trans-Atlantic cable , the use of the Telegraph, and the fast transmission of transactions and payment of financial information (Thakor, 2020). This gave birth to the introduction of credit cards and Interbank Card Association (now MasterCard) (Legowo et al., 2021; Thakor, 2020).

FinTech 2.0 – 3.0 In this era of evolution, the most important and disruptive financial innovation ATMs was introduced (Prawirasasra, 2018). In this era, the transition from analogue to digital occurred, where E-Payments and clearing systems were introduced to improve products and services in the traditional financial banks (Thakor, 2020).

FinTech 3.0 – 3.5 The financial services industry was massively impacted by global crisis in 2008 (Legowo et al., 2021). This era gave birth to the emergence of Democratisation of Digital Financial Services (Prawirasasra, 2018). In this era, new entrants used technology innovations to deliver financial services to customers directly with the absence of intermediaries (Thakor, 2020). The latest technology developments in this era includes the Internet of Things (IoT), Big data (Legowo et al., 2021).

2.2.2 Trends in Financial Technology (FinTech)

Global Trends

Globally, FinTech offers various financial solutions to diverse user groups, including mobile payments and transfers, online-only banking (also known as "neo-banking"), insurance ("InsurTech"), investment, and lending (Langley & Leyshon, 2022). Some notable recent trends that KPMG (2022) refers to include accelerating the expansion and investment in cryptocurrencies and blockchain, continued emphasis on core banking systems and an expansion of FinTech into the world's most remote and under-served countries, such as Africa, Southeast Asia, and Latin America (KPMG, 2022). The recent trends have resulted in the

growth of FinTech globally and this growth has confirmed the common belief that FinTech will disrupt banking (Ya, 2020).

This growth is also because of the global investment in FinTech; in 2021, FinTech reached 5,684 international deals with global investment in FinTech tripling. Investment by corporate venture capital (VC) in FinTech also topped USD115 billion whilst the global cross-border FinTech Mergers and Acquisitions (M&A) activity reached USD36.2 billion. Further, the investment in blockchain and cryptocurrencies also soared to USD30 billion in investment (KPMG, 2022).

FinTech trends in Africa

In 2021, the African FinTech industry reached over $1.6billion in investment across 153 deals, two times the value of 2020 (US $800m). The key markets are; Nigeria in the West, Kenya in the East, and South Africa in the South (KPMG, 2022). There are 260 companies that operate in FinTech in sub-Saharan Africa with payment segment dominating. The payment segment includes mobile money, electronic money, peer-to-peer payments, digital currency, and blockchain (EY, 2019).

In Africa, "feature phones" that use mobile telecom networks and have voice and SMS capabilities make the FinTech sector accessible (Langley & Leyshon, 2022). It is for this reason that today, most FinTech providers in Africa are neo-colonial telecommunications (O'Dwyer, 2019). The growth of FinTech in Africa mainly comes from telecommunications companies that partner with commercial banks and start-up firms (Langley & Leyshon, 2022). This contrasts with the rest of the globe, where FinTech platforms are generally start-ups, incumbent banks or BigTech businesses (Langley & Leyshon, 2022).

The expansion of FinTech in Africa has been led by mobile money payments and transfers (Langley & Leyshon, 2022). About two percent of global payments is from Africa due to the success of mobile money payments in Africa (Chironga et al., 2017). One example is M-Pesa which include 100 million active users (approximately 1 in 10 adults) by 2017 (Lai & Samers, 2021).

FinTech trends in South Africa

South Africa has a fast-growing FinTech industry (National Treasury, 2020). South African FinTech trades in the following segmentation as summarised on the below table (National Treasury, 2020):

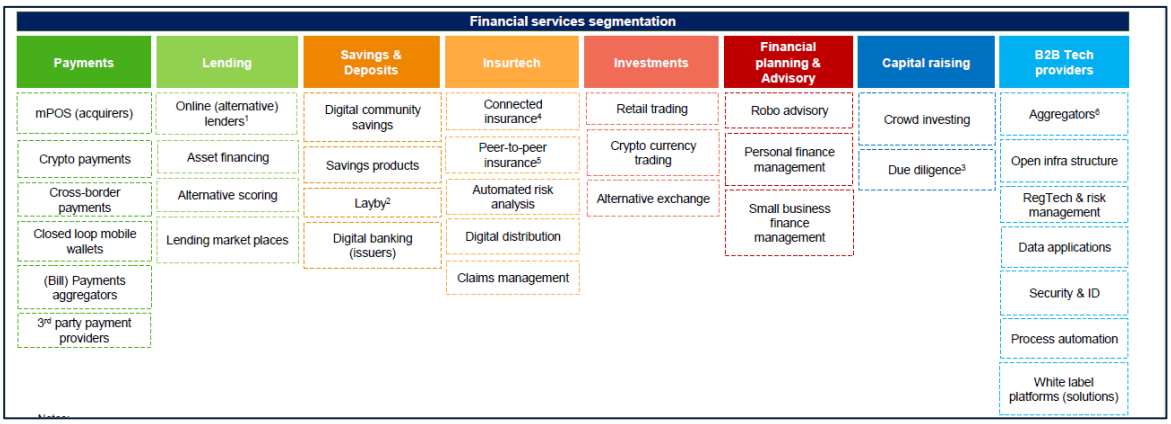

Figure 2:2 Financial Services segmentation (National Treasury, 2020, p. 4)

As at 2019, there were 217 active FinTech in South Africa (National Treasury, 2020). Similarly like in the rest of Africa, payments segment is also dominating the South African FinTech landscape (National Treasury, 2020). South Africa continues to lead in line with global trends by embracing cryptocurrency (Kshetri, 2017). Venture Capital (VC) is responsible for most of the growth of FinTech in South Africa, similarly to international trends (National Treasury, 2020).

2.2.3 Lower-income earners

Lower-income earners are people who belong to a societal group with limited income (Correa et al., 2022). This group is normally the majority of the population, especially in developing economies (Correa et al., 2022). Another definition defines lower-income earners as people whose monetary means do not satisfy their basic needs and who have limited access to public services (Tarafdar et al., 2012). Lower-income earners turn to be vulnerable and susceptible to harsh circumstances, normally due to demographic, economic, psychological, and social dimensions (KA & Subramanian, 2022).

One stumbling block for lower-income populations to obtaining financial services products is their distrust of financial systems (Martin & Hill, 2015). Low interaction with the financial services providers is another stumbling block to obtaining financial service, this can be attributed to their lack of knowledge on financial services (Mende & Van Doorn, 2015). Further, Lower-income earners have always experienced a high level of fraud, mis-selling and poor service due to their history of being less financially sophisticated (Begley & Purnanandam, 2021).

Globally, several studies have looked at how FinTech serves vulnerable populations. A study in China that aimed to focus on the effects of FinTech on poverty alleviation in the provinces of China showed that FinTech had a stronger positive effect on poverty alleviation in lower-income provinces by expanding access to financial services, reducing transaction costs, information asymmetry and household risk and in those areas (Appiah-Otoo & Song, 2021; Wang & He, 2020; Ye et al., 2022). Another study in India found that FinTech had a positive effect on India's efforts to reduce poverty, promote sustainable growth, narrow the income gap, and maintain economic stability (Gautam et al., 2021). Whilst a study in Nigeria that sought to establish the impact of the FinTech strategy on the provision of financial services to low-income individuals in Nairobi discovered that FinTech significantly improved the provision of financial services to these individuals and small businesses, which ultimately promotes financial inclusion (Kimiri, 2018).

The researcher further refers to the study by Sithole et al. (2021) which aimed to examine customer experience value orchestrated by non-banks' financial touchpoints to understand how they enhance the financial inclusion of lower-income consumers (Sithole et al., 2021). The paper by Sithole et al. (2021) shows that the lower-income customers have not embraced the use of touch point technology like ATMs and mobile banking application due to the language barriers experienced since most of these solutions are in English (Sithole et al., 2021).

Low-income persons in rural and informal South African settlements have difficulty accessing banking services. This is primarily because there is no financial inclusion policy, financial institutions exclude lower-income earners,

there is a lack of dependable and affordable internet access, financial illiteracy, the high cost of financial services, unemployment, and poverty, and there are strict compliance requirements requiring them to provide proof of identity and address (Chitimira & Magau, 2021). Even with the introduction of Innovative technology like mobile money and instant cash, lower-income earners in rural areas and informal settlements are still mostly unable to access basic banking services and financial products due to the poor Internet connectivity in those areas. These financial consumers find accessing various financial services and products without traveling to the city difficult (Chitimira & Magau, 2021).

2.2.4 FinTech Adoption

The intent to adopt refers to a motivational behaviour and willingness of a person to do or use something (Tun-Pin et al., 2019). In the context of FinTech , adoption refers to a consumer's willingness to adopt technology in accessing financial services (Tun-Pin et al., 2019). Several research has been done on the adoption of FinTech globally, and found that adoption has been affected by legislative, structural and cultural barriers (Carlin et al., 2017; Mazambani & Mutambara, 2019; Ryu, 2018a; Slazus, 2022; Zalan & Toufaily, 2017). In the South African context, studies have looked at factors that influence FinTech adoption (Mazambani & Mutambara, 2019; Slazus, 2022). The study by Slazus (2022) focused on factors that Influence FinTech Adoption in South Africa by looking at consumer behaviour towards Branchless Mobile Banking. whilst Mazambani and Mutambara (2019) focused on predicting FinTech innovation adoption in South Africa with emphasis on Cryptocurrency. This study indicate that attitude and perceived behavioural control positively impact the intention to adopt cryptocurrency.

Scholars have also tried to understand the adoption of FinTech in developing countries (Kimiri, 2018; Niu et al., 2020; Setiawan et al., 2021). A study of adoption in Indonesia found that financial literacy is the least determinant of the adoption of FinTech (Setiawan et al., 2021). On the other hand, a study in Viet Nam found that financial literacy has strong and positive effects on an individual's awareness and use of FinTech products (Morgan & Trinh, 2020) . A study in

Kenya, Nairobi, found that FinTech enhanced the delivery of financial services to low-income earners and small businesses to a great extent, which subsequently leads to financial inclusion (Kimiri, 2018). From the above literature review, it is evident that FinTech adoption or non-adoption is driven by a number of factors, thus it is important to fully explore and understand all these factors that leads to FinTech adoption.

2.3 Factors that enable the use of FinTech solutions

This section draws on the work of Barbara Jeanne Slazus and Geoffrey Bick's (2022) paper on factors that Influence FinTech Adoption in South Africa. According to this paper, four factors promote the use of FinTech in South Africa; trust, socio-economic influencers, utility and youth (Slazus, 2022). These factors will be unpacked and discussed below.

2.3.1 Trust

Slazus (2022) identifies "Trust" as a factor that promotes FinTech adoption. This finding is further supported by existing literature which states that there is a positive correlation between Trust and FinTech adoption (Baptista & Oliveira, 2015; Hanafizadeh et al., 2014; Ismail & Masinge, 2011; Kim et al., 2009; Maduku, 2017; Priya et al., 2018; Singh & Srivastava, 2018). According to Slazus (2022), trust is the most cited factor that enables FinTech adoption (Slazus, 2022). This factor was also stated in previous studies on Internet banking (Akhlaq & Ahmed, 2013; Pikkarainen et al., 2004), m-banking(Baptista & Oliveira, 2015; Hanafizadeh et al., 2014; Ismail & Masinge, 2011; Maduku, 2017; Priya et al., 2018; Singh & Srivastava, 2018), m-payments (Daştan & Gürler, 2016; Kim et al., 2016) , and FinTech adoption (Dapp et al., 2014; EY, 2019).

Most FinTech solutions are new and unknown in the market, thus, Trust becomes key for customers to adopt the solutions presented by the FinTech 's (EY, 2019). Trust refers to the user's perceived utility of objects (Hu et al., 2019). Scholars such as Kesharwani and Bisht (2021) found that trust can drive behaviour and is driven by its inherent characteristics (Kesharwani & Bisht, 2012). In the case of

FinTech, the inherent characteristics of Trust in FinTech is Brand Imagine and Perceived Risk (Malaquias & Hwang, 2016).

For this reason, the study will also investigate Brand Image and Perceived Risk as factors that drive the adoption of FinTech. In the context of FinTech, a customer's trust in the service plays a vital role in the decision-making process; thus, the more a customer trusts the service provider, the greater the chance of adopting the service (Basak et al., 2016; Koksal, 2016). The functional drivers of trust include data security, data privacy, device trust and account security (EY, 2019; Slazus, 2022). Trust is one of the key components of why customers entrust financial services providers with their hard-earned money (Dapp et al., 2014; Wentzel et al., 2013).

Several researchers believe that the biggest growth and revenue opportunities for FinTech will be realised by FinTech which provides customers with lasting and credible data security assurance (Singh & Srivastava, 2018; Zhou, 2011). Therefore, building Trust to foster adoption of FinTech is crucial to address the security risks and low switching costs that are organic to the FinTech business model (Singh & Srivastava, 2018; Zhou, 2011). This is further supported by the study by Ja-Chul et al. (2009) who found that Trust plays a crucial role in the adoption of mobile banking as it helps customers overcome fears of security, privacy and fraud in the mobile environment (Ja-Chul et al., 2009). Singh and Srivastava (2018) further substantiate this norm, as their study found that Trust is enhanced by security in providing mobile services as Trust and security are positively correlated with one another (Singh & Srivastava, 2018). Trust is important in FinTech due to the high volume of data involved in the service (Hu et al., 2019). Thus, this factor must be included in the study to demonstrate how it affects the attitude of potential users and how it drives their adoption.

2.3.2 Socio-Economic Influencers

The term "Socio-Economic Influencers" is derived from two factors that Barbara Jeanne Slazus and Geoffrey Bick (2022) had originally identified as enabling

factors to the adoption of FinTech solutions. These factors are economic benefit and social influence (Slazus, 2022).

Economic benefit FinTech are seen as disruptive because they offer financial services for free or cheaper as opposed to charging customers unlike traditional financial services providers (EY, 2019). It is then noted that cost saving from a customer perspective is highly important to foster the adoption of FinTech (Maduku, 2017).

Social Influence Peer recommendations and favourable word-of-mouth recommendations affect promoting customers to adopt FinTech services (EY, 2019). The positive correlation between FinTech adoption and social influence is also demonstrated in the intention to use m-banking adoption(Maduku, 2017; Makanyeza, 2017; Wentzel et al., 2013). Social influence refers to the influence of others in adopting new systems and a person's perception of a certain group (Chuang et al., 2016; Kim et al., 2016). Social pressure can result in compliance, acceptance of social pressure with the possibility of gaining social status, and a shift in one's belief system, which can allimpact an individual's behaviour (Kim et al., 2016). Social influence is one of the main aspects influencing a person's perception or experience novel and unfamiliar FinTech products (Cao, 2016). Because of the uncertainty on finance related products, first time users turns to their social clubs in their decision making process for pre-checks (Kim et al., 2016).

Researchers in Portugal carried out an empirical investigation and discovered that social influence has a major impact on behavioural intentions in Portugal to adopt mobile payment technology. The study found that social influence affects mobile payment users' behavioural intentions (Oliveira et al., 2016). It is thus imperative to include social influence as a factor to adoption given that many other studies found a positive correlation between this factor and FinTech adoption.

2.3.3 Utility

Utility refers to the convenience and usefulness of FinTech solutions, which is valuable to improve the lives of those utilising the solutions (Slazus, 2022). There are four sub factors that South Africans deem important in order to adopt FinTech solutions (Slazus, 2022), these are presented in table 2.1 below.

Table 2:1 FinTech Utility factors (Slazus, 2022)

Sub factor	Definitions according to (Slazus 2020)	Similar findings by other scholars
Specific need	FinTech solutions fulfils certain financial service's needs (Slazus, 2022).	A study in Indonesia that was investigating the adoption of FinTech measured ease of use by assessing whether there is a relationship between adoption and the perception of the solution meeting the user's needs. The study found that there is a positive relationship between perceived usefulness in a form of addressing user's needs and FinTech adoption in Indonesia (Setiawan et al., 2021).
User experience	FinTech are easy to use and comprehend functionality (Slazus, 2022).	Studies that focused on mobile payments found that customer experience of mobile payments resulted in adoption of this FinTech

Sub factor	Definitions according to (Slazus 2020)	Similar findings by other scholars
		solution (Chiriac et al., 2018; Kumar et al., 2017)
Speed	The functionality of FinTech is faster to use (Slazus, 2022).	A study that focused on Customer Experience in FinTech found that speed contributes to good customer experience and ultimately adoption of FinTech solutions (Barbu et al., 2021).

The above four factors are further reinforced by local and international research (Dapp et al., 2014; Ismail & Masinge, 2011; Singh & Srivastava, 2018). It is clear that utility is measured by different variables as outlined on the above table, further the findings from previous papers shows that this factor has been successful in driving adoption of FinTech technology.

2.3.4 Age (Youth)

Numerous scholars have concluded that age is a key determinant to FinTech adoption (Garrett et al., 2014; Liébana-Cabanillas et al., 2014). Slazus (2020) finds that the younger generation in South African are keen to adopt FinTech (Slazus, 2022). This finding is consistent with the finding by Das and Das (2020), who found that 66.6% of the age group of 18–28 years and 62.3% of the individuals belonging to the age group 29–39 years turn to use FinTech services more than the older age groups (Das & Das, 2020). Scholars researching the adoption of mobile payments by age also found that younger customers have a higher likelihood of adopting mobile payments than older consumers, concluding that individuals aged 20 years are about 10 times more likely to adopt FinTech than adults aged 75 (Li et al., 2020). The numerous studies listed above indicates

a strong relationship between FinTech adoption and age implying that age is a key factor that drives adoption of FinTech solutions.

The following section has extended the factors that Slazus (2022) identified by including the factors identified by Hu et al., (2019) who identified six factors that enable FinTech adoption, these are; Financial Health, Attitude, Financial Literacy, Innovativeness, Government support, and Brand image (Hu et al., 2019). The six factors identified by Hu et al., (2019) are discussed in the below sections.

2.3.5 Financial health

Financial health refers to measuring financial satisfaction and situation, attitude and behaviour (Joo, 2008). It constitutes financial capability, financial wellness, and financial well-being (Anand et al., 2020). FinTech solutions can contribute to the financial wellbeing and resilience of users when they are open to adopting these services (Mahmud et al., 2022). According to a recent study by Korynski (2019), FinTech improves financial wellness by giving users quick access to information about managing money, including controlling income and expenses (Korynski, 2019). Thus it also fosters financial health (Barefoot, 2020) .

Previous studies have been done on the correlation between FinTech adoption and financial health and it was found that Financial Health is a factor that drives FinTech adoption (Anand et al., 2021; Morgan & Trinh, 2020). A study performed in the context of a developing country (Indonesia) also reached the same conclusion, where it was found that there is a positive relationship between FinTech adoption and financial health (Setiawan et al., 2021).The focus for this study is on lower-income earners, these are individuals that that have limited financial means at their disposal thus it is imperative to understand how this factor drives their usage or adoption of FinTech solutions.

2.3.6 Attitude

Like and dislikes towards a certain item, person, behaviour, institution or event can be referred to as attitude (Ajzen, 1993). In the case of this paper, this refers to FinTech. The simplicity of use and perceived utility of a system have been

found to have a favourable effect on consumers' attitudes about that system in previous studies (Huei et al., 2018) . This scenario would suggest that when a person finds FinTech products and services to be beneficial and easy to use, it improves their attitude about the technology (Huei et al., 2018). This came about as a result of FinTech's advantages, including its utility, user-friendliness, timesaving, and convenience (Chuang et al., 2016). Moreover, Al-Fahim (2016)'s research on Yemen's banking sector shows that simplicity of use and utility of a banking system positively affect consumers' attitudes toward and intentions to utilise internet banking (Al-Fahim et al., 2016).

Bringing together attitudes and intentions for using FinTech, previous research demonstrates a beneficial relationship between attitude and people's behavioural intentions (Hsu & Lin, 2016). This implies that a person's willingness to utilise FinTech will improve if they have positive experiences using its goods and services (Huei et al., 2018). Chuang et al. (2016) found support for this finding by finding a correlation between users' attitudes and intentions to utilise FinTech goods in Taiwan (Chuang et al., 2016). Similarly, Lee (2016) discovered that users' intentions to use mobile enterprise applications are significantly influenced by their mindset (MEA) (Lee, 2016). Additionally, Lee (2009) clarified that a consumer's intention to use internet banking is favourably influenced by attitude (Lee, 2009).

Setiawan et al. (2021) investigated whether individuals interests in using FinTech or what the comfort levels in using FinTech is and found that when a crisis arises, attitude has the biggest direct impact on people's intention to use FinTech (Setiawan et al., 2021). This finding aligns with other studies (Chuang et al., 2016; Hu et al., 2019). The above findings on the relationship between FinTech adoption and attitude supports the notion that attitude has a positive correlation to FinTech adoption.

2.3.7 Digital and financial literacy

Digital literacy has not been studied rigorously like financial literacy (Lyons et al., 2021). Digital literacy refers to the ability to discover, evaluate, write and interpret information on digital platforms and it is measured by grammar, composition,

typing skills and the ability to utilise technology (Wang et al., 2021). This concept is regarded as a lifelong learning skill (Wang et al., 2021).These skills include communicating with others through the internet (Martin & Madigan, 2006). In the case of this study, it refers to the use of FinTech platforms. For purposes of this study digital literacy adopts the digital literacy index recommended by Lyons et al. (2021) which are; mobile technology access, mobile phone proficiency, and mobile money proficiency (Lyons et al., 2021).

Financial inclusion and financial literacy are the driving forces behind digital financial literacy (Lyons & Kass-Hanna, 2021; Morgan et al., 2019). Therefore, there an expanding demand to increase digital financial literacy (Lyons et al., 2021). According to Carlin et al. (2019), in order to engage in the digital economy, a person must have the knowledge and abilities to use digital devices such mobile phones, smart phones, and tablets, as well as the ability to conduct digital financial transactions. According to a study by Lyons et al. (2021), financial literacy and digital literacy are crucial for promoting inclusivity and financial resilience, the study examined the relationship between multidimensional measures of financial and digital literacy and resilience-building financial behaviours, such as saving, borrowing, and risk management in South Asian and Sub-Saharan African countries (Lyons et al., 2021). Another study on the relationship between digital literacy and FinTech adoption was done in Ukraine, the study found that there is a relationship between the level of financial and digital literacy and the depth of promotion of innovative FinTech products among users (Vartsaba & Zaslavska, 2020).

Financial Literacy refers to the understanding of basic financial management information (Setiawan et al., 2021). The fast-growing pace of FinTech has given rise to the need to accelerate financial literacy in order for users to be able to operate FinTech solutions. This can include understanding basic financial terms like compound interest, inflation, and risk diversification (Jünger & Mietzner, 2020; Lusardi, 2019). Other studies have also added that financial literacy is linked with innovativeness (Liu et al., 2021).

With testing the link between financial literacy and FinTech adoption, previous studies have found that financial literacy has a close link to the adoption of

FinTech (Morgan & Trinh, 2020). The same conclusion was also reached by a study that aimed to investigates how financial literacy and other factors contributed to the adoption of FinTech services in Japan, the study found that higher financial literacy is positively associated with a higher likelihood of using FinTech services (Yoshino et al., 2020). In the context of a developing country, a study in Vietnam examined the correlation of financial literacy and FinTech awareness and adoption, by allocating a financial literacy score to a set of questions. The study discovered that an individual's awareness of and use of FinTech products is strongly and favourably influenced by their level of financial literacy (Morgan & Trinh, 2020). The above findings on digital and financial literacy indicates that these two factors are pivotal to drive FinTech adoption.

2.3.8 Innovativeness

The degree in which an individual experiments with new technology is referred to as Innovativeness (Lu et al., 2005). The ability to evaluate new products, technologies, or services at an early stage in their creation is referred to in this study as user innovativeness (Shahzad et al., 2022) . Highly imaginative people are more receptive to technology developments and less likely to notice hazards (Leicht et al., 2018). In addition to this, Yun et al., (2020) refers to Innovativeness as the degree of adoption of new products, technologies or services (Yun et al., 2020). Whilst Setianwan et al. (2021) refers to Innovativeness as pioneering FinTech services (Setiawan et al., 2021). Setianwan et al. (2021) concluded that the willingness to accept new technology is the main driving force of technology adoption, in the case of this paper that refers to FinTech.

Previous literature found that Innovativeness is also a positive factor in the adoption of FinTech (Hu et al., 2019; Morosan & DeFranco, 2014; Zhang et al., 2018). Kim et al. (2010) in their study of mobile payment users' adoption behaviour. This is because most consumers lack professional understanding of a variety of mobile services (Kim et al., 2010). In a study that studied the perspective towards the intention to use loan aggregator platforms, it was found that the attitude toward using the online platform and the behavioural desire to use it were both highly influenced by user innovation. As a result, there is a

correlation between a client's interest in experimenting with new technology or using new products or services and FinTech adoption. (Shahzad et al., 2022). Innovativeness is thus concluded to be a contributing factor to FinTech adoption.

2.3.9 Government Support

Access to the internet is important to accessing FinTech services (Slazus, 2022). To this end, Government support is crucial in building infrastructure such as internet access in order to enable people to access FinTech solutions (Setiawan et al., 2021). The support of the Government also extends to addressing uncertainty of utilising FinTech services, this was proven in the study by Goo and Heo (2020) who concluded that government support positively aligns with FinTech adoption (Goo & Heo, 2020). User Innovativeness, financial literacy and financial technology literacy are all dependant on Government support to this end, Setianwan et al. (2021) concluded that Government assistance and FinTech adoption in Indonesia have a positive link that is mediated by financial literacy (Setiawan et al., 2021). Previous studies clearly indicate the dependency of government support on user's adoption to FinTech solutions, this makes government support another key important factor that drives FinTech adoption.

2.3.10 Brand Image

Brand image is intangible in nature; however it has economic value as it has the potential to produce positive effects on users (Hu et al., 2019) . Brand has the power to prompt service providers to provide reliable service to users, thus has an effect on promoting users' achievements of their intended purposes (Park et al., 2015). A number of empirical studies supports the notion that Brand Imagine has the power to influences user's perception of quality (Riyadh et al., 2010) , value (Shapiro et al., 2019) and satisfaction (Saleem & Rashid, 2011). For this reason, brand is also listed as an enabling factor to FinTech adoption.

2.3.11 Proposition 1

There are numerous factors that promote the use and adoption FinTech in developing countries.

2.4 Barriers to the use of FinTech solutions

This section also draws on several past studies that focused on factors that detracts the use of FinTech solutions.

2.4.1 Perceived risks, Associated costs and Security concerns

The adoption of FinTech, is heavily influenced by perceived risk (Chigada & Hirschfelder, 2017). The increase in cybercrimes and data breeches has alarmed customers; thus, customers are more vigilant when utilising digital channels for financial services (Dapp et al., 2014). Africa is not exempt from the perceived risk that customers deem to be inherent with FinTech, the common risks in Africa include Identity theft, phishing, hacking, malware, data breaches and SIM swaps (Slazus, 2022). Barbara Jeanne Slazus & Geoffrey Bick's (2022) also found that the lack of human interaction negatively influences South African consumers to FinTech adoption in the South African context. This topic will further be unpacked in section 2.5.

Perceived cost is defined as "the degree to which a person perceives that utilising FinTech will cost money" Ismail & Masinge (2011). From a customer perspective, FinTech costs can include transaction service fees, data rates from mobile networks, and expenditures associated with purchasing a mobile device, such as a smartphone or a basic feature phone (Ismail & Masinge, 2011). Cost as a deterrent factor to adopting FinTech is also found internationally by researchers; Brazil (Cruz et al., 2010), Iran (Hanafizadeh et al., 2014) and India (Pandiya & Gupta, 2015). This deterrent is more apparent in lower-income customers as they do not have the means to pay for high transaction fees (Li et al., 2020).

Security concern is defined as measures to maintain the privacy of financial information while it is being sent and stored (Taherdoost, 2018). It refers to

concerns around private information and actions that a user considers the financial services provider will take to protect the user's money (Taherdoost, 2017). The most notable security concern is cybercrimes, which has created an obstacle for adoption (Ogbanufe & Kim, 2018). Previous research showedn that the perception of information loss is unfavourable and prevents the adoption of new technology (Ogbanufe & Kim, 2018).

This factor was not outlined by Barbara Jeanne Slazus & Geoffrey Bick's (2022) however based on the extensive empirical research that the Researcher conducted, it is deemed a very important factor that poses a barrier to the adoption of technologies (Ogbanufe & Kim, 2018). This concern extends to mobile payments (Tseng et al., 2017) and e-commerce(Taherdoost, 2017). This is mainly because, security and confidentiality of personal data are fundamental in processing financial transactions (Ogbanufe & Kim, 2018).

The above literature supports the notion that Perceived risks, associated costs and Security concerns are barriers to FinTech adoption.

Further studies were investigated to understand other barriers to FinTech adoption. The findings of these previous studies are summarised on the below table:

Table 2:2 Barriers to the use of FinTech solutions

Location	Authors	Main barriers to FinTech adoption
India	(Kaur et al., 2020)	• Usage • Risk • Value barriers
India	(Chittineni, 2018)	• Traditional habits of using cash • Security • Value for the money

Location	Authors	Main barriers to FinTech adoption
		• Ease of use
Sweden	(Dimitrova et al., 2022)	• Privacy • Access barriers
China	(Arif et al., 2020)	• Value barrier • Risk barrier • Image barrier
Malaysia	(Rani, 2021)	• Perceived privacy • Security • Risk
India	(Das & Das, 2020)	• Income • Education level • Age

From the above studies, it is evident that there are numerous barriers to the use of FinTech solutions. The researcher will be focusing on the below factors that are dominant in the previous studies:

2.4.2 Age, Income, and education level

A key finding by Slazus (2020) is that the older generation are more hesitant to adopt FinTech solutions, thus age can also be seen as a deterrent to adoption (Slazus, 2022). This is further supported by Das and Das (2020) who found that only 26.9% of individuals aged 50 and above were utilising FinTech services (Das & Das, 2020). Li et al. (2020) concluded that older individuals turn to be anxious whenever they are utilising technology as they turn to have lower Perceived Ease of Use and thus this contributes to their resistance to utilising FinTech solutions (Li et al., 2020).

A few studies have been conducted on income as a factor to technology adoption let alone FinTech adoption (Solarz & Swacha-Lech, 2021). Because of the lack of recent studies, older literature is referenced due to the focus of this paper. Flavián et al. (2006) found that income significantly impacts the adoption of online banking services (Flavián et al., 2006). This barrier is mainly due to the perceived cost associated with technology (Mallat, 2007). Li et al. (2020) conducted an empirical study on mobile payments adoption and this study partially supports the finding that stated that utilising mobile payments depends on your income, the lower the income the less likely is an individual to adopt FinTech solutions (Li et al., 2020). In recent studies, Das and Das (2020) demonstrated that adopting FinTech services depends on customers income (Das & Das, 2020).

According to Rogers (2020), individuals who adopt technology early are mostly those with higher education (Rogers et al., 2014). This was also supported by Szopiński (2016), who showed that education level positively links the adoption and use of online banking (Szopiński, 2016). Li et al. (2020) also confirmed this positive correlation where post bachelor's degree graduates had a 27% usage rate compared to 22% of individuals with high school or lower degree (Li et al., 2020). Das and Das (2020) also supported this as the study found that respondents without any formal education have never used FinTech services (Das & Das, 2020). Thus it can be concluded that level of education can be a deterrent to adopt FinTech services (Das & Das, 2020).

In conclusion, age, Income, and education level are also identified as barriers to FinTech adoption.

