



**An Effect Analysis Study of Financial Inclusion in Malawi: a Case Study of the  
NBS Pafupi Savings and Agent Banking**

**By**

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**at**

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## Declaration of Authenticity

I, the undersigned, declare that this thesis titled 'An effect analysis study of financial inclusion in Malawi: A case study of the NBS Pafupi Savings and Agent banking' is my original work and has not been submitted to any other institution of higher learning or university other than the DaVinci Institute.

Signed:  Date: 1/09/2023

Kwanele Batshela Ngwenya

## Declaration by Supervisor

This thesis has been presented for examination with my approval as the appointed supervisor.

Signed: 

Date: 01/09/2023

Name: Paul Muchineripi PhD



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I am deeply indebted to my wife and my children for the support they have given me during this research project. When I embarked on this project I had you in my mind that you may also get encouraged by what I have done and strive to do even better. Thank you so much. I love you all deeply.

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## **Dedication**

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## Acronyms

ADB	Asian Development Bank
AfDB	African Development Bank
AFI	Alliance for Financial Inclusion
ALLL	Allowance for Loan and Lease Losses
ATM	Automated Teller Machine
BAM	Bankers Association of Malawi
BC	Business Correspondents
BCBS	Basel Committee on Banking Supervision
BCP	Central Bank of Paraguay
BdM	Central Bank of Mozambique
BRH	Central Bank of Haiti
BFAP	The Bureau for Food and Agricultural Policy
CAMELS	Capital adequacy, Asset quality, Management quality, Earnings, Liquidity, Sensitivity to Market Risk
CAR	Capital Adequacy Ratio
CDC	Commonwealth Development Corporation
CEO	Chief Executive Officer
CFEE	Canadian Foundation for Economic Education
CRAR	Capital to Risk (Weighted) Assets Ratio
DEG	German Investment Corporation
DfID	Department for International Development

DFIs	Development Finance Institutions
EBRD	European Bank for Reconstruction and Development
EIB	European Investment Bank
EFT	Electronic Fund Transfer
EIB	European Investment Bank
FDH	First Discount House
FDIP	Financial and Digital Inclusion Project
FI	Financial Inclusion
FIMA	Financial Inclusion in Malawi
FIT	Financial Inclusion Taskforce
FSDP	Financial Sector Development Plan
FSDT	Financial Sector Deepening Trust
FSTAP	Financial Sector Technical Assistance Project
GoM	Government of Malawi
IADB	Inter-American Development Bank
ICT	Information and Communication Technology
IDs	Identification Documents
IFC	International Finance Corporation
IMF	International Monetary Fund
IRB	Internal Ratings-Based
IT	Information Technology

KYC	Know-Your-Client
MAMN	Malawi Microfinance Network
MDGs	Millennium Development Goals
MFI	Microfinance Institution
MENA	Middle East and North Africa
MIGA	Multilateral Investment Guarantee Agency
MNO	Mobile Network Operator
MSE	Malawian Stock Exchange
MSME	Medium, Small Medium Enterprises
M&E	Monitoring and Evaluation
NBE	National Bank of Ethiopia
NBS	New Building Society
NFIS	National Financial Inclusion Strategy
NRB	National Registration Bureau
NSFI	National Strategy for Financial Inclusion
OIBM	Opportunity International Bank of Malawi
PIN	Personal Identification Number
PoS	Point-of-Sales
RBI	Reserve Bank of India
RBM	Reserve Bank of Malawi
RBZ	Reserve Bank of Zimbabwe



RFID	Radio Frequency Identification
SSA	Sub-Saharan Africa
SBP	State Bank of Pakistan
SECP	Securities and Exchange Commission
SMS	Short Message Service
UNCDF	United Nations Capital Development Fund
UNDP	United Nations Development Program
US	United States
USAID	United States Agency for International Development
USSD	Unstructured Supplementary Service Data
USA	United States of America
VSLA	Village Savings Loan Association
WBG	World Bank Group
WWW	World Wide Web

## Abstract

Global estimates suggest that a considerable number of adults remain unbanked and lack access to formal financial services like credit insurance, payment services or savings accounts. In emerging and developed countries, several central banks have implemented various initiatives to promote financial inclusion to lift the poor out of poverty. This study investigates the challenges confronting the New Building Society (NBS) Bank since it launched its financial inclusion product, Bank Pafupi agent networks and Pafupi Savings account. The bank experienced substantial deficiencies and inadequate commercial and business performance. Moreover, the digital world progressed significantly after the introduction of the bank's financial inclusion product. However, it continues to depend on outdated processes and procedures to implement strategies of financial inclusion. This investigation intends to understand the effect of financial inclusion interventions on agents/bank profitability and customers at NBS bank Pafupi savings and Agent banking. The researcher undertakes an effect analysis, assesses the effect of digital banking, and explores financial inclusion processes, capabilities, and barriers to achieve the stated aim. This study applied mixed methods research approach across the data collection and analysis phases. A target population size of 100 was sampled using stratified and simple random techniques. Primary data was collected using questionnaires, interview guides, and secondary data from books, journals, official documents and the Internet. The researcher conducted data analysis using the manual thematic content analysis and Statistical Package for the Social Sciences (SPSS) version 2.0 and MS Excel. The study found that NBS bank is applying digital strategies to alleviate poverty and address financial inclusion. Pafupi Savings and Bank Pafupi networks have significantly assisted the financially excluded in the formal financial system and poverty alleviation. Bank Pafupi performed very well from 2012 to 2020. The platform of mobile banking provides inexpensive transactions, making it a practical solution for realising the objective of poverty alleviation and bank profitability using financial inclusion. The study found that Bank Pafupi faced network, liquidity and financial literacy challenges. The NBS bank has strategies in place but they could be improved hence recommended an interoperability Financial Inclusion model. Additionally, NBS bank could invest in its digital operations for profitability and poverty alleviation.

**Keywords:** Unbanked; Financial Inclusion and interventions; Bank Pafupi; digital strategies; poverty alleviation; Bank profitability

## **Personal Motivation for this Study**

My interest and motivation for conducting this research and writing about financial inclusion resulted from my experience as a young man growing up in Matabo village in South Africa. I grew up in the village with my grandparents, who were livestock farmers, mainly rearing cattle and goats. My village was far from the main trading centres, and my family could spend the whole day travelling to the trading centre and the nearest town. However, within the village, one or two distance shops kept essential products, but sometimes they ran out of stock. My grandparents depended heavily on the long distant trading centre or town for provisions.

My grandfather relied on livestock as his core business, which made them famous in the community. He would go to the market and sell the livestock. At midnight, he “banked” the proceeds from selling the livestock in the mountain. The place was known only to himself. This was his custom until he died. After his death, my grandmother and her grandchildren searched the whole mountain but, they never found the money he saved for all those years.

After the death of my grandfather, my grandmother started a dairy business. The dairy business was formalised and she began supplying milk to a nearby missionary school. At month-end, she would go and collect money. Similarly, finding difficulty with keeping the money in the house and because of theft cases, my grandmother thought of a plan to keep the money safe for future use. She went to the nearby small shop owner in the village who had proper security and asked him to keep her money in the shop (in the form of agent banking). The shop owner agreed, so whenever she received money from her dairy sales she would give it to the shop owner for safe-keeping. When she needed money she went to the shop and took out cash to buy whatever it was she wanted.

Later a problem developed with her relationship with the shop owner. Sometimes, when she went to get the money she could not get cash as the shop owner had used all his money for his business. He would ask her to get anything she wanted from the shop, then deduct its cost from her money. The problem was that sometimes she wanted something that was not in the shop, therefore she was stuck with buying other things when she needed money to pay her expenses in the village, such as the

payment of her herders and she was unable to save money for emergencies, or set money aside in case of drought when she would need to buy fodder for her livestock.

Since she could not obtain money from the shop, her problems were compounded as the issues remained unresolved. She decided to use the money she made on market days to supply other important needs and this gave rise to another problem. After some people realized that she always had money on market days, they robbed her of it before or on the way to the market.

As a grandchild, I experienced my grandparents' problems in keeping their money (untraced money on the hill), the robbery and untrustworthy agent (shopkeeper). The experience revealed to me that all these problems were due to: (i) the long distance to get banking services, (ii) the lack of branches in the village or close to the village, (iii) the lack of agent banking in the village, (iv) the lack of security, as money was stolen, (v) the lack of trust on the part of the shop owner as money was not available when the need arose, and (vi) the lack of technological innovation regarding money transfer and remittance. I felt pity for them and thought of a solution to their problem and those of other people in South Africa and the world who were experiencing similar problems.

As CEO of the Bank, I thought of financial inclusion as a solution to the problem. At my workplace, NBS Bank, I promoted existing financial inclusion products (Pafupi Savings and Agent Banking) that had not performed well as they had incurred losses. My grandparents' problems and the poor performance of Pafupi prompted me to research financial inclusion and this discovery coincided with my enrolment for the PhD programme. I felt that this was the right time for an investigation and it presented an opportunity to find a solution to my grandparents' problems, which are widespread in Malawi and on the African continent.

This research work has fulfilled and transformed me so much. I have believed for some years that the path to a growing economy in Africa lies with the unbanked and underbanked communities. The researcher is a driver of technology and innovation at the NBS Bank workplace. The researcher believes that with the right partnerships and sound technological infrastructure, a large number of people who are currently not in the mainstream of the economy in Malawi and Africa could be a part of its growth and

contribute positively to different countries' Gross Domestic Products (GDP). This could be achieved if only they were properly empowered, educated and equipped with the right digital financial solutions to save or borrow money to grow their businesses. The researcher strongly believes that his life as a young man and that of his grandparents could have been better if technology had been as readily available as it is now and innovation had been as fast as it is now. It only remains for the researcher to imagine what would have become of his grandparents if only they had had access to the latest technology and could have saved their money in a bank account or an equivalent. This project has fulfilled my dream of developing the economy using technology and innovation from the bottom of the pyramid.

## CHAPTER ONE

### INTRODUCTION AND OVERVIEW

#### 1.0 Introduction

This study investigated financial inclusion and digital banking strategies in Malawi from 2008 to 2020. Additionally, it investigated the effect of financial inclusion interventions on agents/bank profitability and customers at NBS Bank Pafupi savings and Agent banking. The study also explored the barriers to financial inclusion at NBS Bank. It intends to assess the effect of financial inclusion and the feasibility of developing a Malawi and African-wide financial inclusion model that would cater for all the unbanked people. In this chapter, the researcher introduces the study background grounded on financial inclusion in the Malawian banking industry. The research problem, aim, objectives, primary and secondary research questions, research philosophy, and the significance of the study are also presented.

#### 1.1 Background

According to Demirguc-Kunt, Klapper, Singer, Ansar and Hess (2018), there are nearly 1.7 billion adults worldwide without bank accounts at financial and microfinance institutions or mobile money providers. This suggests that almost millions of adults are excluded financially as noted by Achugamonu, Adetiloye, Adegbite, Babajide and Akintola (2020). The number of financially excluded persons is higher in developing countries. About eighty per cent (80%) of bankable grownups in Africa are being excluded financially.

Financial inclusion is described by Ozili (2018) as the provision of access to services of finance to entire participants of a populace, especially the impoverished and other prohibited representatives of the people. The World Bank (2014) definition focuses on actual usage in financial services, while the other definitions focus more on the potential ability to use such services (Yoshino & Morgan, 2016).

Annibale (2019) stated that financial inclusion enables equitable financial access – such as access to insurance, credit and savings products to manage the ups and downs of their lives. These products help them to meet goals, smooth out tough times,

and prepare for the unexpected.

Financial inclusion is recognised as an enabler for 7 of the 17 Goals of Sustainable Development. The Sustainable Development Goals are the blueprint for achieving a better and more sustainable future for all. They address global challenges, including poverty, inequality, climate change, environmental degradation, peace and justice (United Nations, 2021).

Increased financial inclusion positively affects key welfare outcomes among poorer African households and businesses, household poverty (Abor *et al.*, 2018), savings (Pina, 2015), foreign remittances, and female empowerment (Swamy, 2014). A key issue for poor households is their ability to insure against or withstand adverse economic shocks (Zhang & Posso, 2019). Donou-Adonsou and Sylvester (2016) find that greater access to bank accounts tends to promote poverty reduction (Ahmad, Green & Jiang, 2020).

Syed *et al.* (2021) studies concluded that the shadow economy creates employment opportunities for the unemployed and helps control poverty (Ajide, 2021). Sarma Sakyi-Narko (2018) finds that financial inclusion is as important as per capita growth rates in African countries.

Financial inclusion should include attention to socio-economic, cultural and geographical attributes. Financial inclusion is instrumental in bridging the gap between the included and excluded, the rich and the poorer communities. It follows that financial inclusion should not be dealt with in isolation but rather include attention to socioeconomic, cultural and geographical attributes (Omar & Inaba, 2020). Problems such as unemployment, poor skills, and low incomes are related to social exclusion caused by poverty (Demirgüç-Kunt *et al.*, 2018).

Digital financial inclusion provides electronic or innovative retail payments and government payments (including conditional cash transfers) and remittances (Park & Mercado, 2018). The World Bank's report indicates that financial inclusion is being promoted by digital financial services, generally by money. This is more common in Sub-Saharan Africa where m-money accounts doubled between 2011 and 2017 (Demirgüç-Kunt *et al.*, 2018:20–22).

### **1.1.1 Malawi Banking Industry**

Malawi banks concentrate their operations in towns and cities, having regard to the geographic situation and population density. There are three hundred branches of commercial banks, ATMs and agency banking outlets, located primarily in areas with significantly large population densities. Malawi Finscope Consumer Survey (2008 – 2012) found that banks faced problems with location and access to bank operations. They also face challenges with extending services to low-income households, especially those located in rural areas. Malawi Finscope Consumer Survey (2012), revealed that various products of banks are not created for the requirements of households with low income. Brune *et al.* (2011) conducted field experiments in rural Malawi on savings products and found that access to formal financial services improves the lives of the poor. Commercial bank lending rates and credit risks to the financial system continue to be high in Malawi. Monetary conditions remained tight. Inflation has been on a downward trend since the second half of 2016, and this has led to the Reserve Bank of Malawi cutting the bank rate from 27% to 24% in November 2016 and to 22% in March 2017 (Reserve Bank of Malawi, 2017).

### **1.1.2 Financial Inclusion in Malawi**

To achieve financial inclusion in Malawi, improvements have been made to financial sector innovation. In February 2015, the Malawi National Switch system was launched to facilitate the interoperability of ATMs and point of sale (POS) terminals in the country. This was the third significant national payments infrastructure improvement after Automated Transfer System (ATS) and Central Securities Depository (CSD) which were implemented in December 2014 (Sangala, 2017). The non-bank-led mobile payments in Malawi were introduced leading to the growth of active subscribers to mobile payments (Matita & Chauma, 2021). Malawi experienced notable growth of mobile money agents as service distribution channels. Money agents are contributing considerably to financial inclusion (Tsilizani, 2015). The country maintained an upward trend in Internet banking, and the subscriber base for bank-led mobile payment reached 520,959 by November 2016. The volume of transactions significantly expanded (Chilima *et al.*, 2018).

Against this background, the researcher carried out this study to investigate the effect



of digital financial inclusion on bank profitability and poverty alleviation. The study aimed at coming up with a digital financial inclusion model for poverty alleviation and NBS Bank profitability.

### **1.1.3 Financial Inclusion**

Several initiatives were instituted to develop institutions to pursue the access to finance agenda. For example, the Export Development Fund (EDF) was established in 2012 with the mandate to increase the productive potential of the country through the provision of finance, equity participation, performance bonds or guarantees, and advisory service for the set-up, expansion and modernization of viable enterprises in the medium and large-scale enterprises sector. Beyond EDF and other initiatives, there has been growth in the “village banking” and “mobile banking” services and other similar innovations. These innovations extended financial services outreach to even small-scale enterprises and people living in remote rural areas (Malawi Finscope Survey report, 2014).

### **1.1.4 NBS Bank Background**

In line with the bank’s philosophy of “taking banking to the people”, the Bank boasts of having one of the widest and probably the best service network in Malawi. NBS Bank has twenty-six (26) real-time Service Centres strategically located across the country. In addition, the Bank offers one of the most comprehensive networks of ATMs, and very innovative Mobile, Agency and SMS banking services to give customers additional service delivery platforms (NBS Bank, 2015). To fulfil such recognition, the bank made innovative efforts to design a financial inclusion product (NBS Bank, 2015).

## **1.2 Problem Statement**

Banks are moving their focus to financial inclusion and there are various interventions which have been applied globally, in SSA and Malawi specifically. It is however unclear how these interventions contribute to bank profitability and the alleviation of poverty and how they combat financial exclusion focusing on NBS Bank. It is therefore very important to investigate the Financial Inclusion strategies being applied and measure the effect of these strategies on bank profitability and poverty alleviation. To this end,

this study investigated the strategies applied at a specific bank (NBS Bank Pafupi savings and agent banking) as a case study to determine which strategies are being applied as a poverty alleviation tool and bank profitability and to explore the barriers to financial inclusion at NBS bank.

### **1.3 Aim**

This investigation aims to understand the effect of financial inclusion interventions on agents/bank profitability and customers at NBS Bank Pafupi savings and Agent banking.

### **1.4 Objectives**

The objectives of this investigation to attain the specified aim are as follows:

- i. To undertake an effect analysis of NBS Bank Pafupi savings and agent banking as financial inclusion interventions.
- ii. To assess the effect of digital banking (NBS Bank Pafupi savings and agent banking) on customers and bank profitability.
- iii. To explore NBS Bank's financial inclusion capabilities and processes on agents/bank profitability and customers.
- iv. To explore barriers to NBS Bank financial inclusion products from 2012 to 2020.
- v. To propose a banking and non-banking model for financial inclusion for NBS bank profit and customers.

### **1.5 Key Research Question**

How do the financial inclusion interventions effect agents/bank profitability and customers at NBS bank Pafupi savings and Agent banking?

#### **1.5.1 Secondary Research Questions**

The study was in pursuance of the following research questions:

- i. What is the effect of NBS Bank Pafupi savings and agent banking as financial inclusion interventions from 2012 – 2019?
- ii. How did digital banking (NBS Bank Pafupi savings and agent banking) effect

- customers and bank profitability?
- iii. To what extent do the NBS Bank's financial inclusion capabilities and processes effect agents/bank profitability and customers?
  - iv. Which barriers were encountered on NBS Bank financial inclusion products from 2012 to 2020?
  - v. Which banking and non-banking model for financial inclusion is appropriate for NBS bank profit and customers?