2.4.3 Proposition 2

The factors that detract from the use of FinTech solutions includes associated costs, low income and education level, perceived risk, and security concerns. These affect both the banked and unbanked.

2.5 ANALYTICAL FRAMEWORK

This section intends to outline this study's theoretical and empirical concepts. The theories discussed in this section aims to outline and account for the propositions outlined above. To select the right theories for the study, a thorough literature review was conducted to answer the research questions outlined in Chapter 1.

Eight major significant models and theories explain an individual's acceptance of any technology-based service; Theory of Planned Behaviour (TPB); Innovation Diffusion Theory (IDT); Social Cognitive Theory (SCT); Model of PC Utilisation (MCPU); Combined TAM and TPB (C-TAM-TPB); Motivational Model (MM); Theory of Reasoned Action (TRA); and Technology Acceptance Model (TAM). (Venkatesh et al., 2003). However, three theories underpin the study, namely, Technology Acceptance Model (TAM), the Perceived Risk Theory (PRT) and the Innovation Resistance Theory (IRT) model.

2.5.1 Theoretical Framework - Technology Acceptance Model (TAM)

The first framework to model and predict user acceptance of information systems was the Technology Acceptance Model (TAM) (Davis, 1985). This model results in an accurate representation of the user's intent to use technology (Akturan & Tezcan, 2012). According to Davis (1985), two direct adoption drivers impacts users attitude, these are "perceived usefulness" (PU) and "perceived ease of use" (PEOU) (Davis, 1985). This model has also been used and applied numerus times by studies in Africa (Chigada & Hirschfelder, 2017; Lule et al., 2012; Muzurura & Chigora, 2019; Wentzel et al., 2013). The TAM model is widely used for technology adoption as it excellently explains the consumer's willingness to adopt technology as well as allows improvements based on analysis of problems, thus in this study the model is used to answer the research question outlined in chapter 1 (Zhang et al., 2018). This study has adopted the TAM model because it a model that is widely used in the study of technology adoption. It offers a theoretical framework for comprehending and forecasting users' attitudes and intentions toward adopting technology. The two main characteristics of this model; Perceived usefulness (PU) and perceived ease of use (EU) are excellent

variables to forecast users' intentions to adopt technology. Further, a wide number of technologies and user groups have been studied using the TAM model, which has been demonstrated to have a high level of predictive value.

See below for the graphical representation of the model:

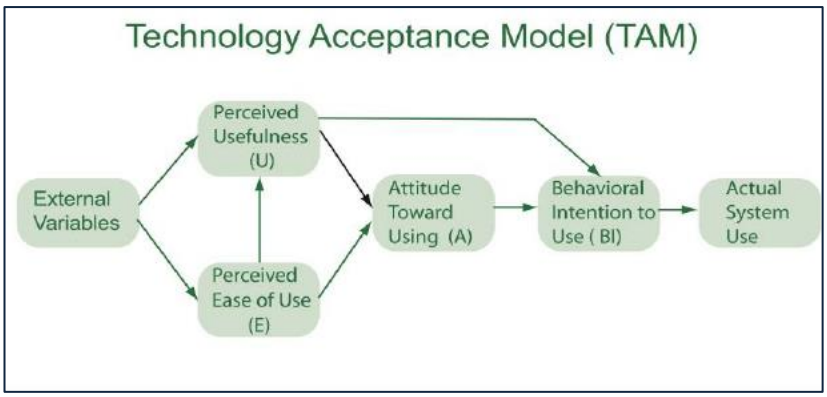

Figure 2:3 TAM Model (Davis, 1985)

The two key variables of the TAM model are discussed in the below sections:

2.5.1.1 Perceived usefulness (PU)

The extent to which someone believes they will gain from employing technology is known as perceived usefulness (Slazus, 2022). For purposes of this paper, this refers to FinTech. As a result, it may be said that a person will first consider the impact of their behaviour before making a choice based on PU (Kim et al., 2009). This is further supported by Ryu (2018) who states that customers opt to adopt FinTech because they believe it has a positive impact (Ryu, 2018a). Over the years, there has been arguments that one major contributing factor to PU is the increased demand for customisation and personalised services (Dapp et al., 2014).

Numerous empirical research concur that PU has a substantial impact on attitudes regarding utilising FinTech (Chuang et al., 2016; Ismail & Masinge, 2011; Kim et al., 2016; Pandiya & Gupta, 2015; Singh & Srivastava, 2018). This phenomenon affects the world (Pandiya & Gupta, 2015). According to a study conducted in Ghana, consumers' intentions to utilise technology at Access Bank

was positively impacted by PU (Cudjoe et al., 2015). Chinese banking institutions were also used as research objects by Chang et al., (2016) and it was found that FinTech has an advantage of bringing in-depth mining of user data and constructing a user knowledge map (Chang et al., 2016). On the other hand, a study in Thailand concluded that there is a correlation between a developed system that is easy to use and the intention to use mobile banking (Chansaenroj & Techakittiroj, 2015).

Carlin et al., (2017) discovered that millennials' behavioural intentions to adopt FinTech are influenced by life expectancy and financial knowledge (Carlin et al., 2017). Another noted factor of perceived usefulness is that it does not require a user to have an additional skill in utilising the technology (Tun-Pin et al., 2019). This inherently attracts users of all background as the FinTech solution is user-friendly, has clear instructions, and facilitates transaction (Tun-Pin et al., 2019).

2.5.1.2 Perceived Ease of Use (PEOU)

Perceived Ease of Use (PEOU) refers to the degree which an individual trusts that utilising a system will come with ease or less effort (Davis, 1985). In this study, the system referred to is FinTech. This is also supported by (Hu et al., 2019) who refers to “perceived use of ease” as the effort consumers make in order to learn to utilise FinTech (Hu et al., 2019). Researchers believe that FinTech solutions that are easy and less complex will not be intimidating to customers (Davis, 1985; Priya et al., 2018). Thus, PEOU result in users being able to adopt noncomplex FinTech solutions in their daily lives (Priya et al., 2018). Numerous researchers agree that PEOU significantly affects attitude (Chuang et al., 2016; Ismail & Masinge, 2011; Kim et al., 2016; Pandiya & Gupta, 2015; Singh & Srivastava, 2018). This is mainly because FinTech services have managed to close the customer experience gap that traditional financial service providers always had as FinTech’s ease of use is the main determinant of its adoption (Abbad, 2013; Chau & Ngai, 2010). Kim et al. (2016) further outline that PEOU of FinTech is more applicable in banking to check one’s account balance and fund transfers (Kim et al., 2016).

The positive correlation between adoption and ease of use is also demonstrated by scholars in the research field of banking (Akturan & Tezcan, 2012; Szopiński, 2016) .The contributing factor to this is the convenience, friendly, easy to operate nature of FinTech service (Riquelme & Rios, 2010). Globally there are a number of positive outcomes for this factor, in Thailand, scholars investigated Taiwanese consumers' intentions to make online purchases revealed that perceived utility was a predictor of customers' willingness to utilise FinTech (Moslehpour et al., 2018).The findings from previous studies demonstrate the positive correlation of perceived ease of use in the adoption of different FinTech solutions, making this factor an important one to drive FinTech adoption.

2.5.2 Perceived Risk Theory (PRT)

The Perceived risk theory was introduced by Bauer in 1960. This theory is used to analyse consumer behaviour (Bauer, 1960).

2.5.2.1 Perceived risk factors for adoption/lack of adoption

This section is an extension of section 2.4.1 and draws from several empirical literature. Per the previous section, Perceived Risk is a deterrent to FinTech adoption (Hu et al., 2019; Slazus, 2022; Tang et al., 2020). Perceived risk is further discussed in this section as several sub-factors anchors this factor.

Perceived risk can also refer to the absence of trust (Hu et al., 2019). Most scholars see Perceived risk as the key factor that deters users from adopting FinTech (Kesharwani & Bisht, 2012; Sikdar & Makkad, 2015). Perceived risk refers to users' privacy and financial risks when choosing FinTech solutions (Hu et al., 2019). Financial risk refers to fears of product profit rate and Privacy risks refers to the disclosure of privacy information when transacting using FinTech solutions (Hu et al., 2019). FinTech services involves technologies such as big data, the Internet of Things (IoT) and Cloud Computing which brings about security concerns when utilising the service (Zhou et al., 2010). The main reason

this factor is deterring users from adopting FinTech is due to the fear that personal information may be misused when using FinTech services (Bansal et al., 2010).

In the FinTech context, Ryu (2018) identified factors four factors underpinning Perceived Risk these four factors were also adapted by Tang et al. (2020), the factors are Financial Risk, Legal Risk, Security Risk and Operational Risk (Tang et al., 2020).

2.5.2.1.1 Financial Risk

Financial risks refer to financial losses experienced whilst conducting a financial transaction (Forsythe et al., 2006). In the context of FinTech, financial risks stem from budgetary exchange framework, currency misinterpretation, moral danger and exchange fees which negatively affects the use of FinTech (Ryu, 2018b). Previous studies by Ryu (2018) found that users of network and mobile phones mostly do not adopt FinTech solutions due to the perceived financial risk; thus, financial risk is a barrier to FinTech adoption (Ryu, 2018b). This finding is consistent with the study conducted by Tang et al. (2020), which found that financial risks negatively affect the adoption of FinTech in Malaysia (Tang et al., 2020). This is mainly because of the perceived financial losses such as financial fraud, misrepresentation of money and possible downtime of the trading frameworks (Tang et al., 2020).

2.5.2.1.2 Legal Risk

Legal risk refers to the unclear legal standing and lack of guidelines for FinTech (Tang et al., 2020). Legal risks include customer's data, privacy and safety of financial systems (Tang et al., 2020). There is currently little guidance on financial and security issues in FinTech since it is recent in the market (Tang et al., 2020). This lack of guidance results in suspicion, fear and uneasiness in users hence (Tang et al., 2020) found that there is correlation between legal risks and FinTech adoption, the more legal risks increase the more the number of consumers are less likely to use FinTech. This finding agrees with the finding by Ryu (2018), which showed that consumers were reluctant to utilise FinTech due to legal risks.

2.5.2.1.3 Security Risk

Security risk is the absence of control over personal information (Luo et al., 2010). In the context of FinTech, security risk is underpinned by hacker attacks on the security systems of FinTech services, fraud and network intrusion (Tang et al., 2020). According to Ryu (2018) this can result in negative effects on user's hence this risk is a major barrier to FinTech adoption due to low levels of confidence in technology (Tang et al., 2020). Ryu (2018) argues that security risk is the main factor for perceived risk of FinTech usage and thus it has a negative effect on FinTech adoption. This finding is contrary to the studies that found that the relationship between security risk and the intention to use FinTech is insignificant (Tang et al., 2020; Teoh et al., 2013).

2.5.2.1.4 Operational Risk

Operational risk is defined as the likelihood of product failure due to the deviation of product design and the failure to fulfil benefits (Luo et al., 2010). In the context of FinTech, this refers to flaws in internal processes, people and frameworks (Barakat & Hussainey, 2013). From a customer context, this refers to transaction errors, incomplete transactions due to system failure and hesitation in resolving system problems (Tang et al., 2020). For this reason, Tang et al. (2020) found that operational risks have a negative effect on the intention to use FinTech.

2.5.2.1.5 Proposition 3

Perception on the adoption of FinTech among the banked and unbanked is driven by perceived risks underpinned by financial, legal, operational and security risks.

2.5.3 Innovation Resistance Theory models (IRT)

The (IRT) is a theoretical framework designed for customer resistance, and it assists in understanding user's behaviour to resistance (Ram & Sheth, 1989). For the purposes of this paper, Innovation Resistance refers to the rational thinking behaviour that affects the decision- making process to adopt innovation due to changes in the status core, in this case FinTech (Hew et al., 2019). IRT proposes

active resistance which outlines functional barriers that drive innovation resistance, passive resistance comes to being due to conflicts with existing beliefs which is outlined by psychological barriers as proposed by IRT (Yu & Chantatub, 2015). The inclusivity of IRT model is relevant to this study as it investigates users' resistance towards innovation (Ma & Lee, 2019). Thus it addresses the user resistance gap that the TAM model does not cover (Gupta & Arora, 2017).

IRT appears to have been the preferred method among researchers to study innovation resistance, as evidenced by the eight earlier empirical investigations that used the IRT as their only theoretical framework (Borraz-Mora et al., 2017). IRT has also complemented other theoretical frameworks such as UTAUT2 (Lian & Yen, 2014). The IRT has also been used to look into the obstacles and opposition to various online solutions, like internet purchasing (Lian & Yen, 2014), m-banking (Gupta & Arora, 2017), m-commerce (Hew et al., 2019) and e-banking (Borraz-Mora et al., 2017). IRT has also been used by researchers globally, including Malaysia (Moorthy et al., 2017), Taiwan (Yu & Chantatub, 2015), Spain (Borraz-Mora et al., 2017) and India (Gupta & Arora, 2017).

IRT is split into two parts (Ram & Sheth, 1989):

- **Functional barriers**
    - Usage barrier

      This refers to barriers that results due to changes brought by new innovation versus existing systems (Ram & Sheth, 1989). User barriers have been linked to users' intentions negatively in previous studies on m-banking (Gupta & Arora, 2017), m-commerce (Moorthy et al., 2017) and e-banking (Borraz-Mora et al., 2017).

    - Value barrier

      This refers to the balance between innovation and benefits offered (Morar, 2013). Prior literature in different contexts has also found that value barrier and technology adoption have close association

with mobile commerce (Moorthy et al., 2017) and mobile banking (Laukkanen, 2016).

- Risk barrier

  Risk barriers refers to new technology's inherent uncertainties (Dunphy & Herbig, 1995). Risk barriers have a negative impact on adoption intentions in different domains, namely mobile commerce (Moorthy et al., 2017) and mobile banking (Laukkanen, 2016).

- **Psychological barriers**
  - Traditional barrier

    Traditional barriers refer to challenges posed by adopting new technology (John & Klein, 2003). Numerous literatures found that tradition barriers negatively affect adoption intentions in mobile commerce (Moorthy et al., 2017) and mobile banking (Laukkanen, 2016).

  - Image barrier

    Imagine barrier is defined as negative brand of the innovation due to the perceived complexity (Lian & Yen, 2013). Prior research have reported image as a barrier negatively influencing users' behaviour regarding different digitisation initiatives, mobile commerce (Moorthy et al., 2017) and mobile banking (Laukkanen, 2016).

2.5.4 Conceptual Framework

The preceding sections have prompted the construction of an enhanced conceptual framework. As per the preceding sections, this study is anchored by propositions drafted in the empirical literature and the theoretical framework referred to above; TAM, PRT and IRT. There are noted limitations on the TAM this is further supported by a few other researchers who noted that the models do not consider risks (Shin, 2010). Therefore, enhanced conceptual framework aims to incorporate some of the key findings of the empirical literature and the theoretical frameworks for FinTech adoption.

FinTech Adoption Research Model

The framework aims to answer the research questions outlined in chapter 1 of this study. The framework enhances/extends the TAM model, Perceived Risk Theory (PRT) and the Innovation Resistance Theory (IRT) by extending the model with the three propositions defined in the study (as informed by literature). This model aims to model the factors that enable the use of FinTech solutions and the barriers to the use of FinTech solutions by lower-income earners.

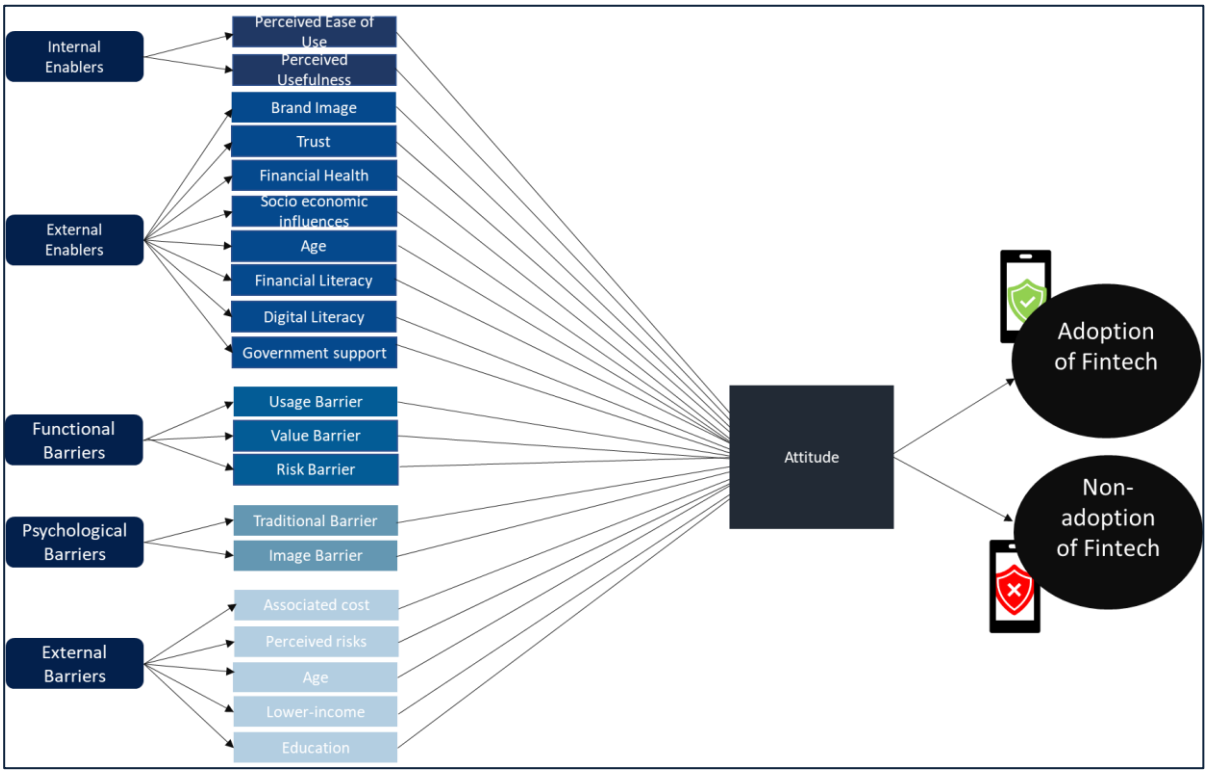

Figure 2:4 FinTech adoption model

From the above, it is clear that adoption is driven by enablers and barriers. Enablers are split into internal and external enablers, where internal enablers are anchored by the TAM model; Perceived Ease of Use and Perceived usefulness and external enablers are anchored by the factors of adoption as per the past literature. Barriers are anchored by the Innovation Resistance Theory (IRT), Perceived Risk Theory (PRT) and barriers of FinTech adoption as per the past literature.

2.6 Conclusion of Literature Review

This chapter reviewed several empirical kinds of literature on the factors that promote or deter the use of FinTech. The chapter started off with answering the first sub research question: What factors that enable the use of FinTech solutions? the researcher firstly made use of Barbara Jeanne Slazus and Geoffrey Bick's (2022) paper on Factors that Influence FinTech Adoption in South Africa as the basis for the discussion and then proceeded to use the study by Hu et al. (2019) which focused on the adoption intention of FinTech services for bank users. The above-mentioned studies were supported by previous studies and findings that have been done on the phenomenon. This led to the identification of ten factors that promote the use of FinTech, resulting in the formulation of **Proposition 1.**

The chapter then focused on answering research sub question two; What are the barriers to the use of FinTech solutions? The researcher also started off this section by basing it on the study conducted by Barbara Jeanne Slazus & Geoffrey Bick's (2022), two key factors namely Perceived Risk and Associated Costs were identified from this study. The rest of the factors that deter the use of FinTech were derived from a number of previous studies as per table 2:2. The findings and results found in the previous studies led to the identification of six factors that deter the use of FinTech and ultimately led to the formulation of **Proposition 2.**

The chapter proceeded to focus on Theoretical framework that have been designed for technology adoption. The intent of this section is to outline the theoretical and empirical concepts of this study. Three theories were outlined, namely, Technology Acceptance Model (TAM), Perceived Risk Theory (PRT) and 2.6.3 Innovation Resistance Theory models (IRT).

In this section, the chapter answered research question three: Perceived risk factors for adoption/lack of adoption. This chapter was an extension of section 2.4.1, and it drawn from several empirical literature. This led to the formulation of Proposition 3.

As outlined in the chapter, three propositions have been formulated to answer the research questions outlined in Chapter 1.

Table 2:3 Propositions

Proposition	Proposition statement
Proposition 1	There are numerous factors that promote the use and adoption FinTech in developing countries.
Proposition 2	The factors that detract from the use of FinTech solutions includes associated costs, low income and education level, perceived risk, and security concerns. These affect both the banked and unbanked.
Proposition 3	Perception on the adoption of FinTech among the banked and unbanked is driven by perceived risks underpinned by financial, legal, operational and security risks.

The chapter proceeded to focus on the Theoretical framework that have been designed for technology adoption. This section intends to outline the theoretical and empirical concepts of this study. Three theories were outlined, namely, Technology Acceptance Model (TAM), Perceived Risk Theory (PRT) and Innovation Resistance Theory models (IRT). The researcher noted that the theoretical models did not cater for propositions formulated and thus constructed an enhanced conceptual framework.

The chapter closes off with an enhanced conceptual framework for FinTech adoption which enhances the TAM model, Perceived Risk Theory (PRT) and the Innovation Resistance Theory (IRT) model to predict factors that enable/deter the adoption of FinTech solutions.

CHAPTER 3. RESEARCH METHODOLOGY

This section discusses the research methods that will be followed to address the propositions identified in the literature review as solutions to the research questions described in chapter 1. The chapter starts by outlining the research approach used in the study, followed by a discussion of the chosen research design and its advantages and disadvantages as they pertain to the research. The chapter then discusses the data collection methods used in the study and the rational thereof. Next, the population and sample to be used in the research and the justification for this selection is described. The chapter will then move on to discuss the research instrument used for the research and indicate how each part of the research instrument addresses a specific issue in the research. The chapter will also include a description of how data will be gathered using the instrument and outline the data analysis and interpretation. Limitations and possible challenges of the study will then follow. The chapter will then conclude with quality assurance and Ethical Considerations.

3.1 Research approach

This study focused on factors that drive the adoption of FinTech by lower-income earners; the focus is thus non-numeric as it aims to explore and understand what drives participants to adopt/not adopt FinTech solutions. For this reason, the qualitative research approach was adopted to give an in-depth understanding of the participants' understanding of FinTech, the FinTech adoption drivers and their experiences with these drivers in the South African context.

Qualitative research is described as an investigation of phenomena, usually in-depth and holistically, employing a flexible study methodology and acquiring rich narrative materials (Polit & Beck, 2008). Qualitative research strives to provide in-depth insights and understanding of real-world problems (Moser & Korstjens, 2017). According to Ludvigsen et al. (2021), a qualitative study provides high-quality data, hence it was selected for this study (Ludvigsen et al., 2021). For this study, the empirical qualitative technique was adopted because the study sought

a more in-depth insight into the phenomenon. Exploratory research provides new insights into the phenomenon, asks questions, and evaluates the phenomenon from a different perspective (Nancy et al., 2001). This is done when little research is done on the subject or topic. The purpose is to develop a theory or framework (Collis & Hussey, 2013). Exploratory research explores whether existing methodological concepts apply to the phenomenon and whether new frameworks or methodologies need to be developed. This type of research does not provide a definitive answer to the problem, but it does provide ideas, guidance or direction that may be the basis for future research (Collis & Hussey, 2013). Due to FinTech being relatively new phenomenon, there is limited information on this subject hence this research was conducted in an exploratory manner.

As per the literature review, there is some understanding of the factors that drive the adoption of FinTech. However, there is little understanding of this topic in the South African context, moreover the lower-income earners. With the assumption that there is limited understanding of this topic, prior conclusions on factors that drive FinTech in South Africa may be limited to mobile or internet banking. With this limited prior research and data on the topic, a qualitative study is required to understand the relationship between lower-income earners and FinTech and the perception of FinTech by lower-income earners. This understanding can be enriched by probing questions in interviews.

3.2 Research design

A research design is a process of collecting, analysing, interpreting and reporting data in research studies (Creswell & Clark, 2017). Mouton (2021) defines it as a conceptual data collection plan in empirical studies (Mouton, 2011). Thus, a research design sets out the design procedure for the data required, the methods that will be used to collect and analyse the data and connects it to the research question (Wilkerson et al., 2014). Mouton (2021) further notes that the research design section tests the overall research question. The topology of the research question is classified into two categories: empirical and non-empirical (Mouton, 2011). Empirical studies result in new knowledge of data and non-empirical

studies makes use of literature review, modelling, philosophical and conceptual analysis to create an understanding (Saunders et al., 2007).

As stated in the research approach, this study adopted a qualitative research approach to understand what participants understand about FinTech and explore participants experiences and learnings. Because qualitative is sorely based on the immediate experience of participants, it provides the most essential and meaningful data (Marvasti, 2018). To this end, the personal perceptions of the study's participants formed the core data of the study, hence the need to adopt a method that allows for exploration. The chosen methodology was a generic qualitative design. This qualitative research design concerns people's subjective attitudes, opinions and reflections of a given phenomenon (Percy et al., 2015). In the study, the focus is to understand the perceptions of lower-income earners in South Africa in terms of what they are experiencing, have experienced, or have not experienced with regards to FinTech solutions. This research design was chosen due to some of the greatest advantages of a phenomenological methodology. One advantage of this methodology is that it aims to learn about and comprehend a phenomenon, a process, or the perspectives and views of participants. It is suitable to small-scale research because it is reliant on in-depth interviews (Merriam, 1998). The disadvantage of using this method though is that it typically contains small samples sizes making it difficult to generalise on larger populations, it limits topics being studied as it focuses on certain contexts, experiences and behaviours and it can easily be influenced by the bias of a researcher as it relies heavily on subjective interpretation (Bazeley, 2020).

3.3 Data collection methods

Data collection generates and evaluates information within an existing framework for a particular variable, which helps answer research questions (Kabir, 2016). This study took a qualitative empirical study approach, thus semi-structured one-on-one interviews were undertaken as means of data collection. Semi-structured interviews were chosen as they allowed the researcher some flexibility in the way questions is worded for each participant and allowed the researcher to probe for more information and clarification where necessary. This method was chosen

because of certain pros it has, the method results in objective knowledge regarding an experience, it enables flexibility of responses and also allows for a comparison of responses by item as all participants are asked the same question (McIntosh & Morse, 2015). It also allows follow up on verbal and non-verbal reactions such as laughter, sighs and facial expressions (Kakilla, 2021). The cons of this method were also noted, this method lacks subjective knowledge, focuses only specific areas of enquiry (McIntosh & Morse, 2015). Because it is verbal, language barrier can cause a challenge as it pose a risk to loss of direct meaning through translation (Kakilla, 2021) .

According to Newman (2013), a researcher needs to be able to align the research questions to the appropriate data collection technique; hence, the study chose to use open-ended questions to collect data for this exploratory research (Newman, 2003). Open-ended questions were chosen because they provide respondents the freedom to deliver a variety of responses which might also prompt follow-up questions (Hyman & Sierra, 2016). It was however noted that open-ended question method has a few disadvantages; although audio or video recording appears to be a great option, many people are reluctant to allow themselves to be audio or video recorded. As a result, the only thing interviewers have of their responses is what they can scribble down as soon as they can, which may be inaccurate and imprecise, leading to inconsistent coding (Hyman & Sierra, 2016). The outlined data collection methods assisted in answering the research questions outlined in chapter 1.

3.4 Population and sample

3.4.1 Population

A population refers to the total number of people from which a statistical sample can be drawn in scientific analysis (Boddy, 2016). In the case of this study, the population refers to all lower-income earners[1] in South Africa.

[1] Lower-income earners refers to people earning between R0 – R3000 in a given month, this is inclusive of those employed in the formal employment sector, informal employment sector, Social Grant recipients

3.4.2 Sample and sampling method

Sampling refers to a method for choosing a representative sample of people or things from a broader population in order to draw conclusions or make inferences about that population (Taherdoost, 2016). The study has adopted a few non-probability sampling techniques. Non-probability sampling has an advantage of being cost- and time-effective (Cusher et al., 2018). This is crucial in this study as there is a very big population to work with. The downside of this sampling technique is that it is impossible to know how well the population is represented, calculation of confidence intervals and margins of error cannot be done as well (Cusher et al., 2018).

The planned number of interviews was between fifteen and twenty-five. This sample size was influenced by the scientific paradigm employed in the study (Boddy, 2016). The selected sampling techniques were convenient sampling (the researcher started collecting data from the participants with whom the researcher has a relationship with), purposive sampling (the researcher used judgment in selecting participants) and snowball sampling (the researcher requested recommendations from initial participants). Three sampling techniques were chosen due to the study's exploratory nature and to ensure that a balanced view of participants can be obtained and meet needs of the research. The list of potential participants is indicated in Table 3.1 below:

Table 3:1 Potential participants

Age of participant	Type of income	Number of participants who have **adopted** FinTech solution to be interviewed	Number of participants who have **not adopted** FinTech solution to be interviewed
18 -25	Formal, informal, R350 grant	2	2
26 - 35	Formal, informal, R350 grant	2	2
36 – 45	Formal, informal, R350 grant	2	2
45 – 55	Formal, informal, R350 grant	2	2
56 - 60	Formal, informal, R350 grant	2	2
Over 60	Social Grant Pension Recipients	2	2
Total number of participants		**12**	**12**

3.5 The research instruments

A research instrument is a tool used for data collection (Cusher et al., 2018). Although every interview will be conducted with a different approach due to the unstructured nature of the technique, an interview schedule was deployed to ensure uniformity (Lievens & De Paepe, 2004). This resulted in each interview schedule consisting of the following three major contextual parts:

i. The opening was designed to make the participant felt welcome and at ease. The objective of the interview was also be outlined upfront to give

the participants an overview of what the interview was about and the research-supplementing information to keep participants motivated to answer the questions thoroughly was provided. Lastly, the opening indicated the expected length of the interview.

ii. The main part of the interview plan listed topics covering possible questions. The interview was moderately planned to include main and possible exploratory questions about each section. This was done by providing some freedom to check responses and adjust to the situation. The unstructured one-on-one interview allowed responses to be recorded.

iii. The ending was short but not abrupt which outlined the main issues discussed during the interview, the next actions to be taken and thank the participants for their time.

Due to the nature of the participants, English challenged their understanding of the questions. Thus, the interviews were conducted in the language the participants understood and allowed them to answer in their language. The responses were then translated into English.

The research instrument was developed, and the interview guide was used to conduct the interviews. The questions were based on the research questions presented in chapter 1.

As stated, semi-structured face-to-face and virtual interviews were conduct using an interview instrument (Annexures A and B). The interviews were semi-structured, and a list of questions were prepared ahead of time to allow for additional input or clarification on the answers given see Annexures A and B (research instrument). The questions were sent to the participants before the interview to manage their expectations. This guided the participants' responses, as they could contextualise their responses based on the questions received.

3.6 Procedure for data collection

COVID-19 protocols recommends that virtual interviews be conducted with participants. However, due to the nature of the participants – lower-income earners, conducting interviews virtually was a challenge as most of them did not

have the means to be contacted virtually. Thus, virtual, and face-to-face interviews were conducted observing all COVID-19 protocols. During the interviews, two instruments to capture the data were used: a notepad to write notes and a recorder. The interviews took approximately an hour to complete. Because the study employed semi-structured interviews, open-ended questions were asked. Appointments with the targeted audience were sent via email for those with email addresses and SMSs for those that do not have email addresses. The following process will be followed:

I. The researcher called the identified participants to introduce them to the study and outline its purpose.

II. The researcher asked the identified participants to participate in the study in the form of an interview.

III. The researcher then set up interviews with participants who agreed to form part of the study.

IV. The participants were then sent the questions before the interview to ensure they were familiar with them and comfortable answering them.

V. The interviews took approximately 60 minutes each.

3.7 Data analysis strategies and interpretation

To analyse the data, a three-stage process recommended by Miles and Huberman (1994) was used. This process involved writing the interviews, summarising the interview, coding the answers according to participants' keywords and testing these against the conceptual framework.

Bhattacherjee (2012) stated that qualitative research heavily relied on a researcher’s knowledge of the subject context and analytic and integrative skills (Bhattacherjee, 2012). Qualitative research can lead to assumptions and biases; hence, data analysis is required to test the researcher’s assumptions, bias, and subjectivity (Fabio et al., 2012). Data analysis refers to converting or analysing raw data to produce information for qualitative or quantitative study (Aljerf, 2018). The purpose of data analysis is understanding the different elements of data by

examining the relationship between concepts or constructs and then interpreting the data to synthesise the data into a comprehensible form (Mouton, 2011).

As stated, this study analysed qualitative data, and as per Heyink and Tymstra (1993), the analysis of qualitative data refers to the interpretation of deter to understand the subject (Heyink & Tymstra, 1993). In the case of this study, the data gathered during the interview process were be grouped according to themes and stories. This approach was relevant to this study as the study's participants might have different perspectives on the topic, insights and knowledge of the factors that drive the adoption of FinTech for lower-income earners. Hence the thematic approach was relevant for this study as it explores perception's, examines data to identify common themes, topics, ideas and pattens (Liu et al., 2020).

In this study, the data analysis adopted the thematic-analysis process that was prescribed by Braun and Clarke (2006). This approach is defined as a method that systematically identifies, organises, and offers insights into themes per a data set (Braun & Clarke, 2006). The thematic-analysis process aims to identify patterns and themes in a qualitative study (Braun & Clarke, 2006). The deductive approach was used for the formulation of certain themes as the three sub-questions were used for theme development. In the case of this study, the data set obtained included factors that promote the use of FinTech solutions, factors that deter the use of FinTech as well as the perceived risks of adopting FinTech according to the participants. Braun and Clarke (2006) further state that there are six steps to thematic analysis:

i. Step one: Familiarity with the data - The researcher read the interview transcripts and notes to understand the data derived from the interviews, this data was then interrogated and grouped into themes.
ii. Step two: Generation of initial codes - use the research questions to code and prepare the interview questions to organise the data systematically and meaningfully.
iii. Step three: Identify themes - Identify themes that come up based on the participants responses.

iv. Step four: Reviewing of themes - Review and modify the themes identified in step three and develop the themes further in the context of South Africa.
v. Step five: Definition of themes - Perform the final refinement of the themes by naming and defining the themes name and define the themes in in the context of South Africa.
vi. Step six: Writing of report – write the research report.

After the interviews were conducted, the interviews were be transcribed and collated into data. The interviews were coded using descriptive coding as recommended by (Saldaña, 2021).

3.8 Quality Assurance

Transferability refers to the extent to which the study results can be transferred to other settings; in the case of a qualitative study, trustworthiness includes credibility, transferability, dependability, and confirmability (Lincoln Yvonna & Guba Egon, 1985).

3.8.1 Transferability

Transferability refers to measures of how well a study's findings can be applied in different contexts (Lincoln Yvonna & Guba Egon, 1985). It further concerns the concept of applicability, thus a thick description of the participants and the research process (Korstjens & Moser, 2018). In the case of this study, transferability was achieved through the explicit explanation of the research model, research approach, limitations, identification of the study's sample size, sample size strategy, demographics used, and socio-economic standing of the participants (lower-income earners). In addition, the study also outlined that the interviews conducted would be flexible and interactive, and that an interview guide would be used. All these explanations will enable the reader to assess whether the findings are transferable to their setting, i.e., if the study is transferable to other developing countries.

3.8.2 Credibility

Credibility is defined as a measure of truth or falsity of the data obtained using the chosen research instrument, thus it is the internal and external validity of the measuring instrument (Saunders et al., 2007). Nancy at el. (2001) defines it as the agreement between the research instrument and the research design measurement (Nancy et al., 2001). As stated, the research design for this study was informed by the research question stated in Chapter 1 and the literature review. To this end, it can be said that the research instrument provided rich data through the main question outlined in Chapter 1 and the secondary questions outlined. This thus substantiates the agreement between the research instrument and the research question. The use of the interview schedule during the interview process also supports the validity of the research instruments and clarifies the parameters of the interviews for the participants. Further, the researcher ensured credibility by focusing more on the themes that persist from all the interviews and whilst ensuring sufficient data and support on them.

Triangulation was also be used to ensure credibility. Triangulation refers the process of enhancing qualitative research by using multiple approaches (Sim & Sharp, 1998). Therefore, the researcher made use of different data sources i.e., gathering data in different times of the day, collecting data on the phenomenon in multiple communities and gathering data from different types of people – Social grant recipients, people employed in the formal sector, people employed in the informal sector, the older generation, and the youth. Lastly, the findings and report were also checked with the participants to test the theory.

3.8.3 Dependability

Dependability is the extent of consistency and quality used by a research instrument (Mantzoukas, 2009). To ensure dependability in this study, standardised interview questions were used for this study and the data analysed using a thematic approach. To aid in improving dependability, an expert in the field was engaged throughout the process for mentoring. Further, the research provides the detail of the interview process, will provide the complete set of the research instrument adopted (notes and recordings done during the interviews),

reflective thoughts, sampling, emergence of the findings and information about the data management. All this information will be made available to enable the reader to study the transparency of the research process.

3.8.4 Confirmability

Conformability refers to the degree to which other researchers could confirm the research study's findings (Lincoln Yvonna & Guba Egon, 1985). It is also the objectivity applied during data collection and analysis (Eldh et al., 2020). In this study, conformability was applied as the researcher ensured non-biased approach to interviews by recording and transcribing the interviews throughout the process. The research also provided the detail of the interview process, provided the complete set of the research instrument adopted (notes and recordings done during the interviews), reflective thoughts, sampling, the emergence of the findings and information about the data management. All this information will be made available to allow for the findings of the research study could be confirmed by other researchers.

3.9 Ethical considerations

Ethics refers to the appropriateness of the researcher's conduct of the study and research participants (Nancy et al., 2001). Thus, ethics should be maintained through the research process as recommended by (Abernethy et al., 2014). Consent, anonymity, privacy and misrepresentation are all important guidelines for ethics as prescribed by (Collis & Hussey, 2014). Ethical clearance is inherently based on the six principles of ethics comprising beneficence, non-maleficence, autonomy, justice, truth-telling and promise-keeping (Chiumento et al., 2020). To this end, the researcher obtained ethical approval from all participants; this was be done by sending an email to participants (those email addresses) and those without email addresses were issued with a consent from to sign.

Further, an ethical clearance was requested and approved from University of Witwatersrand's Ethics Committee to continue with an ethical research study.

All the above aspects are important to ensure that the data collection process complies with the ethical clearance agreement's terms and conditions. In addition, the researcher assured the participants that their privacy would be maintained during the entire process. Should participants want to remain anonymous, pseudo names were used to protect the confidentiality of participants.

The researcher made it clear to the participants that they would be able to withdraw from the interview at any point during the proceedings and that there is an option not to answer all the questions. The participants were informed that the interviews would record and transcribed, and a copy of the transcript would be given to the participants for approval prior to data analysis to avoid misinterpretation.

CHAPTER 4. PRESENTATION OF FINDINGS

4.1 Introduction

As per chapter 3; Research Methodology, a systematic approach and design of qualitative research was used to gather insights from convenient sampling, purposive sampling, and snowball sampling utilising semi-structured interview questions.

This chapter aims to present the findings of the data collected pertaining to investigating the adoption of FinTech solutions by lower-income earners in South Africa. The chapter starts off with a presentation of the participants' demographics, followed by the findings based on the interviews relating to propositions one, two and three as outlined in Chapter 2. As discussed in Chapter 3 of this report, the analysis was conducted using the thematic qualitative approach. Microsoft Excel was utilised to code and classify data into categories leading to emerging themes. The findings are outlined using this analysis method relative to the propositions outlined in Chapter 2. The data is presented through citations, which are interpreted individually or collectively to support the themes that emerged during the interviews.

4.2 Demographics of participants

The research comprised of 24 respondents split equally between those who have adopted FinTech solutions and those who have not adopted FinTech solutions. As per chapters 1 and 2, of this paper, lower income earners refer to individuals earning between R0 – R3 000 per month. For this research paper, all participants disclosed their income ranges, and it was noted that all participants earned below R3 000 per month. This study's income levels were skewed towards the R1 500 – R2 000 range. The source of income of participants ranged from salary, social child grants, social pension grants, social disability grants, social Covid relief grants and allowances. The interviews were conducted through face-to-face

interactions and online interactions using Microsoft Teams. All recordings were recorded using Microsoft Teams. The interviews were conducted in the participant's home language and translated into English. The research comprised two cohorts of participants; Cohort 1 comprised participants that have adopted FinTech solutions and cohort 2 comprised participants that have not adopted FinTech solutions. For purposes of this report, the participants will not be named, the naming convention of each participant will be outlined according to the cohort they were part of as well as a numeric number ranging from 1 to 12 i.e., participants that formed part of cohort 1 – FinTech adoption will be referred to as "FinTech adoption 1" whilst cohort 2 – FinTech non-adoption will be referred to as "FinTech non adoption 1".

The gender of the participants of this study was not determined beforehand as the study was neutral on gender. Cohort 1 – FinTech adoption comprised of five males and seven females whilst cohort 2 – FinTech non adoption comprised of four males and eight females. The two cohorts of participants comprised of individuals who were employed, unemployed, self-employed, pensioners and students. A correlation between employment status and adoption was noted. Majority of those that have adopted FinTech solutions were employed whilst majority of those that have not adopted FinTech solutions were unemployed.

From an education level perspective, most of the participants completed Grade 12; this figure is accelerated by those that have adopted FinTech solutions. On the other side, the majority of those that have not adopted FinTech solutions have completed below Grade 10 education level indicating a correlation between non adoption and the education level of the participants. Only 2 participants completed a Diploma; however, these participants are on Pension.

The study aimed to get a fair representation of participants from both urban and rural areas. For this study, 8 out of 24 participants were from rural areas. The correlation between the adoption and non-adoption of FinTech solutions between rural and urban areas was also explored, and the results will be discussed later in the chapter.

4.3 Themes

The purpose of this study was to gain an understanding of the factors that drives financial technology (FinTech) adoption by lower-income earners in South Africa. The study investigated the factors that enable adoption and those that deter the adoption of FinTech solutions. The study aimed to answer the key research question: **What factors drive the adoption of FinTech by lower-income earners in South Africa?** This key research question was underpinned by the sub-questions outlined in chapter 1. As stated in chapter 2, three propositions were formulated to answer these three sub-questions. These sub-questions were used to guide the interview of which the findings thereof resulted in the development of themes. The deductive approach was used for the formulation of themes as the three sub-questions were used for theme development. The study also followed the inductive approach as it allowed for the identification of emerging themes. The above hybrid methods (deductive and inductive approach) of data analysis resulted in the formulation of the below five themes:

- Understanding of the core concept: Financial Technology (FinTech)
- Factors that enable the adoption of FinTech solutions
- Barriers to the use of FinTech solutions
- Perceived risks among those that have adopted FinTech solutions
- Perceived risks among those that have not adopted FinTech solutions

Table 4:1 Themes of the study

Theme	Sub-themes
Understanding of the core concept: Financial Technology (FinTech)	• FinTech concept • FinTech solutions

Theme	Sub-themes
Factors that drive the adoption of FinTech solutions	• Trust • Socio-economic factors • Age • Financial Health • Attitude • Digital and Financial Literacy • Innovativeness • Government support • Brand image • FinTech service provider's influence to adoption • Income as an enabler to adoption • Education levels as an enabler to adoption • Access to internet • Type of mobile device used
Barriers to the use of FinTech solutions	• Perceived risks • Associated cost • Security concerns • Age • Income levels • Education levels • Preference to Face-to-face interactions as a barrier to adoption • Language (English) as a barrier to FinTech adoption

Theme	Sub-themes
	• Residence location as a barrier to FinTech adoption (Rural) • Mobile phone device as a barrier to adoption • Lack of access to the internet as a barrier to adoption • Digital and Financial illiteracy as a barrier to adoption • Dependency on cash
Perceived risks among those that have adopted FinTech solutions	• Financial risks due to fraud • Financial risks due to FinTech solution breakdown • Financial risks due to product mis-sell • Legal risks • Security concerns • Operational risks
Perceived risks among those that have not adopted FinTech solutions	

4.4 Understanding of the core concept: Financial Technology (FinTech)

As part of the interviews, the study explored the understanding of financial technology (FinTech) of all participants. This preliminary assessment was done at the start of each interview before any prior explanation of the concept. The purpose of the assessment was to obtain a view of the participant's understanding of the concept and get a benchmark of where the participants are to gauge their level of understanding.

4.4.1 The FinTech concept

To explore their understanding of the concept, the below matrix was used:

- **No Understanding** – No form of understanding of the term.
- **Basic Understanding** - Accurately describes and understands the concepts in a very succinct and functional manner.
- **Intermediary Understanding** - Accurately describes and understands the concepts while also being able to provide limited contextual background and examples.

All 24 participants from both cohorts were assessed based on the above matrix. 17 out of 24 participants indicated that they did not have any understanding of the concept - FinTech. This lack/no understanding pertains to the two cohorts despite 8 of the 17 participants already adopted FinTech solutions. Thus, it can be noted that the understanding of the concept has no relation to whether a participant has adopted FinTech solutions or not. It was also noted that age is not a factor to understanding the concept of FinTech. The Researcher provided an explanation to the participants and the participants only grasped the understanding when examples of FinTech solutions were provided.

The rest of the participants (7 out of 24 participants) had basic understanding of the FinTech concept. The participants related the concept to examples of FinTech solutions mainly withing the banking space, see below response of one participant:

"FinTech refers to *Online Banking*". **FinTech adoption participant 7**

A few other respondents used the words ***technology*** and ***money*** to describe the concept:

> *"Things of technology and money".* **FinTech adopter 8**
>
> *"Using your phone to check your money".* **FinTech adopter 12**
>
> *"It's to use your phone for finance purposes".* **FinTech non-adopter 4**
>
> *"Its technology to bank".* **FinTech non- adopter 10**

Two of the participants referred to the concept of FinTech based on the functionality it unlocks:

> *"It's things of the now, technology based that doesn't require one to stand on queues".* **FinTech adopter 1**

> *"It talks about saving money".* **FinTech non-adopter 7**

From the above it is clear that FinTech as a concept is associated with examples of FinTech solutions, the term technology and money as well as the functionality or benefits it unlocks.

4.4.2 FinTech solutions

The Researcher provided an explanation of the FinTech concept to aid participants in understanding the concepts to allow them to answer the subsequent questions. The participants could only grasp the concept once the Researcher provided examples of FinTech solutions. The second assessment in testing the participants' understanding of the FinTech concept was based on the participants providing examples of FinTech solutions they are aware of. Despite most of the participants not understanding the concept, only 2 out of 24 participants could not provide an example of a FinTech solution, whilst 22 participants were able to provide examples.

It was, however noted that only 2 out of the 22 participants that provided examples named more than one example. 1 participant provided an example that was not in the banking industry, while the rest provided examples related to digital banking solutions, i.e., Mobile Banking app and USSD Banking. From the above analysis, it was noted that participants could only reference FinTech solutions that are withing the digital banking sphere indicating the lack of awareness of the other FinTech solutions available.

4.5 Factors that enable the adoption of FinTech solutions

The adoption factors as outlined in Chapter 2 were used to address this theme. This section aims to discuss the result pertaining to Cohort 1 of the participants:

FinTech adoption. The results of these participants are linked to Proposition 1 outlined in chapter 2 (Literature review). Proposition 1 states: ***There are numerous factors that promote the use and adoption FinTech in developing countries***. A number of questions themed according to the proposition were constructed. These questions led to the below results pertaining to Proposition 1. 12 participants were interviewed for this section. The naming convention for participants in this cohort ranges between FinTech adoption participant 1 and FinTech adoption participant 12.

Before participants took part in the interviews, they were asked which FinTech solution they have adopted. 10 out of the 12 participants for this cohort expressed that they have adopted a Banking Mobile app, 1 adopted USSD banking and the other 1 has adopted mobile money.

When asked why they only use Digital Banking solutions participants outlined that it was mainly because the Digital Banking solutions catered for their financial needs. Further, participants outlined that they could perform payments and remittance services using their digital Banking solutions. Some of the responses from the participants are outlined below:

> "*It makes things easy; I can buy electricity; airtime and I use it when I shop online to confirm payment"*. **FinTech adopter 3**

Another participant outlined that the digital banking solution that they use meets their needs:

> *"My App meets my financial needs as I can monitor my products such as funeral, savings account, life insurance".* **FinTech adopter 7**

It was also noted that although solutions such InsurTech and credit services are available on digital banking platforms there is a very high reluctance from participants to use their digital solutions for Insurtech and credit services, they prefer face-to-face functionality for such services. As outlined by one participant

> *"I will never take any product on the App; I do not want to sign up for things I do not understand*". **FinTech adopter 5**

As stated, the factors identified as part of Chapter 1 were explored with participants that have adopted FinTech solutions. The results of these are summarised below:

4.5.1 Trust

Trust refers to a belief/confidence in someone or something. For this cohort of participants, 10 out of 12 of the participants outlined that they trust the FinTech solution they have adopted. Based on the responses, trust is associated with the participant's lived experiences in terms of FinTech solution's availability, reliable and brand of the solution.

> *"I trust my Banking app because it has never disappointed me unless if there is loadshedding or I do not have network. I also do not think I can lose my money on the APP as the bank reassured me that I cannot lose my money as I always have to authorise everything that goes out of the account".* **FinTech adopter 5**

The safety of the FinTech solution was also noted as a factor that promotes trust of the FinTech solution. 5 out of the 10 participants stated that they trust their FinTech solution because of the security features available on the platform.

> *"I trust my Banking app because the app is supported by a locking screen/password"*. **FinTech adopter 2**

One participant associated their trust with brand (Bank X) that provides the FinTech solution.

> *"I trust my App because I trust Bank X, Bank X is one of the best ones".* **FinTech adopter 11**

1 out of the 12 participants stated that they do not trust the app despite using it. This is because it has previously failed them in executing financial transactions.

> *"I do not trust the app because sometimes when you are making payments it doesn't go through and it doesn't reverse payment and you*

have to go through a lot of administration with the bank to reverse certain transactions". **FinTech adoption participant 3**

4.5.2 Socio-Economic Influencers

Economic benefit

The majority of the participants believe that they derive economic benefit from FinTech solution they have adopted, this conclusion is based on 10 out of 12 participants stating that the FinTech solution they are utilising saves them money. The other 2 participants neither agreed or disagreed with the notion of economic benefit. The dominant reason for economic benefit that participants expressed is linked to saving money due to travelling costs. This is mainly because in the South African context, most financial services institutions are located in urban areas/ towns and people have to pay taxi fares to be able to reach the establishments. 6 out of the 10 participants who see economic benefit with the use of FinTech solutions stated that they adopted the FinTech solutions because they do not have to pay for taxi. One of the participants said they adopted the FinTech solution because they are able to save.

"*I am saving on transport money, and banks are too far to get to the bank and app becomes useful*". **FinTech adopter 2**

Based on the other responses, the economic benefit derived from the adoption of FinTech solutions is also associated with the service or transaction cost of utilising the FinTech solution being cheaper than visiting the brick-and-mortar establishment.

"*I believe that my Banking App saves me money as transactions costs less on the app compared to going to the bank*". **FinTech adopter 1**

"Because internet banking is free no transaction costs" hence they are using it as opposed to going to the bank. **FinTech adopter 11**

Social influence

Social influence as a factor to adoption was also tested with participants, 8 out of 12 participants adopted FinTech solutions due to the influence of their financial services provider (Bank), 3 were influenced by their family members while 1 was influenced by the media (television advertisement). Based on the interviews, social influence does not play a major role in adopting FinTech solutions for this cohort. Financial institution influenced the majority of the participants to adopt the FinTech solution adopted. This is mainly because financial intuitions are seen as reputable and knowledgeable with such services.

> *"Family and friend do not have the information that is trustworthy because they do not work for the bank".* **FinTech adopter 10**.

Most participants expressed that they are unlikely to adopt FinTech solutions due to social influences such as family member, friend, or church. FinTech adoption participant expressed that:

> "We work with money you will never know people's intention". **FinTech adopter 8**

Another participant, expressed:

> " T*hey are not the bank; how would they know what's best*". **FinTech adopter 12**

4.5.3 Utility

Utility refers to the convenience and usefulness of the FinTech solution. 11 out of the 12 participants felt that the FinTech solution they are using is convenient, whilst 1 participant stated that they do not think that the FinTech solution they are using is convenient. The convenience of the FinTech solutions adopted is associated with the time-saving nature of the platforms. Participants felt they do not have to queue at the bank to perform their financial services.

"*The app is convenient, at the bank there are queues, and you wait for a long time and then they can say there is no money left".* **FinTech adopter 5**

This is also supported by

"B*ecause app you use it whilst at home, no one can disturb you with your money, no fear that someone is looking at you and can rob you, at the ATM you can't be free to withdraw there is always fear that someone will rob you".* **FinTech adopter 10**

The nature of the language used on the platforms was also perceived to be easy and simple enough to understand. Participants linked the simplicity of language used on utility.

"The language on the app is simple enough for me to understand", whilst other participants still felt that the language used can be difficult, they often refer to the internet or family members whenever they get stuck". **FinTech adopter 1**

"Some of the terms are however difficult I often need an explanation on how something works. It would be easier if the App was translated into my languages". **FinTech adopter 2**

4.5.4 Youth (age)

The interview results shows that there is no correlation between age and FinTech adoption. 10 out of 12 participants stated that they do not think that age has an impact on their adoption of FinTech solutions.

"Anybody can use it; they just need to be shown how to use it". **FinTech adopter 11**

Another participant who is between the age of 18 – 25 stated that

"M*y age makes it easy for me to understand technology and we teach others"* **FinTech adopter 1**

Whilst the peer within the same age range has a different view,

> "*Anyone can use the app".* **FinTech adopter 2**

On the other hand, one participant had a very different view from the rest, the participant felts that such solutions are for older people as the youth does not have the financial muscle to take part in such financial solutions.

> *"I think age plays a factor on adoption because I realised that my 20-year-old daughter does not care about app; age contributes because the more mature you are, the more activity you want to do*". **FinTech adopter 7**

The rest of the participants felt that the FinTech solutions they are using are fairly simple and thus not impacted by age. For those that find it difficult, a participant expressed that once you are shown how to use the FinTech solution, it's easy to adopt.

4.5.5 Financial Health

Financial Health whether good or bad was not necessarily perceived as a factor to FinTech adoption but rather as a factor to the frequency of their utilisation of FinTech solutions. Participants stated that FinTech adoption is mainly driven by a need, which can either be a financial activity or a non-financial activity. This was noted from 8 of 12 participants.

> "*Because if I have money, I am able to transact and if I did not have money, I wouldn't be able to transact. If I was unemployed and I did not have money I would not have the app".* **FinTech adopter 1**,

FinTech solutions are also perceived as a tool to assist with promoting good financial health as participants felt that the solutions help them in managing their money as they can monitor their financial activities.

> "*If I have money I would use my account money, cellphone banking would assist me to monitor my money and how to use my money better".* **FinTech adopter 4**

4.5.6 Attitude

Attitude was measured according to how participants felt about the FinTech solution they have adopted. Participants were asked if they like the FinTech solution they are utilising and all 12 of the participants indicated that they do meaning that they have a very positive attitude towards the FinTech solution they have adopted. A matrix of measure was further used to ascertain the participants adoption of FinTech to their attitude, the matrix is as follows:

- **Bad** – Participants do not rate their FinTech solution in any way.
- **Good** – Participants felt fairly okay with the FinTech solution they are using.
- **Very Good** – Participants are extremely happy and satisfied with the FinTech solution they are using.

Most participants (7 out of 12) stated that they were very happy and satisfied with the FinTech solution they are using. It was noted these participants associated their positive attitude to the convenient nature of the solutions,

> *"Because it's simple and easy to understand, it has all basic things I need i.e., buying airtime, electricity, payments and checking balance".* **FinTech adopter 4**

An exception response was also discovered from one of the participants.

> *"The look and felt are more appealing. When you do not see something there is a search bar to search for what you need, because when you have an issue about the app, there is secure chat to ask for assistance to help you through it".* **FinTech adopter 2**

4.5.7 Digital literacy

Digital Literacy was also assessed using a matrix. The matrix definition is as follows:

- **No Understanding** – No form of understanding digital solutions.

- **Basic Understanding** – Fairly good understanding of how to operate digital solutions, understands only their mobile device.
- **Intermediary Understanding** – Great understanding of how to operate digital solutions, understand how to operate other digital devices.

It was found that 5 participants had a fairly good understanding of digital solutions as they mainly understand how to operate their own mobile devices. These participants expressed that their understanding of digital solutions have contributed to their adoption of FinTech solutions. In terms of understanding the FinTech solutions adopted, 10 out of the 12 participants expressed that are able to navigate the FinTech platforms themselves, whilst 2 of the participants are assisted by their family members to navigate.

From the interviews, the participants expressed that because they know how to operate their mobile devices, their knowledge has had a positive impact on their adoption and utilisation of their FinTech solutions.

> *"Because if I did not understand how my phone works, I wouldn't be able to use my app, learning and taking advice from friends and family also contributes to using the app".* **FinTech adopter 9**

4.5.8 Financial literacy

Financial Literacy was also assessed using a matrix. The matrix definition is as follows:

- **No Understanding** – No form of understanding of financial terms
- **Basic Understanding** - Accurately describes and understands financial terms in a very succinct and functional manner.
- **Intermediary Understanding** - Accurately describes and understands financial terms, while also being able to provide limited contextual background and examples.

It was noted that 8 out of the 12 participants have been classified as having no understanding of financial literacy terms, followed by a very small number of participants with basic understanding. It is noted that the participants interviewed

have adopted FinTech solutions despite their financial literacy levels indicating no correlation between financial literacy levels and FinTech adoption.

It was however noted that financial literacy level impact the activities that they perform on the FinTech platforms.

> "*The minimum understanding makes me use the app less, I do become hesitant to do certain things, prefer face to face to do some of the complex things on app".* **FinTech adopter 8**

Other participants though, did not feel disadvantaged by their financial literacy levels as they are able to use the internet to search for words they do not understand or visit the financial services establishment.

> *"If I do not understand I can't do certain things on the app, but I google certain words I do not understand." FinTech adoption participant 9: "I still operate the app, for things I do not understand I still go to the bank to understand the things I do not understand".* **FinTech adopter 2**

4.5.9 Innovativeness

Innovativeness was measured on the participants experimental nature of technology solutions. 5 out of 12 felts that they are very experimental in nature however not all of them felt that their experimental nature has contributed to their adoption of FinTech solutions.

Only 2 participants out of the 5 participants that are experimental in nature felt that their experimental nature has contributed to their adoption of FinTech solutions. This is supported by the answer provided.

> "B*ecause I am a curious person, I wanted to do online banking and they instructed me to make payment and it required banking app confirmation hence I got the app". On the other hand, FinTech adoption participant 1 stated that: "I downloaded because I saw the benefits of using the app not because of wanting to try out new things".* **FinTech adopter 3**

The 7 participants that are not experimental in nature stated they adopted FinTech solutions mainly because of the benefits that they get from the solutions.

> "*I needed to use it and the benefits of using it".* **FinTech adoption participant 11**

4.5.10 Government support

Government support was explained as any form of aid received from the government that enabled participants to adopt the FinTech solutions they are utilising i.e., free Wi-Fi, education of FinTech solutions. As stated, this cohort consisted of 12 participants. Based on the interviews, there was no correlation between the adoption of FinTech solutions and the participants interviewed. This is because none of the participants received any government support/aid that led to the adoption of FinTech solutions.

It was also noted that although none of the participants received any support from the government, 6 out of the 12 participants felt that government has a role to play in driving the adoption of FinTech solutions.

> "*No government support received however government can educate communicate communities on how to bank safely because people get robbed for carrying cash."* **FinTech adopter 4**

The other 6 however have a different view, they believe that government has no role to play in people's finances.

> *"Government is just government; they have nothing to do with our finances"*. **FinTech adopter 7**

Whilst 1 participant felts that government should focus on their core mandate.

> "*Government can't keep up with the things that they are meant to do, so no they won't do much".* **FinTech adopter 9**

4.5.11 Brand

For purposes of this research, brand refers to the service provider of the adopted FinTech solution. Half of the participants, 6 out of 12 stated that one of the reasons they adopted FinTech is because of the bank they bank with. This is mainly because they trust the bank they are with and thus associated that trust with their FinTech solution.

> "*I felt comfortable with my bank and hence I chose the bank and because I trust them, I also trusted them with cellphone banking".* **FinTech adopter 4**

The other reason for trusting the brand is due to the perceived price of the services provided by the provider, one participant.

> *"Because I saw their bank charges and interest rates, they do not trust exorbitant fees, so I trusted their app".* **FinTech adopter 1**

The other half of the participants, 6 out of 12, stated that their adoption of FinTech solutions has nothing to do with the service provider.

> "*I would've gotten it even if I was banking with another provider. My adoption has nothing to do with brand". The adoption is because of the benefits and nothing else.* **FinTech adopter 3**

> *"No, the benefits were the reasons I wanted the banking app".* **FinTech adopter 6**

In addition to the sub-themes stated above, five emerging sub-themes were identified when analysing the data of participants that have adopted FinTech solutions. These themes also gave rise to sub-themes that are also discussed below. The following sub-themes on the enablers of FinTech adoption will be discussed:

- FinTech service provider's influence to adoption
- Income as an enabler to adoption
- Education levels as an enabler to adoption

- Access to internet
- Type of mobile device used

4.5.12 FinTech service providers as a driver to adoption

One of the key themes that have emerged in the study was the role that FinTech service providers played in driving the adoption of FinTech solutions for the participants interviewed. For this theme, two important aspects are discussed; these are the role that the FinTech provider played in influencing the participants to adopt the FinTech solution and the role played in teaching participants how to operate the FinTech solution.

Adoption due to influence of service provider

Majority of the participants (8 out of 12) expressed that they adopted the FinTech solutions that they are using due to the influence of the service provider, in this case the bank. This influence was mainly because they trust the service provider with their finances. The participants expressed how they would not adopt FinTech solutions if they were told by another party outside their financial services provider.

> *"I am using the Banking App because when I was at the bank, they told me about it. If I had been told by a friend, family member or someone at church, I do not think I would have listed because people at home would not be able to answer me when I have questions, I do not trust them. I always have someone to reference at the bank."* **FinTech adopter 11**

Adoption due to discontinued services

It was also noted that for some participants, they adopted FinTech solutions because the financial services provider (Bank) had discontinued providing certain services at their premises thus the participants had no choice but to adopt FinTech solutions.

"*When you go to the bank, they can't help you anyway they say you must use the app. I only go to the bank when I need to put money into the ATM".* **FinTech adopter 11**

Adoption due to service provider teaching how to operate

There was a consensus amongst participants that recognised the role that FinTech service providers played in their adoption of FinTech solution. This role specifically pertained to how the Consultants at the Financial service Provider's premises (Banks) aided with downloading the FinTech solutions and the time they took to teach them how to operate. This was an emerging theme across most of the participants as they felt that they would not have adopted FinTech solutions had it not been for the aid of the Bank.