## 1.6 The Theoretical Underpinning

Various theoretical frameworks are applied nationally and internationally to understand financial inclusion from different perspectives. Furthermore, the definitions and motivations for financial inclusion differ across theoretical perspectives and influence how financial inclusion strategies are implemented across contexts. This study involved the literature for financial inclusion by utilizing the views of Davinci TIPS framework, transaction cost theory, contemporary banking theory, agency theory, and the CAMELS methodology as broad guiding frameworks to examine financial inclusion strategies and the effect of these strategies on the financial sector.

### 1.6.1 Da Vinci TIPS Model



Figure 1: Da Vinci Tips Model

A commitment “of The Da Vinci Institute’s TIPS™ Managerial Leadership” Model relates to the provision of “a systemic awareness of the multiple sub-systems at play within society, including the workplace” (The Da Vinci Institute, 2020:55). The Model

evokes a consciousness of current psychological models and proficiency to dissect and rethink theories about performance in the workplace to guide the future (The Da Vinci Institute, 2020). Individuals are given the prospect of sense-making of their reality following the suggested conceptual frame in implementing this intricate systemic lens (The Da Vinci Institute, 2020). According to The Institute, the appearance of similar and/or extra competencies and practices of managerial leadership may provide persons with the chance to co-create optional perspectives, conceptual frameworks, and interpretations to navigate change cooperatively and add new domain knowledge (The Da Vinci Institute, 2020).

Based on the TIPS, the theoretical foundation of the association between digital finance, financial inclusion or digital banking commences with the principle that the huge sum of excepted populace owns or has a mobile device and that delivery of services in finance using mobile devices enhances financial access for the omitted people. Digital finance is supplied through computer networks and mobile phones and interconnected to a dependable system of payment (Gabor & Brooks, 2017; Ozili, 2018).

### **1.6.2 Transaction Cost Theory**

This theory is crucial to any bank's strategy to lower costs. This theory will contextualise financial inclusion policies within the context of NBS bank. For NBS bank to lower costs, the invention of digital finance provides positive outcomes for banking operations in the long term (Ozili, 2018). Scott, Van Reenen, and Zachariadis (2017) assess the effect of the acceptance of SWIFT on bank performance. They discover that the acceptance of SWIFT (i) greatly affects long-term productivity (ii) these productivity margins are superior for smaller banks compared to the larger banks; and (iii) exhibit considerable network impacts on performance (Ozili, 2018). This means that if NBS bank adopts SWIFT, profits will be realised by interoperability.

### **1.6.3 Contemporary Banking Theory**

Okiro and Ndungu, (2013) cited Bhattacharya and Thakor's (1993) contemporary banking theory suggests that banks, together with other financial intermediaries, are essential in allocating capital to the economy. This theory is centred on information asymmetry, an assumption that "different economic agents possess different pieces

of information on relevant economic variables". In such a manner, agents will use this information for their profit (in this study, the researcher analyses whether or not Pafupi benefitted the poor or NBS bank profitability) (Freixas and Rochet, 1988). An Asymmetric information problem occurs before the transaction occurs and is related to the possession of unequal, disproportionate or lopsided information. The lack of information about the lender is known as "adverse selection". Moral hazard occurs after the transaction has been entered into and is related to incentives by the lenders to behave opportunistically. In the case of NBS bank country-wide branches, they have digital financial inclusion interventions through Pafupi savings accounts and Bank Pafupi agency networks across Malawi.

#### **1.6.4 Agency Theory**

This theory relates to the relationship between the new model of NBS Pafupi Savings and Agent banking and Mobile Network Operators (MNO) and agents. The agency theory views the company as a link of contracts among self-interested individuals rather than a unified, profit-maximizing entity. Agents need constant supervision and management, which raises agency costs or coordination costs. By reducing the costs of acquiring and analyzing information, information technology permits organizations to reduce overall management costs. It allows them to grow in revenue while shrinking the numbers of middle management and clerical workers (Laudon & Laudon, 1996). This theory relates well to NBS Bank Pafupi agency networks. This network works in collaboration with the Bank-led model.

Agent banks are persons or organizations that are contracted with an established bank to process client transactions on its behalf (Lepoutre and Oguntoye, 2018). Agent banks operate bank transactions in supermarkets, pharmacies, lottery outlets, convenience stores, and post offices. The owners of these outlets act as agents for the affiliated banks, conducting transactions, overseeing deposits, transfers, and withdrawals, confirming account balances, paying bills, and depositing governmental and employer benefits (GSMA, 2021). Their tools include barcode scanners, point-of-sale card readers, and PIN pads connected to the affiliated bank's online system. Clients access services through bank cards, e-wallets, or smartphones. Biometrics and PIN codes to verify and authorize customers. Sohrab and Idris, (2020). Banking agents conduct transactions after completing verification, authorization, and

settlement. These processes are automated or manual. In the agent banking model, customers interact with agents who facilitate transactions. Services retain the attributes of the parent bank (Hossain, Dey, & Afzal, 2015).

#### **1.6.4.1 Profitability of agency banking**

The introduction of the Bank Pafupi agency was aimed at bringing the vulnerable unbanked population into formal banking and financial services. Notwithstanding that, the NBS Bank Pafupi agency network was also aimed at maximizing the agents' and the NBS bank's profitability.

Ndungu and Wako (2015) explain that agency banking is a generating avenue for the banks through the deposits and withdrawals of customers, which ultimately increase the banks' profitability. On the performance of banks, Njagi (2013) found that aspects such as low costs for transactions, banks' regulation of agents, and quick access to financial services positively impacted the banks' performance on the financial dimension across the Kenyan nation. Barasa and Mwirigi (2013) found that agency banking has played a pivotal role in enhancing the penetration of banking services into unbanked markets, hence enhancing the penetration of the financial sector in Kenya. A study by Kambua (2015) in Kenya pointed out a positive connection between cash deposits, the volume of deposits, the volume of withdrawals and financial performance.

Zahan (2017) conducted a study on the sustainability of the mobile banking agent business in Bangladesh, where this business is growing fast and profitably. She concluded that a business licence is a major factor for the continuation of the mobile banking agent business. David-West *et al.* (2019a) considered the mobile money business model to be a frugal innovation. The advantages of this business model are the easy acquisition of resources used to provide financial services, affordable service costs, and the bridging of the gap in the financial services infrastructure. David-West *et al.* (2019b) also argued that this business is considered unsustainable and unprofitable because of the unavailability of a sustainable business model for mobile money agents in Nigeria. The business model used is generic for all customers. They recommended that the solutions offered must match the needs of the customer segment.

### **1.6.5 Financial Innovations Theory**

Błach (2011) observed that financial innovations enhance financial markets' liquidity, ensuring the allocation of resources to areas which are inadequately supplied and improving accessibility to emerging prospects and improving financial inclusion. The theory of financial innovations holds that some restrictions, including external handicaps, help corporations to pursue their objective, which is the maximization of revenue; hence commercial banks think of innovative ways to reach more people and improve their profits (Li & Zeng, 2010). Omwansa and Waema (2014) observed that the emerging innovative financial inclusion models through mobile and other digital financial services (primarily in many African countries) are assisting to close the gap of financial instruments in these countries. The study adopted a descriptive survey and it found that low transaction costs through agency banking positively impacted the financial performance of Kenyan commercial banks.

### **1.6.6 Theory of financial literacy**

The theory of financial literacy has the moderating effect of financial literacy and income-enabling financial inclusion (Singh and Misra, 2020). This theory is relevant to this study as NBS bank adopted new technological innovations and introduced Pafupi savings and Agent banking to customers and bank employees. It was necessary to bring this to the attention of customers and bank employees. Financial literacy plays an important role in helping ensure the financial health and stability of individuals, families, enterprises and national economies. Particular emphasis is placed on the financial literacy of persons. Because of lacking financial literacy, individuals are unable to optimize their welfare (Hastings *et al.*, 2013).

### **1.6.7 Research Philosophy**

Research philosophy is understood by Saunders, Lewis and Thornhill (2019:130) as "a system of beliefs and assumptions about the development of knowledge". The kinds of assumptions researchers make concern "assumptions about the realities you encounter in your research (ontological assumptions), about human knowledge (epistemological assumptions), and about the extent and ways your own values influence your research process" (axiological assumptions) (Saunders *et al.*, 2019:130). According to Kivunja (2017), research paradigms consist of axiology,

epistemology, ontology, and methodology (Kivunja, 2017). These elements involve fundamental norms, values, assumptions, and beliefs that are held by each paradigm to guide an investigation (Kivunja, 2017). Axiology denotes a philosophical branch about the role of ethics and values in the process of research (Saunders *et al.*, 2019).

Ontology is understood by Kivunja (2017:27) as “the philosophical study of the nature of existence or reality, of being or becoming, as well as the basic categories of things that exist and their relations”. The ontological paradigm assists researchers to examine their underlying system of belief about the nature of existence or being and the assumptions they make to assume that something is real or makes sense (Kivunja, 2017).

The functionalism ontological philosophy is used for this investigation because “its representatives perceive society in categories of integrity, invariability, unity, order, *status quo*, searching for universal laws and the reasons for the coherent nature of social reality” (Slawewski, 2013:19). The ontological paradigm of a functionalist recognizes the objective nature and reality of the societal world (Slawewski, 2018). According to Slawewski (2018:19), “functionalists are pragmatists searching for knowledge which is useful and which may serve the purpose of predicting and controlling social processes by providing practical solutions in response to practical problems”. Slawewski (2018) explains that functionalism is entrenched in the literature of positivism and grounded on quantitative analyses and methods.

Constructivism research philosophy recognises that reality is a product of human intelligence interacting with experience in the real world. Constructivism accepts reality as a construct of human mind, as such reality is perceived to be subjective and closely associated with pragmatism and relativism. Constructivism posit that all knowledge is constructed from human experience. While positivism argues that knowledge is generated in a scientific method, constructivism maintains that knowledge is constructed by scientists and there is no single methodology to generate knowledge. Epistemological Constructivism explain that knowledge is created by human perception and social experience (Andrew, Pedersen, and McEvoy, 2011). It was adopted in the study for qualitative research approach.

Epistemology philosophy is understood by Slawewski (2018) as the philosophical area



that deals with knowledge and cognition. It “concerns assumptions about knowledge – how we know what we say we know, what constitutes acceptable, valid legitimate knowledge and how we can communicate knowledge to fellow human beings” (Saunders *et al.*, 2019:159). The epistemological assumptions that researchers make determine the type of contribution they can make to knowledge resulting from their investigation (Saunders *et al.*, 2019).

The researcher uses the pragmatist epistemological philosophy to address the subject of financial inclusion interventions in the banking industry. According to Saunders *et al.* (2019:160), “pragmatist ontology, epistemology and axiology are focused on improving practice”. The choice of research strategies is guided by the particular nature of the problem under investigation (Saunders *et al.*, 2019). The pragmatist acknowledges that a variety of methods exist for conducting an investigation and interpreting the world, “that no single point of view can ever give the entire picture and that there may be multiple realities” (Saunders *et al.*, 2019:150). Pragmatism concerns the “philosophical stance that argues that concepts are only relevant where they support action. It considers research starts with a problem, and aims to contribute practical solutions that inform future practice” (Saunders *et al.*, 2019:812). Pragmatism is used in this investigation to inform the mixed method approach. It was used for both, open and closed-ended questions, both, emerging and predetermined approaches, and both, qualitative and quantitative data analysis

Axiology relates to a philosophy branch about ethics and values in an investigation incorporating questions regarding how researchers are dealing with their values including those of participants (Saunders *et al.*, 2019). It concentrates on what researchers’ value in an investigation because their values influence how they conduct research and what they value in the findings (Dudovskiy, 2022). The pragmatism axiological paradigm implies that the researcher adopts subjective and objective viewpoints because values contribute significantly to the interpretation of findings (Dudovskiy, 2022).

## **1.7 Geographical Discussion Around Financial Inclusion**

The researcher proposed the Digital Interoperability Model for financial inclusion. The model operates on the Nation Identification Card as a tool for interoperability and

success enabler of Malawi's financial inclusion. The inability of citizens to establish identity is a major inhibitor to accessing financial services. A proper national identity framework is integral to the effective delivery of all the government's responsibilities to its citizens. From security to privacy to social welfare programmes, the lack of a cohesive framework for capturing the details of every citizen means that many people are going to be excluded. Establishing identity is central to onboarding excluded populations to the recognized financial services ecosystem. Around eighteen per cent (18%) of financially excluded adults cannot access services of finance (whether through a bank or a mobile money provider) because they lack the documents required to prove their identities (World Bank, 2014). The researcher studied globally how others implemented digital financial inclusion successfully.

The World Bank's Global Findex Survey (2017) showed that a lack of documentation was found to be a critical barrier to accessing financial services by twenty-six per cent (26%) of unbanked people in low-income countries. Digital identity is a necessary starting point for financial inclusion. The World Bank points to three characteristics that are crucial for enabling the use of ID documents for financial services: the ID should a) have a legal basis and hence be recognized by the government, b) be unique to that individual and c) exist in a digital format. It needs to be noted that several other implicit aspects are essential, notably; that the ID should be accurate, secure, and privacy-preserving and, for

## **1.8 Significance of the Study**

The current study critically evaluated financial inclusion theories that can be used to provide initiatives or interventions in the Malawi banking sector. These theories can be introduced or applied to improve the financial inclusion status of the Malawi banking industry. The study will bring to the attention of beneficiaries the initiatives or interventions which have been introduced by executors to obtain access to affordable financial services for their clients. The study highlights the performance of NBS bank's financial inclusion initiatives between 2008 and 2017. It will critically reveal how Pafupi and the savings account financial inclusion service has performed regarding poverty alleviation and bank profitability.

NBS Bank Limited and the Malawi government have policies for financial inclusion.

Despite these theories and policies, the bank faces financial inclusion challenges. Its Pafupi savings product is not fully yielding the expected outcomes, creating a research gap. In the researcher's view, there was a need for a change in the technology adopted and how the change needed to be managed to attain full Pafupi savings financial inclusion. The study will add to the existing body of literature in the academic world. As pointed out earlier in the literature review, there is limited information about financial inclusion, especially in the developing world. The study's purpose is to add to current knowledge by broadening the narrative on financial inclusion in an emerging economy.

The discoveries are predicted to support the banking industry, stakeholders and policymakers to adopt the correct approach to ensuring that financial services are accessible to all, irrespective of their background, location, attributes and ethnicity. The study will also add to the literature by revealing the genuine sources of difficulties working against the realisation of complete financial inclusion and present constructive interventions.

### **1.9 Design and Methodology Overview**

This study applied mixed research methods (MMR) across the data collection and analysis phases. The study collected qualitative and quantitative data from all participants. In-depth interviews were conducted with experienced agents and executives. The document analysis was conducted to review the financial inclusion strategies employed at NBS Bank. The ontological paradigm of a functionalist recognizes the objective nature and reality of the societal world. The researcher uses the pragmatist epistemological paradigm to address the subject of financial inclusion interventions in the banking industry. The pragmatism axiological paradigm implies that the researcher adopts subjective and objective viewpoints because values contribute significantly to the interpretation of findings. Simple random and convenient sampling methods were used to select the sample. The quantitative data (surveys) were uploaded to a Microsoft Excel spreadsheet and analysed using SPSS version 20 and used to generate graphs, tables and figures to summarise and present the findings. Excel was used present data in tables, plotted and plotted as graphs to display the trends in each variable. This current study followed methodological procedures to analyse the data that included thematic for qualitative, SPSS for quantitative and document analysis.

## 1.10 Thesis Structure

This study consists of the following Chapters:

**Chapter 1** presents the overview and contextualization. It presents the thesis and ground the investigation to address gaps in the literature concerning global Financial Inclusion.

**Chapter 2** presents and discusses a comprehensive review of financial inclusion literature and illustrates the patterns related to how financial inclusion and exclusion are understood in banking literature. It reviews and summarizes the general conceptualizations of financial inclusion. Secondly, it explores and critiques the contributions of the banking industry towards financial inclusion. Third, financial inclusion within a digital space is explored and reviewed.

**Chapter 3** methodology followed to answer research questions is described.

**Chapter 4** presents and analyses the findings from the questionnaire and Interview guide.

**Chapter 5** studies the findings supported by empirical studies. The reflection of findings through the TIPS lenses was discussed. A Financial Inclusion model is suggested, presented and discussed.

**Chapter 6** provides the conclusion and recommendation based on each objective and the DaVinci TIPS model.

## 1.11 Hypothesis

Financial inclusion interventions that include agent networks, mobile money, digital financial services, digital payments and products as have the ability to create businesses and invest in education hence alleviating poverty, increasing economic empowerment and growth. FI provide individuals with an opportunity for a secure credit and savings hence encouraging financial stability deriving from high levels of bank deposits contributing to a stable deposit base for bank profitability. Financial mediators serve as designated agents of savers and can attain economies of scale. As a result, those who save entrust their funds to these intermediaries to be invested

in whatever ventures they deem viable, such as digital credit, insurance, with investors possessing the ability to fund withdrawals at any time via predetermined circumstances. Financial Inclusion can be measured by: access, usage, and quality of financial services and delivery (Goel and Sharma 2017; Ajefu et al. 2020). Apart from branches, banks customer base increases through ATMs, point-of-sale (POS), and other electronic services such as agent banking. This increase boost the performance of banks due to more customers that attracted deposits, and offer services (Shihadeh et al. 2018).

**Hypothesis 1.**

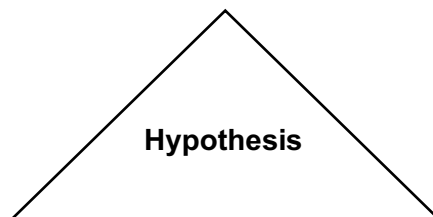
**HO 1:** Financial Inclusion alleviates poverty as well as bank profitability

**HA 2:** Financial Inclusion does not alleviate poverty as well as bank profitability

**Hypothesis 2.**

**HO 1:** There is a relationship between financial inclusion interventions and digital financial services

**HA 2:** There is no relationship between financial inclusion interventions and digital financial services



**Hypothesis 3.**

**HO 1:** Bank led and non-ban led Financial inclusion interventions models alleviate poverty and bank profitability

**1.12 Conclusion**

The present chapter was intended to provide a contextualization and problem statement of the present study and to define relevant concepts. It highlighted the importance of an investigation of financial inclusion on alleviating poverty, bank profitability and challenges of financial Inclusion. In the next Chapter, the theoretical and methodological frameworks applied in the present study will be detailed.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.0 Introduction

This Chapter presents and discusses a comprehensive literature review on financial inclusion and demonstrates how the patterns of financial inclusion and exclusion are understood in banking literature. Firstly, the general conceptualizations of financial inclusion will be evaluated and summarized. Secondly, the contribution of the banking industry towards financial inclusion will be explored and critiqued. Thirdly, financial inclusion in digital space will be explored and reviewed.

#### 2.1 Inclusion in Finance

Financial inclusion is explained in various ways and conceptualization varies across contexts. Ozili (2020; 2018) defines financial inclusion as access to and delivery of financial services by representatives of a population involving the impoverished and other disregarded members of the population. This means that businesses and individuals have access to affordable and useful formal services of finance that address their requirements responsibly and sustainably (Ozili, 2020).

Grant (2020) elaborates on this definition and defines financial Inclusion as making financial products and services accessible and affordable to all individuals and businesses, regardless of their net worth or company size. From these perspectives, financial Inclusion strives to remove the barriers that exclude people from participating in the financial sector and using these services to improve their lives.

Zulfqar, Chaudhary, and Aslam (2016) observe that financial Inclusion enables individuals to participate in the growth process by enhancing their access to economic opportunities and broadening their choices, making them more productive and efficient economic agents. Additionally, Kelikume (2021) points out that Financial Inclusion leads to poverty reduction in two possible ways. First, increased availability of financial resources enhances access to education, increased self-employment and human development, which help to alleviate poverty. Secondly, broad-based access to financial products and services leads to efficient resource allocation, thus providing

better financial leverage to the underprivileged for poverty reduction (Sani, Ozdeser and Cavusoglu, 2019). Niankara (2020) observed that financial Inclusion is increasingly regarded as fundamental to the development of assistance to poor households, to improve their lives while also generating economic activity. Demirgüç-Kunt *et al.* (2015) think that greater access to financial services can contribute to poverty reduction by decreasing vulnerability, an increase the productivity of Micro, Small and Medium Enterprises (MSMEs) and greater formalisation of firms.

At the macro level, Sani, Ozdeser and Cavusoglu, (2019) found evidence that an increase in access to financial services has positive effects on the financial system's stability, the effectiveness of the monetary policy, growth and inequality reduction. To achieve this goal, inclusion strategies are driven by digital technological platforms, potentially breaking all previous barriers, including physical, social, language, and financial (Achugamonu *et al.*, 2020). This digital transformation includes emerging market economies that offer an array of viable digital alternatives to traditional bank services that could not capture a significant underbanked population (International Financial Corporation, 2017). The digital technological revolution reduces transaction costs through established platforms of telecommunication companies and mobile money operators (Ozili, 2018). They provide quality financial products that meet the needs of the active poor in rural communities (International Financial Corporation, 2017).

With the advent of the digital technological revolution, African countries have over the years made much effort and progress towards advancing financial Inclusion. The feat of some innovative financial instruments such as mobile money in Africa offers more opportunities, mainly for the poor, youth, rural dwellers, and small and medium enterprises (SMEs), to be financially included in poverty reduction (Abor *et al.*, 2018).

According to Ozili (2020a:2), “a formal account is the first step towards financial inclusion because it can provide a convenient way to save money, pay bills, and meet emergency needs”. Ozili (2020a:2) explains that “financial inclusion can introduce a savings culture of which individuals can take advantage to manage their cash inflows and outflows and save excess money”. Ozili (2020a:2) adds that “financial inclusion also allows financial markets to be within reach of all citizens that want to engage in economic activities”.

Ozili (2021) argues that having access to a banking account is central to inclusion in finance. This entails everyone owning a basic bank account, and improving their economic welfare. People will “make financial decisions and conduct transactions that improve their welfare. This is because restricted access to finance can make it easier for people to make poor financial decisions and choices that would not happen if unrestricted access to finance was granted” (Ozili, 2021:3).

**Hypothesis 1.**

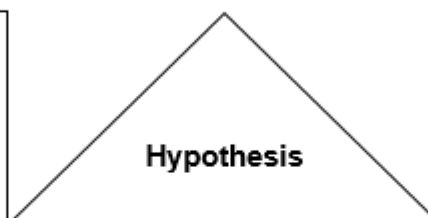
**HO 1:** Financial Inclusion alleviates poverty as well as bank profitability

**HA 2:** Financial Inclusion does not alleviate poverty as well as bank profitability

**Hypothesis 2.**

**HO 1:** There is a relationship between financial inclusion interventions and digital financial services

**HA 2:** There is no relationship between financial inclusion interventions and digital financial services



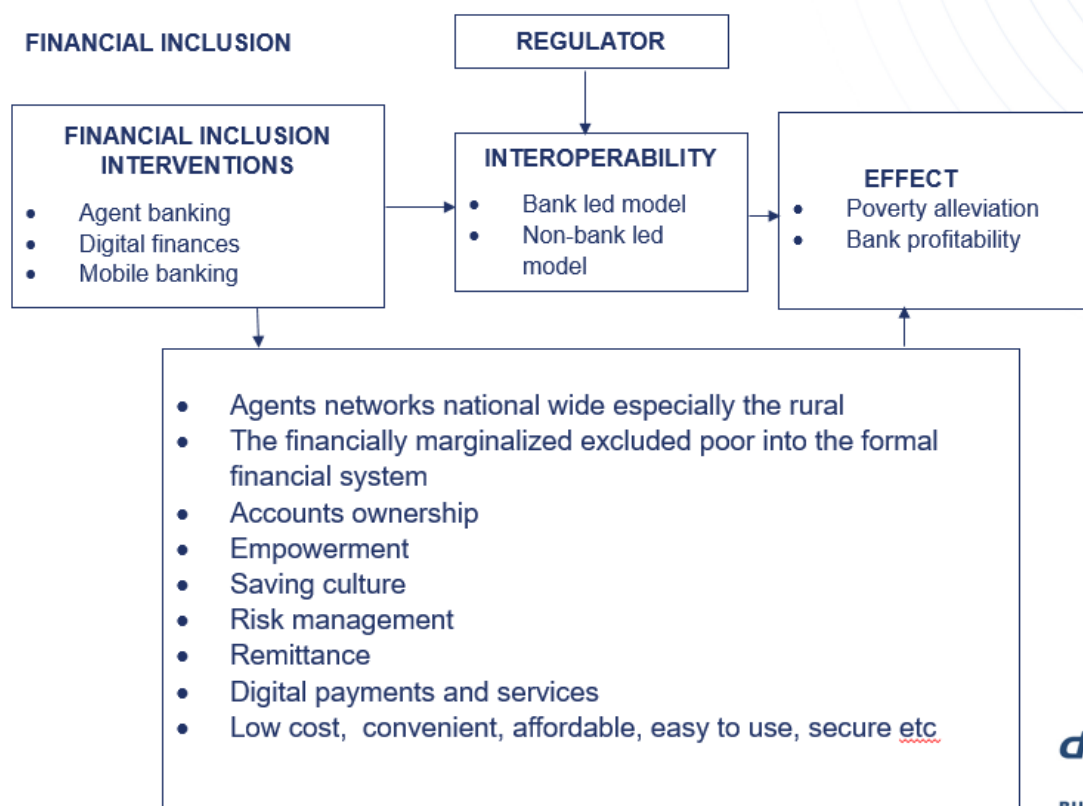
**Hypothesis 3.**

**HO 1:** Bank led and non-ban led Financial inclusion interventions models alleviate poverty and bank profitability

**HA 1:** Bank led and non-ban led Financial inclusion interventions models Financial inclusion interventions does not alleviate poverty and bank profitability



## THEORETICAL FRAMEWORK



### 2.1.1 Financial Inclusion

In this vein, financial inclusion does not take into account “the evidence that poverty is associated with bad habits and poor decision-making that hinder financial inclusion” (Ozili, 2020:4). Sheehy-Skeffington and Rea (2017:4) state that “the people or low-income individuals mainly dwell on the present cost of the future, such as unhealthy eating, which damages health in old age, taking high-interest loans, which favour meeting an immediate financial need as opposed to future needs”. Sivanathan and Pettit (2010:4) state that “the perceptions of low status create a greater desire for poor people to spend the little money they have on status-displaying goods, such as clothing and electronics to improve their social standing”. Sheehy-Skeffington and Rea (2017) explain that those with lower socioeconomic status find it hard to migrate from a disadvantaged community to an urban neighbourhood where opportunities arise, but prefer proximity to their neighbourhood to discover modern neighbourhoods.

Luhrmann *et al.* (2018) state that when unhindered financial access is given to individuals exhibiting this behaviour or making poor decisions, financial access will not develop their prosperity.

### **2.1.2 Financial Inequality and Inclusion**

The current study is contributing to the narrative that contests the contemporary agenda of financial inclusion by examining financial inclusion's critical dimensions. Berry (2015), Mader (2018) and Prabhakar (2019) indicate that this literature contends that attaining financial inclusion using institutions of finance does not serve the greatest interests of the ignored people. It results in the disparity and finance literature that evaluate the effect of financial inclusion on gender and income inequalities including the impact of gender parity in the macroeconomy (Allen *et al.*, 2016; Aslan *et al.*, 2017; Gonzales *et al.*, 2015). It leads to the narrative recognising certain difficulties of reaching financial inclusion.

### **2.1.3 Financial Inclusion and Financial Literacy**

The substantial amount of the available literature advocates that the literacy of finance is the greatest essential positive effect on financial Inclusion. Worthington (2016) defined financial literacy as the ability to make decisions regarding all aspects of people's budgeting, saving, and spending matters. Wang *et al.* (2020) identified the fact that poor knowledge regarding financial issues increases the chances of making unsecured P2P loans and personal loans. Hasan, Le, & Hoque, (2021) empirical findings showed that knowledge regarding various financial services factors had significant impacts on getting financial access. Using correlations and arguments, financial literacy is demonstrated by these studies that it is likely to assist excepted individuals to be conscious about available financial services. However, Shen *et al.* (2019) perceived that financial literacy worked as a significant force in bridging the gap between frequent internet usage and low financial management usage. Financial literacy reflected consumers' educational level, and the usage of financial literacy in FinTech influenced digital financial inclusion. Also, financial literacy increased the likelihood of using digital financial products and services to improve financial access (Hasan *et al.*, 2020c).

Willis (2011) identifies the elevated cost of financial education and literacy, the rate at

which industry practices and financial product offerings shift is a key hurdle for financial literacy and education. Ozili (2021:6) points out that “the lack of interest or resistance to financial education is another obstacle to financial literacy. Willis (2011:6) adds that “voluntary financial education is widely available and free yet seldom used by many people. If people do not participate in voluntary financial education programmes, will they participate in compulsory financial education programmes?” In totality, financial literacy challenges create uncertainty on whether financial inclusion can be improved by financial literacy in a profound sense.

#### **2.1.4 Advantages of Financial Inclusion**

The initial hypothesis or reason explaining why the advantages of financial Inclusion fade away “is the quick fix hypothesis” (Ozili, 2021:7). According to Ozili (2021:7), “the quick fix hypothesis argues that when an economic or financial crisis affects poor people’s access to basic financial services, the government will provide benefits such as cash transfer payments”. It will provide other advantages to needy persons and other impacted parties to enhance their economic well-being temporarily (Ozili, 2021). Nevertheless, when the crisis is concluded, the advantages provided to needy individuals and the concerned parties will be lowered to a minimum because of the soaring cost of maintaining the benefits plan (Ozili, 2021). Ozil (2021:7) explains that “the quick fix hypothesis states that when a ‘quick-fix’ financial inclusion regime is over, the beneficiaries will gradually withdraw from the formal financial sector when the benefits stop”.

The other reason arguing that the financial inclusion benefits fade away “when a government has achieved its financial inclusion objectives and fails to sustain the infrastructure it created to achieve its financial inclusion goals” is referred to as the ‘post-achievement slack’” (Ozili, 2021:8). The government can stop funding completely when the objectives of financial inclusion have been realized and concentrate on other priorities of the economy (Ozili, 2021). Ozili (2021:8) indicates that “the third hypothesis is the change-in-government hypothesis”.

#### **2.1.5 Using Transaction Account**

This implies that financial inclusion necessitates access to a business account. A business account is utilised for daily payments so that businesses and individuals can

pay for things needed or withdraw cash (Ozili, 2021). The contemporary agenda of financial inclusion presumes that persons must access proper accounts to allow them to execute transactions that enhance their well-being (Ozili, 2021). An additional theory is that poor households and individuals will execute well-being-enhancing transactions (Ozili, 2021). According to Demirgüç-Kunt, Klapper, Singer, Ansar, and Hess (2017:9), “even among those using their accounts for transaction purposes, the majority of them do not perform transactions that improve their welfare. In this view, caution must be exercised when emphasizing ‘having transactional accounts to improve welfare’”.

### **2.1.6 Mobile Money**

Digital money is promoted by financial inclusion and it is challenging to understand. Lichtfous, Yadav, and Fratino, (2018) and Chipere (2018) claim that financial inclusion is attained using digital money. According to Brunnermeier *et al.* (2019), digital money is challenging to comprehend for everyday people and it defeats the intent of financial inclusion. Brunnermeier *et al.* (2019) believe that digital money requires the learning of passwords and an agent who might be unavailable. When confronted with a dilemma, customers may encounter a long wait for support and “on the other hand, cash is much better than digital money. Cash does not require the memorizing of passwords, cash is easy to understand, and cash is culturally integrated with people’s lives in society” (Ozili, 2021:10). According to Sapovadia (2018:11), “even in urban areas, it is hard to ween educated people from using digital money or persuade them to accept digital currencies, and difficult to persuade the underserved communities to embrace digital money due to financial illiteracy who only understand physical cash”.

### **2.1.7 Financial Inclusion and the Crusade Opposed to Cash-In-Hand**

Both the rich and poor advanced a solid empathy for cash-in-hand (Ozili, 2021). At present, a more substantial part of the countryside populace and signalling a modest percentage of the city inhabitants still choose cash-in-hand for crisis spending and payment for services and goods instead of using digital payment or cheque options (Ozili, 2021). The utmost concern is using vigorous policies to deter cash-centred transactions (Better Than Cash, 2014). Rules and policies such as issuing ultimatums to businesses and individuals, enforcing charges on levying charges, and substantial

cash withdrawals on substantial cash deposits to decrease the usage of cash-centred transactions are influential, which offers itself as a campaign against cash (Ozili, 2021).

One central area of concern is aggressive procedures to dampen cash-centred transactions (Ozili, 2021). Ozili (2021:12) points out that “some policymakers have the wrong idea and they believe that the adoption of forceful rules or policies is the best way to make citizens migrate from cash payments to non-cash payments”. Utilising influence “to encourage the population to use non-cash payment alternatives is better than using aggressive policies and rules” (Ozili, 2021:12). Mandatory rules or policies are used by policymakers because people generally have a solid empathy towards cash and will not abandon cash dealings without a certain level of compulsion (GSMA, 2018).

Financial inclusion by commercial banks is a traditional channel for including the unbanked in the formal financial system (Nkuna *et al.*, 2018). FI comprises access, quality, usage and welfare (World Bank, 2015:3). To achieve FI, Nkuna *et al.* (2018) reveal that the financial system in Malawi adopted bank-led mobile agent banking services with Mobile Network Operators (MNOs). Agent / branchless banking has expanded even in rural areas, and banks have significantly contributed to reaching the unserved population.

To address the specific needs of the unbanked rural populations, NBS Bank, with regulatory approval of the Reserve Bank of Malawi (RBM), started digitisation through the Bank Pafupi product in 2012 (NBS Bank Annual Report, 2018). In April 2015, NBS bank rolled out the national digital financial Bank Pafupi agent network. In 2016, NBS enabled account opening on the stand-alone system (i.e., EazyMobile and Android Pafupi Mobile applications using ordinary phones, smartphones and standard Point of sale (POS) devices. Pafupi customers automatically registered for EazyMobile Lite to access withdrawals and deposits (Women’s World Bank, 2015). Hence, this study aims to find out why most customers are not opening accounts at NBS Bank Pafupi agents and its effect on poverty alleviation and inclusive finance for poor rural Malawians.

## **2.2 Contributions of Banks to Financial Inclusion**

This section discussed reported banks' contribution to financial inclusion globally and in Sub-Saharan Africa. It highlights the role of agency banking, which relates well to agency banking theory and variables. It showcases the role played by technology and financial innovation such as mobile banking and mobile money. This section reveals how these innovations have impacted financial inclusion – hence poverty alleviation and bank profitability.

### **2.2.1 Global Role of Central Banks**

Commercial banks play the role of financial intermediary and the theory of financial intermediation stipulates that the process of intermediation seeks to enable the surplus units to lend to the deficit units (Asare, Sackey & Hongli, (2020). Regulators in many jurisdictions have played a central role in facilitating this (Mehrotra & Yetman, 2015).

### **2.2.2 Global Role of Banks**

Financial inclusion has become one of the priorities of banks because of its prominent role in optimally exploiting investment opportunities and then reflecting on their financial performance (Banna *et al.*, 2022), and financial inclusion enhances sufficient flexibility to face negative economic shocks (Sakyi-Nyarko, 2022). Among the vital pillars in the theory of finance is the role played by financial institutions and markets in the effective allocation of capital resources, which ultimately leads to the promotion of economic growth and in this aspect, financial inclusion plays a prominent role (Naser & Alabassi, 2022). A close relationship between the flow of funds and the interest rate exit determines the price of the asset and then improves performance (Demir *et al.*, 2020), The two indicators' Return on assets (ROA) that measure the company's ability to achieve profits through its assets, the higher the ROA, the more effective the company is (Rosikah *et al.*, 2018:7), and Return on Equity (ROE), that measure of the company's ability to achieve profits from the total capital owned (Rosikah *et al.*, 2018:7) have been adopted to measure bank performance.