"I am using the app because the bank told me about it and the Consultant helped me download the app and showed me how to use it. Every time I do not know how to do something I wait to get time to go to the bank so they can teach me how." **FinTech adopter 7**

4.5.13 Income as an enabler to adoption

The study was focused on lower income earners earning less than R3 000 per month. It was found that income levels also play a vital role in the adoption of FinTech solutions as it enables one to be able to afford some of the key resources needed to access FinTech solutions i.e., Smartphones and mobile data. It was further noted that for those that have the resources to access FinTech solutions, their income levels still affect their adoption of FinTech solutions in terms of how frequent they access the platforms as well as the activities they perform on these platforms.

Frequency of access

It was noted that although participants have adopted FinTech solutions i.e., have downloaded the mobile app, they can spend days if not months without accessing them because of lack of funds as they do not see the need to access the platforms if they do not have money. They access the platforms only when they have money

to monitor (mostly month end), have money to perform financial transactions and have money for mobile data. Participants felt that if they earned more, they would be able to access the FinTech platforms more.

> *"If I had an income in my account, I would use the app more frequently".* **FinTech adopter 2**

> *"I can't always use the app, I earn too little to use it frequently, once I have depleted my money, I have no reason to use the app."* **FinTech adopter 3**

> *"I only use the app during month end when I have money."* **FinTech adopter 10**

Limitation of activities

It was noted that participants adopted FinTech solutions due to the financial transactions that they can perform on FinTech platform. Those transactions are mainly buying airtime, mobile data, sending money or buying electricity. Therefore, it was noted that the limitation of funds affects the financial activities performed thus adoption of FinTech solutions. It was further noted that when there no funds they see no need to use the platform at all.

> *"I can only use cellphone banking when my husband sends me money for errands i.e., buy electricity, make payments etc, I only use It few days a month."* **FinTech adopter 4**

> *"If I had more money, I would be able to get certain offers on the app, I would transact more and have more activity. It impacts frequency of access."* **FinTech adopter 8**

> *"I use the app less because of less income, if you had more money, I would use it more".* **FinTech adopter 11**

4.5.14 Education levels as an enabler to adoption

Education as an enabler to adoption was also noted as an emerging theme. Although education was not used as a matrix to select participants, it was observed that most participants that have adopted FinTech solutions have obtained Grade 12 whereas those that have not adopted FinTech solutions mostly completed their education lower than Grade 10.

The participants that have adopted FinTech solutions further articulated that their education level played a big role in their adoption of FinTech solutions. This is because their education levels have enabled them to be able to read, write and understand the language used on the platforms (English) thus they are able to understand the terms used as well as navigate the platform without much hassle.

> *"I am using the app because I am able to understand the language used on the app, its simpler for someone with a Grade 12".* **FinTech adopter 1**

> *"My school levels have assisted me to use the app because I am able to understand certain terms and navigation".* **FinTech adopter 2**

> *Education has helped me, I am able to read, without school I wouldn't be able to read and understand instructions."* **FinTech adopter 12**

4.5.15 Access to the internet devices and Cost of mobile data

As stated, majority of the participants that have adopted FinTech solutions have adopted Mobile Banking Applications. These applications require mobile data or Wi-Fi to download whilst some require connectivity such as mobile data and Wi-Fi to access. It was noted that this requirement leads to access to the internet being a factor that drives adoption of FinTech solutions.

> *"Access to the internet limit what I do on the app because if I do not have mobile data, you can't use the app, it impacts how often I go on the app".* **FinTech adopter 7**

> *"When I do not have data, I can't login into the app".* **FinTech adopter 12**

This study has established that most participants downloaded their Mobile Banking Application using the FinTech provider's internet. It was however noted that for them to access the mobile Banking applications they require data of which they do not always have the funds to acquire it. This is mainly due to the cost of mobile data or obtaining a Wi-Fi connection. This limitation impacts the frequency that they then access their FinTech platforms.

> *"Access to my Banking app is not frequent. Mobile data is very expensive. I only have money to buy WhatsApp bundles and because the app requires mobile data, I do not always have it and thus can't access the app if I do not have money for data."* **FinTech adopter 8**

As per the introduction of this chapter, 11 out of the 12 participants have adopted Mobile Banking Applications whilst 1 participant has adopted USSD Banking. Participants that have adopted Mobile Banking applications attributed their adoption to the type of mobile phone they have i.e., smartphone. They would not have adopted FinTech solutions if they were using any other phone that does not enable them to download FinTech solutions.

> *"I downloaded the banking app because my phone allowed me to download it, with a feature phone you can't download an app."* **FinTech adopter 2**

> *"Adoption of FinTech solutions is dependent on the phone you use, because if you can't afford a phone, you will have limitations."* **FinTech adopter 4**

4.6 Barriers to the use of FinTech solutions

The barriers to FinTech solutions as outlined in proposition 2 were used to address this theme. According to proposition 2 there are 6 barriers to the adoption of FinTech solutions. In this section, the results for Cohort 2 of the participants: FinTech non adoption will be discussed. These results relate to Proposition 2 outlined in chapter 2 (Literature review). Proposition 2 states: ***The factors that detract the use of FinTech solutions includes associated costs, low income and education level, perceived risk, and security concern. These affect both the banked and unbanked***. The proposition was used to theme and design

interview questions. These questions led to the below results pertaining to Proposition 2. Similar to the previous section, 12 participants were interviewed for this section. The naming convention for participants in this cohort ranges between FinTech non adoption participant 1 and FinTech non adoption participant 12.

4.6.1 Perceived risks

Perceived risks were measured based on that risks participant think they are likely to encounter should they adopt FinTech solutions.

There are a number of risks that hinder/deter participants from adopting FinTech solutions. These risks have different classification, i.e., financial risks due to loss of money, data theft, theft of mobile device and fear of making mistakes.

> *"People can take my details/personal information and defraud me and scam me with my personal information. I do not know what might happen".* **FinTech Non adopter 1**

> *"If I lose my phone someone can get into my app, even at home there is someone that's on drugs, they can easily steal my phone and go sell it and I would lose my money".* **FinTech Non adopter 2**

It was however noted that the ultimate risk that they are afraid of is losing their money i.e., financial risk.

> "I can lose my money if I leave money in my phone, I only use my phone for calls". **FinTech Non adopter 5**

The non-adoption and perceived risks were also explored with the participants, and it was found that 11 out of 12 participants have not adopted FinTech solutions because of the perceived risks listed above with 1 participant unable to answer as they do not understand how the app works.

> *"Yes, I have not adopted the app because I am weary of losing money, I still do not trust the apps".* **FinTech Non adopter 10**

Whilst another participant believes that although they are afraid of losing money, should they get a better understanding of how FinTech solutions operate they have hope that they would be able to prevent some of the risks.

> *"Yes, I have not adopted the app because I am afraid of losing money, however if I understand better, I can do something to prevent those things from happening".* **FinTech Non adopter 12**

The risk of product mis-sell was also explored and 10 out of the 12 participants are afraid of taking products they do not understand due to their lack of understanding of how FinTech solutions operate.

> "*Yes, I am afraid of product mi-sell, because my understanding is limited, I wouldn't know the implications of what I am signing up for".* **FinTech Non adopter 1**

> *"Yes, I am afraid of product mi-sell, because I would click on things I do not understand, I also do not understand financial terms like Interest, not comfortable, I would end up taking things I do not know or understand".* **FinTech Non adopter 2**

The other 2 out of 12 participants do not perceive product mis-sell as a risk that can occur to them as they do not believe that they would sign up for things that they do not understand.

> *"I doubt so, I do not think it would be difficult for me to understand the app and how it operates".* **FinTech Non adopter 3**

4.6.2 Associated costs

Associated cost refers to the costs that participants believe that they will incur should they adopt FinTech solutions. 4 out of the 12 participants believe that utilising FinTech solutions costs money. 1 participant believes that FinTech adoption does not cost money as it does not require one to use a taxi to travel to the bank. The rest of the participants, 7 out of 12 did not know whether FinTech solutions costs money or not. The 3 participants that believe that FinTech costs

money all indicated that they have not adopted FinTech solutions because of the costs they believe they will incur. These costs include mobile data costs.

> *"I have not adopted the app because I do not have money to afford data so I can access the platform".* **FinTech Non adopter 1**

> *"I have not adopted the app because I do not have money to buy frequent data, I will download something that I can't use due to not having data".* **FinTech Non adopter 2**

One participant expressed that they believe that FinTech solutions are for people with money and not those who depend on government social grants.

> *"I have not adopted the app I do not have money; this is for people who have money not us people depending on grants".* **FinTech Non adopter 5**

The other 1 participant believed that FinTech does not cost money however their non adoption has nothing to do with associated costs.

> "*No, you save money, you can transact whilst at home, no need for transport".* **FinTech Non adopter 10**

There is also a belief amongst the participants that FinTech solutions costs more money than going to the bank.

> "*If I use the app, it will charge me for transactions such as app, or airtime, its better if I withdraw a bulk at the branch/ATM and I can do my errands without getting charged for each"*. **FinTech Non adopter 1**

Whilst product mis-sell is also perceived to contribute to associated costs.

> *"Because I can take up things, I do not understand so the bank I would take up things I understand".* **FinTech Non adopter 9**

A conclusive conclusion between associated costs and FinTech adoption cannot be attained due to the above mixed views.

4.6.3 Age

Age was also tested as a deterrent to FinTech adoption, 10 out of the 12 participants do not believe that their age has any impact on their non adoption of FinTech solutions. Most of them related their non adoption to their lack of understanding of FinTech solutions and that it had nothing to do with their age as their peers are already using FinTech solutions.

> *"No, it's all about being educated and explained to. Age has nothing to do it. It's all about understanding".* **FinTech Non adopter 6**

> *"I do not think so, it's for everyone for as long as you understand, and someone explain".* **FinTech Non adopter 10**

Lack of money was also cited as a reason for non-adoption and not necessarily their age.

> *"No, what impacted me not to have an app is money, smartphones are expensive, and I can't afford them".* **FinTech Non adopter 3**

The other two participants felt that age had an impact on their adoption.

> "*Yes, because when you are younger you know how to read and understand easily". A different reason was however provided by FinTech Non adoption participant 8 who is between age 45 – 55: "Yes, I think I am too old to understand, if I was younger, I would understand".* **FinTech Non adopter 4**

4.6.4 Security concerns

All 12 participants expressed that they have not adopted FinTech solutions because of security concerns. These concerns are mainly due to privacy concerns and cybersecurity. Privacy concerns is mainly due to the participants not knowing where their data is stored when they use FinTech solutions. 2 of the participants felt that their family members can access their device and use their information to defraud them:

> "*Yes, because I do not know where the information is stored, do not know where the information is going, it might go to someone else".* **FinTech Non adopter 1**

> "*Yes, because I am not sure where my information ends up, I felt like my information can even end up on google".* **FinTech Non adopter 2**

> "*Yes, because like I said the kids at the house you do not know what they can do, they can see things they do not need to know, I also drink so I do not know who can take my phone or steal my money*". **FinTech Non adopter 5**

Interestingly, one participant indicated that they have not adopted FinTech solutions because of what they hear from the media.

> *"Yes, because you hear on the news that data/information has been stolen".* **FinTech Non adopter 6**

A few participants did not know what cybersecurity means or what it refers to. After explaining the term, they are even more anxious about adopting FinTech solutions**.**

> *"I did not know what cybercrimes meant this makes me anxious about the app, it makes me appreciate my decision because it means I can lose my money*". **FinTech Non adopter 5**

> "*Yes, a lot, especially because I do not understand these things".* **FinTech Non adopter 7**

Participants that were aware of cybersecurity cited that cybersecurity is a security concern, as such they have not adopted FinTech solutions because of the risk of getting robbed which might lead to being scammed.

> "*Yes, only if I get robbed, mugged, I wouldn't get scammed because my phone has a password".* **FinTech Non adopter 4**

Other security concerns that were mentioned by participants range from identity theft, lack of adequate security feature on mobile device, family member

accessing their phone and defrauding them. These security concerns were also cited as having contributed to their non adoption.

> *"My children can also steal my money, because I do not know English".* **FinTech Non adopter 11**

4.6.5 Income levels

As stated, all participants are lower income earners earning between R0 – R3 000 per month. From the interviews, it was noted that majority of the participants, 9 out of 12 stated that their income levels have contributed to their lack of adoption of FinTech solutions. The cost of mobile data costs was cited as a factor for non-adoption as the participants felt that they do not earn a lot of money to be able to afford mobile data. Other participants associated their lack of adoption to their inability to afford smartphones as they do not earn a lot of money to afford smartphones as they are expensive.

> "*Yes, because the phone I have does not have space so I can't afford a new phone with space and also data is expensive I do not afford to have data to access the app all the time. I'd rather buy food with my money than buy data to access the app. I do not see the need to have app whilst I do not have money, what would I be doing with an app as I won't have much to track".* **FinTech Non adopter 3**

> *"Yes, what impacted me not to have an app is money, smartphones are expensive, and I can't afford them".* **FinTech Non adopter 4**

5 out of the 12 participants felt that it is not necessary for them to use any FinTech solution as they earn too little money, and they do not need anything to help them transact or monitor their money as it gets in and gets out.

> *"Yes, because the money I get paid is too small, when the government sees me using app/cellphone banking they will think I have money and that I do not need the money so they will stop paying me/giving me money, I prefer to keep some of my money on me and not put it in the bank because*

the government will think I do not need the money. I only pay a little money into the bank, or my kids send me money". **FinTech Non adopter 5**

"Yes, because R350 is not a lot of money, so I do not have a lot of things to do on an app". **FinTech Non adopter 10**

"Yes, because the money is too little and there are responsibilities so I won't have enough money to transact and also the charges on the app might be too much". ***FinTech Non adopter 12***

Lastly, 7 out of the 12 participants felt that if they earned more money, they would have adopted FinTech solutions.

"Yes, because if I had more money, I would be able to afford data". **FinTech Non adopter 12**

4.6.6 Education levels

As seen in the demographic section, majority of the non-participant's education level is below Grade 10. When asked if their education level is a barrier to their adoption of FinTech solutions, 9 out of 12 expressed that it is because FinTech solutions are written in English, and they struggle with comprehension of certain English words. Some participants do not know how to read English.

"Yes, because when you are educated, some things are clear, and you are able to understand. I only know how to write my name and surname. It becomes difficult to read". **FinTech Non adopter 5**

"Yes, because when we were going to school we learned in our language, and we were taught in Sepedi, so if you were not able to study properly then you won't be able to use the app". **FinTech Non adopter 6**

This group of participants also believe that if they had higher education, they would have adopted FinTech solutions due to the likelihood of getting a better paying job:

"*Yes, because if I had higher education I would've been employed and afford a smartphone". This is also anchored by FinTech Non adoption participant 6: "Yes, I would cause I would get a better job, I could afford data and Wi-Fi and be able to understand how the app works".* **FinTech Non adopter 3**

The other 3 participants expressed that education has no impact on their adoption.

"N*o, if you are a person when things like technology arrive, if you do not have an interest education is not a factor because you get people that completed higher education but still not be interested in using the app".* **FinTech Non adopter 7**

"*No, education has no impact as long as someone showed you and walked the journey with you".* **FinTech Non adopter 10**

In addition to the sub-themes stated above, seven emerging sub-themes were identified when analysing the data of participants that have not adopted FinTech solutions. These themes also gave rise to sub-themes that are also discussed below.

- Preference to Face-to-face interactions as a barrier to adoption
- Language (English) as a barrier to FinTech adoption
- Residence location as a barrier to FinTech adoption (Rural)
- Mobile phone device as a barrier to adoption
- Lack of access to the internet as a barrier to adoption
- Digital and Financial illiteracy as a barrier to adoption
- Dependency on cash

4.6.7 Preference to Face-to-face interactions as a barrier to adoption

FinTech solutions are purely digital without any human interactions. The study found that the non-face-to-face nature of FinTech acts as a barrier to adoption due to people's preference for face-to-face interactions. This preference is driven by the lack of trust in FinTech, fear of making mistakes, perception that FinTech solutions are complex due to the language used on the platforms as well as lack of interest in the FinTech solutions.

Lack of Trust in FinTech solutions

Lack of trust because of security concerns was identified as a barrier to adoption. Participants believe that adopting FinTech will expose them to financial risks as such they do not trust the solutions adopted, they prefer to have someone assist them in a face-to-face setting so they can also hold those individuals accountable should anything happen to their money.

> *"I do not trust the app, someone that get access to my phone can steal my money and send it to someone else".* **FinTech Non adoption participant 2**

> *"I also do not trust them. I need someone to explain and how to use it. I also do not trust that money is safe."* **FinTech Non adoption participant 6**

Fear of making mistakes

The study also found that there was a general fear of using FinTech solutions hence the preference for face-to-face interactions. This fear is attributed to their perceived view that one needs to be educated in order to be able to operate FinTech solutions.

> *"I scared of making mistakes, as I am not educated, I prefer going to the bank to transact. I am scared of security concerns, my kids can get hold of my phone and they can get access to my money, with loadshedding and when I do not have electricity, I often ask my kids to go charge for me somewhere and thus they have access to my phone so they can use my money. I also do*

not know how to read so I won't be able to understand." ***FinTech adoption participant 5***

4.6.8 Language (English) as a barrier to FinTech adoption

The primary language used on FinTech platforms is primarily English. South Africa has 11 official languages thus not everyone is able to read or write English. It was found that participants have not adopted FinTech solutions because of their lack of knowledge of reading and writing English.

"I do not know English so I can't access FinTech solutions. They must have an option of Zulu so I can read and understand what they are saying." **FinTech Non adoption participant 2**

"I do not understand how to write or read English. Using our native language might be beneficial for us." **FinTech Non adoption participant 5**

4.6.9 Lack of awareness, understanding and interest of FinTech solutions

Lack of awareness

It was noted that a few participants (7 out of 12) were not aware of any FinTech solutions. Therefore, their lack of knowledge is attributed to their non-adoption of FinTech solutions.

"I do not know them or understand how to operate technology". **FinTech Non adoption participant 8**

Lack of knowledge

Of those that were aware they were only aware of Mobile Banking Applications. This lack of knowledge hinders them to adopt FinTech solutions.

"I do not understand the things." **FinTech Non adoption participant 9**

"*I do not understand how it works*." **FinTech Non adoption participant 12**

Lack of interest in FinTech solutions

A general lack of interest in FinTech solutions was also noted as a barrier to adoption. The attitude towards FinTech was also noted to have been attributed to lack of resources required to access FinTech solutions i.e., mobile data or smartphones.

> *"I am not interested, and I do not understand it properly."* **FinTech Non adoption participant 4**

> *"I do not have a smartphone; I am not interested in FinTech."* **FinTech Non adoption participant 7**

> *"I have not thought of doing them now, but I see they are important."* **FinTech Non adoption participant 10**

4.6.10 Residence location as a barrier to adoption (Rural)

The study was explored in both rural and urban areas in South Africa. A clear distinction of infrastructure and exposure was noted between the two different areas. Although the study was not pre-emptive in terms of location, it was found that majority of those that reside in rural areas have not adopted FinTech solutions. It was further noted during the course of the data analysis that residence location was an emerging theme that hinders the adoption of FinTech solutions. This is driven by the lack of network to access FinTech solutions.

Lack of Network connection

Participants that reside in rural areas attributed their non adoption of FinTech solutions to their place of residence. Lack of network and network issues were cited as contributors to their lack of adoption. Thus, it is not conducive to have any FinTech solution as one will struggle to even connect to it.

"Because there's no network here, you have to travel to get to the network and even travel far to get to the stores so you can buy airtime for data." **FinTech Non adoption participant 2**

"Network is a struggle; the government forgets us. There are no banks close by". **FinTech Non adoption participant 6**

"It does affect me because the network is poor." **FinTech Non adoption participant 7**

Lack of awareness

Participants also stated that because they live in rural areas, they were no aware of FinTech solutions. Those that were aware only heard from people however they uncertain about the trustworthiness of these solutions.

*"I did not know about FinTech solutions, I heard from people because when people are vising here, they tell us about these things, apps do not exist here in the rural areas, we only know how to use phones to make calls. Network also has an impact, it's hard for the phone to connect.***" FinTech Non adoption participant 5**

4.6.11 Mobile phone device as a barrier to adoption

The study also uncovered that there was a correlation between FinTech non adoption and mobile phone device. Majority of the participants that have not adopted FinTech solutions alluded to utilising feature mobile phones, however it should be noted that this was not deliberately pre-empted during the selection of participants. The data analysis also supports this finding, as most of the participants also alluded to their mobile phone devices being a strong barrier to adoption of FinTech solutions. This barrier is mainly driven by the type of mobile device available as well as limitations with mobile device i.e., space or damage.

Type of mobile device available

As observed at the beginning of the chapter, most participants only refer to mobile banking applications as FinTech solutions. The other types of FinTech solutions

were unknown. As such, it was found that lack of smartphones was identified as a barrier to adoption of FinTech .

> *"I do not have a smartphone, I've never had an interest to have cellphone banking, I was not sure whether my phone would allow me."* **FinTech Non adoption participant 3**

> "I do not have a smartphone; I am not interested in FinTech ". **FinTech Non adoption participant 7**

Limitations with mobile phone device

It was also noted that limitations with mobile phone device contributed to non-adoption of FinTech solutions. Participants believe that Mobile Banking applications take too much space on their mobile phones as a result they have not downloaded them.

> *"I do not have data for banking app, I tried using it, I do not know how to use it, it was using too much space on my phone, cellphone banking I do not see the need of it I go to the branch or ATM to transact."* **FinTech Non adoption participant 1**

4.6.12 Lack of access to the internet as a barrier to adoption

As stated, most FinTech solutions are accessed via the internet. Thus, one needs to have WIFI or mobile data connection. Participants expressed that they have not adopted FinTech solutions due to the exorbitant costs of mobile data.

> *"I do not have the app because it will require me to have money to buy airtime or data. If I do not have money, it will mean I won't be able to use them".* **FinTech Non adoption participant 6**

> *"Because at month it means I must have money for mobile data, and I do not always have money."* **FinTech Non adoption participant 7**

> *"The cost of data is too expensive, and I can't afford data."* **FinTech Non adoption participant 11**

4.6.13 Digital and financial illiteracy as a barrier to adoption

The study found that digital and financial illiteracy were very strong barriers to FinTech adoption. Participants expressed that their literacy levels were very low as such they were unable to adopt FinTech solutions as these solutions are dependent on one's understanding of digital solutions as well as financial understanding. This lack of understanding or illiteracy was mainly attributed to their education levels, lack of exposure to such solutions as well as the perceived complexity thereof.

Digital illiteracy as a barrier to adoption

The study found that the non-FinTech adoption cohort ascribed their non adoption to their lack of understanding of how to operate digital solutions. There was a general discomfort with operating digital solutions like mobile phone, laptops, and computers and thus they felt that if they are unable to operate such, they it would be difficult to operate FinTech solutions as they are accessed via digital solutions/channels. This fear was also accelerated by the fact the FinTech solutions concerns money, and they do not want to try-out anything that will put their money at risk.

> *"I can't even use WhatsApp, banking app is for educated people, we're talking about money now."* **FinTech Non adoption participant 5**

> *"I do not understand how to operate the phone, my brain doesn't work properly anymore".* **FinTech Non adoption participant 8**

Financial illiteracy as a barrier to adoption

As witnessed at the beginning of the chapter, financial literacy of participants was also tested and 9 out of 12 non FinTech solution participants expressed that they do not have any form of financial literacy. The cohort expressed that their financial illiteracy played a big factor to their non adoption of FinTech solutions as they do not want to sign up for things that will put their finances at risk without much understanding.

"I do not know anything about finances, if I had the app, I wouldn't understand what is written and the implications and they do not eve explain what the terms mean, you just see "%" without much explanation, so I prefer someone to explain". **FinTech Non adoption participant 2**

"If I had the app, I would struggle to understand the terms and know what I am signing up for so its best I do not get any of these things and go directly to the bank." **FinTech Non adoption participant 12**

4.6.14 Dependency of cash

The participants of this study were from urban and rural areas. Those that were from urban areas were mostly from townships. It was noted that the economic activities in these areas are not very advanced, thus there is limitations of infrastructure that allows for people to be able to fully rely on FinTech solutions to live and operate comfortably. The rural and township economy are noted to be very cash heavy thus one needs to be able to have cash to be able to buy from the spaza shop, street vendors or to even commute with public transport. This limitation results in the dependency of cash, as such people withdraw most of their funds from town so that they are able to transact in the township/rural economy. This results in them not seeing the need to adopt FinTech solutions as these solutions do not allow them to be able to transact within this economy i.e., taxis only allow cash and Spaza shops only allow cash.

"I use money for a lot of things to buy at the spaza shop, I use cash for taxi, I use cash to pay burial society, so how I do these things if my money is on my phone?" **FinTech Non adoption participant 6**

4.7 Perceived risks factors for the adoption of FinTech solutions

Perceived risks outlined as per proposition 3 were used to address this theme. According to proposition 3 **Perception on the adoption of FinTech among the banked and unbanked is driven by perceived risks underpinned by financial, legal, operational and security risks**. The purpose of this section is to present

the findings pertaining to Cohort 1 of the participants: FinTech adoption. Interviews were conducted with 12 participants to assess the above proposition. The proposition was then used to draft several questions and these questions led to the below results relating to Proposition 3.

4.7.1 Financial Risks due to fraud

Questions for Financial risks were anchored around the perceived view of participants losing money. This was attributed to Fraud, FinTech solution breakdown and product mis-sell. For the first cohort: FinTech adoption, 5 out of 12 participants believe that they run a risk of losing money due to Fraud whilst utilising the FinTech solutions. These participants are quite aware of the different fraud use cases that they might be exposed to when using FinTech solutions however it was noted they have adopted FinTech solutions. Thus, this fear did not deter them from adoption.

> *"Yes, I think I can lose money due to fraud, because there's a lot of criminals, we get a lot of messages instructing us to do certain things, you do not know what to trust so it can happen*". **FinTech adopter 8**

Some of the participants felt that they have the responsibility to protect themselves from such risks.

> *"Yes, I think I can lose money due to fraud; you just need to be aware of what information you give out to people*". **FinTech adopter 11**

> *"Yes, I think I can lose money due to fraud, because if I lose my phone someone can unlock it and get access to my money, when you have an app, you need to be careful with your phone".* **FinTech adopter 12**

The other participants that form part of the first cohort felt different about the risk of losing money due to fraud. 7 out of the 12 participants felt that they do not run the risk of losing money due to fraud hence they adopted FinTech solutions. Some believe so because it has never happened to them whilst some believe so because of the reassurance they received from the FinTech solution service provider i.e., Bank.

"No, I do not believe I can lose money due to fraud because it hasn't happened to me, you need pin to access it". **FinTech adopter 4**

"*No, I do not believe I can lose money due to fraud; the bank reassured me that I can't lose money, the bank is responsible if I lose my money".* **FinTech adopter 5**

4.7.2 Financial risks due to FinTech breakdown

For purposes of the interviews, FinTech breakdown was defined as the FinTech solution being offline or not working in order to simply it for the participants. For cohort 1 – FinTech adoption, 6 out of 12 participants felt that they can lose money if the FinTech solution they have adopted is not working or is offline. The fear is mainly because when their FinTech solution is offline, they are unable to monitor their funds and thus are afraid that their money might not be there when the app is back online. This fear is derived from past experiences they have had. It was noted though that the fear that these participants have does not affect their adoption of FinTech solutions.

"Yes, I run the risk of losing money when the app is offline, it once happened to me. Whilst I am buying airtime, the transaction went through and the app stopped working and they deduct the money however when I queried it with the bank I was not be credited with the airtime, in that event I lost money". **FinTech adopter 3**

"Yes, I run the risk of losing money when the app is offline, it once happened to me. It there was a transaction I am not comfortable with, but it went through, and tried to stop it but the app was off already". **FinTech adopter 6**

One participant referred to a different reason as the participant is self-employed.

"Yes, I can lose money when the app is offline, because a lot of people can pay me while the app is offline, and if they send me money but I can't verify on app if they indeed sent it. In that case I lose money by giving them

the product without being sure that the money is in my account". **FinTech adopter 9**

The other 6 participants did not believe that they can lose money due to the FinTech solution being offline. This is mainly because they believe that if the FinTech solution is not working nothing can happen to their money. Their money is safe with the FinTech solution provider, and should they lose money during that period they can always query it with the provider.

> *"No, I do not think I run the risk of losing money when the app is offline, because if the app is not working and I lose money I am able to query it with the bank".* **FinTech adopter 1**

> "*No, I do not think I run the risk of losing money when the app is offline because when the app is offline then the app is not operating at all with no transactions".* **FinTech adopter 2**

4.7.3 Financial risks due to product mis-sell

Product mis-sell was explained to participants as a risk they might incur due to taking up products that they do not understand. For cohort 1 – FinTech adoption, 8 out of 12 participants did not believe that they can lose money due to product mis-sell. This is because they are extremely careful whenever they are transacting on the app, the participants stated that should there be something they do not understand they contact their service provider or use the internet to understand.

> *"No, I do not think I run a risk of product mis-sell, because I can always query it with the bank and reverse the action".* **FinTech adopter 1**

> *"No, I do not think I run a risk of product mis-sell, I am not that ignorant, I won't take things I do not understand, I google things I do not understand".* **FinTech adopter 3**

The other 4 participants felt that they run a risk of losing money by taking up a product that they do not understand. They expressed that although they have

adopted the mobile banking application, they have limited understanding of how it operates and are afraid of making mistakes. This fear is also increased by the lack of face-to-face interaction thus there is no one to hold accountable.

> *"Yes, I run a risk of product mis-sell, I think if I took a loan I do not understand, and they debit my account it could be a loss to me".* **FinTech adopter 4**

> *"Yes, I run a risk of product mis-sell, based on my limited understanding of my app".* **FinTech adopter 6**

4.7.4 Legal Risks

Legal risk was assessed based on the participants understanding of legal rules governing the FinTech solution they have adopted. An interesting finding was observed for cohort 1 – FinTech adoption, only 1 out of the 12 participants indicated that they are aware of the legal rules governing/pertaining to the FinTech solution they have adopted. The one participant that is aware of the rules, stated they are only aware of the basic rules pertaining to how they can protect themselves when using FinTech solutions:

> "*The rules that I am aware of is that do not give out the pin, be careful with my phone, do not allow people to touch my phone".* **FinTech adopter 12**

The rest of the participants have successfully adopted FinTech solutions without understanding the rules/laws governing them indicating that legal risks are not a barrier to adoption. These participants further indicated that their lack of knowledge of legal rules does not worry them as they are able to transact on their platforms without any issues.

> *"No, I just experiment, as long as I understand what I am doing, I am not bothered by rules. I just accept the rules, I do not read".* **FinTech adopter 3**

> "*I use the app even if I do not understand the rules".* **FinTech adopter 10**

4.7.5 Security concerns

Security concerns refers to any fears that participants have relating to the security of their money, data, and privacy when it relates to FinTech solutions. For cohort 1 – FinTech adoption, 11 out of the 12 participants stated that they do not have any security concerns regarding their money, data, and privacy when it comes to the FinTech solutions they have adopted. This is largely because of the security features they have on their mobile devices which they felt are adequate to protect them.

> *"No security concerns, because the app is on my phone and when you login on the app you need to put in password".* **FinTech adopter 2**

> *"No security concerns, because the one day I wanted to delete the app on my phone and add it on another phone, I downloaded the app, and it asked too many questions and that reassured me of the security measures".* **FinTech adopter 9**

> "*No, I have not had any issues before, I have not had anyone around me having issues before. Also, because the bank has systems in place to ensure information is not misplaced".* **FinTech adopter 4**

The other participants find comfort in knowing that they can always query any losses with the provider should they occur.