### **2.2.2.1 Deposit Accounts, Inequality, Loans and Poverty Alleviation**

Financial inclusion provides the basis for the development of the financial system (Chuc *et al.*, 2022; Emara & El-Said, 2021). As observed by (Mhlanga, 2021) financial inclusion banking services are provided to all segments of society, especially those with low incomes. The reviews by Qamruzzaman and We (2019) and by Adeola and Evans (2017) provided indicators adopted to measure financial inclusion. The loans granted indicator refers to the total loans granted by the bank. If the loans were one of the important sources of financing, on the other hand, the loan provided the issuing bank with an opportunity to obtain appropriate returns (interest rate) and thus improve financial performance (Qamruzzaman & We, 2019). Secondly, deposits with the bank's indicator refer to the total deposits with the bank (Qamruzzaman & We, 2019). If this money is available, it helps the bank to exploit investment opportunities in an optimal manner, which is reflected positively in the bank's financial performance (Adeola & Evans, 2017).

### **2.3 Digital Financial Inclusion**

In the previous section, the literature on financial inclusion was reviewed in Sub-Saharan Africa. The section discussed digital financial inclusion concerning research objective three: To explore NBS Bank Financial inclusion capabilities and processes on agents/bank profitability and customers. The following themes were included: (a) Digital financial inclusion, (b) Digital finance (c) digital payments, platforms and services.

The Consultative Group to Assist the Poor defines digital financial inclusion as “digital access to, and the use of, formal financial services by the excluded and underserved population” (CGAP, 2015) and (Ozili, 2018). Currently, innovative digital financial services via mobile phones and similar devices have been launched in at least 80 countries (GSMA, 2014) to encourage millions of poor customers to exclusively use digital financial services rather than cash-based transactions (Ozili, 2018).

Fintech' denotes 'financial technology' and is defined as the delivery of financial and banking services through modern technological innovation led by computer programs and algorithms (The World Bank 2020). A Fintech provider is an individual or company that uses a technology platform, whether online or offline, to provide new financial

services or to improve the delivery of existing financial services. Ideally, a provider would qualify to be termed a Fintech provider if it uses technology (whether online or offline) to provide, or to improve, the delivery of financial services such that the number of hurdles between requesting a financial service and receiving the financial service is significantly reduced for users of financial services (Evans, 2018). 8).

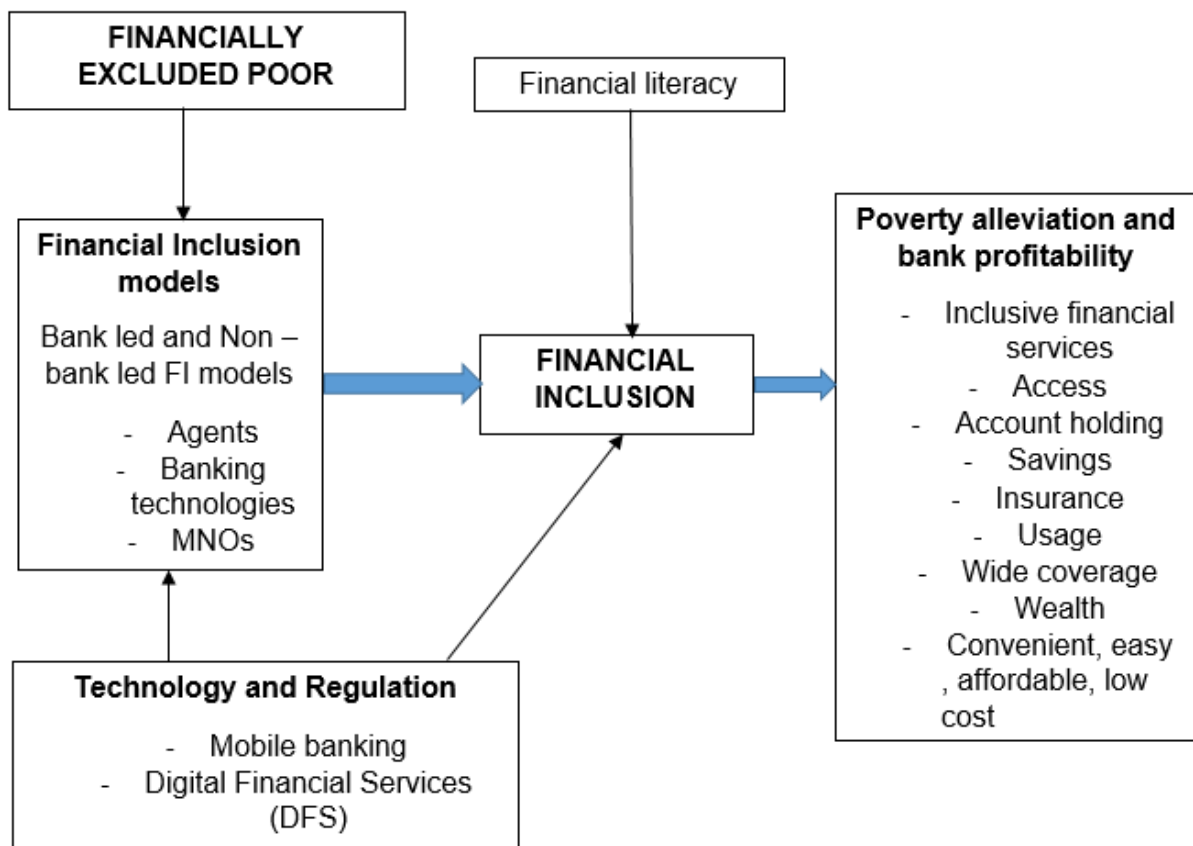
The expansion of digital payment platforms has offered the opportunity to link poor people with providers of savings, credit, and insurance products (Radcliffe & Voorhies, 2012). Further, advanced account administration developments and business sector improvements have opened open doors for lower-salary individuals with deficient money-related administration choices (McKee, Kaffenberger & Zimmerman, 2015). In Kenya, digital financial services have been a runaway example of overcoming adversity and the entrance to a formal budgetary administration enhanced from nineteen per cent (19%) in 2006 to sixty-seven per cent (67%) in 2013, which corresponds with the ascent of computerized money related administrations in Kenya. A large portion of the country tenants in Kenya has replied that they have used either or a blend of monetary administrations that is banks, funds and credit co-agents, microfinance establishments, computerized monetary administrations suppliers or casual gatherings (European Investment Bank, 2014). Kenya has made critical steps in progressing monetary incorporation as of late, as confirmed by an increment of thirty-three per cent (33%) in the level of record infiltration at a formal budgetary foundation or portable cash supplier somewhere around 2011 and 2014. The Rampart of the advancement in Kenya's monetary incorporation scene has been credited to the nation's energetic versatile cash biological system, which includes extraordinarily large amounts of take-up (Villasenor, Darrell & Lewis, 2015).

Digital inclusion urges the provision of a system of payment based on these established telecommunication services controlled by regulation to clarify the requirements regarding the “know your client” and the legal status of mobile money agents (Arner, 2018). And finally, access for the poor to all their financial and non-financial needs online (Koh *et al.*, 2018).



## 2.4. Conceptual Overview

Financial inclusion can be described in many different ways, and the conceptualization varies depending on the context. Ozili (2020, 2018) defines finance as access to and provision of financial services by representatives of the population, including the poor and other disadvantaged. This means that businesses and individuals have access to affordable, useful and formal financial services that meet their needs responsibly and sustainably (Ozili, 2020).



Grant (2020) expands on this definition, defining financial inclusion as the availability and affordability of financial products and services to all individuals and businesses, regardless of net worth or business size. In this regard, financial inclusion seeks to remove the barriers that prevent people from participating in the financial sector and using these services to improve their lives. Also called inclusive finance.

Zulfqar, Chaudhary and Aslam (2016) find that financial inclusion increases individuals' access to economic opportunities and allows them to participate in the growth process by expanding their choices, making them more productive and efficient

economic agents. I know it will be Furthermore, Kelikume (2021) points out that financial inclusion leads to poverty reduction in two ways. First, increased financial availability improves access to education, promotes self-reliance and human development, and contributes to poverty alleviation. Second, broad access to financial products and services leads to efficient resource allocation, thus providing disadvantaged people with better financial leverage for poverty reduction (Sani, Ozdeser & Cavusoglu 2019). Niankara (2020) noted that financial inclusion is increasingly seen as a cornerstone in deploying support to improve the lives of poor households while boosting economic activity. Demirgüç-Kunt *et al.* (2015) believe that improved access to financial services will reduce poverty by reducing vulnerability, increasing productivity in micro-, small- and medium-sized enterprises (MSMEs) and promoting business normalization.

At the macro level, Sani, Ozdeser and Cavusoglu (2019) find evidence that improved access to financial services has a positive impact on financial system stability, monetary policy effectiveness, growth, and reducing inequality. To achieve this goal, inclusion strategies are driven by digital technology platforms that potentially break down all previous barriers, including physical, social, language and economic barriers (Achugamonu *et al.* 2020). This digital transformation includes emerging market economies that offer a range of viable digital alternatives to traditional banking services that have been unable to reach significant populations due to inadequate access to banking services (International Financial Corporation, 2017).

The digital technology revolution reduces transaction costs through established platforms of telecom and mobile operators (Ozili, 2018). They offer high-quality financial products that meet the needs of the active poor in rural areas (International Financial Corporation, 2017). With the advent of the digital technology revolution, African countries have made tremendous efforts and progress over the years to promote financial inclusion. The performance of innovative financial tools such as mobile money in Africa will increase opportunities for economic engagement in poverty alleviation, especially for the poor, youth, rural residents and small and medium enterprises (SMEs) (Abor, Amidu, & Issahaku, 2018).

According to Ojiri (2020a:2), “formal accounts are the first step towards financial inclusion because they provide a convenient way to save money, pay bills and prepare

for emergencies”. Ozili (2020a:2) states that “financial inclusion can introduce a savings culture that individuals can use to manage cash inflows and outflows and to save excess money”. Ojiri (2020a:2) adds that “financial inclusion ensures access to financial markets for all citizens who want to participate in economic activity”. Ozili (2021) argues that access to bank accounts is central to financial inclusion. This means everyone has a basic bank account.

## **2.5. Global Financial Inclusion Interventions and Impacts**

Whether governments prioritize financial inclusion depends on whether it improves economic growth (Kim *et al.*, 2018), increases financial stability (Neaime & Gaysset, 2018), and reduces poverty (Koomson *et al.*, 2018), reducing income inequality (Huang & Zhang, 2020), and reducing financial risks (Ozili, 2021b). Other studies address the impact of financial inclusion on digital finance (Ozili, 2018), financial literacy (Grohmann, Klühs, & Menkhoff, 2018), financial regulation (Anarfo & Abor, 2020), and economic policy uncertainty (Ozili, 2022).

Several determinants have been identified. Globally, financial inclusion can improve and smooth household incomes by reducing vulnerability to shocks, increasing investment in education and health, and facilitating growth in business and related employment. Poor people face enormous economic challenges. Poor people's incomes are not only lower, they are also more volatile. They often rely on a series of unpredictable jobs and weather-dependent farming. Transforming irregular sources of income into a reliable resource to meet their daily needs poses a significant challenge for the poor. Another challenge is covering expenses when big expenses arise (e.g. home improvement, medical, or home improvement). The breadwinner becomes ill (Buvicic, Johnson, Perova & Witoelar, 2020). Savings, credit, insurance and remittances help people who cannot balance fluctuating incomes and expenses, provide a margin of safety when incomes decline or expenses increase, and fund children's education and medical needs. can. Moreover, financial inclusion in the form of financial services for micro-entrepreneurs and small businesses has been guided by the intention to help them survive, thrive and bring income to the poor (World Bank, 2021).

In 2011, the world's total adult population was estimated at 5 billion, of which 2.5 billion

had bank accounts and 2.5 billion were unbanked. The exclusion of so many people from financial services around the world means that maintaining a sufficient number of bank branches in unbanked rural areas is expensive and exorbitant, as well as the need for the poor. barriers such as the inability to maintain a sufficient minimum balance. To pay normal bank charges for standard bank accounts (Aron, 2017). For example, between 2011 and 2014, 700 million adults had bank accounts, but the number of unbanked people fell by 20% to just 2 billion. According to Demirgüç-Kunt *et al.* (2015), a 13 percentage point increase in access to official accounts in developing countries, made possible thanks to innovations in the technological field of mobile money in particular, has led to a rise in the number of people in sub-Saharan Africa. Access to formal banking services improved rapidly.

According to the 2017 GlobalFINdex, 20% of people who had accounts in 2017 never used their accounts. Financial access is a more limited concept than financial inclusion, providing access to all useful, affordable, sustainable and responsibly provided financial products and services. These services include credit, savings, payments and insurance, including digital finance (Demirgüç-Kunt *et al.* 2018). There is growing evidence that inclusive financial markets reduce poverty and inequality rates by enabling individuals and households to control their consumption and payments, obtain bank loans and obtain insurance (Mader, 2018). Moreover, financial inclusion facilitates the creation of new innovative businesses and the expansion of existing businesses, creating jobs that contribute to national savings (Ajide, 2020).

### **2.5.1 Global Mobile Financial Services**

Sub-Saharan Africa is increasingly using mobile phones to support the spread of financial services across bank branch boundaries. Mobile financial services were first launched in Kenya in 2007 through mobile operator Safaricom's M-Pesa platform (M is Swahili for 'mobile' and Pesa means 'money'). To improve access to financial services in the West African Economic and Monetary Union (WAEMU) member countries, the Common Central Bank for All Member States (CBWAS2) launched a comprehensive financial inclusion program in 1999, which also included mobile money. However, by 2014, the proportion of adults with bank accounts in WAEMU was among the lowest in sub-Saharan Africa. The penetration rate of bank accounts in WAEMU countries and his four reference countries in East Africa that introduced

mobile money platforms earlier or at the same time as WAEMU countries namely Kenya in 2007 and his bank accounts in Tanzania in 2007. A comparison was made with the penetration rate of large disparities observed in Uganda in 2008 and Somalia in 2009. In 2014, the average bank account penetration in WAEMU countries was close to 16%, while the average penetration in reference countries was close to 50%. At the same time, the proportion of adults with access to mobile money accounts in WAEMU countries is still significantly lower than in the four reference countries, where he was around 7% in WAEMU compared to around 41% in the reference countries. Furthermore, in 2014, Côte d'Ivoire had the highest percentage of adults with a mobile money account of any country in the Union, at nearly 24%. Less than a quarter of people are 15 years old and older. Côte d'Ivoire and Mali had tax rates close to 12%, while other member states had rates well below 10%. Statistics, therefore, show that despite a steady increase since WAEMU's mobile money was launched between 2009 and 2014, its introduction reaches only a small fraction of the adult population in the Allied countries. The publication by Siddik *et al.* (2014), by exploring, in the context of Bangladesh, the factors which influence the behavioural intention to adopt (or continue to use) mobile banking services, reveals through Structural Equation Modelling (SEM) that the perceived financial cost, risk and the subjective standard, are key factors. In the same manner (Shaikh & Karjaluo, 2015), by effecting an analysis and a synthesis of existing studies on the adoption of mobile banking, highlight the fact that compatibility (with the lifestyle and the device), the perceived use and attitude are the most important factors of the intention to adopt mobile banking services in developed as well as developing countries. After the implementation of mobile money in 2009 in WAEMU. Financial inclusion in terms of penetration of official bank accounts recorded more or less significant growth in each country of the union over the period 2011-2014. Indeed, whereas Benin, Niger and Togo recorded increments of between five and eight percentage points, Burkina Faso only registered growth by one percentage point, while Mali and Senegal recorded increments of 12 and 10 points, respectively. Also, a large disparity is observed between WAEMU countries and reference countries in terms of comparisons between the rates of penetration of official bank accounts. However, in 2014, each of the reference countries recorded a high penetration rate of more than one-third of the population aged 15 and over, whereas only Côte d'Ivoire had a penetration rate equal to 1 in all WAEMU member countries.

## **Penetration rate of mobile money accounts in WAEMU countries and some East African countries**

In 2017, nearly 1.7 billion adults worldwide (31% of the adult population) did not have an account with a financial institution or mobile money provider. Overall, 56 per cent of all unbanked adults were female, and half were from the poorest 40 per cent of households. Two-thirds of her unbanked adults have less than primary education. Nearly half of unbanked adults live in seven major developing countries.

Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan (Demirgüç-Kunt *et al.* 2018; Ozili, 2020). Since 2011, when the Bank Group began recording financial assets through its Global Findex database, access to finance has increased significantly around the world. Globally, the proportion of adults with a bank account rose from 51% in 2011 to 69% in 2017, an increase of 515 million. Over this period, account ownership rates in low- and middle-income countries doubled, rising from 13% to 35% in low-income countries. East Asia and the Pacific (71%) and South Asia (70%) had the highest account-holding rates in 2017, while the Middle East and North Africa region had the lowest account-holding rates (43%) (World Bank, 2021).

Expanding financial access (access and use of a broader range of financial services) among marginalized groups, including women and the poor, despite an increase in basic bank account ownership. Needless to say is still an issue. First, if access to finance is supply-driven, demand for the services provided may lag. The 2017 GlobalFIndex found that 25 per cent of account holders in developing countries had not used their accounts for deposits or withdrawals in the previous year (quiet percentage) (Demirgüç-Kunt *et al.* 2018). In India, where he has deployed 300 million accounts in just a few years under the Jan Dhan Yojana programme, the inactivity rate in 2017 was 48% for him (Bull, 2018b). Although women's access to financial services has improved over time, the gender gap in accounting jobs narrowed only marginally from 9.6 percentage points in 2011 to 8.8 percentage points in 2017. In low- and middle-income countries, female account ownership is nearly 50% of hers. However, in some countries, their possession and use were still restricted by cultural and legal norms. Moreover, although access to the poor has improved, surpassing 50% in low- and middle-income countries, the gap between rich and poor did not widen between 2014 and 2017, which is still as wide as \$14. Percentage points (see 2017 Global

Findex (Demirguc-Kunt *et al.* 2018). Rural access has increased sharply, especially in China and India, but rural access gaps persisted in Africa (Bull, 2018a).

## **2.6. Digital Financial Inclusion**

Digital technology has played a pivotal role in expanding the reach of financial services. Globally, 52 per cent of adults made digital payments in 2017, compared with 42 per cent in 2014. In low-income countries, this proportion increased from 15 per cent in 2014 to 26 per cent in 2017. According to Global Findex, only 4% of adults worldwide had a mobile money account in 2017, but in sub-Saharan Africa, 21% of their adults had a mobile money account. The use of digital payments is highly dependent on physical and financial infrastructure, as well as the existence and enforcement of appropriate laws and regulations, including consumer protection. The emergence of the coronavirus (COVID-19) pandemic has brought new urgency to efforts to advance digital financial services for businesses, individuals and governments (Von Allmen *et al.*, 2020; WIEGO, 2020).

### **2.6.1. Digital Finance**

Digital finance refers to the arrangement of some blend of money-related and instalment benefits that are conveyed and overseen utilizing portable or Web advances and a system of specialists (Michelle, 2016). As per the World Bank (2015) and Michelle (2016), computerized money-related administrations allude to the utilization of advanced innovations (web, versatile correspondence innovation) to get to monetary administrations and execute budgetary exchanges. Thus, digital financial services generally refer to the far-reaching technologies available to perform financial services from a wide range of providers to an extensive category of recipients. This is possible by using digital remote means, including e-money, mobile money, card payments, and electronic funds transfers (Asian Development Bank, 2016 in Michelle, 2016).

Computerized Financial Services (DFS) are basically about sparing cash, getting credit and protection, and performing exchanges through advanced channels like cell telephones, cards, PCs, tablets, et cetera (Martin *et al.*, 2016; Michelle, 2016). Digital financial payment products allow users to access funds from far-flung business people, relatives and friends during times of crisis, reducing the likelihood that they will

fall into poverty, to begin with (Klapper, ElZoghbi & Hess, 2016) and (Michelle, 2016). Advanced budgetary administrations, for example, versatile cash, furnish people with more prominent accommodation, protection, and, as a rule, improved security, contrasted with putting away money at home or travelling with money (Villasenor *et al.*, 2015) and Michelle (2016). Computerized back likewise assumes an essential role for small organizations as it gives them access to funds alongside secure budgetary items, electronic instalment frameworks and an opportunity to assemble a money-related history (Mujeri, 2015; Michelle, 2016).

### **2.6.2. Digital Financial Services**

According to Michelle (2016), digital financial services are vital to the public as they boost security for their cash and they are more convenient than keeping money at home or travelling with money on one's person. Thus, digital financial services generally refer to the far-reaching technologies available to perform financial services from a wide range of providers to a broad category of recipients. This is possible through the use of digital remote means including e-money, mobile money, card payments, and electronic funds transfers (Asian Development Bank, 2016). The methodology of DFS has had positive effects by initiating neighbourhood and rustic economies through expanded cash dissemination, business development and work opportunities (European Investment Bank, 2014; Michelle, 2016). Achieving financial inclusion requires bridging the gap between cash and digital payments (Dayadhar, 2015; Michelle, 2016). Through digital financial services, poor households can accumulate cash to invest in their micro-enterprises and maintain precautionary cash to guard against the detrimental effects of unexpected shocks. In addition, once customers are connected to a digital payment system, they can transfer money instantly and cheaply to friends, family and business collaborators (Michelle, 2016; Radcliffe & Voorhies, 2012).

### **2.7. Mobile Technology in Africa**

The foremost reason that mobile technology has been touted as a new hope for economic development, especially in Africa with the evolution of fixed line and mobile penetration in the last 15 years. Meanwhile, mobile penetration. Meanwhile, mobile penetration, outside sub-Saharan Africa increased more than five-fold, but the miracle



'occurred in sub-Saharan Africa where mobile penetration rose by 3200% from an admittedly low base. Africa has leapfrogged over its low infrastructure in fixed line direct to mobile (Aron, 2018). Most sub-Saharan African countries have recorded rapid growth in mobile subscriptions, although there are variations. The World Bank (2016a) stated that people in developing countries now value mobile phone use more than access to traditional necessities, such as electricity or even clean water.

Aker and Mbiti (2010) suggest five reasons why mobile phones have the potential to unlock substantial benefits for Africa. First, phones improve access to information, especially about geographically dispersed markets, which can reduce price dispersion and waste of unsold agricultural produce (Aker, 2010). The use of phones reduces search costs and may increase the average price received by farmers (Minkoua Nzie, Bidogeza, & Azinwi Ngum, 2018). Second, phones can improve firms' communications with suppliers and customers enabling better management of supply chains and deliveries (Frempong, 2009). They enable easier access to extension services and may have a more general impact in helping to promote the use of more modern technologies by small-scale producers (Issahaku *et al.*, 2018). Third, mobile phones create jobs within the MNOs, and in the provision of ancillary services. New businesses have been created, such as the Village Phone pioneered by Grameen Bank in Bangladesh (Aminuzzaman, Baldersheim, & Jamil, 2003). In Africa, the cheapest mobile handset can cost more than half the average monthly income (Aker and Mbiti, 2010); and small businesses have been set up to acquire and rent out phones and SIM cards for occasional users (Donner, 2008). Fourth, mobile phones are used within social and family networks, including requests for support for an unexpected personal or financial shock. M-money is used to send credits that are received instantaneously over long distances (Jack and Suri, 2014). Economists have recently paid greater attention to the importance of social networks (Jackson *et al.*, 2017), but little is known about the impact of mobile phones on such networks. In principle though, mobile phones can increase social and economic inclusion, and improve economic efficiency (Okello *et al.*, 2018; World Bank, 2016a). Fifth, mobile phones can be used to provide financial services, such as money. Mobiles have also been used in a wide range of activities, including the clinical trials cited in the introduction. In Kenya, Malawi and South Africa, mobile phone reminders have been used in HIV retroviral therapy (Aker & Mbiti, 2010). The benefits of mobile phones can

be summed up as follows: they facilitate search and the transmission of information so that households can make better-informed decisions and obtain improved access to financial services, promoting savings and consumption smoothing. Businesses benefit from increased trade and production, and enhanced competition. Government benefits from higher tax receipts due to greater economic activity. The positive impact of mobile penetration on risk-sharing, consumption-smoothing and social inclusion can particularly benefit poor households, especially among women, providing some independence, and helping to address the gender gap in poverty incidence (GSMA, 2013). M-money gives low-income households access to affordable savings opportunities and makes it possible for them to manage the cost of larger expenses. Poorer people may benefit disproportionately from better information-sharing, such as about prices (Aker, 2010). Insofar as mobile penetration particularly provides benefits for more vulnerable citizens, it may also help address inequality (Asongu & Nwachukwu, 2016).

### **2.7.1 Mobile Money in Africa**

The researcher analysed the literature on mobile money and its potential for reducing financial exclusion (Davidson & McCarty, 2012). First, mobile money (m-money) can contribute to the economy through its impact on financial and food security, employment, and on financial, human and social capital accumulation (Beck *et al.*, 2015; Carlson *et al.*, 2015; Ky *et al.*, 2018).

Mobile technology may improve financial inclusion in more ways than in the provision of m-money, especially through enhancements to business communication and management information (Aker & Mbiti, 2010). Africa is the continent where financial exclusion is a particularly serious issue. In 2017, only thirty-eight per cent (38%) of adult males and twenty-seven per cent (27%) of adult females in sub-Saharan Africa had accounts at a formal financial institution (Demirgüç-Kunt *et al.*, 2018). Recent research indicated that finance causes development. First, GDP per capita is an inadequate indicator of economic and human development and poverty reduction. Recently, human development indices (HDI) and inequality-adjusted indices have been used as more comprehensive national welfare measures (UNDP, 2016).

Mobile phones and wireless internet end isolation and will therefore prove to be the most transformative technology of economic development. Mobile technologies have had transformative effects, especially in developing countries where now, more households own a mobile phone than have access to electricity or improved sanitation (World Bank, 2016a).

The World Bank's report on the Global Findex Database (Demirgüç-Kunt *et al.*, 2018) documents worldwide progress on financial inclusion promoted by digital financial services, in general, and money, in particular. The latter's contribution is more pronounced in sub-Saharan Africa where the share of m-money accounts has more than doubled between 2011 and 2017 (Demirgüç-Kunt *et al.*, 2018, pp. 20–22).

Riley (2020) in Uganda, examined the impact of disbursing microfinance loans through a mobile-money account rather than through the usual cash method. She found that receiving loans through a mobile money account led to an eleven per cent (11%) increase in the value of business capital and a fifteen per cent (15%) increase in business profits. She also found that the mechanism behind these effects was an improvement in the ability to resist sharing pressure. Mobile money may have effects on family dynamics because such accounts are individually held. On the other hand, researchers have found that mobile money boosted entrepreneurship by reducing theft while speeding up entrepreneur-supplier transactions and raising the valuation of trade credit in Kenya (Beck, *et al* 2018).

A Malawi study by Chiwaula *et al.* (2020) measured the impact of mobile money and financial literacy training coupled with reminder text messages among Village Savings and Loan Association members. The findings showed that the treatment effect of the intervention of knowledge regarding ways to use mobile money for savings was six per cent (6%) and that the effect of knowledge that members could take out loans was five per cent (5%). The treatment effects of the use of mobile money to receive money and to increase savings were ten per cent (10%) and five per cent (5%), respectively. The treatment also led to the digitization of Village Savings and Loan Associations by seven per cent (7%).

## **2.8. Empirical Review**

Existing research provides conflicting evidence about the link between financial

inclusion and its impact on individual or household poverty and financial stability. Salignac *et al.* (2019) explore the under-measurement of financial inclusion in terms of access to financial services. However, there is a better understanding of how economically disadvantaged people react to adverse economic events. These studies suggest that individual and technical analyses, resilience and ecosystems, and adversarial analyses, are analysed to understand individual responses to economic and financial shocks. These studies explore new frameworks for financial inclusion, including B. Credit checks, which still need to be investigated (Evan, 2018; Loureiro & Gonzalez, 2019).

Corrado and Corrado (2015) examine the determinants of financial inclusion and access to financial services. Between 2008 and 2010, they explored geographic measures of financial inclusion in Europe as part of a transition study conducted by the World Bank. Financial decisions and socioeconomic information are collected and analysed in this study of 25,000 people in 18 Eastern and 5 Western European countries. The 2007 crisis is still present, and the study sheds light on financial inclusion behaviour by those who managed to obtain bank loans and other financial services. Strikingly, empirical studies show that people are most likely to have financial inclusion depending on where they live, their employment status, income level, education level, marital status, age, religion and family ethnicity. The empirical literature explores the determinants of both banked and unbanked individuals, with a focus on vulnerable groups. The main focus in 2015 was poverty risk integration and financial inclusion. The results show an inverse correlation between socially excluded people and their degree of financial service use. This study explores the two major demographic factors, gender and age, that have a significant impact on financial inclusion. Most of the people under consideration were under the bench in both Latin America and Africa.

Moreover, both underbanked and unbanked individuals are associated with low income and precarious employment. Individual origin, income/occupational status, and access to financial services are three distinct profiles of financial inclusion highlighted in this study (Fernandez *et al.*, 2018; Islam & Simson, 2018). Empirical research (Birkenmaier, 2018) explores the positive and significant impact of savings, investments, mortgages and retirement accounts on financial inclusion.

Meanwhile, car loans and credit card use impact financial inclusion. Investigating differences in demand and supply of financial services due to racial wealth disparities in the United States (Burton, 2018). Empirical research results (Deku *et al.*, 2016) show that the range of consumer financial services is wide-ranging. H. Access to credit and borrowing intensity are considered weak in the UK. Burton (2018) also argues that the unequal distribution of financial services based on socioeconomic status reflects competition for limited resources between valued and valueless individuals. I emphasized that there are online banking, digitization and technological advances have been proposed as useful tools to facilitate access to financial services in both rural and urban areas (Simpson and Buckland, 2016). Kosse and Vermeulen (2014) explore the increasing use of informal channels for money transfers as the use of mobile phone technology increases. Several empirical studies also describe the risks and adverse effects of digitization. Kear (2017) explores how modern technology for credit scoring and the invention of big data introduces a data tax to those with less wealth.

### **2.8.1 Access and Usage – Financial and Sustainable Development**

For example, Bayar *et al.* (2021) analyse how the development of the financial sector and access to finance affect primary energy use. They analysed a sample of European Union (EU) transition countries from 1996 to 2017 using panel cointegration and causality tests that account for cross-sectional dependencies. They found that access to finance was negatively related to primary energy consumption. Daffria *et al.* (2021) Investigating the relationship between financial inclusion and ethnic development. They use a medium-level perspective to analyse 11 ethnic groups in Nigeria and Senegal. They found a significant positive association between ethnic financial inclusion and regional economic prosperity.

Kandpal (2020) shows that despite the government's financial inclusion intervention program in India, some rural residents remain ignorant of local financial institutions. Rambogo *et al.* (2021) Investigating the role of financial inclusion in inclusive development in Indonesia. They point out that access to finance is significantly and positively related to the level of regional economic development in Indonesia. Zaidi *et al.* (2021), using data from 23 Organization for Economic Co-operation and Development (OECD) countries from 2004 to 2017, the links between financial

inclusion, energy use and carbon emissions were analysed . Results show a positive relationship between financial inclusion, energy use and carbon emissions.

Garcia *et al.* (2019) explore the impact of women's financial inclusion on inclusive economic development. They argue that women's participation in the financial system reduces inequality and improves physical and social well-being, thereby boosting women's economic development. Empirical analyses based on data from the Global Findex database and the World Bank Databank show that increasing women's economic inclusion, measured in terms of access to bank accounts and access to credit cards, has a positive impact on economic development. Huang *et al.* (2021) investigated the impact of financial inclusion and trade openness on the economic development of 27 EU countries from 1995 to 2015. They conclude that the access, depth, efficiency and overall development of financial institutions have a significant positive impact on the economy. They also find that financial inclusion has a greater impact on economic performance in low-income and new EU member states than in high-income and former EU member states. Matekenya *et al.* (2021) examine the impact of financial inclusion on human development in Sub-Saharan Africa (SSA).

They argue that access to and use of financial services can facilitate business creation and enable individuals to invest in health and education, manage risk and reduce the burden of economic shocks, thereby improving human development. They perform a generalized panel method of moment regression analysis and conclude that financial inclusion has a positive impact on human development. Cicchiero *et al.* (2021) investigated the relationship between financial inclusion indices and development variables in 42 least-developed countries in Asia and Africa from 2000 to 2019. They found that economic growth leads to financial inclusion. They also found that unemployment and literacy are among the factors contributing to financial inclusion. We also know that income inequality undermines financial inclusion and hinders development.

Analfo *et al.* (2019) explore the link between financial inclusion and financial sector development in SSA. They found an inverse causal relationship between financial sector development and financial inclusion in a sample of SSA countries. Their results suggest that financial inclusion is a driver of financial sector development and vice versa. Adesoyemi *et al.* (2020) assess the impact of financial inclusion on sustainable

development from 2001 to 2016. They use Error Correction Models (ECM) and Fully Modified Least Squares Analysis (FMOLS) to determine short-term relationships between each other.

### **2.8.2 Poverty Alleviation**

Park and Mercado (2015) also show that regulatory changes in the financial system have reduced inequality and promoted banking and financial stability. Jabil *et al.* (2017) show that financial inclusion dramatically reduced poverty among low-income households in sub-Saharan Africa through net wealth creation and greater social benefits.

Adeola and Evans (2017) demonstrate in their study how financial inclusion in terms of financial access and use can help drive economic diversification in Nigeria. According to the authors, financial inclusion could help Nigeria build shared prosperity and end extreme poverty. Kim *et al.* (2018) found that financial inclusion had a positive impact on economic growth in Organization of Islamic Cooperation (OIC) countries.

Chauvet and Jacolin (2017) use firm data from 79 emerging and developing economies to analyse the impact of financial inclusion and banking competition on firm performance. The authors show that financial inclusion has a positive impact on business growth, especially when banking markets are not concentrated. We also know that highly competitive banks drive corporate growth only when there is a high degree of financial inclusion. Le, Chuc and Taghizadeh-Hesary (2019) examine the impact of financial inclusion on financial efficiency and sustainability in 31 Asian countries. The authors show that financial inclusion harms financial efficiency but has a positive impact on fiscal sustainability.

Rizwan and Bruneau (2019) examine the role of information and communication technology (ICT) in increasing financial inclusion and reducing poverty and income inequality based on a sample of 62 countries over the period 2001–2012. The authors' findings show that ICT promotes financial inclusion, accelerates economic growth, and reduces poverty and inequality.

In a recent study, Ajide (2020) shows that financial inclusion also has a significant positive impact on entrepreneurship in Africa. Abubakar, Daneji, Muhammed and

Chekene (2020) identified financial inclusion as one of the enablers of growth in developing countries, stating that inclusion faster than population growth yields a better indicator of financial inclusion, actually accelerating economic growth in Nigeria. Ouechtati (2020) empirically investigates the impact of financial inclusion on poverty and income inequality using a sample of 53 developing countries from 2004 to 2017. The authors found evidence that financial inclusion helps reduce poverty and income inequality by increasing the availability of credit and increasing access to commercial bank accounts. Omar and Inaba (2020) find similar results in 116 developing countries in Asia, Africa, Latin America and the Caribbean.

### **2.8.3 Financial Inclusion and Financial Innovation and Technology**

Some empirical studies explore the impact of financial innovation and technological progress on promoting financial inclusion, as the existing structures and processes of the financial system are highly unsuitable for promoting financial inclusion (Al-Mudimigh Beck *et al.*, 2014; Chinoda & Kwenda, 2019; Ouma *et al.*, 2017). Financial innovation refers to technological advances, development of new financial products, and improvements in the provision of financial products and services. Ouma *et al.* (2017) highlights how financial innovations such as mobile phone users are being used to improve financial inclusion through savings and other financial transactions. Chinoda and Kwenda (2019) show that mobile phone use and technological advances play an important role in promoting financial inclusion in 49 selected countries. Anshari (2020) explores how countries with large numbers of internet users and large numbers of FinTech organizations are helping to increase levels of financial inclusion, especially in countries outside the banking system. Empirical studies also highlight that technological advances have significantly increased financial inclusion in Africa. Smartphone lending, women's empowerment, the entry of foreign banks, and the creation of the microfinance instinct have also been analyzed as recent advances in financial system strategies to promote financial inclusion (Bravo *et al.*, 2018; Chen & Divanbeigi, 2019; Leon & Jin, 2019; Shetty & Hans, 2018;). Furthermore, optimal monetary policy, agent banking, improved financial protection, strong financial performance, and post office integration into the financial system are considered key indicators for promoting financial inclusion (Naceur *et al.*, 2017). Empirical studies also show that the distance between banks and customers and the point of sale of financial



products and services and other financial transactions increases levels of financial inclusion (Banka, 2014; Aggarwal & Klapper, 2013).