> *"No, I can always query with the bank".* **FinTech adopter 1**

> *"No cause the bank assured me all is well".* **FinTech adopter 5**

There was also concern of robbery that might occur due to the FinTech solution being installed on their mobile devices.

> *"I am scared that criminals might force me to send them money without my permission, when I go to certain places, I leave my phone because I am scared criminals might force me to login on my app and send them money".* **FinTech adopter 12**

4.7.6 Operational risks

Operational risks refer to risks of downtime of the FinTech solution. For Cohort 1 – FinTech adoption, operational risks do not affect their adoption of FinTech solutions however it affects the frequency of use of FinTech solutions. Based on the participants, downtime frustrates them as they are unable to do certain transactions that they might need to do at a point in time. The frustration is mainly due to past experiences they had.

> "*Yes, it's frustrating when I must do something, and cellphone banking Is not working. Yes, the screen said "You are unable to complete the transaction, please try again later" I had gone back and redo the transaction. No, this is the only tool I must use. I have no choice since the bank is far".* **FinTech adopter 4**

> *"Yes, it scared me, but I still downloaded the app. Mostly month end and Friday nights, it frustrates you, I might lose money if I want to play lotto and the numbers win but I couldn't play because it was offline".* **FinTech adopter 7**

> *"Yes, because I am used to the app, it makes things get on hold. It frustrates me whenever its offline".* **FinTech adopter 8**

The rest of the participants felt that downtime does not affect them because if the FinTech adopted is not working then they understand the reasons why.

> "*No, I understand when it's not working".* **FinTech adopter 5**

4.8 Perceived risks factors for the lack of adoption of FinTech solutions

Perceived risks outlined as per proposition 3 were used to address this theme. According to proposition 3 **Perception on the adoption of FinTech among the banked and unbanked is driven by perceived risks underpinned by financial, legal, operational and security risks**. The purpose of this section is to present the findings pertaining to Cohort 2 of the participants: FinTech non

adoption. Interviews were conducted with 12 participants to assess the above proposition. The proposition was then used to draft a number of questions and these questions led to the below results relating to Proposition 3.

4.8.1 Financial risks due to fraud

The risk of Fraud for cohort 2 – FinTech non adoption is very prevalent in comparison to the FinTech adoption cohort. 9 out of 12 participants states that they felt that they run a risk of losing money due to fraud that might occur should they adopt FinTech solutions. This is mainly due to the risk of them losing their mobile device and someone defrauding them.

> "*Yes, I run a risk of fraud, because someone can get access to my phone without my knowledge and steal my money, no one can get to the bank and steal my money".* **FinTech Non adopter 5**

Another prevalent reason is the risk of not being able to protect themselves against fraud due to their lack of understanding of how FinTech solutions operate.

> *"Yes, because I do not understand how these things work and if you do not know these things a lot of criminal activities can happen which will lead to you losing money".* **FinTech Non adopter 10**

> *"Yes, because they will call me and pretend to be the bank and answer because it's the bank and they will take my money. These days you do not know who is calling you".* **FinTech Non adopter 11**

For the remaining 3 customers, 1 participant expressed that they do not know because they are not using any FinTech solution. The other 2 participants felt that they do not run the risk because they can always query it with the bank and that such risks only occur when someone has your information.

> *"No, no one can defraud me, if it happens, I will go to the bank".* **FinTech Non adopter 4**

> *"No, I do not believe that app has fraud unless if there is a person who has your information".* **FinTech Non adopter 12**

These two participants however have not adopted any FinTech solutions despite their stance regarding fraud risks.

4.8.2 Financial risks due to FinTech breakdown

For Cohort 2 – FinTech non adoption, 9 out of 12 of the participants felt that they do not run a risk of losing money due to the FinTech solution that they are using not working or being "offline". This is mainly because these participants felt that if the solution is not working then nothing can happen to their money. These participants expressed that their non adoption of FinTech solutions had nothing to do with the operational issues of the FinTech solutions.

> *"No, I do not think it's possible for me to lose money when the App is offline. If it's not working it's not working, it's no different to the bank if they are offline, I can't lose money".* **FinTech Non adopter 4**

Contrary to the above, 3 out of 12 participants felt that they run a risk of losing money when the FinTech solution they have adopted is not working or is "offline". The participants expressed that this fear had also contributed to their non adoption of FinTech solutions. This is largely because they do not understand why FinTech solution would go offline, what causes it to be offline and what that implies for them.

> *"Yes, because if it's not working whilst I am logged in who is looking at me to see what I am doing".* **FinTech Non adopter 5**

> *"Yes, I do not know what makes it to be offline, I sometimes think its offline because criminals have gotten in*". **FinTech Non adopter 11**

4.8.3 Financial risks due to product mis-sell

Majority of the participants in Cohort 2 – FinTech non adoption, 10 out of 12 stated that they believe that they are at risk of losing their money due to taking products that they do not understand as there is no one to explain to them what they are signing up for. This can result in them having monthly financial obligations on

products such as credit and insurance products that they might have taken by mistake. This is explained further by the below participants:

> *"Yes, I run a risk of getting products I do not want; mistakes happen so it can happen".* **FinTech Non adopter 3**

> *"Yes, I run the risk of product mis-sell, because no one would've explained to me that I have taken".* **FinTech Non adopter 4**

> *"Yes, I run a risk of losing money because if you take products by mistake you still must pay for them, it can happen that the money can get lost. Today I am able to find myself owing for airtime but not knowing how".* **FinTech Non adopter 5**

4.8.4 Legal risks

For cohort 2 – FinTech non adoption, only 1 out of the 12 participants indicated that they are aware of the legal rules governing/pertaining to the FinTech solutions. The rest of the participants stated that they were not aware of any legal risks. It was noted that the participants only expressed their concern of legal risks once the question was posed indicating that legal risks are not barrier to FinTech adoption for this cohort.

> *"Yes, the lack of understanding of rules worries me, if I do not know the rules and what protects me when I make a mistake, I do not know who I can complain to if I make a mistake, if I knew the rules, I will understand better".* **FinTech Non adopter 4**

> *"I worry about using the app because I do not know what rules govern the app and ultimately my money, I do not want to end up losing money because I do not understand".* **FinTech Non adopter 12**

Two of the participants explicitly stated that they do not care much about the legal rules their lack of adoption had nothing to do with rules.

> *"No, the lack of awareness of the rules of my app does not affect me".* **FinTech Non adopter 3**

"*No, I do not care about the rules".* **FinTech Non adopter 11**

4.8.5 Security concerns

As stated under the result discussion, proposition 2 - All 12 participants expressed that they have not adopted FinTech solutions because of security concerns. These security concerns range from privacy, cybercrimes, and data storage. Access to mobile devices is also a big contributor to security concerns for this cohort of participants.

> *"Yes, because like I said the kids at the house you do not know what they can do, they can see things they do not need to know, I also drink so I do not know who can take my phone or steal my money".* **FinTech Non adopter 5**

> *"Yes, because you hear on the news that data/information has been stolen".* **FinTech Non adopter 6**

There are however participants that did not have any security concerns in respect of data privacy:

> *"No, because the bank would prepare me to understand the risks and how to protect myself".* **FinTech Non adopter 3**

There was also a general concern of cybercrime amongst the participants which has resulted in their non adoption of FinTech solutions.

4.8.6 Operational risks

According to Cohort 2 – FinTech non adoption, operational risks are a barrier to FinTech adoption. 8 out of 12 participants states that the downtime of FinTech solutions affected their decision-making process to adoption. This is due to the possible inconvenience they believed they might experience if they had adopted any FinTech solution.

> *"Yes, what I do if I need to transact, and the app is not working".* **FinTech Non adopter 6**

"Yes, because it would mean if its offline then you can send money, you might have to find alternatives". **FinTech Non adopter 7**

"Yes, because if there is an emergency, I would not be able to transact or use the app". **FinTech Non adopter 12**

Fear of operational risks also emanated from what participants have heard from those that have adopted FinTech solutions.

"Yes, because the lady I work for always complains that the app is down, they can't make transactions and sometimes they do not know how long it will take for the app to get back". **FinTech Non adopter 1**

This is very similar to cohort 1 where a number of participants expressed that they have been inconvenienced by downtime of the FinTech solutions they have adopted. One participant however expressed a different view.

"I do not care much because I do not use it. I also do not want to have things that do not work if it's there it must work". **FinTech Non adopter 2**

4.9 Summary of the results/findings

Chapter 4; Presentation of findings was informed by the insights gathered during the interviews of lower-income earners who have adopted FinTech solution and those who have not adopted FinTech solutions. This chapter presented the analysis and interpretation of the results of the 24 participants interviewed. The qualitative results show that lower-income earners in South Africa do not fully understand the world of FinTech , the concept to them is foreign despite some of them utilising the solutions. Most participants were inadequately knowledgeable on the subject matter, as well as core concepts. Suggesting that there is not much knowledge and awareness of FinTech solutions amongst the lower-income earners. Further, Lack of awareness of the different FinTech solutions available more specifically for lower-income earners was also noted from the results. This is mainly because all participants from both cohorts only referred to Digital Banking FinTech solutions, of which all of them are supplied by the Big 5 banks in South Africa. This made it difficult to allow for meaningful engagement and

assessment of the other FinTech solutions available. The results also suggests that location i.e., rural, or urban plays a factor in the adoption of FinTech solutions amongst lower-income earners.

It was found that lower-income households were influenced by some of the factors discussed in the literature. These were summarised according to the themes; the results were themed according to the three propositions outlined in the Literature review i.e.:

- **Proposition 1** - There are numerous factors that promote the use and adoption FinTech in developing countries.

- **Proposition 2** - The factors that detract from the use of FinTech solutions includes associated costs, low income and education level, perceived risk, and security concerns. These affect both the banked and unbanked.

- **Proposition 3** - Perception on the adoption of the FinTech among the banked and unbanked is driven by perceived risks underpinned by financial, legal, and operational and security risks.

A few emerging themes relevant to the lower-income earners and the South African context were also identified which require further research.

CHAPTER 5. DISCUSSION OF THE RESULTS OR FINDINGS

5.1 Introduction

As stated in the introduction of the paper, the purpose of this qualitative study is to gain an understanding of the factors that drives financial technology (FinTech) adoption by lower-income earners in South Africa. This is due to the imperative need to understand the factors that enable the adoption of FinTech solutions as well as the barriers to FinTech adoption by lower income earners in the South African context. The study used previous literature to understand this phenomenon. The assessed literature resulted in the formulation of three propositions. These propositions were tested with 24 participants and the finding of the interviews were presented in chapter 4.

This chapter aims to deploy more insightful details by testing the results of the research against the research questions. This will be achieved by discussing and explaining the results of the interviews within the context of the literature outlined in the literature review section. Thus, this chapter will resemble the literature review with the results embedded in it and central to it. This will be done with the intention to find commonalities or differences between the body of research that exists today, and the findings of the interviews conducted for this research. As such, this chapter will unpack the results of the 24 participants interviewed outlining their motivating factors to adoption or non-adoption of FinTech solutions.

The chapter will start off with answering the main research question posed in Chapter 1, underpinned by the sub-research questions.

Main Question: What factors drive the adoption of FinTech by lower-income earners in South Africa?

- **Sub-research question 1**: What factors enable the use of FinTech solutions?

- **Sub-research question 2**: What are the barriers to the use of FinTech solutions?
- **Sub-research question 3**: What are perceived risk factors for adoption/lack of adoption of FinTech solutions among the lower-income earners?

As per chapter 2, the study employed several frameworks to understand the factors that drive the adoption or deter the adoption of FinTech solutions. As noted, these frameworks had limitations thus the Researcher designed an enhanced conceptual framework; FinTech Adoption Research Model.

The framework was also tested with the participants and the results thereof will be presented in this chapter. The chapter will then close off with the presentation of findings in relation to new themes that emerged from the interviews.

5.2 Discussion pertaining to sub-question 1

5.2.1 *What factors enable the use of FinTech solutions?*

The first sub-research question 1 aimed to understand the drivers of FinTech adoption by lower-income earners. This question was explored with 12 participants that have adopted one or more FinTech solutions. It was noted that all these participants have adopted Mobile Banking Applications and that they were not aware of the other solutions available for use.

The participants that have adopted FinTech solutions indicated that they do not understand what FinTech solutions are, this gap on the understanding of FinTech solution was identified despite the participants having adopted FinTech solutions. The general understanding of operating the FinTech solutions adopted was also noted to be intermediate as most of the participants only use the FinTech solutions adopted for basic transactions like buying airtime, data, electricity and sending money. It was also noted that some participants depend on their family members to assist them to operate the solutions.

5.2.1.1 *Perceived ease of use as a factor to FinTech adoption*

The opening question to the interviews was asking participants why they are using the FinTech solution they are using and 8 out of the 12 participants interviewed used the words “easy to use” to describe the motivating factors to their adoption. This finding relates to the ease of use of the FinTech solution adopted. This finding correlates with the findings of a number of scholars in the research field of banking who also found ease of use (PEOU) as a factor to FinTech adoption (Akturan & Tezcan, 2012; Szopiński, 2016). This factor was also tested in a developing country (Thailand) to investigate Taiwanese consumers' intentions to make online purchases and the same conclusion was reached. It was revealed that perceived utility was a predictor of customers' willingness to utilise FinTech (Moslehpour et al., 2018). This study found that ease of use of FinTech solutions was also attributed to the useability of the Fintech solutions in terms of the transactions that they can perform i.e., buy airtime, data, and electricity. This finding aligns with a study by Riquelme and Rios (2010) who found that the e contributing factor to FinTech adoption is the convenience, friendly, easy to operate nature of FinTech service (Riquelme & Rios, 2010).

5.2.1.2 *Perceived usefulness as a factor to FinTech adoption*

The other 4 participants referred to the convenience of the FinTech solution as the driver to their adoption i.e., being able to transact without the need to queue as well as the ability to use the FinTech solution at any time of day even when they are at work. These reasons refer to the “usefulness” of the FinTech solutions adopted i.e., Perceived Usefulness (PU). The researcher noted that this outcome agrees with the numerous empirical research that concur that PU has a substantial impact on attitudes regarding utilising FinTech (Chuang et al., 2016; Ismail & Masinge, 2011; Kim et al., 2016; Pandiya & Gupta, 2015; Singh & Srivastava, 2018). The above findings also correspond with a previous study performed in the African context, a study conducted in Ghana on the consumers' intentions to utilise technology at Access Bank found that adoption of technology was positively impacted by PU (Cudjoe et al., 2015).

Thus, it can be concluded that perceived ease of use and perceived usefulness has a positive correlation to FinTech adoption. These two factors form part of the TAM framework designed by Fred Davis (1985). According to Davis (1985) two direct adoption drivers impact users attitude, these are “perceived usefulness" (PU) and "perceived ease of use" (PEOU) (Davis, 1985).

5.2.1.3 *Testing the factors of adoption discussed in Chapter 2*

The literature review section also unpacked a few factors that have been identified as drivers of adoption by several researchers. All these factors were also tested with the participants.

5.2.1.3.1 *Trust as a factor to adoption:*

10 out of 12 of the participants stated that they adopted the FinTech solutions they are using because they trust them. This trust is driven by the availability, reliability, safety, and brand of the FinTech solution. These insights agree with the findings by Ernst and Young (2019) and Slazus (2022) who stated that the functional driver of trust includes data security, data privacy, device trust and account security (EY, 2019; Slazus, 2022). The finding around safety correlates with the finding by Ja-Chul et al. (2009) who found that Trust plays a crucial role in the adoption of mobile banking as it helps customers overcome fears of security, privacy and fraud in the mobile environment (Ja-Chul et al., 2009).

Brand association as a factor to trust to was also found as a key element in the decision-making process of FinTech adoption; thus, the more a customer trusts the service provider, the greater the chance of adopting the service (Basak et al., 2016; Koksal, 2016).

5.2.1.3.2 *Socio economic factors as a factor to adoption:*

Economic benefits:

From the interviews conducted, it was found that economic benefit is a key driver to FinTech adoption. This is mainly because 10 out of 12 participants indicated

that they adopted the FinTech solutions due to economic benefits derived. Cost saving from a customer perspective was also identified by Maduku (2017) in his study of "*Customer acceptance of mobile banking services*" as a highly important to foster adoption of FinTech (Maduku, 2017).

For this study, these economic benefits include saving money for traveling costs. Therefore, saving due to traveling costs is a new driver that was identified by the researcher as a driver to economic benefit. Ernst and Young (2019) previously stated that FinTech are seen as disruptive because they offer financial services for free instead of charging customers like traditional financial services providers (EY, 2019). This is accurate because the other driver to economic benefit is service or transaction cost of utilising the FinTech solution being cheaper than visiting the brick-and-mortar establishment:

Social Influence

67% of the interviewed participants adopted the FinTech solutions due to the influence of the bank whilst 25% was influenced by family members. None of the participants were influenced by community. This finding is contrary to the findings found by numerous scholars in their studies on the intention for use m-banking adoption where they found a positive correlation between social influence and the adoption of m-banking (Maduku, 2017; Makanyeza, 2017; Wentzel et al., 2013).

The participants were then asked if they would have adopted FinTech solutions if recommended by family, friends or church mates and majority of the participants expressed that they are unlikely to adopt FinTech solutions due to social influences as they do not trust social influences with their finances. The sentiments from the participants also contradicts the conclusion by Kim et al., (2016) who concluded that because of the uncertainty on finance related products, first time users turn to their social clubs in their decision-making process for pre-checks (Kim et al., 2016).

5.2.1.3.3 *Utility as a factor to adoption:*

The results of the interviews revealed that utility is also a factor to FinTech adoption. This was explored with 12 participants and 11 out of the 12 participants stated that the FinTech solution that they are using is convenient. Therefore, it can be that utility is a factor to FinTech adoption. This finding is similar to the finding by Slazus (2022) who found that South African users are more inclined to adopt FinTech services if it makes their lives simpler and easier (Slazus, 2022). The same conclusion was also reached by several other local and international researchers in their studies (Dapp et al., 2014; Ismail & Masinge, 2011; Singh & Srivastava, 2018).

The convenience referenced by participants for this study was in relation to time saving, simplicity and the value derived from the FinTech solutions adopted as they can easily transact without much hassle. These findings positively correlates with the studies by numerous Scholars who found that FinTech adoption was driven by its utility in terms of speed (Barbu et al., 2021; Slazus, 2022), user experience (Chiriac et al., 2018; Slazus, 2022) and specified need (Setiawan et al., 2021; Slazus, 2022) .

5.2.1.3.4 *Youth (Age) as a factor to adoption:*

Age was used to select the sample for the interviews. The interviews were conducted with a wide range of age groups ranging from 18 years old – over 60 years old. There was no difficulty in terms of obtaining participants that were older. This is evidence enough to indicate that age is not a factor to adoption, however the question was also posed to the participants and 10 out of 12 participants stated that they do not think that age has an impact on their adoption of FinTech solutions. Therefore, it can be concluded that there is no correlation between age and FinTech adoption. This finding is contrary to Slazus (2022) who found that that the younger generation in South African are keen to adopt FinTech solutions in comparison to older generation (Slazus, 2022). According to the literature review, scholars researching adoption of mobile payments by age also found that younger customers have a higher likelihood of adopting mobile payments than older consumers concluding that that individual aged 20 year is

about 10 times more likely to adopt FinTech than adults aged 75 years old (Li et al., 2020). This was not found to be the case for this study as the appetite for FinTech adoption for older and younger generation seemed to be the same from the participants.

5.2.1.3.5 *Financial health as a factor to adoption:*

It was found that Financial Health is not necessarily perceived as a factor to FinTech adoption but rather as a factor to the frequency of their utilisation of FinTech solutions. Participants stated that FinTech adoption is mainly driven by a need, which can either be a financial activity or a non-financial activity**.** The above is contrary to the findings by scholars in the context of Indonesia who found that there is a positive relationship between financial health and FinTech adoption in Indonesia (Setiawan et al., 2021).

Participants also credited their adoption to the non-financial activities such as money management tools and tips available on the FinTech solutions. This finding is similar to the recent study from Korynski (2019) that found that FinTech has beneficial effects on financial health by providing users with easy access to information related to money management, including managing income and expenses (Korynski, 2019).

5.2.1.3.6 *Attitude as a factor to adoption:*

The study also found that Attitude is a factor to FinTech adoption. This finding was concluded on the basis that all 12 participants indicated that they like the FinTech solution adopted as such indicating a positive attitude towards the FinTech solution they have adopted. The likeness of the FinTech solution was found to have been driven by the benefits derived from it in terms of convenience and the simplicity thereof. This finding is in line with the findings from other studies that found that users adopted FinTech solutions due to the advantages derived from the solutions, including its utility, user-friendliness, timesaving, and convenience (Al-Fahim et al., 2016; Chuang et al., 2016).

When comparing this finding with other countries, it is noted that the findings of this study correlate with other studies. A study in Indonesia found that there is a positive relationship between attitude and FinTech adoption in Indonesia (Setiawan et al., 2021). In addition, this finding agrees with the conclusion reached by Chuang et al., (2016) on the study who stated that attitudes toward on using have a significantly positive effect on behavioural (Chuang et al., 2016).

5.2.1.3.7 *Digital literacy as a factor to adoption:*

For purposes of this paper, it can be concluded that the participants of this study have been classified as having basic understanding of digital solutions as they mainly understand how to operate their own mobile devices. This conforms to the definition of digital literacy outlined by Carlin et al. (2019), who defined digital literacy as the knowledge and abilities to use digital devices such mobile phones, smart phones, and tablets, as well as the ability to conduct digital financial transactions (Carlin et al., 2017). For this study, 10 out of the 12 participants expressed that they are able to navigate the FinTech platforms themselves and that this was enabled by their knowledge and familiarity of their mobile devices. This leads to the conclusion that there is a positive correlation between FinTech adoption and digital literacy with the exception of 2 of the participants are assisted by their family members to navigate their FinTech platforms.

The above findings correspond to the that was conducted in Ukraine on the relationship between digital literacy and FinTech adoption the study found that there is a relationship between the level of financial and digital literacy and the depth of promotion of innovative FinTech products among users (Vartsaba & Zaslavska, 2020).

5.2.1.3.8 *Financial literacy as a factor to adoption:*

Financial literacy of the participants was also measured. The study explored understanding of financial terms i.e., compound interest, inflation, and risk diversification as outlined by (Jünger & Mietzner, 2020; Lusardi, 2019) and it was found that 67% of the participants have no financial literacy whilst 33% of the

participants expressed that their financial literacy is basic. These statistics indicate that in the context of lower-income earners in South Africa, there is no correlation between financial literacy and FinTech adoption. This is mainly because the participants interviewed have adopted FinTech solutions despite their financial literacy levels. This conclusion is contrary to a study conducted in a developing country; Vietnam, which found that found that a higher level of financial literacy has strong and positive effects on an individual's awareness and use of FinTech products (Morgan & Trinh, 2020). The above findings conflicts with previous studies by who explained that financial literacy positively correlates with FinTech adoption (Jünger & Mietzner, 2020; Morgan & Trinh, 2020).

It was however noted that financial literacy levels impact the activities they perform on the FinTech platforms. Further cementing that financial literacy does not necessarily drive adoption but rather unlocks certain functionalities and activities on the platform. This agrees with the finding by Liu et al., (2021) who added that financial literacy also aligned with user innovativeness (Liu et al., 2021).

5.2.1.3.9 *Innovativeness as a factor to adoption:*

Innovativeness was tested according to the definition provided in the literature review section, it refers to the degree in which an individual experiment with new technology is referred to as Innovativeness (Lu et al., 2005). Only 5 participants out of the 12 participants indicated that their experimental nature has contributed to their adoption of FinTech solutions. This is similar to other previous literatures that found that Innovativeness is a positive factor to the adoption of FinTech (Hu et al., 2019; Morosan & DeFranco, 2014; Zhang et al., 2018).

For this study, it was found that majority of the participants, 7 out of 12 did not attribute their adoption to their innovativeness nature. Their adoption was mainly due to the convenience and usefulness of FinTech platforms. Thus, it was found that Innovativeness did not play any role in the adoption of FinTech solutions of the interviewed participants. This finding is contrary to past study that focused on perspective towards the intention to use loan aggregator platforms which found

that the attitude toward using the online platform and the behavioural desire to use it were both highly influenced by user innovation (Shahzad et al., 2022).

5.2.1.3.10 *Government Support as a factor to adoption:*

Contrasting to the finding by Setianwan et al. (2021) who concluded that Government assistance and FinTech adoption in Indonesia have a positive link that is mediated by financial literacy (Setiawan et al., 2021). It was found that none of the participants for this research received any government support/aid in their adoption of FinTech solutions. Participants had differing views around the role of government with regards to the adoption of FinTech solutions.

5.2.1.3.11 *Brand as a factor to adoption:*

Half of the participants, 6 out of 12 stated that one of the reasons they adopted FinTech was because of the bank they bank with. This is mainly because they trust the bank they are with and thus associated that trust with their FinTech solution brand. This is in agreement to a study performed in Indonesia that clearly found a positive relationship between brand image and FinTech adoption in Indonesia (Setiawan et al., 2021). This finding also agree with other empirical studies that states that Brand Image has the power to influences user's perception of quality (Riyadh et al., 2010) ,value (Shapiro et al., 2019) and satisfaction (Saleem & Rashid, 2011).

5.3 Discussion pertaining sub-question 2

5.3.1 *What are the barriers to the use of FinTech solutions?*

The second sub-question aimed to understand the barriers to the adoption of FinTech solutions by lower-income earners. This question was explored with 12 participants who have never adopted any FinTech solutions. The opening question to the interviews was asking participants why they are not using any FinTech solutions. The literature review section also detailed a few factors that

detract the use of FinTech solution by several researchers. All these factors were also explored with the participants.

The participants that have not adopted FinTech solutions indicated that they were not aware of FinTech solutions, this awareness gap was identified despite some participants being banked.

5.3.1.1 *Perceived risks as a barrier to FinTech adoption*

The correlation between non adoption and perceived risks was also exploed and it was found that 11 out of 12 participants have not adopted FinTech solutions because of the perceived risks. Some of the perceived risks identified include Data theft, Loss of mobile device, financial risks, and cyber risks. The same conclusion was found by Barbara Jeanne Slazus & Geoffrey Bick's that found that the perceived risk that customers deem to be inherent with FinTech Identity theft, phishing, hacking, malware, data breaches and SIM swaps (Slazus, 2022).

5.3.1.2 *Associated costs as a barrier to FinTech adoption*

A constructive conclusion on this factor acting as a deterrent to FinTech adoption could not be reached as 7 out of 12 do not know whether FinTech solutions costs money or not. This reinforces the lack of knowledge of FinTech s within the South African context. It was however noted that 4 out of the 12 participants believe that utilising FinTech solutions costs money. The associated costs referenced for these participants was mobile data costs as well as the cost of smartphones.

There is also a belief amongst the participants that FinTech solutions costs more money than going to the bank. This was also quoted by Ismail and Masinge (2011) who stated that FinTech costs can include service fees for transactions, data rates from mobile networks, and expenditures associated with purchasing a mobile device, such as a smartphone or a basic feature phone (Ismail & Masinge, 2011). Contrary to what other scholars found internationally who found that cost is a barrier to FinTech adoption, Brazil (Cruz et al., 2010), Iran (Hanafizadeh et al., 2014) and India (Pandiya & Gupta, 2015), a conclusive conclusion cannot be reached on whether associated costs deters the adoption of FinTech solutions.

5.3.1.3 *Age as a barrier to FinTech adoption*

Participants strongly expressed that age was not a barrier to FinTech adoption, 10 out of the 12 participants do not believe that their age has any impact on their non adoption of FinTech solutions. Their non adoption is mainly due to their lack of understanding of FinTech solutions and that has nothing to do with their age as their peers are already using FinTech solutions. These findings are contrary to what Das and Das (2020) who found. Das and Das (2020) found that only 26.9% of individuals aged 50 and above were utilising FinTech services (Das & Das, 2020) whereas with this study there was an equal split between participants that are younger and those older.

Li et al. (2020) concluded that older individuals turn to be anxious whenever they are utilising technology as they turn to have lower Perceived Ease Of Use and thus this contributes to their resistance to utilising FinTech solutions (Li et al., 2020). The finding by Li et al (2020) was explored on participants aged 56 - over 60 years and all participants reiterated that age is not a factor to their non adoption of FinTech solutions.

5.3.1.4 *Security concerns as a barrier to FinTech adoption*

It was found that security concerns are a major barrier to FinTech adoption. This is mainly because all 12 participants expressed that they have not adopted FinTech solutions because of security concerns. The security concerns span across cybercrimes, privacy concerns and data losses. Other studies also identified cybercrimes as a security concern which created an obstacle for FinTech (Kim et al., 2018; Ogbanufe & Kim, 2018). Security concern as a barrier to FinTech adoption was also found in a study that focused on mobile payment, this study found that security concerns were a major barrier to the adoption of mobile payments (Tseng et al., 2017). Previous research showed that the perception of information loss is unfavourable and prevents the adoption of new technology (Ogbanufe & Kim, 2018). This was also the case with the participants that took part in this study.

5.3.1.5 *Income levels as a barrier to FinTech adoption*

Li et al. (2020) conducted an empirical study on mobile payments adoption and this study supports the finding that stated that utilising mobile payments depends on income levels, the lower the income the less likely is an individual to adopt FinTech solutions (Li et al., 2020). From the interviews conducted for this study, it was noted that majority of the participants, 9 out of 12 stated that their income levels have contributed to their lack of adoption of FinTech solutions. Thus, acting as a barrier. The cost of mobile data and inability to afford smartphones were cited as the main contributors to non-adoption due to income levels. This finding is further supported by a study by Das and Das (2020) who demonstrated that the adoption of FinTech services is dependent on customers income (Das & Das, 2020). The findings also correlates with the findings of the study where the researchers found that income levels were a barrier to adoption mainly due to the perceived cost associated with technology (Mallat, 2007).

5.3.1.6 *Education levels as a barrier to FinTech adoption*

Szopiński (2016) found that education level has a positive link with the adoption and use of online banking (Szopiński, 2016). This finding was explored with the participants, and it was found that there is indeed a positive link between the adoption of FinTech solutions and education levels. 9 out of 12 participants for this study expressed that they have not adopted FinTech solutions because of their education levels. This is because FinTech solutions are written in English, and they struggle with comprehension of certain English words. Some participants do not know how to read or write English.

Similar to the findings by Das and Das (2020), when comparing the education levels of 12 participants who have adopted FinTech solutions and 12 participants who have no adopted FinTech solutions, one notes that the non-adoption participants have lower education levels than those that have adopted FinTech solutions (Das & Das, 2020).

5.4 Discussion pertaining to sub-question 3

5.4.1 *What are perceived risk factors for adoption/lack of adoption of FinTech solutions among the lower-income earners?*

Sub-question 3, aimed to understand the perceived risks associated with FinTech solutions. As per chapter 2, Perceived risk is anchored by several sub-factors, namely: Financial, security, operation risk and security concerns as informed by the Perceived Risk Theory (IRT). To answer sub-question 3, 24 were interviewed split according to:

Cohort 1: FinTech adoption participants.

Cohort 2: FinTech non adoption participants.

5.4.1.1 *Financial risks*

Financial risks were measured in accordance with the definition Forsythe et al., (2006) who referred to financial risks as financial losses experienced whilst conducting financial transaction (Forsythe et al., 2006).