Moreover, evidence from the literature suggests that FI supports economic growth through ICT. ICT in financial inclusion facilitates digital access to formal financial services for marginalized and underserved populations. Joia and dos Santos (2017) found that e-government projects meet the public's need for access to financial products and services. Another study suggests that governments could set up centralized information repositories to provide general information about financial service providers to the general public, thereby promoting financial inclusion (Bongomin, Ntayi & Munene 2016).

Andrianaivo and Kpodar (2012) used a generalized method of moments (GMM) estimation to investigate the impact of ICT, especially mobile and fixed line penetration, on growth in several African countries. A similar study by Mihasonirina and Kangni (2011) also confirmed the importance of communication technology in FI. Tchamyou, Erreygers and Cassimon (2019) explore the impact of ICT on economic inequality through dimensions of depth, efficiency, activity and size of financial sectors in African countries. The results show that ICT reduces income inequality by normalizing the financial services sector. Other studies based on the MENA region suggest that high levels of ICT penetration have a positive impact on financial development and promote economic growth (Sassi and Goaid 2013). Falahty and Jusoh (2013) also emphasized the importance of ICT in financial growth in MENA countries.

#### **2.8.4 Financial Inclusion and Literacy**

Several researchers (Kapadia, 2019) have studied the role of financial literacy in improving financial inclusion. Empirical studies conclude that financial literacy, such as savings, credit use, and money management, are positively related to financial inclusion. It is clear that financial literacy in India promotes financial inclusion and improves household living standards. It has also been suggested that low financial inclusion is associated with declining financial literacy and inadequate educational policies. Empirical studies also highlight important links between financial literacy and financial inclusion in Ghana (Adomako *et al.*, 2016; Grohmann *et al.*, 2018).

## 2.9. Case Study Analysis: Interventions, Successes, and Challenges

### 2.9.1 Kenya

Despite significant improvements in financial inclusion in East Africa and the growing number of vulnerable groups with access to affordable and safe banking services, there still needs to be more to encourage the continued use of formal banking services. McKay (2016) points out that the Kenya Financial Diary tracked the financial transactions of his 300 low-income households for one year. Their research found that despite the growing popularity of mobile money, there is still a high reliance on traditional lending groups known as Chama. Pillow mattress banking keeps cash at home instead of the bank, and store credit, which has been around for generations, is still popular in Kenya. She further said that informal, socially based forms of funding are still used, especially among women in rural areas.

Mugambi (2014) cites M-PESA (M for mobile and Pesa for money in Swahili) as a successful model for financial inclusion in Africa. Mugambi (2014) states that M-PESA is the product name for a mobile phone-based money transfer service for mobile operator Safaricom, which operates in Kenya and Tanzania. DFID (2008) states that a Kenyan developed the product through funding from the UK Department for International Development (DFID) from 2003 to 2007, and borrowers developed the original M-PESA concept to create a service that enables microfinance loans. Easy to obtain and redeem through Safaricom's network of mail-order agents. This will enable Microfinance Institutions (MFIs) to offer their users more competitive loan interest rates at lower costs than cash transactions. DFID (2008) further states that users of the service have benefited from being able to track their financial status more easily. When the service was tested, customers used it for various alternative purposes. M-PESA is refocused and launched with a different value proposition.

The expansion of digital payment platforms offers opportunities to connect poor people with providers of savings, credit and insurance products (Radcliffe & Voorhies, 2012). In addition, high levels of account management development and business improvements have opened doors for low-income individuals with poor financial management options (McKee, Kaffenberger & Zimmerman, 2015).

Mobile financial services were launched in Kenya in 2007 through Safaricom's M-Pesa

platform (M is Swahili for 'mobile', and Pesa means 'money'). Agent or mobile banking is a cheap alternative to brick-and-mortar banking, as evidenced in Kenya, where about 48 per cent of the population used his M-PESA in 2011. Gale (2010) and Finmark Trust (2018) point out that mobile operator-provided mobile money products are similar to M-Pesa, which has a high mobile penetration rate. According to Jack and Suri (2011), the most important reason for not using M-Pesa was not owning a mobile phone (60% of second-round non-users). Telecenters and cybercafes facilitate access to mobile phones, but these are most likely located in urban areas (Sey, 2005).

Jack and Suri (2011) document higher remittances, especially from children to parents, from M-Pesa users compared to non-users. Yenky *et al.* (2014) found that parents, not children, are the most common sending group. Savings during the study increased the rate at which he used M-Pesa. Lower risk and ease of use were the main reasons for storing via M-Pesa over traditional home repositories. M-Pesa is also used for secure cash transportation, or "self-transportation," as it is converted into money for safe overnight storage (Eijkman *et al.*, 2010; Demombynes & Thegeya, 2012).

Beck *et al.* (2015) found that Kenyan SMEs who purchase goods on credit were 17% more likely to use their M-Pesa than other means, such as cash. They argue that m-money facilitates trade credit because it reduces security risks associated with cash. Several articles have explored the relationship between M-Pesa and formal funding, with conflicting results. Jack and Suri (2011) found that M-Pesa users were more likely to use bank accounts, but subsequent users included those who did not use formal financial systems.

Mbiti and Weill (2011) report that M-Pesa use is associated with less reliance on informal funds and more use of formal funds. However, Yenkey *et al.* (2015) disagree. They find that the late adopters of M-Pesa come from rural areas, unbanked women, and the female population. However, M-Pesa use makes individuals more vulnerable to the formal financial system. We found no evidence of an attraction to Many users simply replacing informal finance with her M-Pesa without taking further steps into the formal financial system. Other countries continue to use informal finance as before. Further insight into the relationship between M-Pesa and formal funding was provided by Johnson and Krijtenburg (2015) after interviewing a stratified sample of Kenyans

(62 individuals). Respondents reported an aversion to formal lending as it entails commitments on a "borrow and borrow" basis. They viewed sending money (including via M-Pesa) as "please and help." Therefore, we are reluctant to move from M-Pesa to a formal financial arrangement. M-Pesa accounts do not earn interest, but the data provided by the phone facilitates the mental calculation of savings, making it a small savings option for poor households and women without formal accounts. as attractive (Thaler, 1999). Your spouse may not remember how much you have hidden under your mattress and may accuse your partner of theft, but e-money is private to the account holder, and the amount is visible when you enter your PIN. In addition to saving on M-Pesa itself, M-Pesa users tend to save more on official accounts than non-users (Mbiti & Weill, 2011; Demombynes & Thegeya, 2012).

Despite this, the available savings accounts were underutilized. In Kenya, digital financial services have set a good example of overcoming adversity, with access to formal household management increasing from 19% (19%) in 2006 to 67% (67%) in 2013, which coincides with the rise of computerized money—associated management in Kenya. Most landlords in Kenya say they use either financial management or a combination of these. H. Banks, fund and credit joint agencies, microfinance institutions, computerised financial management providers or occasional gatherings (European Investment Bank, 2014). Kenya has recently taken an important step in advancing currency adoption, as evidenced by a 33% increase in record penetration to formal household foundations or mobile cash providers between 2011 and 2014. The development of Kenya's monetary union scene is due to the country's active and eclectic cash system, which has attracted substantial sums of money (Villasenor, Darrell & Lewis, 2015).

Today, with the proliferation of mobile phones, people no longer need expensive infrastructure to provide modern financial services. With digital technology, costs are so low that it makes business sense for companies to serve more people ignored by the old system. For example, in Kenya, M-PESA has enabled city dwellers to efficiently and cheaply send money to relatives in rural areas, ultimately making store payments (Gates, 2022). Realini and Mehta (2015) found that M-PESA could enable urban migrants to send money back to their villages and people accustomed to waiting in line for hours at banks to pay bills and school fees remotely. Furthermore, in 2010, 9.5

million people, or 23% of Kenya's population, used the M-PESA money transfer service. Transfers made annually equal 11% of Kenya's Gross Domestic Product (GDP) (The Economist, 2013; The Guardian, 2018).

## **MALDIVES**

The section below critically discusses the Maldives' interventions, successes, and challenges.

### **Account ownership is high.**

In the Maldives, 80 percent of adults have an account, the highest number of any South Asian economy other than India. The Maldives is one of the rare economies outside of Sub-Saharan Africa with high mobile money penetration. In the Maldives, 23 percent of adults have a mobile money account. No other South Asian economy has mobile money penetration above 10 percent, except for Bangladesh, which is 21 percent (World Bank, 2019).

Account ownership inequalities persist even though the Maldives has relatively high financial inclusion. While 85 percent of men have an account, only 74 percent of women do, leaving an income gap of 11 percentage points. Regionally, the Maldives' gender gap falls in the middle. Significant gender gaps exist in Afghanistan, Bangladesh, and Pakistan; smaller ones are found in Sri Lanka and India. Adults in the richest 60 percent of households in the Maldives are 15 percentage points more likely to have an account than those in the poorest 40 percent. That income gap is fairly typical in South Asia outside of India and Sri Lanka, where income differences are only a third of what they are in the Maldives.

Goods services and financial services are increasingly provided through mobile phones. More than 90 percent of adults in the Maldives have a mobile phone which is reflected in the widespread use of digital transactions in the Maldives. Over 90 percent of account owners report using their accounts for at least one deposit or withdrawal in the past year. These numbers reflect the widespread usage of accounts for digital payments. Sixty-eight percent (68%) of adults in the Maldives report making or receiving digital payments. These include retail transactions made through mobile phones and the internet, receipt of wages, government payments, or agricultural

payments into an account, collecting domestic remittances, and payments through a debit card or credit card. The Maldives leads South Asia both in the overall share of adults using domestic remittances and the percentage who rely on digital channels. Nearly half of adults in the Maldives report sending money to or receiving money from friends or relatives living in other parts of the country. Among domestic remittance users, about two-thirds report using a financial institution to do so. Overall a fifth of adults in the Maldives and Bangladesh report using a mobile phone for domestic remittances. This last number likely reflects the rise of mobile money accounts, which are cheap and efficient.

Digital wage payments are also common in the Maldives. About 4 in 10 adults report receiving wage payments in the past year. Among wage recipients, 82 percent receive their earnings directly into a financial institution account. When it comes to the public sector is ahead of the private sector in the use of digital payroll. While 93 percent of public sector wage earners are paid digitally, the same is true of only 73 percent of private sector wage earners. In the Maldives, half of the account owners, use mobile phones or the internet to check account balances.

Online shopping is more advanced in the Maldives than the rest of the region. In the Maldives, online shoppers prefer to pay digitally. Two-thirds of adults use online.

Domestic remittances play an important role in development and financial inclusion. In the Maldives, 47 percent of adults report sending or receiving domestic remittances in the past year.

In the Maldives World Bank (2020) found a strong use of formal savings as 4 in 10 adults report saving money, and the overwhelming majority of savers use a formal financial institution.

### **Expanding account ownership by digitizing domestic remittances.**

Although account ownership is high in the Maldives, there are still chances to bring unbanked adults into the formal financial system by moving routine cash payments into accounts. Overall 85 percent of unbanked adults in the country have a mobile phone, potentially putting digital financial services in reach. Roughly 1 in 6 unbanked adults in the Maldives report sending or receiving domestic remittances exclusively in cash or through an over-the-counter (OTC) service. People who use OTC domestic

remittance services might be relatively easy to sign up for accounts. They are already familiar with digital payments and might be comfortable making transactions through an account. The challenge for the private sector is to offer people affordable options for moving money. One reason for the popularity of OTC services is that they tend to be less expensive than accounts. Digitizing utility payments could increase account usage. Two-thirds of adults in the country pay utility bills, yet 69 percent of these payers use cash. Among adults with an account, nearly half still pay utility bills in cash. Allowing utility users to pay for services such as water, electricity, and trash collection digitally can benefit greatly. For providers, digital payments lower the costs of collecting fares World Bank, 2018).

### **Barriers to financial inclusion**

About 1 in 5 adults in the Maldives still have no account at a financial institution and are therefore unbanked. Around half of the unbanked do not need an account, unaffordable and relevant to their needs, a family member already has an account, insufficient funds, and religious concerns.

### **2.9.2 TANZANIA**

The section below discusses Tanzania's Interventions, Successes, and Challenges as a case study.

FinScope estimated that about 60% of Tanzanians used mobile money services in 2017 (FinScope, 2018). Only 50% of Tanzanians used mobile money services in 2013 (FinScope, 2013). From 1961 to 2006, Tanzania had only 11.2% of the adult population having access to formal financial services (FinScope, 2006). With the successful reintroduction of mobile money in 2008, in 10 years, Tanzania had reached 72% of the adult population who use formal financial services. The number of financially excluded people decreased from 54% in 2006 to 28% in 2017 (FinScope, 2006; 2018). However, between 2013 and 2017, mobile money became one of the main savings instruments in Tanzania.

Active usage of mobile money accounts surpasses that of bank accounts and other accounts, with mobile money active accounts at 64% and other accounts below 60% (FinScope Tanzania 2017). There were only 112,000 registered mobile payment

accounts in 2008 and about 71,245,336 in 2016, with active accounts reaching 17,025,685. This is because one person may have two or three registered accounts and one active account. (Mobile service agents also increased from 2,757 in 2018 to 371,132 in 2016 (Bank of Tanzania (BOT), 2017).

Mobile money in Tanzania has changed the provision of financial services as it includes more adult populations than banks and other Financial Institutions (FIs). Between 2009 and 2013, FinScope (2013) shows that the percentage of adults with access to financial services increased to 57.4 percent from 15.8 percent, mainly due to the use of non-bank formal financial services, which reflects the uptake in the use of mobile money services.

Between 2013 and 2017, access to formal financial services increased from 57.4% to 72%, with mobile money providing about 60% of the formal financial services uptake (FinScope, 2018). There are about five model categories of mobile payments. They are: (i) operator-centric or telcoled model: which uses the mobile operator to deploy mobile payment services independently; (ii) Bank-Centric Model: which uses a bank to deploy mobile payment applications or devices to agents or customers with the required Point-Of-Sale (POS) acceptance capability; (iii) Collaboration model: involves banks, MNOs and a trusted third party; (iv) Peer-to-Peer model: which involves an independent mobile payment service provider, other than FIs and MNOs, to provide mobile payments (AFI, 2012: 3). Tanzania uses the telco-led model for mobile money, with any third parties such as 'Selcom' and 'Maxicom' facilitating utility payments. Typical mobile financial service payments adopted by the market in Tanzania include (i) 'P2P' (Person-to-Person payments): which includes both domestic and international remittances (money transfer); (ii) 'P2B' (Person-to- Business payments): which facilitates the purchase of goods and services, bills and utility settlements for water, electricity, TVs, medical expenses, school fees, etc.; (iii) P2G (Person-to- Government Payments): which include taxes and fees, for instance, road licenses, road tickets, etc.; (iv) B2P (Business-to- Person Payments): which include salary payments and social benefits (BOT, 2017). To regulate mobile money, the BOT uses the following regulatory tools: (i) The 2015 National Payment Systems Act; (ii) The 2015 Payment Systems Licensing and Approving Regulations; (iii) The 2015 Electronic Money Regulations (BOT, 2017). To operationalize the regulations, the BOT created the



following tools: (i) oversight policy framework; (ii) oversight manual for licensing and approving; (iii) oversight off-site surveillance manual; and (iv) oversight on-site examination manual (BOT, 2017).

### **2.9.3 Interoperability**

When mobile money started in Tanzania, MPesa had its agents. Airtel had its agents. And so forth. Later on, Tigo also came with its agents. The problem was that the volume of their business through the agents was low. The MPesa agents were restricted from dealing with MPesa customers. Likewise, the other agents dealt with their MNOs only. To remove this aspect of exclusivity, the 'non-exclusive' interoperable system was initiated. In 2014, an interoperability agreement between the BOT, two banks, and all four MNOs (Tigo, Airtel, Zantel, and Vodacom) was reached as it laid the foundation for different levels of interoperability. The main levels of interoperability in Tanzania during the time of my field research were: (i) 'agent level'; (ii) 'wallet-to wallet level'; (iii) 'wallet-to-other platforms'.

At the agent level, the removal of 'exclusivity' meant that no agent was exclusive to one operator. Hence, a Mpesa agent, likewise an Airtel agent, could serve other MNOs. This is the reason why an agent today serves more than one MNO. This has increased the scale and volume of business and is in line with Metcalfe's theory. And if the agent rented a place for his business, now he covers a much bigger business than earlier.

Meanwhile, when a non-Mpesa customer receives money from an MPesa customer, the agent is likely to transfer the money from an MPesa account to a non-Mpesa account. The non-Mpesa customer can buy Airtel units and put the balance on his Airtel phone. Before these arrangements, a customer needed to leave the agent and walk a distance to find an Airtel agent, before he could buy the Airtel units. This is the agent level interoperability.

In the second level of interoperability in Tanzania known as 'Wallet-to- Wallet' level. Tanzania was the first in the world to reach this level of interoperability. A Mpesa customer could send money directly to an Airtel e-wallet at this level. The Wallet-to-

Wallet interoperability triggered the banks to rethink about their operations. If the pricing is right, the wallet-to-wallet interoperability reduces costs significantly. The banks have tried to use the same theory, but they have failed for a long time due to pricing, among other issues. Hence, competitive pricing and the right products are key to interoperable systems. The MNOs with affordable services and the right products for the financially excluded people have managed to include more of the financially excluded people in their interoperable systems. Because of the convenience of the mobile money interoperable system, the 'wallet-to-other platforms' became the third level of interoperability in Tanzania. It is much more convenient once a customer receives money in his Airtel mobile money account and he wants to pay for his electricity bills, that is a 'wallet-to-other platforms' interoperability. It is between the mobile money provider, the operator, and the service providers. If a customer wants to pay his electricity bill, there are aggregators such as Selcom and Maxicom. They act as intermediaries who receive customer payments and send them to TANESCO (the national electricity company in Tanzania). TANESCO receives the payments and provides the customer with electrical services. That is another stage of that interoperability between the financial service provider and the ultimate service provider (BOT (2017)).

In 2014, an interoperability agreement between the BOT, two banks, and all four MNOs (Tigo, Vodacom, Zantel, and Halotel) was reached and laid the foundation for the abovementioned levels of interoperability. Tigo led the remaining MNOs into an agreement as the MNOs became aware of the challenges facing the mobile money sector, which included: (i) the direct competition for the market share; (ii) the slow-pace growing market; and (iii) latent demand from potential customers' willingness to increase frequency and value of transactions. To overcome all these challenges, in 2013, Airtel, Tigo and Zantel implemented their interoperability scheme, while Vodacom supported the structure, it did not sign up (Di Castri and Gidvani, 2014; Borreau and Valletti, 2015; Jones-Evans, 2016; Musa et al., 2014).

In 2015, Vodacom started discussions to join the interoperability agreement (IFC, 2015), and in 2015 it joined the interoperability agreement to make Tanzania the first African mobile money market with full interoperability for mobile money peer-to-peer (P2P) transfers (Kabendera, 2015). Furthermore, in 2015 'The 2015 National Payment

Systems Act', 'The 2015 Electronic Money Regulations' and 'The 2015 Payment Systems Licensing and Approving Regulations' were reinforced to set up the rules of the game. The Tanzania case study is a benchmark for the researcher's Proposed Malawi Digital Financial Inclusion Interoperability Financial Inclusion model.

### **2.9.3 ZIMBABWE**

Ndlovu and Ndlovu (2013) report that electronic banking, or e-banking, has become an integral part of banking in recent years, seeing less than 30 percent of financial transactions conducted through brick-and-mortar branches in Zimbabwe. CGAP (2014) say that the most obvious difference between digital banking and brick-and-mortar banks is location and accessibility. Although banks tend to have a wide branch network, the reach and convenience of digital banks far outweigh what brick-and-mortar offers. Ndlovu and Ndlovu (2013) state that mobile banking has great potential to become transformational for the unbanked communities in Zimbabwe as it may utilise the power of mobile phone networks to reach low-income earners. Samans (2017) report that financial services in several developing countries, including Zimbabwe, are not readily available to most of the population, particularly marginalised communities. The informal sector can act as an important shock absorber for an economy like that of Zimbabwe, which is sluggish and has a high unemployment rate. As an alternative to formal employment through which a substantial amount of money exchanges hands daily, there is a need for concerted efforts to promote financial inclusion. This will also alleviate poverty.

It should be noted that fintech is playing a growing and critical role in financial inclusion. Fintech offers accessibility, which brick-and-mortar banks do not have despite having a wide branch network. Mobile banking has the great potential of becoming transformational for the unbanked communities in Zimbabwe as it may utilise the power of mobile phone networks to reach low-income earners.

The National Financial Inclusion Strategy has significantly contributed to the transformation of the financial inclusion landscape in Zimbabwe. NFIS reveals significant progress in various areas, including; product diversification, digital financial services, financial literacy and consumer protection, opening of low-cost bank

accounts and access to financial products and services by various target segments, including Micro, Small and Medium Scale Enterprises (MSMEs), Women, Rural Farmers, Small-Scale Farmers, Youth, and People living with Disabilities. The Financial Inclusion Strategy implementation was characterized by various challenges, including; inadequate support by some stakeholders; an unstable macroeconomic environment; a high level of informality among small businesses due to the perceived high cost of regulation; predominant use of immovable assets for collateral; inadequate capacitation of lending institutions in the area of SME financing; and general low confidence in the banking system and insurance sector due to historical legacy issues. Thulani et al. (2014) have found that mobile banking penetration is very high in Zimbabwe, but it is not generally used for loan and savings purposes.

The FinScope Consumer Survey (2014) revealed a significant improvement in the proportion of the population accessing formal financial services from 38% in 2011 to 69% in 2014, largely attributable to mobile money financial services. Women are largely excluded from formal financial services, notwithstanding that they form the greater part (51.9%) of the population of Zimbabwe over 14 million Zimbabwe Statistics Office). Further, the FinScope Survey 2012 revealed that 57% of small business owners were women. According to the FinScope Survey of 2014, seventy percent (70%) of the Zimbabwean population resides in rural areas, and only 23% of the rural population is formally banked compared to 46% of the urban population. FinScope MSME Survey of 2012 noted that rural areas accounted for 66% of the MSMEs in the country, and of these rural businesses, 47% are financially excluded, compared to 36% in urban areas, while 40% use informal financial products and services only. It was also noted that financial exclusion is higher in rural areas due to the following reasons:

- (i) long distance to the nearest access point;
- (ii) high cost of accessing financial products and services, bank charges and stringent account opening requirements;
- (iii) irregular and low incomes;
- (iv) poor returns and lack of adequate capital; and
- (v) poor rural infrastructure, which does not support the growth of micro-enterprises.

Access to financial services by rural populations can also be impeded when financial institutions fail to properly implement risk-based CDD / KYC measures and enforce stringent account opening requirements.

The MSME FinScope Survey of 2012 survey further revealed that only 14% of MSME owners were banked, 18% of MSME business owners were formally served, including both bank and other formal non-bank products/services, and 57% of the MSME business owners in Zimbabwe were women. According to the 2012 FinScope MSME Survey, 57% of the business owners in Zimbabwe were women, and only 14% of MSMEs had bank accounts. The survey revealed the following:

- (i) The level of banked adult women remained low at 27% in 2014, although there was a marginal increase from 23% in 2011;
- (ii) The uptake of credit by women was deficient, with more than 77% of women not having access to credit
- (iii) 56% of women were not saving at all, while the majority of those that were saving were doing so through informal practices such as savings clubs;
- (iv) 72% of women adults in Zimbabwe did not use insurance products at all, whether formal or informal

The number of mobile money agents increased significantly from 38,745 in December 2015 to 59,218 at the end of 2019. The number of mobile money agents declined in the last half of 2020 following the Reserve Bank Directive to suspend mobile money agents from facilitating mobile financial transactions. The directive was necessitated by the need to protect consumers on mobile money platforms, which were being abused by merchants engaging in shadow banking activities.

Active mobile subscriptions increased from 3.3 million in 2016 to 7.67 million as of 31 March 2020. The increase is attributed to an increase in the number of registered mobile telephone subscriptions. There were 24,379,810 registered mobile subscriptions as of 31 March 2020, of which 13,724,522 were active.

There was also a notable increase in the number of Point of Sale devices in Zimbabwe from 16,363 in December 2015 to 121,413 in 2019, driven mainly by the Reserve Bank of Zimbabwe's efforts to promote electronic payments and the introduction of mPOS in 2019, targeting MSMEs.

Factors that continue to hamper women's financial inclusion in Zimbabwe despite the advances made in mobile technology and the provision of financial services via telephony services include education, financial literacy, technology penetration rates and affordability, which are discussed below.

### **Lack of identity documents**

Mobile technology has lowered the barrier for the inclusion of women in Zimbabwe, however, some females have not been able to access mobile banking because of the nature of their work and lack of identification documents, among other reasons. A study by Bhowmik and Saha (2013) concluded that females venture into small and low-earning activities like informal vending, creating stalls and other unregistered activities as they have limited access to national identity documents. Without national identity documents, it is challenging for females to register a mobile phone sim card, a prerequisite to accessing digital financial products. This is further exacerbated by banks still having daunting processes, a hurdle to digital financial inclusiveness. Females in informal trading have little income, so they cannot sustain accounts offered by financial services providers (Bruhn and Love, 2014).

### **Low education levels**

The fact that females have traditionally not been given equal opportunities to advance their education compared to their male counterparts limits their ability to acquire formal employment, which would guarantee regular income (UN Women, 2018). Manyika, Lund, Suger, White and Berry (2016) state that in many African communities, the rights of females to education are still being violated. Angelow and Weselina (2016) also state that violation of a right to education leads to financial suppression, leaving females subordinate to their male counterparts. In turn, the females fail to access critical information that, leaves them ignorant of their rights to be included in key decisions affecting their lives, such as being financially included. The paper argues that failure to access information makes it difficult for females to appreciate the impact of financial products and services on their lives. Low literacy levels also hinder the ability by females to use mobile gadgets needed to access banking and insurance services as these services are integrative and self-service (Alliance for Financial Inclusion, 2016). Education and financial literacy have a direct

causal relationship. Findings by AFI (2016), indicate that females, on average, are less financially literate and this continues to negatively impact financial literacy and how digital financial dynamics can positively impact the lives of females. As a result of illiteracy, some females cannot use mobile gadgets, making it difficult for them to take advantage of measures on financial inclusion that are being availed to them (Global System for Mobile Association, 2018).

### **Discriminatory customary laws**

According to Rahman (2013), customary and statutory laws in many developing countries still discriminate against females as norms restrict females from having their own bank accounts. These discriminatory tendencies also take away the right for females to get involved in deciding on family expenditures and household purchases. As such, this limits females in budgeting for internet costs, yet digital financial services like internet banking are largely accessed online (Arora, 2010).

### **Limited knowledge of mobile banking**

As argued by Angelow and Weselina (2016), recognition of the role of females and equal opportunities can easily translate into increased participation of females in mobile banking. Females in many developing countries still remain unable to consume digital banking products as they lack the knowledge and capacity to access these financial products and services. The low uptake of financial products by females has been explained by Alliance for Financial Inclusion (2016) which states that females are naturally slow in taking advantage of financial services, including those that are digital. The report further states that some females tend to be highly risk-averse and conservative compared to men when it comes to making decisions which relate to banking. Silverstein and Sayre (2009) state that while females tend to be slow in making financial decisions compared to men, when they make such decisions, they tend to be more for the benefit of the whole family.

Another factor affecting women's inclusion in the informal sector is low levels of mobile phone penetration. Although mobile phone service penetration in most countries is still growing, Bank (2018) states that approximately 1.7 billion females worldwide cannot access a subscriber identity module (SIM). Alliance for Financial Inclusion (2018) states that societal barriers in developing countries make use of mobile phone gadgets

by females lower than that by men. The report further states that females working in the informal sector are inhibited by cost, network coverage and lack of technological literacy to access digital banking services.

### **Banking services culture**

The reason why some countries have low numbers of females who use banking services is also explained by Wagh (2017), who points out that in some countries, most bank officials are men and this is a hindrance and a challenge to female customers who may feel uncomfortable and less confident to interact with males. The other challenge is that financial services are designed as a one size fits all and do not consider that females have unique needs. Regarding expenditure, females tend to have many small-value transactions which most banks charge.

#### **2.9.3.1 Recommendations**

The Government of Zimbabwe should continue to employ strategies which aim to increase financial inclusion from the current 69 percent to their target of 90 percent by 2020 (FINMARK TRUST, 2014) and (Chipika, 2020). Given the significant role that females play in economic development, research on new modes of ensuring that their needs and expectations in banking are considered is crucial.

##### **a) Mobile money service providers should offer value-added tools**

Mobile money service providers should offer value-added tools to help females in the informal sector to manage digital payments better. They should provide such applications that assist with accounting and inventory management.

##### **b) Consider the unique needs and preferences of females**

Methods to promote digital financial inclusion of females in the informal sector should include their unique needs. Some developing countries are designing digital financial products that consider the preferences and needs of females. Helms and Brigit (2013) state that in Lebanon, an organisation called in Al Majmoua, has created a free loyalty card called Bitakati. The service which they offer is dedicated at attracting and retaining female borrowers. Bill & Melinda Gates Foundation (2019) report that in Malawi, NBS Bank in collaboration with Women's World Banking, designed a Pafupi



service, a savings account in which sales staff are deployed to serve female customers. Women's World Banking (2015) points out that the bank used emotional appeal, highlighting peace of mind, affordability and lack of thresholds to attract female customers.

### **c) Reduce the cost of transacting**

Villasenor, West, and Lewis (2015) state that the exclusion of females from access to and usage of formal financial services harms economic development. The study by FinMark Trust (2012) reveals that key disablers that hamper financial inclusion in rural communities in Zimbabwe include the high cost of financial service delivery, females not owning assets, especially in rural areas, dilapidated infrastructure, lack of tailor-made financial products and lack of trust and confidence in the financial sector as a result of the adoption of the multi-currency system.

### **d) Make mobile account maintenance affordable**

The financial services sector must plan and avail affordable products to promote the utilisation of banking services by females in the informal sector. Affordability is one compelling idea that should be outlined among the benefits of having a mobile money account (Global Partnership for Financial Inclusion, 2020). Access to digital banking services for females brings an array of opportunities associated with accessing financial services. With the help of government regulations and the lobbying of gender-centred non-governmental organisations financial services organisations in Zimbabwe should devise methods to transform their financial services to be a vehicle to offer their services even to those in informal businesses (GPFI, 2016).

### **e) Cheap internet costs**

Public policies should make instruments to close the gender gap in terms of mobile phones access. As long as this gap remains, females will still have a hurdle to access the digital financial solutions available even if they have identity documents. This should be coupled by cheap internet access. A digital ID and registered SIM cards should also be made available for females (Demirguc-Kunt, Clapper, Singer, Ansa & Hess, 2018). In some countries, females have been given cellphones and internet access for reduced costs as a way of promoting females to include females in banking. That was also supported by the regulations to accelerate creation of digital banking

accounts for females by allowing them to access new financial services accounts at no cost. To subscribe in the initiatives females were lured by availability of credit lines at a cheap cost that the prevailing markets rates. According to a study by Alliance of Digital inclusion (2017) females in the informal trading would only see the value of banking and opportunities associated with it once they first access credit to facilitate opening of bank accounts.

#### **f) Encourage interoperability**

An interoperable digital financial payment system is a fundamental facility if digital financial inclusiveness for females is to be effective. While interoperability benefits the whole society, females stand to benefit more as men can easily own more than one mobile phone than females (Banthia, Greene, Kawas, Lynch, & Slama, 2011). Governments especially in developing countries should pass laws that promote competition between banks, insurance companies and mobile network operators (MNO's). By so doing financial services players will have more incentives to tailor make their products so that females are well catered for (Demirguc-Kunt, Clapper, Singer, Ansa & Hess, 2018). This way females may be encouraged to transfer money and to make payments to people who even use different financial players (Darko, Smith, & Walker, 2015).

#### **g) Make access to identity documents easy**

Global Partnership for Financial Inclusion (2020), states that one in every five unbanked females say that they lack identity documents. The understanding is that once the barrier is lifted females can easily open bank accounts. Zimbabwe should within its ability support this cause by putting in place mechanisms to ensure that all females are able to access identity documents.

#### **h) Provide for direct access into digital bank accounts**

The government should create mechanisms that make females access money directly into their digital banking accounts. This is a feasible solution as there is evidence that approximately 140 million females on the planet have opened their first account with the purpose of receiving a pay-out which include public sector wages, pensions and

social benefits (Delechat, Corrine, Monique, Rui Xu, & Fan Yand, 2018). These payments should not be facilitated through the accounts of husbands or relatives as the history of transactions will determine credit worthiness in future (World Bank Group, 2019).

#### **i) Female friendly consumer protection laws**

Comprehensive consumer protection is required for females to benefit from digital banking activities. Banking products should be well described and should be made easy to use for females who are less educated and in the informal businesses. Banks should take into account the financial capability of females and their experience. Fraudulent cases should be very minimum (World Bank, 2016).

#### **2.9.4 Malawi**

In most low-income countries like Malawi, financial systems remain weak and tend to serve a small fraction of the population. Most citizens tend to rely on the informal financial system for financial intermediation. Savings rates remain low and the formal financial system is severely limited in its role as an intermediary in the economy. Theoretical literature and empirical studies suggest that countries with low savings rates tend to have lower economic growth and remain underdeveloped (Todaro & Smith, 2011). Financial inclusion is therefore recognized as a necessary condition for ensuring inclusive and sustainable growth in Africa and other developing countries (Triki & Faye, 2013). In recent years, despite financial liberalization and financial reforms in many countries, it has been recognized that financial systems are not comprehensive and that most citizens have little or no access to formal financial services. It has been. His definition of financial inclusion is based on the three dimensions of access, utilization and quality (Alliance for Financial Inclusion, 2013).

The Government of Malawi (GoM) recognizes the importance of financial inclusion to achieve inclusive and sustainable economic growth. GoM has been working to improve financial inclusion for many years. Development of the first National Financial Inclusion Strategy (NSFI) for 2010-2015 formulated a financial sector development strategy in 2010. and implementation of the Financial Sector Technical Assistance Project (FSTAP). Despite these efforts, financial inclusion remains low. Many formal financial institutions are concentrated in urban areas, and services are scarce in rural

areas. For example, only 3.3% of bank branches were located in rural areas at the end of December 2016 (Nkuna et.al, 2018). In contrast, the majority of Malawi's population (about 84 per cent) lives in rural areas (National Bureau of Statistics, 2019), which means that modern financial services are not within adequate distance. Furthermore, Chirwa and Mvula (2014) found that only 15.4 per cent of Malawian adults had a formal bank savings account.

Malawi's poor access to financial services means the country is missing out on significant welfare benefits associated with financial inclusion. However, evidence of factors affecting financial inclusion in Malawi is limited. In Malawi, no research has focused on understanding factors related to financial inclusion. Chirwa and Mvula (2014) investigated the relationship between financial literacy indicators and Malawian respondents' socioeconomic characteristics. However, this study focused on financial literacy rather than financial inclusion in general. Therefore, this study is expected to contribute to our understanding of key policy variables affecting financial inclusion and may help formulate policies and programs to improve financial inclusion in Malawi.

#### **2.9.4.1 Financial Inclusion in Malawi**

Since the 1980s, GOM has made several efforts to improve financial inclusion. In 1987 GOM established a department in the Ministry of Agriculture called Smallholder Agriculture Credit Administration (SACA) and in 1988 he established the Malawi Muji Fund (MMF). The purpose of this facility was to provide seasonal credit (provided on a group basis) to small farmers. Farmers Association). However, loan repayments declined sharply in late 1992/93 and the system collapsed in 1993/94. Later, SACA was reorganized into Malawi Rural Finance Corporation (MRFC) in 1994. MRFC is 100% owned by the Government of India and was one of the top financial institutions in most regions with over 25,000 accounts at the end of December 2006 (International Monetary Fund and World Bank, 2008). ). The government also fully owned the Malawi Savings Bank and had interests in several commercial banks involved in the financial sector, such as NBS Bank and Inde Bank. In 2007, with the support of the United Nations Development Project (UNDP) and the United Nations Capital Development Fund (UNCDF), the Government of India launched the Malawi Financial Inclusion (FIMA) project to ensure livelihoods, especially for the poor and vulnerable in Malawi. Fighting poverty through Financial services (loans, savings, payment services, money

transfers, insurance) is available in rural areas. This project culminated in developing the first National Financial Inclusion Strategy (NSFI) to be implemented from 2010-2015. NSFI should emphasise improving the provision of quality and diversified financial services to those excluded from the financial sector.