Cohort 1: FinTech adoption participants

For this study, it was noted that financial risks are not a barrier to FinTech adoption for those participants that have already adopted FinTech solutions. This is because 7 out of the 12 participants felt that they do not run the risk of losing money due to fraud hence they adopted FinTech solutions. The key financial risks identified stem from fraud, platform malfunction and product mis-sell. This finding contradicts with the findings of the study that was conducted in Malaysia which found that financial risks negatively affect the adoption of FinTech in Malaysia (Tang et al., 2020). Other participants expressed that financial risk affect the frequency of accessing the FinTech solutions, confidence levels of the FinTech solutions adopted as well as accessing other key features of FinTech solutions.

Cohort 2: FinTech non adoption participants

The finding for this cohort is consistent with the findings outlined in the literature review. 9 out of 12 participants states that they have not adopted FinTech solutions because they felt that they run a risk of losing money i.e., financial risks. This was also found by Ryu (2018) who found that users of network and mobile phones mostly do not adopt FinTech solutions due to the perceived financial risk and thus financial risk is a barrier to FinTech adoption (Ryu, 2018a).

In the study, Perceived Risk Factors Affect Intention to Use FinTech , Tang et al. (2020) tested financial risk on the basis of perceived financial losses such as financial fraud, misrepresentation of money and possible downtime of the trading frameworks (Tang et al., 2020). These were explored with the participants, and it was found that financial losses resulting from fraud, FinTech platform malfunction and product Mis-sell are considered as financial risks. From the above it is clear that financial risks is a very strong barrier to the adoption of FinTech solutions as previously found by Tang et al. (2020) also that that found that financial risks have a negative effect on the adoption of FinTech in Malaysia (Tang et al., 2020).

5.4.1.2 *Legal risks*

Cohort 1: FinTech adoption participants

Similar to the findings on financial risks, it was noted that legal risks are not a barrier to FinTech adoption for this cohort. This is mainly because all 12 participants adopted FinTech solutions without understanding the rules/laws governing them indicating that legal risks are not a barrier to adoption. Further, the participants expressed that legal risk are not a concern to them whenever they consider FinTech solutions. This finding is contrary to what Ryu (2018) found in his study that consumers were concerned with legal risks and therefore reluctant to use FinTech (Ryu, 2018a). Unlike the findings by Tang et al. (2020) participants were not bothered by the maturity of the Legal fraternity when it pertains to the FinTech industry.

Cohort 2: FinTech non adoption participants

For cohort 2 though, the participants expressed that they do not know the legal rules governing FinTech solutions. This is also contrary to the finding that consumers are concerned with legal rules (Ryu, 2018a).

The participants only expressed their concern of legal risks once the question was posed; thus, it can be concluded that legal risks are not barrier to FinTech adoption for this cohort. This finding is very different to the findings on previous studies, who found that Legal risk have a negative effect on FinTech use intention (Ryu, 2018a; Tang et al., 2020). The Researcher attributes this conclusion to the observed general lack of awareness of FinTech solutions of the participants.

5.4.1.3 *Security Risks*

Security concerns were analysed in relation to the matrix used by Tang et al. (2020) who refers to security concerns as hacker attacks on the security systems of FinTech services, fraud and network intrusion (Tang et al., 2020).

Cohort 1: FinTech adoption participants

For cohort 1 – FinTech adoption, 11 out of the 12 participants stated that they do not have any security concerns regarding their money, data, and privacy when it comes to the FinTech solution they have adopted. The above finding agrees with the study by Teoh et al., (2013) that found that security is not significantly associated with consumers' perception toward e-payment (Teoh et al., 2013).

For this study, the comfort around security was attributed to security features available on their mobile devices as well as the FinTech platforms. This finding is contrary to Ryu (2018) who argues that security risk is the main factor for perceived risk of FinTech usage and thus it has a negative effect on FinTech adoption (Ryu, 2018a).

Cohort 2: FinTech non adoption participants

All 12 participants expressed that they have not adopted FinTech solutions because of security concerns. These security concerns range from privacy,

cybercrimes, and data storage. Access to mobile devices is also a big contributor to security concerns for this cohort of participants.

The reasons provided by participants around security concerns indicate that participants have very low levels of confidence in FinTech solutions. This was also stated by Ryu (2018) that concluded that security concerns can result in negative effects on user's hence this risk is a major barrier to FinTech adoption due to low levels of confidence in technology (Ryu, 2018a). Correspondingly, Tang et al., (2020) found that security risk has a negative effect on FinTech use intention (Tang et al., 2020). This finding was also found on other spheres of FinTech solutions mobile payments (Tseng et al., 2017) and e-commerce (Taherdoost, 2017).The above finding is contrary to what was found in the study by Teoh et al., (2013) that found that security is not significantly associated with consumers' perception toward e-payment (Teoh et al., 2013).

5.4.1.4 *Operational Risks*

Cohort 1: FinTech adoption participants

Operational risks according to this cohort does not affect their adoption of FinTech solutions as downtime does not take long. It was however noted that affects the frequency of use of FinTech solutions. Based on the participants, downtime frustrates them as they are unable to do certain transactions that they might need to do at a point in time. This finding is contrary to Tang et al. (2020) who found that operational risks have a negative effect on the intention to use FinTech (Tang et al., 2020).

Cohort 2: FinTech non adoption participants

For this study, it was found that operational risks are a barrier for FinTech adoption. 8 out of 12 participants states that the downtime of FinTech solutions affects their adoption. This is due to the perceived inconvenience they believe they might experience if they had adopted any FinTech solution. It was also noted that this risk is reinforced by what the participants hear from those that have adopted FinTech solutions. This finding agrees with the finding by Tang et al.

(2020) who found that operational risks have a negative effect on the intention to use FinTech (Tang et al., 2020).

5.5 Discussion of the findings in relation to the conceptual framework

As per chapter 2, the FinTech Adoption Research Model was designed to answer research sub-question one, two and three. The framework enhances/extends the TAM model, Perceived Risk Theory (PRT) and the Innovation Resistance Theory (IRT) by extending the models with the factors identified in the literature review. The purpose of this model is to model the factors that enable the use of FinTech solutions, the barriers to FinTech adoption as well as the perceived risks of FinTech solution by lower-income earners.

The below section will only focus on the two variables of the TAM model. These variables were explored with the participants and the findings are summarised below:

Perceived Ease of use (PEOU)

Perceived Ease of Use (PEOU) refers to the degree which an individual trusts that utilising a system will come with ease or less effort (Davis, 1985). For purposes of this paper, it was measured based on the participants experience of the FinTech solutions. Based on the responses received, participants referred to the below factors to describe ease of use: Easy to use, friendly to use and understandable.

As stated, 8 out of the 12 participants interviewed used the word “easy” to describe the motivating factors to their adoption. These findings were also reached by several other researchers who found a correlation between adoption and ease of use in the research field of banking (Akturan & Tezcan, 2012). The contributing factor to this is the convenience, friendly, easy to operate nature of FinTech service (Riquelme & Rios, 2010).

Perceived Usefulness (PU)

Slazus (2022) describes PU as the extent to which someone believes they will gain from employing technology is known as perceived usefulness (Slazus, 2022) This was tested with participants based on whether they felt that the FinTech solutions adopted meet their needs or whether they believe is saves them time. All participants indicated the FinTech adopted meets their financial needs and that it saves them time. All participants indicated that these contributed to the adoption of the FinTech solutions they are using. Several other studies concur with these finding, PU has a substantial impact on attitudes regarding utilising FinTech (Chuang et al., 2016; Ismail & Masinge, 2011; Kim et al., 2016; Pandiya & Gupta, 2015; Singh & Srivastava, 2018) (Chuang et al., 2016; Ismail & Masinge, 2011; Kim et al., 2016; Pandiya & Gupta, 2015; Singh & Srivastava, 2018).

The below section will only focus testing the (IRT) that was designed to understand understanding user's behaviour to resistance (Ram & Sheth, 1989). This model unpacks Functional Barriers and phycological barriers to Innovation (Ram & Sheth, 1989).

As stated, the enhanced conceptual framework also caters for the Innovation Resistance Theory (IRT). This theory was also explored with participants and the findings are summarised as follows:

Innovation Resistance Theory (IRT)

Innovation Resistance Theory was tested on participants that have not adopted FinTech solutions to explore whether the barriers that are outlined by the theory held true to the participants.

Functional Barriers as a deterrent factor to adoption

For purposes of the interviews, functional barriers were explored against the below three barriers: usage, value, and risk barrier.

Usage Barriers

Usage Barrier was explored based on the perceived difficulty or complexity of utilising FinTech solutions (Ram & Sheth, 1989). 7 out of 12 participants alluded that they have not adopted FinTech solutions because they believe that they are very difficult to use: indicating usage as a barrier. The difficulty of usage is mainly due to the language used on the platforms. The platforms are mainly written in English and the participants do not understand English. Usage also acted as a barrier in previous studies focusing on m-banking (Gupta & Arora, 2017) and m-commerce (Moorthy et al., 2017). The same conclusion was reached on the study where usage barrier conceptualised through complexity was a barrier to the adoption of electronic banking (Borraz-Mora et al., 2017).

Value barriers

Value as a barrier was measured based on the definition provided by Morar (2013) who refers to value as the balance between innovation and benefits offered (Morar, 2013). In the case of this research value was measured against price/saving money. 4 out of 12 participants expressed that they think they could derive value from adopting FinTech solutions however this perceived value has not resulted in their adoption.

Some of the participants expressed that they do not see any value in adopting FinTech, they do not see how it would save them money whilst others stated that the cost of mobile data is too expensive so they do not think they will save money. This is mainly due to their lack of understanding of how FinTech solutions work. For this reason, it can be concluded that value is a barrier to FinTech adoption. The findings concur with those by Laukkanen (2016) who concluded that Value barrier negatively mobile banking non-adopter's intention to use the innovation as well as Internet banking non-adopter's intention to use the innovation (Laukkanen, 2016).

Risk barriers

The definition provided by the study states that risk barriers refer to new technology's inherent uncertainties (Dunphy & Herbig, 1995). For purposes of

this study, risk barrier was tested around the uncertainty of making mistakes whilst using FinTech solutions. 10 out of the 12 interviewed participants expressed a strong concern around the fear of making mistakes whilst using FinTech solutions which might result in them losing money. This fear is as a result of their lack of understanding of how FinTech solutions operates. Thus, it can be concluded that risk is a barrier to FinTech adoption. Similar findings were found by other studies on the adoption of using different domains such as mobile commerce (Moorthy et al., 2017) and mobile banking (Laukkanen, 2016). Thus this study concluded that risk barriers have a negative impact on adoption the adoption of FinTech solutions.

Psychological Barriers as a deterrent factor to adoption

Psychological barriers are anchored on Traditional and Image barriers. Psychological barriers were measured the participants views on their preference of going to the brick-and-mortar establishment for financial services. This measure is consistent with the definition that states that tradition barrier comes into play when an innovation is incompatible with an individual's existing values and past experience, as well as social norms (Ram & Sheth, 1989).

Traditional barriers as a deterrent to adoption:

From the interviews conducted, all 12 participants stated that they prefer going to the brick-and-mortar establishment for financial services. This is mainly because they prefer face-to-face interactions. The findings are consistent with several other studies. Laukkanen and Hiltunen (2016) found that tradition barrier explains the rejection of Internet banking in Finland (Laukkanen, 2016). Similarly, a study done in Malaysia also found that there is a negative relationship between tradition barrier and adoption of mobile commerce among generation X in Malaysia (Moorthy et al., 2017).

Image barriers

Imagine barrier is defined as negative brand of the innovation due to the perceived complexity (Lian & Yen, 2013). This definition was used to test image barriers with the participants. 7 out of 12 participants alluded that they have not

adopted FinTech solutions because they believe that they are very difficult to use. The difficulty of usage is mainly due to the language used on the platforms. The platforms are mainly in enabling and the participants do not understand English. Laukkanen (2016) also conducted similar research to identify factors behind resistance towards online banking in Finland. They interviewed 30 customers; the results showed that perceived image is a barrier with the adoption of innovation (Laukkanen, 2016).

5.6 Conclusion

The study has revealed findings that demonstrates the factors that enable the adoption of FinTech solutions as well as the barriers of FinTech adoption. This was done by showcasing the differences and similarities of the findings of previous by other researchers. From the findings it is clear that this study serves the South Africa context fully.

Most of the findings in this study aligns with the literature as demonstrated above.

CHAPTER 6. CONCLUSIONS & RECOMMENDATIONS

6.1 Introduction

The purpose of this qualitative study was to gain an understanding of the factors that drives financial technology (FinTech) adoption by lower-income earners in South Africa. This purpose was driven by the dire need to close the gap on understanding the adoption of FinTech solutions by lower-income earners in South Africa. To address this purpose, key research questioned underpinned by three sub-research questions was outlined in Chapter 1 of this paper. An extensive literature review was conducted to understand previous literatures on the factors that drive the adoption of FinTech solutions in an attempt to answer the key research question as well as the sub-research questions. The paper then progressed to test the three sub-research questions with participants that are lower-income earners in South Africa.

The literature review resulted in the formulation of three propositions that contributed to answering the three sub-research questions outlined. The researcher also explored three theoretical frameworks (TAM, PRT and IRT) that addressed individual's acceptance of technology to predict the factors that promote the use of FinTech solutions. A few limitations were noted on the theoretical frameworks deployed for the study and thus, an enhanced conceptual framework was formulated to incorporate some of the key findings of the empirical literature and the theoretical frameworks for FinTech adoption.

The study employed a qualitative research method using semi-structured interviews as an instrument to collect data in order to address the research problem. The coding and categorisation of data enabled the analysis of the emerging themes. The study employed saturation and triangulation leading to the systemic interpretation and presentation of data. Data presentation employed a combination of words and tables to support the three propositions. The chapter then concluded with findings confirming propositions using the utmost ethical standards thus ensuring credibility and transferability of the study.

This chapter aims to present the conclusions found in this study, to make recommendations, outline future studies that should be carried out for this topic as well as present the limitations of this study. The chapter will start off with integrating the findings about the propositions into the original sub-research questions stated in Chapter 1 and answer each question in turn. It will then proceed to make recommendations to each of the stakeholders identified in chapter 1 under the heading “Significance of the research”, the chapter will then proceed to discuss suggestions for further research – these will be suggestions that occurred during the course of writing up the research as well as some of the delimitations identified for this study. Lastly, the chapter will close of with listing all the limitations of the study.

6.2 Conclusions regarding research question 1

Conclusion regarding research question 1**: What factors enable the use of FinTech solutions?**

The qualitative findings indicate that not all the factors identified in literature review held true to the adoption of FinTech solutions by lower income earners in the South African context. It was found that Trust remains a main contributing factor to adoption of FinTech solutions due to the safety of the FinTech solutions adopted as well as the service provider (brand) of the FinTech solution. Utility was tested against “perceived ease of use" (PEOU) in the form of convenience, and it remains that the perceived ease of use is a contributing factor to adoption. This is mainly due to the absence of needing to queue due to the availability of FinTech solutions. It is concluded that Economic value is a factor that drives the adoption FinTech solutions due to the perceived cost saving pertaining to FinTech solutions. The cost of mobile data was identified as an inhibiting factor to the frequency of accessing FinTech solution more specifically to the cohort interviewed due to their income levels. Social influence does not seem to be a factor to adoption of FinTech solutions, adoption is rather mainly driven by the service providers of FinTech solutions i.e., Banks.

In alignment with the literature review, Attitude remains a pivotal factor that drives the adoption of FinTech solutions. It was established that the understanding of mobile devices i.e., digital literacy is a contributing factor to FinTech adoption.

Age was not identified as a factor to FinTech adoption. The adoption of FinTech solutions is mainly driven by a user's willingness as to adopt as well as their understanding of FinTech solutions. It was also noted that FinTech solutions covers a range of financial as well as non-financial activities, to this end financial health was not identified as a factor to adoption of FinTech solutions. The different views gathered was mainly because in the South African context, one is able to access FinTech solutions without mobile data and perform activities or transactions that are non-financial in nature. Financial literacy measured according to understanding of basic financial terms was noted not to be a contributing factor to FinTech adoption. For this study, it was noted that FinTech solutions are used despite lack of understanding of financial term. Innovativeness of users was also not linked to the adoption of FinTech solutions. Government support was not identified as a factor that drives the adoption of FinTech solutions by lower-income earners in south Africa. It is also concluded that the brand of FinTech solution's service providers drives the adoption of FinTech solutions.

Based on the findings from the study, it can be concluded that the factors that drive the adoption of FinTech solutions by lower income earners in South Africa are **trust, economic benefit, utility, attitude, digital literacy and brand** anchored by **"perceived usefulness**" (PU) and **"perceived ease of use"** (PEOU).

6.3 Conclusions regarding research question 2

Conclusion regarding research question 2**: What are the barriers to the use of FinTech solution?**

Similar to the findings for question 1, it was also found that not all factors identified in literature review held true as barriers of adoption of FinTech solutions by lower income earners in the South African context. According to the findings, it was found that Perceived risk was a major barrier to the adoption of FinTech solutions

in South Africa. The major risks that underpinned perceived risks were found to be financial risks, data loss risk, mobile device risks, product mis-sell risk and the risk of making mistakes whilst performing financial transactions digitally. This finding is similar to the findings by numerous researchers as per the literature review.

With regards to associated costs as a barrier to FinTech adoption, it was noted that the cost of mobile data is associated with FinTech solutions. This is because some participants expressed that the cost of mobile data has resulted in their non adoption of FinTech solutions. According to the research conducted, it was found that income-levels were also a big barrier to FinTech adoption. This was mainly because participant expressed that their income was very little as such, they cannot afford to buy mobile data and smartphones required to operate FinTech platforms.

There was also consensus that the level of income was very low and as such they did not need any technology solution to assist them in monitoring or operating their finances. Education levels were found to also be a barrier to FinTech adoption. This is mainly because FinTech solutions are mostly written in English and participants felt that if they adopted FinTech solutions they would not be able to read or comprehend the platforms as they do not fully understand English whilst some cannot read English. This lack of understanding of English was attributed to their education levels. The research also found that there is a general belief that FinTech solutions were meant for educated individuals.

It can thus be concluded that barriers to FinTech adoption by lower income earners in South Africa are **Perceived risks, Income levels, Security concerns and Education levels.**

6.4 Conclusions regarding research question 3

Conclusion regarding research question 3**: What are perceived risk factors for adoption/lack of adoption of FinTech among the lower-income earners?**

Research sub-question 3 was anchored on by the Perceived Risk Theory, thus the risks outlined by the theory were tested with participants, financial risks, Legal risks, Security Risks and Operational risks. As stated in Chapter 4, the findings for research question 3 are split between participants that have adopted FinTech solutions and those that have not adopted FinTech solutions. When testing financial risks, it was noted that participants that have adopted FinTech solutions have done so despite the concern of potentially losing money. The concern of losing money was mostly due to the risk of fraud that might occur. A general fear of financial risks due to FinTech solution breakdowns was also noted due to the inability to monitor funds due to downtime. For the participants that have not adopted FinTech solutions, it was found that financial risk contributed to their non adoption of FinTech solutions. This risk is underpinned by loss of money as well as fear of not being able to protect themselves should they be exposed to the risk of fraud. Financial risks due to product mis-sell was also noted to be a major anchor to perceived risks. This is due to lack of understanding of how FinTech solutions work which might result in unintended financial obligations.

Legal risks were not seen as a perceived risk for both the participants that have adopted FinTech solutions and those that have not adopted FinTech solutions. Participants have successfully adopted FinTech solutions without understanding the rules/laws governing them indicating that legal risks are not a barrier to adoption.

Comparing the results of cohort 1 and 2 as it pertains to security concerns, cohort 1; FinTech adoption indicated that they do not have any security concerns due to the security features available on their mobile devices as well as the FinTech platforms. Contrary, FinTech non adoption cohort attributed their non adoption to security concerns, these include privacy, cybercrimes, and data storage concerns.

The last perceived risk identified was operational risks. It was found that for participants that have adopted FinTech solutions, operational risks do not affect their adoption of FinTech solutions however it affects the frequency of use of FinTech solutions. On the other hand, participants that have not adopted FinTech

solutions indicated that downtime of FinTech platforms affects their decision-making process this operational risk acts as a barrier to their adoption.

The findings resulted in the review of proposition 3, as such proposition 3 states that Perceived risks differ for those that have adopted FinTech solutions and those that have not adopted FinTech solutions, for those that have adopted FinTech solutions Perceived risks are underpinned by financial risks while legal risks, operational risks and security risks are not risk factors for FinTech adoption. For those that have not adopted FinTech solutions, Perceived risks underpinned by Financial, operational risks and security risks are a major deterrent to FinTech adoption whilst legal risks are not a factor to non-adoption of FinTech solutions.

The above findings and conclusions have led to the review of the enhanced FinTech adoption model as drawn in Chapter 2.

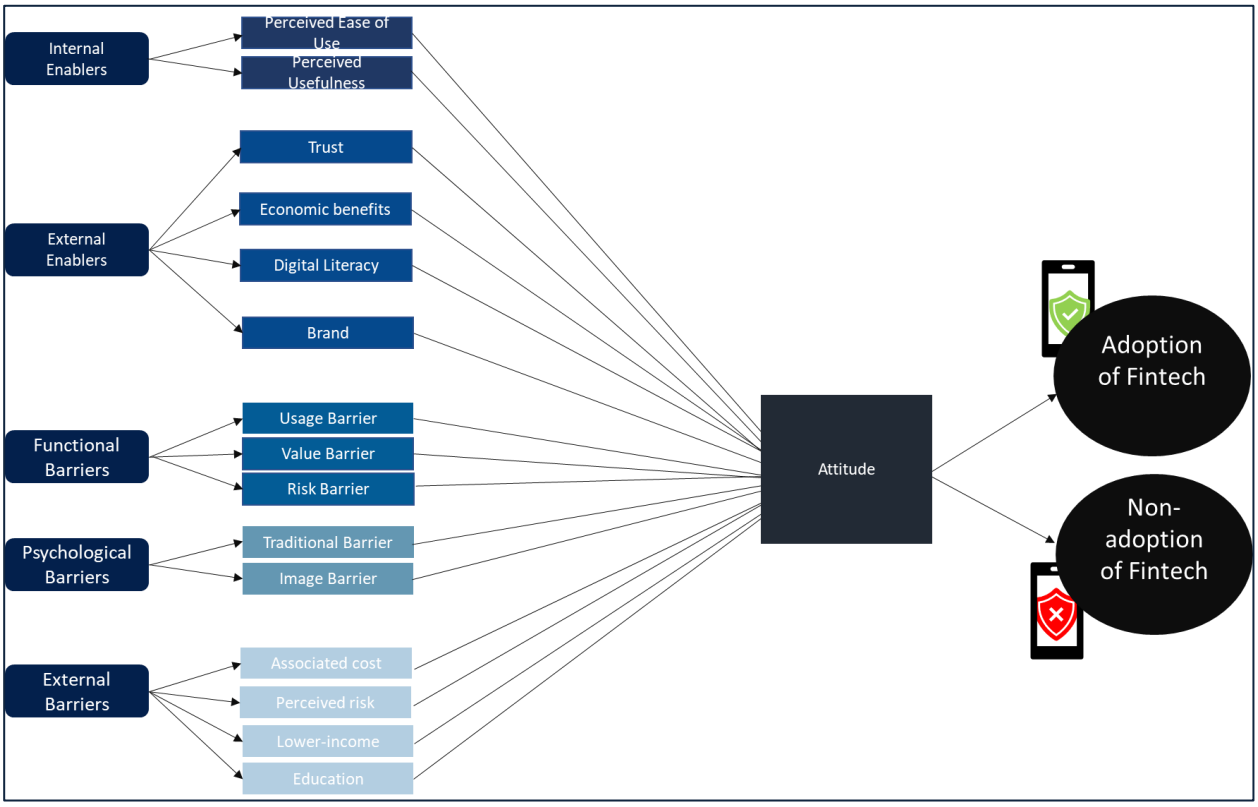

Figure 6:1 FinTech adoption model

6.5 Recommendations

This research paper has outlined findings with regards to enablers to and barrier of FinTech adoption. These findings will also act as insights for financial services sector, policy makers, FinTech players and the government in order for them to get an understanding of the relationship between the South African lower-income earners as well as their adoption/non adoption of FinTech solutions. The findings can further be used by financial services providers, policy makers to encourage customer to use FinTech solutions. Furthermore, a number of recommendations have been identified to assist the financial services sector, policy makers, FinTech players and the government to better cater for lower-income earners in relation to the adoption of FinTech solutions.

The study resulted in the design of an enhanced conceptual framework; FinTech adoption model. This framework provides all stakeholders with the foundation needed to effectively solve for the adoption of FinTech solutions by lower-income earners. The model is rooted on human behavioural theories, as such FinTech providers can use the framework to understand the enablers of FinTech adoption and some of the key barriers to adoption whilst policy makers can use the models as cornerstone to understand the interactions between lower-income earners and FinTech solutions. This will result in a more informed approach to policies and regulations that is informed by a fuller understanding of some of the first-hand experiences of lower-income earners with the FinTech solutions that are available today.

Financial Services sector inclusive of FinTech players

Financial sector refers to all players i.e., banks, investment houses, lenders, finance companies, real estate brokers, and insurance companies.

Awareness:

The study found that lower-income earners were only aware of FinTech solutions provided by Banks i.e., Mobile Banking Applications and USSD Banking. It is thus recommended that all players in the financial services sector must invest in a practical strategic approach that raising awareness of their FinTech solutions in

order to attract lower-income earners. The awareness must range from basic transactional banking, credit solutions and Insurance solutions.

Utilise partnerships: One efficient way to spread the word about FinTech solution is to collaborate with institutions that support populations of lower income, such as non-profits organisations. The reach and reputation of these groups can be used by FinTech to engage with potential clients and earn their trust.

Educate and Empower: Giving prospective clients access to educational materials and tools will assist to demystify FinTech and foster trust. Customers who want to better manage their finances might benefit from financial literacy courses, webinars, and online tutorials that can explain the advantages of FinTech solutions.

Awareness of security controls in place

It was also noted that there were general security concerns around FinTech solutions, these ranged from privacy concerns and cybersecurity. Thus, more deliberate efforts such as awareness campaigns are needed to inform lower-income earners about safe online behaviours and how to protect themselves.

Emphasise security measures: With marketing materials and client communications, FinTech should draw attention to the security measures in place. Information on encryption, two-factor authentication, biometric authentication, fraud monitoring, and other security controls that are in place to safeguard users' accounts and data are examples of the kind of information that can be included in this.

Educating clients: Customers' knowledge of the security controls in place can be effectively increased by offering them instructional resources. FinTech businesses may provide tutorials, webinars, and other tools that explain the value of security.

Customers can be engaged by FinTech companies to better understand their security concerns and receive advice and support. This can entail granting

access to customer service departments that have received security-related questions and concerns handling training.

Collaborate with security professionals: Working together, security specialists can help FinTech companies stay on top of new risks and offer the most up-to-date security solutions to clients. This may entail collaborating with cybersecurity businesses, ethical hackers, and other specialists to find and fix security flaws.

Accelerate Marketing efforts to raise awareness

FinTech providers must invest in marketing efforts that are contextual to lower-income earners and ensure greater reach than just urban areas. These must include all mediums of communication in different languages to ensure that the message is clear to those that have adopted FinTech solutions and those that have not adopted FinTech solutions.

Use social media and digital marketing: These channels might be useful for reaching lower-income earners. Social media platforms can be used by FinTech businesses to advertise to certain audiences and promote their solutions through influencer marketing and other forms of online advertising

Workshops and training programmes for lower-income earners in their communities

As per the findings, most of the FinTech solution users adopted FinTech solutions because of the influence of the service provider. It was also noted that whenever assistance is required, users need to travel to the FinTech establishment in order to unlock certain functionalities of the FinTech solution adopted. It is therefore recommended that FinTech providers invest in conducting workshop, training programmes and roadshows in lower-income communities. This will assist with raising awareness of solutions, increase knowledge of the different FinTech solutions, demystify the perceptions that exists and also understand the challenges experienced by this group of users.

Promotion of other functionalities

The study found that users perceive FinTech solutions as solutions that are only meant for financial transactions such as buying airtime, sending money. It is thus recommended that FinTech providers raise awareness of the full range of services available on FinTech platforms that will assist in improving the financial health of users, these include Money Management tools that will assist users with tracking and managing financial transactions, making informed savings decisions, and creating budgets and saving plan. These services are even more relevant to lower-income earners.

Improved user Experience

The study found that users highly valued "ease of use" when it came to FinTech. Therefore, FinTech providers need to ensure that they design the interfaces with care and clear navigation that is simple and clear for users with any education level.

Simplify the user interface for lower-income users who might not be accustomed to complicated user interfaces or financial language. By developing user-friendly interfaces and clear language, FinTech companies can enhance acceptance.

Enable easy access to solutions through tailoring design to accommodate lower-income earners

The study found that there are some FinTech platforms that do not require users to pay for mobile data in order to access them. These platforms are zeroized, this erases the barrier of needing to spend money on mobile data in order to access FinTech solutions. It is therefore recommended that FinTech providers explore such solutions in order to accommodate the financial standing of lower income earners given the nuances that exists with this market.

Preference to face-to-face

It was noted that a general preference to face-to-face interaction was key for this market. Therefore, FinTech providers must create a strategic balance of face-to-face and non-face-to-face interaction. This can be achieved through enablement

of Interactive functionality such as chat, phone and email functionalities on FinTech platforms to enable live interactions as users are transacting and video functionality for complex queries. Users may contact this support at any time of the day or night for assistance with their questions.

FinTech can also provide financial education by helping their customer manage and understand their money. Videos, blogs, and other interactive content can be used for this. The objective is to educate consumers on how to successfully manage their funds and the services they are utilising.

Use Local Agents: FinTech can collaborate with regional representatives who can give users in-person support. These representatives can be taught to help platform users and provide financial education.

Community-Based Organisations: In order to provide services to people with lower incomes, FinTech's can collaborate with community-based organisations. These groups can aid with outreach to potential customers, account setup help, and financial management advice. By adopting these techniques, FinTech's can assist lower-income earners and educate them as needed without having to interact with them in person. By enabling access to affordable financial services, this can aid in closing the financial inclusion gap.

Need for more languages other than English

The primary language used on FinTech platforms was noted as a barrier to adoption. Therefore, FinTech solution providers must review the language functionality available on their platforms. Expanding on the list of languages available on FinTech platforms will open up for more users whose first language is not English. This will enable users to easily grasp the terms and conditions of financial products and services, offering services. This attempt will also assist to increase financial literacy and financial inclusion.

Multilingual service provision will also be advantageous for FinTech companies themselves as well. FinTech firms will be able to enter into new markets and reach a wider spectrum of potential clients by providing services in languages other than English.

Building Trust

Building trust through good reputation is an imperative given the security concerns expressed by participants. Participants that have adopted FinTech solutions attributed their adoption to the provider's brand. Therefore, FinTech firms must always ensure data security and focus on providing clear communication to their users, obtain regulatory accreditation and social endorsement and make use of user testimonials to gain trust from the public.

Transparency: By being open and honest about their services, costs, and policies, FinTech can win user's trust. This is being up front about any potential fees or charges and giving clear, understandable information about their products and services.

Education: FinTech may assist clients better understand financial services by offering information and tools. This helps to increase customer trust. These can include webinars, financial literacy classes, and other tools to support customers in making wise financial decisions.

Security: As was already said, many lower-income individuals have serious concerns about their safety. By investing in strong security measures like multi-factor authentication, encryption, and fraud detection systems, FinTech's may increase customer trust. Customers can be informed properly about the security measures in place, and they can be given tools to aid in their own protection.

FinTech start-ups to partner up with big banks

As witnessed, all participants adopted FinTech solutions of the big 5 banks in South Africa. This was driven by their trust in these service providers. Therefore, to benefit from the banks' complementing strengths and abilities, including as trust, scalability, client access, and regulatory compliance, fintech start-ups must collaborate with large providers.

Policy makers

Policy makers play a very crucial role in the FinTech industry as they define the rules and regulations that governs the industry. Thus, it is important that they are

aware of the driver or barriers to FinTech adoption by lower income earners to influence the industry by instituting rules and regulations that favour this income group.

Govern the cost of resources

As per the preceding chapters, the study found that the cost of the required resources needed to access FinTech solutions i.e., mobile data as well as the cost of smartphones are very exorbitant to lower-income earners. As such, cost is a major barrier to FinTech adoption. It is therefore imperative that policy makers intervene in the regulations that govern the costs associated with accessing the internet as well as smartphones in order to ensure that all income levels/groups are fully catered for. To make internet connection accessible for everyone, data charges should be regulated and decreased.

Foster financial literacy

Adoption of FinTech solutions is heavily reliant on digital and financial literacy. Thus, policy makers must take it upon themselves to introduce rules and regulations that enforces digital and financial literacy into the public education system. These regulations must be further extended to the financial services sector; compel all financial services providers to include basic digital and financial literacy as part of their onboarding processes of customers with favourable nuances to lower-income earners.

Financial inclusion policies

The financial services sector remains favourable to middle-income to higher income earners despite the recent efforts by policy makers. Therefore, introduce stringent policies and regulations that reforms the status quo to be more favourable to catering for the needs and nuances of lower-income earners when it pertains to FinTech solutions. Introduce digital financial inclusion measures that favour lower-income earners.

Policymakers can create national policies to encourage financial inclusion, which may encourage lower-income earners to utilise FinTech’s. These can be

achieved by setting goals for financial inclusion and creating regulatory frameworks to foster financial innovation.

Encourage investment in FinTech's for financial inclusion by providing tax incentives, grants, or other types of financial assistance. Policymakers can encourage investment in FinTech that are committed to helping low-income people. This may assist FinTech companies that are committed to financial inclusion draw more investment.

Awareness of FinTech, laws and security policies

A general lack of awareness of FinTech solutions was noted. Policy Makers are as responsible and the government and the financial sector to increase awareness of FinTech solutions most specifically to those that are traditionally left out i.e., rural areas.

The study also found a very big gap between the knowledge of laws and regulations pertaining to FinTech solutions as well as users thereof. Therefore, policy makers must make deliberate efforts to raise awareness around the different rules and regulations that pertain to FinTech solution, inclusive of how people must protect themselves from cyber risks, what the responsibilities of FinTech providers are as well as the responsibilities of users.

Network connectivity Interventions

Network coverage was noted as barrier to adoption policy makers must institute regulation that compels telecommunication providers to provide equal connectivity strength across all locations i.e., rural, and urban areas. The quality of service offered to consumers must also be closely monitored by regulatory agencies, who must also put in place incentives for compliant service providers and sanctions for noncompliance.

Foster Interoperability and testing

Encourage interoperability and data sharing by increasing competition, cutting costs, and enhancing access to financial services for low-income earners, interoperability, and data sharing across different FinTech providers can help. By

creating guidelines and rules that support teamwork and information sharing, policymakers may advance these practices.

Institute sandboxes, in a controlled environment, a regulatory sandbox allows a FinTech company to test new goods and services without being fully regulated. To promote FinTech innovation and experimentation, particularly in the field of supporting low-income people, policymakers can set up regulatory sandboxes.

Government:

Improve the informal ICT infrastructure in both urban and rural locations. For digital financial services, digital financial literacy, and sustained financial inclusion, digital inclusion is a prerequisite. Sustainable financial inclusion will depend more and more on well-designed ICT systems and the extent to which those ICT systems reach all consumers, especially the lower-income market, as the world becomes more digital, various processes become digitised. In the South African context, a few processes require this government intervention. These are, investing in infrastructure, fostering regulations, encouraging financial literacy, digitising government payments, digitising cash and ICT infrastructure needed to support the adoption of FinTech solutions such as free WIFI.

Investing in infrastructure

By investing in infrastructure such mobile networks and high-speed internet access, particularly in rural regions, governments may encourage the uptake of FinTech services. By doing this, it may be possible to guarantee that even low-income individuals in remote locations have access to financial services.

Fostering regulations

Establishing advantageous regulatory conditions for FinTech businesses is another way that governments may encourage innovation and cut costs for users. This may entail establishing precise rules of conduct for FinTech businesses, assisting initiatives to promote financial inclusion, and offering tax breaks to FinTech businesses that cater to low-income customers.

Encourage financial literacy

Governments can benefit low-income users by funding financial education programs, which can increase financial literacy and make it simpler for users to comprehend and use FinTech services. This can involve collaborating with FinTech firms to create instructional materials and giving money to charitable organisations that run financial literacy initiatives.

Governments can provide low-income consumers with subsidies or incentives to assist offset the cost of utilising FinTech services, which can increase adoption. This can involve providing tax credits to low-income customers who invest in specific FinTech products or providing subsidies for mobile data subscriptions.

Collaboration with FinTech firms

Finally, governments can work with FinTech firms to create solutions that are affordable for customers with low incomes. This may involve collaborating with financial businesses to produce new financial services or products, or fund FinTech businesses that prioritise servicing low-income people. Governments can encourage lower-income users' adoption of FinTech services and advance financial inclusion by investing in infrastructure, fostering a supportive regulatory environment, promoting financial education, offering subsidies or incentives, and partnering with FinTech firms.

Digitise government payments

While we have come a long way in recent years, there is still a big opportunity to further digitise government payments to help promote financial inclusion. This will in turn assist the financial services sector to position FinTech solutions available to recipients so that they can manage their money at the comfort of their homes.

Digitise cash

One big barrier to FinTech adoption is the dependency of cash in lower-income communities. Communities where lower income resides rely heavily on cash, as such it becomes very difficult for them adopt FinTech solutions as the rural and the informal urban communities require cash to transact. These include taxis,

street vendors and Spaza shops. To address this, government must foster collaboration between policy makers, financial services industries, taxi industry, informal trade industry to find ways of effectively tackling the issue of digitising cash. Should this become successful, lower-income earners residing in rural and urban informal residents will not see the need to withdraw all their cash from their bank accounts in order to transact at home. They will be able to digitally transact with service providers digitally through FinTech solutions.

Collaboration between all three stakeholders

It is strongly advised that the need for improved cooperation amongst participants in the FinTech ecosystem be properly addressed. This would make it easier to find solutions to the problems that the South African FinTech sector is facing. Therefore, cooperation between public sector and private sector FinTech ecosystem stakeholders will greatly enhance South Africa's FinTech ecosystem.

All interested parties can benefit from workshops and training programs to better grasp the dynamic present in the FinTech industry. This is essential since both the technology and financial services of contemporary economies are developing. As a result, this would ensure that those who were previously underprivileged benefit and contribute to the overall development of the South African FinTech sector.

6.6 Suggestions for further research

The research focused on investigating on the factors that drive the adoption of FinTech solutions by lower-income earners in South Africa. This was prompted by the gap identified in the literature available in the South African context which focused on practical experiences of lower-income earners in South Africa.

The study examined the participants' experiences with this phenomenon in order to better understand the factors influencing the adoption of FinTech in South Africa. There is currently a gap in literature on the FinTech phenomena in South Africa that concentrates primarily on the participants' present real-world experiences within South Africa. This study aims to close the gap identified within

South Africa. It has also contributed to the body of work that focuses on drivers and barriers of FinTech solution by lower income earners.

The additional elements identified by study participants in more detail may be the subject of future research. The study's findings will be given more weight if the sample size is increased from the present 24 individuals to a bigger group. Additionally, if the investigation was long-term, it would enable the analysis of FinTech over a longer period of time, enabling the assessment of lower-income earners and other influences on or non-adoption.

Further research could be conducted with respondents that earn a bit more than the income level threshold used for this study. A mixed-methods study consisting of a more representative and diverse sample of respondents could be utilised. A quantitative, cross-location study to measure FinTech adoption in different locations can also be explored. Future research should consider various geographical area and across country. Thus, study can be explored further in urban and non-urban areas characteristic to explain the issue of FinTech products and services adoption various generations individual level.

A further study is required to further unpack the emerging themes identified.

Emerging theme for those that have adopted FinTech solutions:

- FinTech service provider’s influence to adoption
- Income as an enabler to adoption
- Education levels as an enabler to adoption
- Access to internet
- Type of mobile device used

Emerging theme for those that have not adopted FinTech solutions:

- Preference to Face-to-face interactions as a barrier to adoption
- Language (English) as a barrier to FinTech adoption
- Residence location as a barrier to FinTech adoption (Rural)
- Mobile phone device as a barrier to adoption

- Lack of access to the internet as a barrier to adoption
- Digital and Financial illiteracy as a barrier to adoption
- Dependency on cash

6.7 Limitations

A few limitations were noted, the samples were only taken from three provinces in South Africa due to the timeline of the study and budgetary constraints. Thus, the results of this study cannot be fully generalised to low-income households in South Africa.

Income is a dynamic variable that requires frequent assessment, therefore, the measure that was used to categorise income levels had a limited degree of precision.

This study used qualitative research techniques, therefore some of the inherent limitations of those techniques may have been present. Participants presumably have more control over the content of the data obtained in qualitative research because it is open-ended.

Several limitations have been identified as follows:

I. The study had a limited sample size due to the time allocation of the study.
II. The study is limited to the South African context; thus, findings apply to the case study in question.
III. The study was qualitative this by nature, a qualitative study has inherent limitations.
IV. There were challenges with the availability of participants.
V. The language barrier challenges with the participants due to the literacy levels of the participants.
VI. The researcher were challenges with conducting all the interviews virtually due to possible lack of resources by participants to hold virtual interviews.

Some interviews were conducted virtually. To this end, the researcher was not able to identify non-verbal cues or read people’s body languages

REFERENCES

Abbad, M. M. (2013). E-banking in Jordan. *Behaviour & Information Technology*, *32*(7), 681-694.

Abernethy, A. P., Capell, W. H., Aziz, N. M., Ritchie, C., Prince-Paul, M., Bennett, R. E., & Kutner, J. S. (2014). Ethical conduct of palliative care research: enhancing communication between investigators and institutional review boards. *Journal of pain and symptom management*, *48*(6), 1211-1221.

Africa. (2018). *Poverty Trends in South Africa*. http://www.statssa.gov.za/publications/Report-03-10-06/Report-03-10-062015.pdf

Ajzen, I. (1993). Attitude theory and the attitude-behavior re l ation. *New directions in attitude measu re ment*, 41-57.

Akhlaq, A., & Ahmed, E. (2013). The effect of motivation on trust in the acceptance of internet banking in a low income country. *International Journal of Bank Marketing*.

Akturan, U., & Tezcan, N. (2012). Mobile banking adoption of the youth market: Perceptions and intentions. *Marketing Intelligence & Planning*.

Al-Fahim, N. H., JUSOH, W. J. W., & ABIDEEN, A. (2016). An examination factors influencing the intention to adopt internet banking among SMEs in Yemen: using an extension of the technology acceptance model (TAM). *The Journal of Internet Banking and Commerce*.

Alt, R., & Puschmann, T. (2012). The rise of customer-oriented banking-electronic markets are paving the way for change in the financial industry. *Electronic Markets*, *22*(4), 203-215.

Alwi, S., Alpandi, R. M., Salleh, M. N. M., & Najihah, I. (2019). An empirical study on the customers' satisfaction on FinTech mobile payment services in Malaysia. *International Journal of Advanced Science and Technology*, *28*(16), 390-400.

Anand, S., Mishra, K., Verma, V., & Taruna, T. (2020). Financial literacy as a mediator of personal financial health during COVID-19: A structural equation modelling approach. *Emerald Open Research*, *2*.

Anand, S., Mishra, K., Verma, V., & Taruna, T. (2021). Financial literacy as a mediator of personal financial health during COVID-19: A structural equation modelling approach. *Emerald Open Research*, *2*, 59.

Appiah-Otoo, I., & Song, N. (2021). The impact of Fintech on poverty reduction: Evidence from China. *Sustainability*, *13*(9), 5225.

Arif, I., Aslam, W., & Hwang, Y. (2020). Barriers in adoption of internet banking: A structural equation modeling-Neural network approach. *Technology in Society*, *61*, 101231.

Arner, D. W., Barberis, J., & Buckley, R. P. (2015). The evolution of Fintech: A new post-crisis paradigm. *Geo. J. Int'l L.*, *47*, 1271.

Authority, F. S. C. (2022). *Finanacial Sector Outlook Study*. Genesis. https://www.fsca.co.za/Documents/FSCA%20Financial%20Sector%20Outlook%20Study%202022.pdf

Bank. (2021). On fintech and financial inclusion. https://blogs.worldbank.org/psd/fintech-and-financial-inclusion

Bansal, S. K., Bansal, A., & Blake, M. B. (2010). Trust-based dynamic web service composition using social network analysis. 2010 IEEE International Workshop on: Business Applications of Social Network Analysis (BASNA),

Baporikar, N. (2021). Fintech challenges and outlook in India. In *Innovative strategies for implementing FinTech in banking* (pp. 136-153). IGI Global.

Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. *Computers in Human Behavior*, *50*, 418-430.

Barakat, A., & Hussainey, K. (2013). Bank governance, regulation, supervision, and risk reporting: Evidence from operational risk disclosures in European banks. *International Review of Financial Analysis*, *30*, 254-273.

Barbu, C. M., Florea, D. L., Dabija, D.-C., & Barbu, M. C. R. (2021). Customer experience in fintech. *Journal of theoretical and applied electronic commerce research*, *16*(5), 1415-1433.

Barefoot, J. A. (2020). Digitizing Finance: FinTech as A solution for consumer financial health and inclusion. *M-RCBG Associate Working Paper Series*(149).

Basak, S. K., Govender, D. W., & Govender, I. (2016). Examining the impact of privacy, Security, and trust on the TAM and TTF models for e-commerce consumers: A pilot study. 2016 14th Annual Conference on Privacy, Security and Trust (PST),

Bauer, R. A. (1960). Consumer behavior as risk taking. Proceedings of the 43rd National Conference of the American Marketing Assocation, June 15, 16, 17, Chicago, Illinois, 1960,

Bazeley, P. (2020). Qualitative data analysis: Practical strategies. *Qualitative Data Analysis*, 1-584.

Begley, T. A., & Purnanandam, A. (2021). Color and credit: Race, regulation, and the quality of financial services. *Journal of Financial Economics*, *141*(1), 48-65.

Boddy, C. R. (2016). Sample size for qualitative research. *Qualitative Market Research: An International Journal*.

Borraz-Mora, J., Bordonaba-Juste, V., & Polo-Redondo, Y. (2017). Functional barriers to the adoption of electronic banking: The moderating effect of gender. *Revista de Economía Aplicada*, *25*(75), 87-107.

Cao, W. (2016). FinTech acceptance research in Finland-Case company Plastc.

Carlin, B., Olafsson, A., & Pagel, M. (2017). *Fintech adoption across generations: Financial fitness in the information age*.

Chang, Y., Wong, S. F., Lee, H., & Jeong, S. P. (2016). What motivates Chinese consumers to adopt FinTech services: A regulatory focus theory. Proceedings of the 18th annual international conference on electronic commerce: e-commerce in smart connected world,

Chansaenroj, P., & Techakittiroj, R. (2015). Factors Influencing the Intention to Use Mobile Banking Services in Bangkok.

Chau, V. S., & Ngai, L. W. (2010). The youth market for internet banking services: perceptions, attitude and behaviour. *Journal of Services Marketing*.

Chigada, J., & Hirschfelder, B. (2017). Mobile banking in South Africa: A review and directions for future research. *South African Journal of Information Management*, *19*(1), 1-9.

Chiriac, C., Hurduzeu, G., & Zavera, I.-C. (2018). MOBILE PAYMENTS AND EMERGING TECHNOLOGIES. *Annals of the University of Oradea, Economic Science Series*, *27*(2).

Chironga, M., De Grandis, H., & Zouaoui, Y. (2017). Mobile financial services in Africa: Winning the battle for the customer. *McKinsey & Co*.

Chitimira, H., & Magau, P. (2021). A Legal Analysis of the Use of Innovative Technology in the Promotion of Financial Inclusion for Low-Income Earners in South Africa. *Potchefstroom Electronic Law Journal (PELJ)*, *24*(1), 1-27.

Chittineni, J. (2018). Perceived Barriers for the adoption of digital payment services: A Study on South Indian customers. *Gavesana Journal of Management*, *10*(1), 51-58.

Chiumento, A., Rahman, A., & Frith, L. (2020). Writing to template: Researchers' negotiation of procedural research ethics. *Social Science & Medicine*, *255*, 112980.

Chuang, L.-M., Liu, C.-C., & Kao, H.-K. (2016). The adoption of fintech service: TAM perspective. *International Journal of Management and Administrative Sciences*, *3*(7), 1-15.

Collis, J., & Hussey, R. (2013). *Business research: A practical guide for undergraduate and postgraduate students*. Macmillan International Higher Education.

Collis, J., & Hussey, R. (2014). Business Research. sl. In: Palgrave Macmillan.

Correa, J. C., Dakduk, S., van der Woude, D., Sandoval-Escobar, M., & Lopez-Llamas, R. (2022). Low-income consumers' disposition to use automated banking services. *Cogent Business & Management*, *9*(1), 2071099.

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications.

Cruz, P., Neto, L. B. F., Muñoz-Gallego, P., & Laukkanen, T. (2010). Mobile banking rollout in emerging markets: evidence from Brazil. *International Journal of Bank Marketing*.

Cudjoe, A. G., Anim, P. A., & Nyanyofio, J. G. N. T. (2015). Determinants of mobile banking adoption in the Ghanaian banking industry: a case of access bank Ghana limited. *Journal of Computer and Communications*, *3*(02), 1.

Cusher, T., McCleary, K., & Grossman, C. (2018). How Patient Organizations are Using Patient-Reported Outcomes: Survey Results from a Non-Probability Sample of Patients Count Network Members. *Value in Health*, *21*, S114.

Dapp, T., Slomka, L., AG, D. B., & Hoffmann, R. (2014). Fintech–The digital (r) evolution in the financial sector. *Deutsche Bank Research*, *11*, 1-39.

Das, A., & Das, D. (2020). Perception, adoption, and pattern of usage of FinTech services by bank customers: Evidences from Hojai District of Assam. *Emerging Economy Studies*, *6*(1), 7-22.

Daştan, İ., & Gürler, C. (2016). Factors affecting the adoption of mobile payment systems: An empirical analysis. *EMAJ: Emerging Markets Journal*, *6*(1), 17-24.

Davis, F. D. (1985). *A technology acceptance model for empirically testing new end-user information systems: Theory and results* Massachusetts Institute of Technology].

Demirguç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2017). Measuring financial inclusion and the fintech revolution. *The Global Findex Database, World Bank Group*.

Dimitrova, I., Öhman, P., & Yazdanfar, D. (2022). Barriers to bank customers' intention to fully adopt digital payment methods. *International Journal of*

Quality and Service Sciences, *14*(5), 16-36. https://doi.org/10.1108/IJQSS-03-2021-0045

Dunphy, S., & Herbig, P. A. (1995). Acceptance of innovations: the customer is the key! *The Journal of High Technology Management Research*, *6*(2), 193-209.

EIGE, E. I. f. G. E. (2019). *Disadvantaged groups*. https://eige.europa.eu/thesaurus/terms/1083

Eldh, A. C., Årestedt, L., & Berterö, C. (2020). Quotations in qualitative studies: Reflections on constituents, custom, and purpose. *International Journal of Qualitative Methods*, *19*, 1609406920969268.

EY, E. a. Y.-. (2019). *Global FinTech Adoption Index 2019*. https://assets.ey.com/content/dam/ey-sites/ey-com/en_gl/topics/banking-and-capital-markets/ey-global-fintech-adoption-index.pdf

FinMark. (2018). *State of Agent Networks in South Africa: Towards a digital ecosystem for inclusive financial services*. https://finmark.org.za/wp-content/uploads/2018/08/FinMark-Trust-State-of-Agent-Networks-in-SA-2018-Report.pdf

FinMark. (2020). *South African Financial Inclusion Insights Survey 2020*. https://finmark.org.za/wp-content/uploads/2021/01/FinScope-South-Africa-2020-Report.pdf

Flavián, C., Guinaliu, M., & Torres, E. (2006). How bricks-and-mortar attributes affect online banking adoption. *International Journal of Bank Marketing*.

FMT, F. S. A.-. (2019). *FinScope South Africa 2019 Pocket Guide*. https://finmark.org.za/system/documents/files/000/000/242/original/FinScope_SA_2019_Pocket_Guide_2020.pdf?1604679365

Forsythe, S., Liu, C., Shannon, D., & Gardner, L. C. (2006). Development of a scale to measure the perceived benefits and risks of online shopping. *Journal of interactive marketing*, *20*(2), 55-75.

Forum. (2017). 6 challnges to financial inclusion in South Africa. https://www.weforum.org/agenda/2017/04/financial-inclusion-south-africa/

Frame, I., Austen, K., Calleja, M., Dove, M., White, T., & Wilson, D. (2009). New tools to support collaboration and virtual organizations. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*, *367*(1890), 1051-1056.

FSB, F. S. B. (2019). FinTech and market structure in financial services: Market developments and potential financial stability implications. *Financial Innovation Network, Financial Stability Board, Basel, Switzerland*.

Garrett, J. L., Rodermund, R., Anderson, N., Berkowitz, S., & Robb, C. A. (2014). Adoption of mobile payment technology by consumers. *Family and Consumer Sciences Research Journal*, *42*(4), 358-368.

Gautam, R. S., Kanoujiya, J., Bhimavarapu, V. M., & Rastogi, S. (2021). Financial Technology and Its Impact on Poverty in India. *International Journal of Management and Humanities (IJMH)*, *6*(3), 1-10.

Gimpel, H., Rau, D., & Röglinger, M. (2018). Understanding FinTech start-ups–a taxonomy of consumer-oriented service offerings. *Electronic Markets*, *28*(3), 245-264.

Giusta, M., & Kambhampati, U. (2008). Financial Inclusion and Development: A Cross Country Analysis. Annual Conference of the Human Development and Capability Association, New Delhi,

Goo, J. J., & Heo, J.-Y. (2020). The impact of the regulatory sandbox on the fintech industry, with a discussion on the relation between regulatory sandboxes and open innovation. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(2), 43.

Group, W. B. (2018). *Retail Banking Diagnostic: Treating Customers Fairly in Relation to Transactional Accounts and Fixed Deposits*. World Bank.

Group, W. B. (2022). *Financial inclusion: Financial inclusion is a key enabler to reducing poverty and boosting prosperity*. Retrieved 25/05/2022 from https://www.worldbank.org/en/topic/financialinclusion/overview#1

GSMA. (2014). *State of the Industry Mobile Financial Services for the Unbanked*. https://www.gsma.com/mobilefordevelopment/wp-content/uploads/2015/03/SOTIR_2014.pdf

Gupta, A., & Arora, N. (2017). Understanding determinants and barriers of mobile shopping adoption using behavioral reasoning theory. *Journal of Retailing and Consumer Services*, *36*, 1-7.

Hanafizadeh, P., Behboudi, M., Koshksaray, A. A., & Tabar, M. J. S. (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and informatics*, *31*(1), 62-78.

Hew, J.-J., Leong, L.-Y., Tan, G. W.-H., Ooi, K.-B., & Lee, V.-H. (2019). The age of mobile social commerce: An Artificial Neural Network analysis on its resistances. *Technological Forecasting and Social Change*, *144*, 311-324.

Hornuf, L. (2016). *The emergence of the global fintech market: Economic and technological determinants*.

Hsu, C.-L., & Lin, J. C.-C. (2016). Effect of perceived value and social influences on mobile app stickiness and in-app purchase intention. *Technological Forecasting and Social Change*, *108*, 42-53.

Hu, Z., Ding, S., Li, S., Chen, L., & Yang, S. (2019). Adoption intention of fintech services for bank users: An empirical examination with an extended technology acceptance model. *Symmetry*, *11*(3), 340.

Huei, C. T., Cheng, L. S., Seong, L. C., Khin, A. A., & Bin, R. L. L. (2018). Preliminary study on consumer attitude towards fintech products and services in Malaysia. *International Journal of Engineering & Technology*, *7*(2.29), 166-169.

Hyman, M., & Sierra, J. (2016). Open- versus close-ended survey questions. *NMSU Business Outlook*, *14*.

IFC, I. F. C. (2017). *How FinTech is reaching the poor in Africa and Asia: A start-up perspective*. https://www.ifc.org/wps/wcm/connect/d3217a44-60d5-45f0-a590-caa24482e22f/EmCompass+Note+34+DFS+and+FinTech+Mar+28+FINAL.pdf?MOD=AJPERES&CVID=llIOTMQ

IMF, I. M. F. (2018). *The Bali Fintech Agenda*. Retrieved from https://www.elibrary.imf.org/view/journals/007/2018/050/007.2018.issue-050-en.xml

India. (2019). *Report on trends and progress of banking in India 2018-19*. https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/0RTP241219FL760D9F69321B47988DE44D68D9217A7E.PDF

Ismail, T., & Masinge, K. (2011). Working paper series mobile banking: innovation for the poor. In: Research and Training Support to Build African Capacity in Science ….

Ja-Chul, G., Sang-Chul, L., & Yung-Ho, S. (2009). Determinants of behavioral intention to mobile banking; Expert Systems with Applications. In: VoL.

John, A., & Klein, J. (2003). The boycott puzzle: Consumer motivations for purchase sacrifice. *Management science*, *49*(9), 1196-1209.

Joo, S. (2008). Personal financial wellness. In *Handbook of consumer finance research* (pp. 21-33). Springer.

Jünger, M., & Mietzner, M. (2020). Banking goes digital: The adoption of FinTech services by German households. *Finance Research Letters*, *34*, 101260.

KA, A. A., & Subramanian, R. (2022). Current Status of Research on Mobile Banking: An Analysis of Literature. *Vision*, 09722629211073268.

Kabir, S. M. (2016). METHODS OF DATA COLLECTION. In (pp. 201-275).

Kakilla, C. (2021). Strengths and weaknesses of semi-structured Interviews in Qualitative research: A critical essay.

Kaur, P., Dhir, A., Singh, N., Sahu, G., & Almotairi, M. (2020). An innovation resistance theory perspective on mobile payment solutions. *Journal of Retailing and Consumer Services*, *55*, 102059.

Kesharwani, A., & Bisht, S. S. (2012). The impact of trust and perceived risk on internet banking adoption in India: An extension of technology acceptance model. *International Journal of Bank Marketing*.

Kim, C., Mirusmonov, M., & Lee, I. (2010). An empirical examination of factors influencing the intention to use mobile payment. *Computers in Human Behavior*, *26*(3), 310-322.

Kim, G., Shin, B., & Lee, H. G. (2009). Understanding dynamics between initial trust and usage intentions of mobile banking. *Information Systems Journal*, *19*(3), 283-311.

Kim, M., Zoo, H., Lee, H., & Kang, J. (2018). Mobile financial services, financial inclusion, and development: A systematic review of academic literature. *The Electronic Journal of Information Systems in Developing Countries*, *84*(5), e12044.

Kim, Y., Choi, J., Park, Y.-J., & Yeon, J. (2016). The adoption of mobile payment services for "Fintech". *International Journal of Applied Engineering Research*, *11*(2), 1058-1061.

Kimiri, M. (2018). *Effect of Fintech strategy on financial services delivery to the unbanked low income earners in Nairobi County* University of Nairobi].

Koksal, M. H. (2016). The intentions of Lebanese consumers to adopt mobile banking. *International Journal of Bank Marketing*.

Korstjens, I., & Moser, A. (2018). Series: Practical guidance to qualitative research. Part 4: Trustworthiness and publishing. *European Journal of General Practice*, *24*(1), 120-124.

Korynski. (2019). *The Contribution of the Fintech Sector to Financial Inclusion and Health: A Review of Opportunities and*

Challenges. Microfinance Centre

KPMG. (2022). Pulse of Fintech H2'21. https://assets.kpmg/content/dam/kpmg/xx/pdf/2022/02/pulse-of-fintech-h2-21.pdf

Kshetri, N. (2017). Will blockchain emerge as a tool to break the poverty chain in the Global South? *Third World Quarterly*, *38*(8), 1710-1732.

Kumar, V. R., Lall, A., & Mane, T. (2017). Extending the TAM model: Intention of management students to use mobile banking: Evidence from India. *Global Business Review*, *18*(1), 238-249.

Lai, K. P., & Samers, M. (2021). Towards an economic geography of FinTech. *Progress in Human Geography*, *45*(4), 720-739.

Langley, P., & Leyshon, A. (2022). Neo-colonial credit: FinTech platforms in Africa. *Journal of Cultural Economy*, 1-15.

Laukkanen, T. (2016). Consumer adoption versus rejection decisions in seemingly similar service innovations: The case of the Internet and mobile banking. *Journal of business research*, *69*(7), 2432-2439.

Lee, M.-C. (2009). Factors influencing the adoption of internet banking: An integration of TAM and TPB with perceived risk and perceived benefit. *Electronic commerce research and applications*, *8*(3), 130-141.

Lee, S. (2016). User behavior of mobile enterprise applications. *KSII Transactions on Internet and Information Systems (TIIS)*, *10*(8), 3972-3985.

Legowo, M. B., Subanidja, S., & Sorongan, F. A. (2021). Fintech and bank: Past, present, and future. *J. Tek. Komput*, *7*, 94-99.

Leicht, T., Chtourou, A., & Youssef, K. B. (2018). Consumer innovativeness and intentioned autonomous car adoption. *The Journal of High Technology Management Research*, *29*(1), 1-11.

Leong, K., & Sung, A. (2018). FinTech (Financial Technology): what is it and how to use technologies to create business value in fintech way? *International Journal of Innovation, Management and Technology*, *9*(2), 74-78.

Li, B., Hanna, S. D., & Kim, K. T. (2020). Who uses mobile payments: Fintech potential in users and non-users. *Journal of Financial Counseling and Planning*.

Lian, J.-W., & Yen, D. C. (2013). To buy or not to buy experience goods online: Perspective of innovation adoption barriers. *Computers in Human Behavior*, *29*(3), 665-672.

Lian, J.-W., & Yen, D. C. (2014). Online shopping drivers and barriers for older adults: Age and gender differences. *Computers in Human Behavior*, *37*, 133-143.

Liébana-Cabanillas, F., Sánchez-Fernández, J., & Muñoz-Leiva, F. (2014). Antecedents of the adoption of the new mobile payment systems: The moderating effect of age. *Computers in Human Behavior*, *35*, 464-478.

Lievens, F., & De Paepe, A. (2004). An empirical investigation of interviewer-related factors that discourage the use of high structure interviews. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, *25*(1), 29-46.

Lincoln Yvonna, S., & Guba Egon, G. (1985). Naturalistic inquiry. *Beverly Hills: Sage Publications*.

Liu, B., Wang, J., Chan, K. C., & Fung, A. (2021). The impact of entrepreneurs's financial literacy on innovation within small and medium-sized enterprises. *International Small Business Journal*, *39*(3), 228-246.

Lu, J., Yao, J. E., & Yu, C.-S. (2005). Personal innovativeness, social influences and adoption of wireless Internet services via mobile technology. *The Journal of Strategic Information Systems*, *14*(3), 245-268.

Ludvigsen, M. S., Hall, E. O., Westergren, T., Aagaard, H., Uhrenfeldt, L., & Fegran, L. (2021). Being cross pressured-parents' experiences of the transfer from paediatric to adult care services for their young people with long term conditions: A systematic review and qualitative research synthesis. *International Journal of Nursing Studies*, *115*, 103851.

Lule, I., Omwansa, T. K., & Waema, T. M. (2012). Application of technology acceptance model (TAM) in m-banking adoption in Kenya. *International journal of computing & ICT research*, *6*(1).

Luo, X., Li, H., Zhang, J., & Shim, J. P. (2010). Examining multi-dimensional trust and multi-faceted risk in initial acceptance of emerging technologies: An empirical study of mobile banking services. *Decision Support Systems*, *49*(2), 222-234.

Lusardi, A. (2019). Financial literacy and the need for financial education: evidence and implications. *Swiss Journal of Economics and Statistics*, *155*(1), 1-8.

Lyons, A., Kass-Hanna, J., & Liu, F. (2021). Building financial resilience through financial and digital literacy in South Asia and Sub-Saharan Africa. *Available at SSRN 3496562*.

Lyons, A. C., & Kass-Hanna, J. (2021). Financial inclusion, financial literacy and economically vulnerable populations in the Middle East and North Africa. *Emerging Markets Finance and Trade*, *57*(9), 2699-2738.

Ma, L., & Lee, C. S. (2019). Understanding the barriers to the use of MOOCs in a developing country: An innovation resistance perspective. *Journal of Educational Computing Research*, *57*(3), 571-590.

Maduku, D. K. (2017). Customer acceptance of mobile banking services: Use experience as moderator. *Social Behavior and Personality: an international journal*, *45*(6), 893-900.

Mahmud, K., Joarder, M. M. A., & Muheymin-Us-Sakib, K. (2022). Adoption Factors of FinTech: Evidence from an Emerging Economy Country-Wide Representative Sample. *IJFS*, *11*(1), 1-27.

Makanyeza, C. (2017). Determinants of consumers' intention to adopt mobile banking services in Zimbabwe. *International Journal of Bank Marketing*.

Malaquias, R. F., & Hwang, Y. (2016). An empirical study on trust in mobile banking: A developing country perspective. *Computers in Human Behavior*, *54*, 453-461.

Mallat, N. (2007). Exploring consumer adoption of mobile payments–A qualitative study. *The Journal of Strategic Information Systems*, *16*(4), 413-432.

Mantzoukas, S. (2009). The research evidence published in high impact nursing journals between 2000 and 2006: A quantitative content analysis. *International Journal of Nursing Studies*, *46*(4), 479-489.

Martin, A., & Madigan, D. (2006). *Digital literacies for learning*. Facet Publishing.

Martin, K. D., & Hill, R. P. (2015). Saving and well-being at the base of the pyramid: Implications for transformative financial services delivery. *Journal of Service Research*, *18*(3), 405-421.

Marvasti, A. (2018). Research methods. *The Cambridge Handbook of Social Problems*, *1*(3), 23-37.

Mazambani, L., & Mutambara, E. (2019). Predicting FinTech innovation adoption in South Africa: the case of cryptocurrency. *African Journal of Economic and Management Studies*.

McIntosh, M. J., & Morse, J. M. (2015). Situating and constructing diversity in semi-structured interviews. *Global qualitative nursing research*, *2*, 2333393615597674.

Mende, M., & Van Doorn, J. (2015). Coproduction of transformative services as a pathway to improved consumer well-being: Findings from a longitudinal study on financial counseling. *Journal of Service Research*, *18*(3), 351-368.

Merriam, S. B. (1998). *Qualitative Research and Case Study Applications in Education. Revised and Expanded from" Case Study Research in Education."*. ERIC.

Moorthy, K., Ling, C. S., Fatt, Y. W., Yee, C. M., Yin, E. C. K., Yee, K. S., & Wei, L. K. (2017). Barriers of mobile commerce adoption intention: perceptions of generation X in Malaysia. *Journal of theoretical and applied electronic commerce research*, *12*(2), 37-53.

Morar, D. D. (2013). An overview of the consumer value literature–perceived value, desired value. *Marketing from information to decision*(6), 169-186.

Morgan, P. J., Huang, B., & Trinh, L. Q. (2019). The need to promote digital financial literacy for the digital age. *IN THE DIGITAL AGE*.

Morgan, P. J., & Trinh, L. Q. (2020). *Fintech and financial literacy in Viet Nam*.

Morosan, C., & DeFranco, A. (2014). When tradition meets the new technology: An examination of the antecedents of attitudes and intentions to use

mobile devices in private clubs. *International Journal of Hospitality Management*, *42*, 126-136.

Moser, A., & Korstjens, I. (2017). Series: Practical guidance to qualitative research. Part 1: Introduction. *European Journal of General Practice*, *23*(1), 271-273.

Moslehpour, M., Pham, V. K., Wong, W.-K., & Bilgiçli, İ. (2018). E-purchase intention of Taiwanese consumers: Sustainable mediation of perceived usefulness and perceived ease of use. *Sustainability*, *10*(1), 234.

Mouton, J. (2011). How to succeed in your master's and doctoral studies: A South African (p. 280). *Hatfield: Van Schaik Publishers*.

Mungai, K., & Bayat, A. (2018). The impact of big data on the South African banking industry. 15th International Conference on Intellectual Capital, Knowledge Management and Organisational Learning, ICICKM 2018,

Muzurura, J., & Chigora, F. (2019). Consumers' Behavioural Intention to Adopt Mobile Banking in Rural Sub-Saharan Africa Using an Extension of Technology Acceptance Model: Lessons from Zimbabwe. *International Journal of Business, Economics and Management*, *6*(6), 316-334.

Nancy, B., Grove, S., & Ruth, F. (2001). The practice of nursing research conduct, critique and utilization. In: New York, WB Saunders Company.

Newman, W. L. (2003). Social Research Methods: Qualitative and Quantitative Approaches, Boston. *MA: Pearson Education Inc*.

Niu, G., Wang, Q., & Zhou, Y. (2020). Education and FinTech Adoption: Evidence from China. *Available at SSRN 3765224*.

O'Dwyer, R. (2019). Cache society: transactional records, electronic money, and cultural resistance. *Journal of Cultural Economy*, *12*(2), 133-153.

Ogbanufe, O., & Kim, D. J. (2018). Comparing fingerprint-based biometrics authentication versus traditional authentication methods for e-payment. *Decision Support Systems*, *106*, 1-14.

Olanrewaju, K. (2016). Cutting through the fintech noise: Markers of success, imperatives for banks. *Global Banking Practice, McKinsey, New York (December 2015)*.

Oliveira, T., Thomas, M., Baptista, G., & Campos, F. (2016). Mobile payment: Understanding the determinants of customer adoption and intention to recommend the technology. *Computers in Human Behavior*, *61*, 404-414.

Pandiya, S., & Gupta, S. (2015). A study of changing pattern and demand for mobile banking services in India. *Global Journal of Enterprise Information System*, *7*(1), 16-27.

Park, E., Kim, H., & Ohm, J. Y. (2015). Understanding driver adoption of car navigation systems using the extended technology acceptance model. *Behaviour & Information Technology*, *34*(7), 741-751.

Percy, W. H., Kostere, K., & Kostere, S. (2015). Generic qualitative research in psychology. *The qualitative report*, *20*(2), 76-85.

Pikkarainen, T., Pikkarainen, K., Karjaluoto, H., & Pahnila, S. (2004). Consumer acceptance of online banking: an extension of the technology acceptance model. *Internet Research*.

Polit, D. F., & Beck, C. T. (2008). *Nursing research: Generating and assessing evidence for nursing practice*. Lippincott Williams & Wilkins.

Poor. (2011, 17 February 2011). How Agent Network Managers Have Fueled M-PESA's Success. https://www.cgap.org/blog/how-agent-network-managers-have-fueled-m-pesas-success

Prawirasasra, K. P. (2018). Financial technology in Indonesia: Disruptive or collaborative. *Reports on Economics and Finance*, *4*(2), 83-90.

Priya, R., Gandhi, A. V., & Shaikh, A. (2018). Mobile banking adoption in an emerging economy: An empirical analysis of young Indian consumers. *Benchmarking: An International Journal*.

Ram, S., & Sheth, J. N. (1989). Consumer resistance to innovations: the marketing problem and its solutions. *Journal of consumer marketing*.

Rani, M. S. B. A. (2021). Study on customer satisfaction, adoption, perception, behaviour, and Security on financial technology (fintech) services. International Conference on Multidisciplinary Innovation and Economics,

Review. (2018, 05 May). How WeChat became the primary news source in China. https://www.cjr.org/tow_center/how-wechat-became-primary-news-source-china.php

Riquelme, H. E., & Rios, R. E. (2010). The moderating effect of gender in the adoption of mobile banking. *International Journal of Bank Marketing*.

Riyadh, A. N., Bunker, D., & Rabhi, F. (2010). Barriers to e-finance adoption in small and medium Sized enterprises (SMEs) in Bangladesh. *Available at SSRN 1726262*.

Rogers, E. M., Singhal, A., & Quinlan, M. M. (2014). Diffusion of innovations. In *An integrated approach to communication theory and research* (pp. 432-448). Routledge.

Ryu, H.-S. (2018a). Understanding benefit and risk framework of fintech adoption: Comparison of early adopters and late adopters. Proceedings of the 51st Hawaii International Conference on System Sciences,

Ryu, H.-S. (2018b). What makes users willing or hesitant to use Fintech?: the moderating effect of user type. *Industrial Management & Data Systems*.

Saldaña, J. (2021). The coding manual for qualitative researchers. *The coding manual for qualitative researchers*, 1-440.

Saleem, Z., & Rashid, K. (2011). Relationship between customer satisfaction and mobile banking adoption in Pakistan. *International Journal of Trade, Economics and Finance*, *2*(6), 537.

Saunders, M., Lewis, P., & Thornhill, A. (2007). Research methods. *Business Students 4th edition Pearson Education Limited, England*.

Schueffel, P. (2016). Taming the beast: A scientific definition of fintech. *Journal of Innovation Management*, *4*(4), 32-54.

Setiawan, B., Nugraha, D. P., Irawan, A., Nathan, R. J., & Zoltan, Z. (2021). User innovativeness and fintech adoption in indonesia. *Journal of Open Innovation: Technology, Market, and Complexity*, *7*(3), 188.

Shahzad, A., Zahrullail, N., Akbar, A., Mohelska, H., & Hussain, A. (2022). COVID-19's Impact on Fintech Adoption: Behavioral Intention to Use the Financial Portal. *Journal of Risk and Financial Management*, *15*(10), 428.

Shapiro, S. L., Reams, L., & So, K. K. F. (2019). Is it worth the price? The role of perceived financial risk, identification, and perceived value in purchasing pay-per-view broadcasts of combat sports. *Sport Management Review*, *22*(2), 235-246.

Shin, D. H. (2010). Ubiquitous computing acceptance model: end user concern about security, privacy and risk. *International Journal of Mobile Communications*, *8*(2), 169-186.

Sikdar, P., & Makkad, M. (2015). Online banking adoption: A factor validation and satisfaction causation study in the context of Indian banking customers. *International Journal of Bank Marketing*.

Sim, J., & Sharp, K. (1998). A critical appraisal of the role of triangulation in nursing research. *International Journal of Nursing Studies*, *35*(1-2), 23-31.

Singh, S., & Srivastava, R. (2018). Predicting the intention to use mobile banking in India. *International Journal of Bank Marketing*.

Sithole, N., Mort, G. S., & D'Souza, C. (2021). Building blocks of financial inclusion through customer experience value at financial touchpoints in Southern Africa. *International Journal of Bank Marketing*.

Slazus, B. J. (2022). Factors that influence FinTech adoption in South Africa: a study of consumer behaviour towards branchless mobile banking. *85561451X*.

Solarz, M., & Swacha-Lech, M. (2021). Determinants of the adoption of innovative fintech services by millennials.

Szopiński, T. S. (2016). Factors affecting the adoption of online banking in Poland. *Journal of business research*, *69*(11), 4763-4768.

Taherdoost, H. (2016). Sampling methods in research methodology; how to choose a sampling technique for research. *How to choose a sampling technique for research (April 10, 2016)*.

Taherdoost, H. (2017). Understanding of e-service security dimensions and its effect on quality and intention to use. *Information & Computer Security*.

Taherdoost, H. (2018). Development of an adoption model to assess user acceptance of e-service technology: E-Service Technology Acceptance Model. *Behaviour & Information Technology*, *37*(2), 173-197.

Tang, K. L., Ooi, C. K., & Chong, J. B. (2020). Perceived risk factors affect intention to use FinTech. *Journal of Accounting and Finance in Emerging Economies*, *6*(2), 453-463.

Tarafdar, M., Anekal, P., & Singh, R. (2012). Market development at the bottom of the pyramid: examining the role of information and communication technologies. *Information Technology for Development*, *18*(4), 311-331.

Teoh, W. M. Y., Chong, S. C., Lin, B., & Chua, J. W. (2013). Factors affecting consumers' perception of electronic payment: an empirical analysis. *Internet Research*.

Thakor, A. V. (2020). Fintech and banking: What do we know? *Journal of Financial Intermediation*, *41*, 100833.

Treasury, N. (2018). *Consultative paper on policy proposals for crypto assets*. https://www.treasury.gov.za/comm_media/press/2019/CAR%20WG%20Consultation%20paper%20on%20crypto%20assets_final.pdf

Treasury, N. (2020). *Financial Inclusion Policy - An Inclusive Financial Sector for All*. Pretoria Retrieved from http://www.treasury.gov.za/comm_media/press/2020/Financial%20Inclusion%20Policy%20-%20An%20Inclusive%20Financial%20Sector%20For%20All.pdf

Tseng, J.-T., Han, H.-L., Su, Y.-H., & Fan, Y.-W. (2017). The influence of intention to use the mobile banking-the privacy mechanism perspective. *Journal of Management Research*, *9*(1), 117-137.

Tun-Pin, C., Keng-Soon, W. C., Yen-San, Y., Pui-Yee, C., Hong-Leong, J. T., & Shwu-Shing, N. (2019). An adoption of fintech service in Malaysia. *South East Asia Journal of Contemporary Business*, *18*(5), 134-147.

Vartsaba, V., & Zaslavska, O. (2020). FinTech industry in Ukraine: problems and prospects for the implementation of innovative solutions. *Baltic Journal of Economic Studies*, *6*(4), 46-55.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS quarterly*, 425-478.

Vijai, C. (2019). FinTech in India–opportunities and challenges. *SAARJ Journal on Banking & Insurance Research (SJBIR) Vol*, *8*.

Wang, Q., Liu, C., & Lan, S. (2021). Digital Literacy and Financial Market Participation of Middle-aged and Elderly Adults in China.

Wang, X., & He, G. (2020). Digital financial inclusion and farmers' vulnerability to poverty: Evidence from rural China. *Sustainability*, *12*(4), 1668.

Wentzel, J. P., Diatha, K. S., & Yadavalli, V. S. S. (2013). An application of the extended Technology Acceptance Model in understanding technology-enabled financial service adoption in South Africa. *Development Southern Africa*, *30*(4-5), 659-673.

Wilkerson, J. M., Iantaffi, A., Grey, J. A., Bockting, W. O., & Rosser, B. S. (2014). Recommendations for internet-based qualitative health research with hard-to-reach populations. *Qualitative health research*, *24*(4), 561-574.

Ya, S. L. (2020). Prospects and Risks of the Fintech Initiatives in a global banking industry. *Проблемы экономики*(1 (43)), 275-282.

Ye, Y., Chen, S., & Li, C. (2022). Financial technology as a driver of poverty alleviation in China: Evidence from an innovative regression approach. *Journal of Innovation & Knowledge*, *7*(1), 100164.

Yoshino, N., Morgan, P. J., & Long, T. Q. (2020). Financial literacy and fintech adoption in Japan.

Yu, C.-S., & Chantatub, W. (2015). CONSUMERSâ€™ RESISTANCE TO USING MOBILE BANKING: EVIDENCE FROM THAILAND AND TAIWAN. *International Journal of Electronic Commerce Studies*, *7*(1), 21-38.

Yun, J. J., Zhao, X., Jung, K., & Yigitcanlar, T. (2020). The culture for open innovation dynamics. In (Vol. 12, pp. 5076): Multidisciplinary Digital Publishing Institute.

Zalan, T., & Toufaily, E. (2017). The promise of fintech in emerging markets: Not as disruptive. *Contemporary Economics*, *11*(4), 415-431.

Zavolokina, L., Dolata, M., & Schwabe, G. (2016). The FinTech phenomenon: antecedents of financial innovation perceived by the popular press. *Financial Innovation*, *2*(1), 1-16.

Zhang, T., Lu, C., & Kizildag, M. (2018). Banking “on-the-go”: examining consumers’ adoption of mobile banking services. *International Journal of Quality and Service Sciences*.

Zhou, T. (2011). An empirical examination of initial trust in mobile banking. *Internet Research*.

Zhou, T., Lu, Y., & Wang, B. (2010). Integrating TTF and UTAUT to explain mobile banking user adoption. *Computers in Human Behavior*, *26*(4), 760-767.

APPENDIX (A) Research Instrument – FinTech Adaptors

SECTION 1: PARTICIPANT BACKGROUND AND DEMOGRAPHIC INFORMATION

Age and Gender

Years Range	18 -25	26 -35	36 -45	46 -55	56 -60	Over 60
Age Range						
Gender						
Male						
Female						

Education History

Education level	
Below Grade 10	
Below Grade 12	
Grade 12	
Certificate	
Diploma	
Bachelor's degree	
Honours Degree	
Master's Degree	
Doctoral Degree	

Employment

Employed	Unemployed

Type of Income

Salary	
Social Grants (child)	
Social Grants (Pension)	
Social Grants (Disability)	
Other	

Income

R1 – R500	
R500 – R1500	
R1500 – R2000	
R2000 – R2500	
R2500 – R3000	
N/A	

Location – Urban or rural

Urban	
Rural	

Which of the below devices do you own? You may select more than one answer.

SmartPhone	
Feature phone	
Laptop/computer	
Tablet	
None	

Which of the following categories of Apps do you make use the most?

You may select more than one.

Social media	
Search for information	
Entertainment	
Mobile banking	
Gaming	
Online shopping	
Transport	

SECTION 2: FINANCIAL SERVICES NEEDS AND UNDERSTANDING OF FINTECH

Understanding of FinTech:

1. What is your understanding of Financial Technology (FinTech)?
2. Which Financial Technology (FinTech) solutions are you aware of?

SECTION 3: FACTORS OF ADOPTION:

Why are you using the Fintech solution you are using?

Trust:

- Do you trust the Fintech solution you are using and why?
- Did your trust/lack of trust contribute to your adoption of Fintech solutions?

Socio economic factors:

- Economic benefit
    - Do you believe the use of the FinTech platform saves you money? If yes how? If no, how?
    - Did the cost saving contribute to your adoption of Fintech solutions?
- **Social influence**
    - Who influenced you to use the financial technology solution?
    - Are you likely to use a fintech solution if it has been offered because of a suggestion your friend, family member or institutions, such as temples/church has made?

	Family member	Friend	Church
Likely			
Less likely			
Unlikely			

Utility:

- Is using the Fintech platform more efficient/convenient than visiting the big and mortar premises of the financial service provider? If yes how?
- Did the convenience/ lack of convenience contribute to your adoption of Fintech solutions?
- Has the language and terminologies used by the FinTech providers impacted your adoption of the Fintech solution? Yes, No, how?

Age:

- Do you think age has an impact on you using the fintech solutions?
- If yes, what impact is that?
- If no, why not?

Financial health:

- Do you think your financial health has an impact on you adopting the Fintech solution you are using? If yes how, if no, how?

Attitude:

- Do you like Fintech solutions? Why? Why not?
- How do you feel about using the fintech solution you're currently using?

Very Good	
Good	
Bad	

Digital literacy

- What is your understanding of digital solutions?
- How has your understanding of digital solutions contributed to your usage of FinTech solutions?
- Do you understand how to navigate the platform or does someone assist you with navigating the FinTech platform If so, who and why?

Financial Literacy

- What is your understanding of basic financial management information, like basic terms such as compound interest, inflation, and risk diversification?
- Do you think the understanding/lack of understanding of the above has an impact on your use of financial technology solution? What impact is that?

Innovativeness

- Are you a person that likes to experiment with new technology? Yes, or no and why?
- Do you believe that you're your experimental nature has resulted in you using the Fintech solution? Yes, No and why?

Government support

- Did government support., free Wi-Fi, education of Fintech solutions contribute to you adopting the Fintech solution? Why?

Brand image

- What is your view of the Fintech provider you are using?
- Does the brand that provides the fintech solution have anything to do with you trusting/ adopting the fintech solution? How?

Conceptual Model:

Perceived usefulness:

- Did you adopt the Fintech solution because it meets your financial needs?

- Which needs are those?
- How does using Fintech solutions save you time?
- Did this contribute to your adoption of fintech solutions?

Perceived ease of use:

- Do you find it easy to use Fintech services? How?
- Do you believe the operation interface of Fintech is friendly and understandable? How?
- Do the above benefits contribute to your adoption of fintech solutions?

Emerging themes:

Income levels:

- How has your income level impacted the use of Fintech solutions?

Access to the internet:

- How do you feel about the cost of Internet connectivity?
- Does the cost of data or Wi-Fi affect your use your fintech solution? How?

Education level:

- How has your education level assisted you in understanding and navigating the FinTech platform?
- Who do you think is responsible for helping you understand the financial technology solution you're using?

- Did you download the App yourself? If not, who assisted you?
- Do you understand how to navigate the platform or does someone assist you with navigating the FinTech platform If so, who and why?
- What benefits do you get on the financial solution platform that you wouldn't otherwise get from the big and mortar premises of the financial service provider?
- Did the type of phone you have affect whether you adopt a fintech solution or not? Why?

SECCTION 4: PERCEIVED RISKS:

Financial risks:

- Do you think you run a risk of losing money due to fraud whilst using the Fintech solution? Yes, no and why not?
- Do you think you run a risk of losing money whilst using the fintech solution because of the App not working? Why? Why not?
- Do you think you run a risk of losing money because you have taken a product that you do not understand? Why? Why not?

Legal risks:

- Are you familiar with any legal rules pertaining to the usage of fintech platforms?
- Does this awareness/lack of awareness of these rules affects your adoption/lack of adoption of fintech solutions?

Security risks:

- Do you have any security concerns regarding the use of Fintech? Yes, no, why, if yes what are those concerns?
- Do you think that your data is private or when using the fintech solution?

Operational risks:

- Does the fintech downtime affect your adoption of fintech solutions?
- Has your fintech solution ever failed you when completing a transaction and did this affect your usage of the platform?

Emerging:

- Tell me about a time you were not able to complete a transaction because of a security concern?
- Is using the Fintech platform safer than visiting the big and mortar premises of the financial service provider? If yes how?

- Tell me about a time where you or someone else lost money on a FinTech platform?
- Are you more comfortable doing transactions or buying products when using fintech? Why? And which transactions/ products?

APPENDIX (B) Research Instrument – FinTech non-Adaptors

SECTION 1: PARTICIPANT BACKGROUND AND DEMOGRAPHIC INFORMATION

Age and Gender

Years Range	18 -25	26 -35	36 -45	46 -55	56 -60	Over 60
Age Range						
Gender						
Male						
Female						

Education History

Education level	
Below Grade 10	
Below Grade 12	
Grade 12	
Certificate	
Diploma	
Bachelor's degree	
Honours Degree	
Master's Degree	
Doctoral Degree	

Employment

Employed	Unemployed

Type of Income

Salary	
Social Grants (child)	
Social Grants (Pension)	
Social Grants (Disability)	
Other	

Income

R1 – R500	
R500 – R1500	
R1500 – R2000	
R2000 – R2500	
R2500 – R3000	
N/A	

Location – Urban or rural

Urban	
Rural	

Which of the below devices do you own? You may select more than one answer.

SmartPhone	
Feature phone	
Laptop/computer	
Tablet	
None	

Which of the following categories of Apps do you make use the most?

You may select more than one.

Social media	
Search for information	
Entertainment	
Mobile banking	
Gaming	
Online shopping	
Transport	

SECTION 2: FINANCIAL SERVICES NEEDS AND UNDERSTANDING OF FINTECH

Understanding of FinTech:

3. What is your understanding of Financial Technology (FinTech)?
4. Which Financial Technology (FinTech) solutions are you aware of?

SECTION 3: BARRIERS TO ADOPTION:

Why have you not adopted any Fintech solution? I

Perceived risks:

- What risks do you think you stand to run when using Fintech solutions?
- Did these risks affect your decision to not have a fintech platform?
- Do you think that you run a risk of product mis-sell from Fintech solutions?
- Do you believe it's easier for money to be stolen when using Fintech or when going to the brick-and-mortar establishment?

Associated costs:

- Do you think that using FinTech costs money? Yes/no and why? Yes,
- What costs do you think those are?
- Do these costs affect whether you adopt the fintech solution or not? How?

- Do you believe you would be charged more to use Fintech solutions than brick and mortar establishment? Yes, no, why?

Age:

- Do you think your age has an impact on you using the fintech solutions?
- If yes, what impact is that?
- If no, why not?

Security concerns?

- Do you have concerns about your privacy when using Fintech? Yes, no and why?
- Do you have concerns about cybercrimes such as hacker, scams when using Fintech solutions?
- What other security concerns do you have for adopting Fintech solutions?
- Did these security concerns affect your decision to not have a fintech platform?

Income levels:

1. Do you think your salary level has an impact on you not using Fintech solutions? How?
2. Do you feel if you earned more, you would be able to adopt the fintech solutions? How?

Education levels:

1. Do you think your education level has any impact on your adoption of Fintech solutions? Yes/no and why?
2. Do you think if you had higher education, you would've adopted fintech solutions?
3. Who do you think is responsible for helping you understand the financial technology solution?

Emerging:

- Do you believe that the area in which you live in I.e., rural or urban has an effect on your lack of adoption of FinTech's?
- Do you think if the government had provided infrastructure such as free wifi, education of FinTech you would've adopted it?
- Does your current phone allow you to download the FinTech solution?

Language used:

- Do you think the language and terminologies the FinTech providers use on their digital platforms are easy to understand?

Digital illiteracy

- What is your understanding of digital solutions?
- How did your understanding/ lack of understanding of digital solutions contributed to your usage of FinTech solutions?

Financial illiteracy

- What is your understanding of basic financial management information, like basic terms such as compound interest, inflation, and risk diversification?
- How did your understanding/lack of understanding of the above impact your use of financial technology solution?

Lack of access to the internet:

- How do you feel about the cost of Internet connectivity?
- Does the cost of data or Wi-Fi affect your use your fintech solution? How?
- Does the type of phone you are using affect whether you use Fintech solutions or not? Why?

Conceptual Framework:

Usage Barrier:

- Do you believe Fintech solutions are difficult to use? Yes, no, why? Has this contributed to your non adoption of the solutions? Yes, no, why?

Value:

- Do you believe Fintech solutions will save you money? Yes, no, why? Has this contributed to your non adoption of the solutions? Yes, no, why?
- Do you believe Fintech solutions increases the ability to control financial matters? Yes, no, why? Has this contributed to your non adoption of the solutions? Yes, no, why?

Risk Barrier:

- Are you afraid of making mistakes in the process of using fintech solutions? Yes, no, why? Has this contributed to your non adoption of the solutions? Yes, no, why?
- Are you afraid of entering wrong information in the process of using fintech solutions? Yes, no, why? Has this contributed to your non adoption of the solutions? Yes, no, why?

Traditional:

- Do you prefer going to the brick-and-mortar establishment for financial services? Yes, no, why? Has this contributed to your non adoption of the solutions? Yes, no, why?
- Do you prefer to engage in face-to-face interaction when performing financial transactions? Yes, no, why? Has this contributed to your non adoption of the solutions? Yes, no, why?

Image barriers:

- Do you believe that Fintech solutions are difficult to use? Yes, no, why? Has this contributed to your non adoption of the solutions? Yes, no, why? See above

SECCTION 4: PERCEIVED RISKS:

Financial risks:

- Do you think you run a risk of losing money due to fraud whilst using the Fintech solution? Yes, no and why not?
- Do you think you run a risk of losing money whilst using the fintech solution because of the App not working? Why? Why not?
- Do you think you run a risk of losing money because you have taken a product that you do not understand? Why? Why not?

Legal risks:

- Are you familiar with any legal rules pertaining to the usage of fintech platforms?
- Does this awareness/lack of awareness of these rules affects your adoption/lack of adoption of fintech solutions?

Security risks:

- Do you have any security concerns regarding the use of Fintech? Yes, no, why
- If yes what are those concerns?
- Do you think that your data is private or when using the fintech solution?

Operational risks:

- Does the fintech downtime affect your adoption of fintech solutions?

Emerging:

- Is using the Fintech platform safer than visiting the big and mortar premises of the financial service provider? If yes how
- Tell me about a time where you or someone else lost money on a FinTech platform?
- Are you more comfortable doing transactions or buying products when using fintech? Why? And which transactions/ products?

APPENDIX (C): Participant Information Sheet

Research title: Factors driving the adoption of financial technology solutions (FinTech) by lower-income earners in South Africa.

Researcher: Nthabiseng Manamela

I am a student at Wits Business School (WBS). As part of my studies of Master of Management in the field of Digital Business, I am conducting research on the factors driving the adoption of financial technology (FinTech) solutions by lower-income earners in South Africa. I am under the supervision of Ayanda Magida.

The aim of this research is to gain an understanding of the factors that drives FinTech adoption by lower-income earners in South Africa.

The focus of the study is on lower-Income earners that are either permanently or temporarily employed in the formal or informal sector or are recipients of social grants (SASSA).

You are invited to take part in this research study. Participation in this study is voluntary and you are allowed to withdraw at any point in the study without any prejudice or penalty.

The interview will take about an hour to complete. The interview can be conducted online via Zoom, Microsoft Teams and they will be audio recorded and transcribed for record keeping purposes. For participants that do not have the means to conduct the interviews online, a face-to-face interview will be arranged, and it will also be recorded and transcribed. The interview will be held in a language that the participant understands, and you will also be allowed to respond in your own language. This recording will be stored in an electronic form and only the researcher will have access to this recording. It will be deleted after 5 years.

Please be aware that you have the option to opt out of being recorded. All data will be kept confidential as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and not disclosed to anyone else. I will be using a pseudonym (false name) to represent

your participation in my final research report. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

There will be no personal costs to you if you participate in this project, you will not receive any direct benefits from participation but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study.

This study will be written up as a research report which will be available online through the university library website. If you wish to receive a summary of this report. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email:

hrecnon-medical@wits.ac.za

Student: Nthabiseng Manamela

Email address: 2390227@students.wits.ac.za

Supervisor: Ayanda Magida

Email address: Ayanda.magida@wits.ac.za

Participant's Name: _____

Signature: _____

Date:

Researcher's Name: Nthabiseng Manamela

Signature:

Date: 26 June 2022

Appendix (D): Consent Form

Title of project: Factors driving the adoption of financial technology solutions (FinTech) by lower-income earners in South Africa.

Problem statement: The low adoption of FinTech solutions by lower-income earners in South Africa.

Name of researcher: Nthabiseng Manamela

I, ……..., agree to participate in this research project. The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle the relevant options below).

I agree that my participation will remain anonymous	YES	NO
I agree that the researcher may use anonymous quotes in his / her research report	YES	NO
I agree that the interview may be audio recorded	YES	NO

Name of participant ……

Signature …….

Date ……..

Name of researcher ……

Signature …….

Date ……..