However, the lack of coordinating bodies prevented this strategy from being fully implemented. The strategy was to be coordinated by his FIMA, which he ended in 2011, but no specific department within the Ministry of Finance was designated to coordinate the implementation of the strategy. As a result, only isolated elements of the strategy have been implemented and not major initiatives that could significantly impact financial inclusion. Second, another development complementary to the NSFI was the establishment of the Financial Sector Development Strategy (FSDS) for 2010-2015. FSDS aimed to build a financial sector that supports financial services and fosters sustainable economic growth. Following the implementation of this strategy, the financial sector's legal and regulatory framework was strengthened and significant investments were made in financial infrastructure such as the National Switch to promote interoperability among banks. Additionally, the Bankers Association of Malawi (BAM) has also established a task force to advocate for financial inclusion in banks, but little progress has been made so far (Nkuna, Banda & Chirwa, 2022).

Third, the Government of Malawi, with the support of the World Bank, has provided Financial Sector Technical Assistance from 2011 to 2017 through the Reserve Bank of Malawi to improve financial access for unbanked Malawians. This project involved several activities to improve financial inclusion, including conducting a baseline survey, establishing a consumer protection unit within the Reserve Bank of Malawi, and a financial education campaign program (Nkuna, Banda & Chirwa, 2022).

## **2.10 Conclusion**

The chapter presented and discussed a comprehensive review of financial inclusion literature and illustrated the patterns related to how financial inclusion and exclusion are understood in banking literature. It reviewed and summarised the general conceptualisations of financial inclusion. Secondly, it explored and critiqued the contributions of the banking industry towards financial inclusion. Thirdly, financial inclusion within a digital space was explored and reviewed.

## CHAPTER THREE

### RESEARCH METHODOLOGY

#### 3.0 Introduction

This study applied a case study methodology to explore the effect of financial inclusion at a specific bank. The methodological choices and procedures followed are clearly stated and motivated. This chapter describes the procedures by which the data were collected and interpreted in this study. It discusses the rationale for selecting the chosen research method, the development of the questionnaire, and the data analysis techniques and tools that were utilised. It concludes with a brief discussion of the ethical implications raised by the study.

The discussions in the preceding chapters have laid the groundwork for exploring the effect of financial inclusion on the excluded, poverty alleviation and bank profitability in Malawi. In line with the research question that guides this study (Chapter 1, page 22), the literature review presented a myriad of methodological frameworks and evidence published in various scholarly studies to support the investigation. The present chapter explored the specific methodologies relevant to this type of research as determined by the researcher. As defined by Saunders, Lewis and Thornhill (2019), research methodology describes the relevant research procedures that a researcher incorporates into a study to help generate evidence. This investigation intended to understand the effect of financial inclusion interventions on agents/bank profitability and customers at NBS bank Pafupi savings and Agent banking.

The researcher used several methodologies to collect and analyse the data to address this aim. Firstly, questionnaires (survey-based) were used to explore the effect of financial inclusion interventions and solicit the participants' views regarding financial inclusion. The exploratory survey collected qualitative and quantitative data from all participants.

Secondly, in-depth interviews were conducted with experienced agents and executives. Third, document analysis was conducted to review the financial inclusion strategies employed at NBS Bank.

The quantitative data (surveys) were uploaded to a Microsoft Excel spreadsheet and analysed using SPSS version 20. The qualitative data (in-depth interviews) were analysed using thematic analysis. In addition, the researcher analyzed data into NVivo following these steps:

- i. Step 1 – Reviewed research questions and/or research approach and imported them into NVivo for easy reference.
- ii. Step 2 - read a few transcripts and wrote summarised memos. The researcher opened a transcript and clicked on the memo link in the ribbon to create a linked memo to the transcript to write up key points.
- iii. Step 3 - created a research journal and developed a coding strategy. The researcher reviewed the summarized memos for the transcripts, created a research journal as a memo and wrote up the key issues coming out of the interviews related to the research questions and developed an initial broad coding strategy.
- iv. Step 4 - coded for the broad topic areas (themes) by selecting the text and then dragging it onto the code. The researcher conducted NVivo coding using a mind map, and a coding framework, coded for the broad topic areas (themes). He reviewed the coding, reorganised the codes, explored the data using coding queries, and identified the themes.

### **3.1 Research Methods**

Research methods are classified according to the research paradigm and the relevant approach (Creswell, 2017).

This study adopted the following research methods: (a) questionnaire; (b) interviews; and (c) document analysis. Although a questionnaire was not an experiment-based method, the method aligned well with deductive reasoning under positivism (Casula, Rangarajan & Shields, 2021). An interview was conducted as one of the case studies approaches is positivism, (Yin, 2018). For example, the following are brief descriptions of classifications of the interview analysis methods used by the researcher. The researcher applied the principles of grounded theory (Glaser & Strauss, 1967) to draw inferences from the data. Open coding, axial coding and selective coding strategies were applied in the thematic analysis (Braun & Clarke, 2020) of the data as prescribed

by Yin (2018) for case studies. The researcher discovered common patterns which were aligned with a predefined coding scheme (Neuendorf, 2019).

### **3.1.2 Research Approach**

The study adopted abductive and deductive approaches (Conaty, 2021). It was based on a pragmatic research philosophy to combine both an abductive and inductive approach (Casula, Rangarajan, & Shields, 2021). This is required at the beginning of any scientific research. It was inductive in that it explored past studies from different perspectives (Mitchell, 2018). The recent study discussed the effect of financial inclusion interventions on poverty alleviation and bank profitability from different perspectives, but new knowledge was required, hence the reason for the abductive approach combining both approaches is to provide insight into the phenomena with no loyalty given to any alternative paradigm.

### **3.1.3 Research Method & Strategy**

This study applied mixed research methods (MMR) across the data collection and analysis phases.

Phase one involved both qualitative and quantitative approaches within the content scope to investigate and obtain an in-depth quality and understanding of a phenomenon. The knowledge obtained from the above application of a qualitative method was then used by the researcher to determine digital platforms and systems that will be contextualized in the study for the proposed digital interoperability financial inclusion. Additionally, the researcher conducted a frequency analysis to extract a set of critical success factors. During this phase, the researcher used the qualitative approach to gather data in the form of in-depth interviews as questionnaires adopted from (Thompson *et al.* 2018) study whose participants' answers were based on their own experience and knowledge. Thereafter, the last phase (phase three), identified the most critical factors and brought into line the statistical measures for a quantitative data analysis.

First, the researcher as CEO based his study on the NBS bank management team that built the artefact (Bank Pafupi) to solve a problem (the financially excluded and marginalised poor rural community) in practice using design theories, constructs,



models, and methods. In developing and building an artefact (Proposed Digital Financial Inclusion Interoperability model), the researcher drew upon theoretical knowledge, contextual information, organizational needs (Bank profitability), and personal creativity (Proposed Digital Financial inclusion Interoperability model).

Information technology (IT) artefacts (Bank Pafupi and agency banking) are systems (or are involved with systems). The environment of Information systems (IS) artefacts comprises people (Customers), organizations (NBS Bank, and technology (NBS Bank Information Technology (IT) and MNOs) (Weiganda, Johannesson & Andersson, 2021). NBS Technology Policy is premised on making sure that we are using technology to generate revenue whilst assisting customers at the same time. We push the FI agenda at a profit, not at a loss, that is the key, because we are a profit-making organization (Dimba, 2020)

The rationale of the NBS Technology Policies is to enable the bank to execute the business strategy and support business operations. The tenets of the policies are based on ISO 27001/27002 and 31000 standards, and COBIT 5 IT governance frameworks. The tenets are represented in Figure 2.



Figure 2: NBS Technology Policy

Gregor and Jones (2007) described eight general components of design theories: (1) purposes and scope; (2) constructs; (3) principles of form and function; (4) artefact mutability; (5) testable propositions; (6) justificatory knowledge; (7) principles of

implementation; and (8) expository instantiations that were applied in this study are discussed below.

NBS bank provides seamless processes for accessibility that is, taking banking closer to the people; expanding digital payments securely to customers. NBS bank scaled down the number of branches from 32 to 26 branches actively driving the digital agenda, including self-service channels and a plan to roll out digital branches (NBS bank, 2020). The NBS Bank's rationale in the drive for a financial inclusion strategy was very effective. The bank managed to open more than 100,000 accounts and mobilized close to a billion deposits through this product and provided banking to otherwise unbanked communities. In measuring the effectiveness of Bank Pafupi, validity and reliability were used interchangeably. Validity was the degree to which the artefact (Bank Pafupi) worked correctly, that is, correctly achieved its goal with reliability. Consistency is the harmony or agreement of features or parts to a whole or one another. Therefore, the conditions on this component verified the reliability of the IS artefact that is, the Pafupi savings account and Bank Pafupi agency banking with people organization and technology.

The goal of the evaluation was to assess whether the artefact or theory works and the usefulness of the artefact or theory. The rationale for the Pafupi Saving product was to reach low-income earners who had the vision to save. Most customers were not saving because of distance, monthly charges and lack of proper IDs. Pafupi products brought convenience, removed monthly charges, made book balance affordable and allowed customers to open accounts with simplified KYC. All this was done to enable more people to access formal banking.

An evaluation was the main instrument for learning the design of artefacts (NBS Bank Financial inclusion interventions) that fitted the purpose (Poverty alleviation and bank profitability) It established whether research (The current research) has assisted in handling the challenges it sought to resolve. An evaluation was enabled by a clear-cut statement of discernible results at the beginning of the research design and the compilation of appropriate data during its life.

Studies represent an imperative phenomenon of information systems (Digital financial inclusion); they make a substantial influence on the field; artefacts are realizable and

testable; artefacts deliver improved resolutions than prevailing systems (Pafupi savings account and Bank Pafupi agency networks); and the experience obtained from the process of system building is generalisable. According to NBS Bank executives, the rationale for setting up Pafupi savings is the same as the rationale for setting up Bank Pafupi. It is effective since the bank no longer spends money on physical buildings but partners with business people who already have structures in those areas. Customers can transact business in locations closer to them. Rural customers feel comfortable transacting their business at agencies rather than the bank because the bank ambience sometimes intimidates rural clients.

The researcher evaluated the artefact (Bank Pafupi and digital financial inclusion) by utilising empirical methods to establish how well the artefact performed (global financial inclusion interventions). These produced a workable artefact in the shape of a concept, a modeller method; developed technology-constructed (proposed digital interoperability financial inclusion model) resolutions to relevant and important business complications. Due to the multiple disciplinary disposition of information systems, the researcher used empirical evaluation and benchmarking proofs (for example, Mpesa in Kenya and Tanzania) for appraisal of the study artefacts.

The evaluation determined, objectively, and systematically the efficiency, effectiveness, and relevance of an activity. Analysis of the effect of NBS Bank's financial inclusion interventions in terms of its objectives (poverty alleviation and bank profitability), containing the investigation (data analysis) and the administrative and implementation management (proposed digital interoperability financial Inclusion model) activity.

On banking-oriented technologies; the executives explained that NBS has used banking-oriented technologies, in this sense, on the core banking systems and other privy systems to keep data as a data engine source for all banking transactions and make decisions on how NBS can use that data to the best of our abilities. So NBS core banking system is like a data repository because everything done for a customer is dumped into the system and intelligence is used to interpret that data e.g. the amount of a loan to be accessed.

As for banking-oriented technology; the bank has been using the core-banking

application using Temenos T24 R14 with financial crime mitigation (FCM) modules to adhere to banking regulations. Besides, the bank has been: using systems to manage loan and credit facilities using Credit Quest; providing alternative means to access banking services using auto teller machines (ATMs), point of sale (POS) devices, USSD and smartphone-based applications and internet banking services. The bank has also been integrated into national and international money transfer networks such as Nat switch and SWIFT to conduct business.

**Non-banking-oriented technologies** have been used as data sources to determine customer behaviour, for example, using MNO's platforms. NBS Bank zeroed into customers' behaviour in terms of their expenditure and the other services they are obtaining elsewhere. For NBS bank, both technologies are being used as data sources where intelligence can be sought to make decisions.

Non-banking technology has been used to run the general functions of the business, such as managing collaboration and communication using the Microsoft Office 365 product suite, financial management and human resources management, and connecting branches and office locations using virtual private networks (VPNs). NBS is already using the National ID card for authorization of over-the-counter transactions. Bank transactions use facial recognition and fingerprints.

The evaluation methodology followed both qualitative and quantitative techniques for the evaluation of various research processes done by the researcher (Creswell & Plano Clark, 2018). The quantitative evaluation involved appraisal of the effect of artefacts (Digital financial inclusion) by a comparison of results among the agents/customers and NBS bank staff and executives. The qualitative evaluation relied upon the choices evaluators' views about the effect and functioning of the design artefacts (Pafupi savings account and Bank Pafupi agent banking), including surveys (Interview guide and questionnaire), case studies (that included Bank Pafupi, Mpesa in Kenya, Tanzania, Maldives and Nigeria), national identification and peer reviews. Qualitative evaluation involved mainly (in-depth interviews with the NBS bank executive) individual discussions, and provided information outside that linked with quantitative appraisals.

### 3.2 Research Design

The study employed a case study using a Mixed Methods Research (MMR) design (Creswell, Plano Clark, 2018). Mixed methods were advantageous in developing new and better environmental and contextual (or social-ecological, socio-cultural) interventions, gearing investigations to participants' cultural and ethnic influences factors that influence financial inclusion interventions and acceptance of digital financial inclusion products and services (Kinnebrew, *et al.*, 2021). As an important approach to adapting financial inclusion interventions to the financially excluded poor communities, mixed methods research was used to address the challenges and capabilities. Quantitative and qualitative methods enabled the researcher to integrate qualitative research and qualitative data conceptually and analytically (Borgstede & Scholz, 2021) (for example, semi-structured interviews and questionnaires) with traditional epistemological and quantitative methods of research to facilitate translation (Prussing, 2018). Mixed methods helped the researcher to understand, not just whether a financial inclusion intervention works, but how, why, and for whom

The mixed methods enabled the researcher to give attention to the need for “outside the box” thinking (Oppert, *et al.*, 2022) related to a proposed digital financial inclusion model, including a strong focus on preferences and agent – the customer-centred and evidence-based decision-making from NBS Bank executives.

The study is poverty alleviation and profit-centred that helped agents, customers, NBS staff, and other decision-makers to assess “the relative benefits, capabilities, performance and challenges of NBS bank financial inclusion interventions as a poverty alleviation tool and NBS bank profitability. Tension between “customer-centeredness” and the application of “evidence-based” interventions was beneficial (e.g., savings account, cash and cash out, deposit, online transactions – payments or remittances) from getting to the financially marginalized rural poor people. Mixed methods strategies were essential in understanding what must be adapted in evidence-based models to make them successful (Dawadi, Shrestha, & Giri, 2021).

Mixed methods hold the promise of advancing the strategic goals of several institutes to develop culturally relevant interventions, to translate interventions into practice (Aschbrenner, Kruse, Emmons, *et al.*, 2022), and to carry out research that leads to

improved agents, customers – and NBS bank profitability. Themes such as financial inclusion interventions, agent banking, digital financial inclusion, digital financial products and services, capabilities and performance of interventions, increasing the reach and acceptability of interventions, and enhancing the customer-centeredness of poverty alleviation and bank profitability are common to the strategic plans of NBS Bank Limited plc calling for the proposed digital interoperability financial inclusion model.

The mixed methods enhanced quantitative analysis to identify factors that might be associated with poor response to interventions, or factors that account for people who do not “fit the model,” that are outliers, or provide clues to how interventions can incorporate the diverse needs and circumstances of people (“personalised interventions” (Guetterman, *et al.*, 2019). Mixed methods increased the ability to address research questions about what causes people to be financially excluded in the first place (to become one of “the poor”). The complexity of the problems faced by agents and of customers’ needs requires the perspectives of multiple disciplines (Dawadi, Shrestha, & Giri, 2021).

The qualitative research depicted the process, captured the words of personal experience, explored financial inclusion capabilities and challenges, and used an interview with the executive and agents, customers and staff. In the translation process, mixed methods designs come into the process between the effectiveness of the interventions and the implementation of the proposed interoperability digital financial inclusion model. Mixed methods facilitated the movement of interventions along the translational continuum of the proposed financial inclusion model. This was because the intervention or implementation components of the proposed interoperability digital financial inclusion model were being designed while eliciting the experiences of the persons in the contexts in which the interventions are to be carried out (Palinkas, *et al.*, 2011). Financial inclusion-based research, involving key stakeholders in investigations in regulation and policy research provided a culturally sensitive model for data collection and responsiveness to the diversity found in participants.

### 3.2.1 Inclusion and Exclusion Criteria

This study applied inclusion and exclusion criteria to select studies and participants to be included purposively. These inclusion and exclusion criteria are described for each data collection method below.

#### SURVEY

Effect analysis of financial inclusion interventions and challenges

*Table 1: Inclusion and exclusion criteria*

##### INCLUSION CRITERIA

- Adults (agents, customers, above 18 years with or without an NBS bank account since 2008
- NBS staff who have worked from 2012 to 2020
- Agents that operated from 2012 to 2022 in a rural setting
- Women between 2008 (Pafupi savings account) and 2014 (Bank Pafupi)

##### EXCLUSION CRITERIA

- The researcher (CEO of NBS bank)
- Agents in an urban setting
- Agents that operated before 2012 and after 2021 to 2022 in the rural setting
- Members of the target population who cannot participate in a research study.

#### Interviews by the Researcher

##### INCLUSION CRITERIA

NBS executives and staff who have worked from 2012 to 2020

Agents that operated from 2012 to 2022 in the rural setting

##### EXCLUSION CRITERIA

NBS staff who are not executives

Staff who did not volunteer to take part in the study

#### Document Analysis

##### INCLUSION CRITERIA

- Publications from 2012 to 2020
- Case studies from 2008 to 2020
- Most relevant articles illustrate the effect of financial or other digital financial

##### EXCLUSION CRITERIA

Studies that did not focus on the financial inclusion of the unbanked population

Studies that used an observational design Study

inclusion and the potential of digital platforms as well as challenges

- 34 articles
- Annual reports, books and book chapters, case studies, conference proceedings, interview guides, survey questionnaires

used a qualitative methodology

Studies published more than 5 years ago

Studies published in a language other than English

Studies that compared financial inclusion interventions

Studies located in a certain geographic area

Studies published in the last 5 years with exceptions on concepts and theories

The recruitment process was designed to invite prospective participants to participate voluntarily, address the sampling, and benefit the prospective participants within this community. Recruitment was done according to the inclusion and exclusion criteria stated above.

The researcher visited and notified agents and staff through an introductory letter from Davinci and a letter of approval from the NBS Bank Board Chair and invited prospective participants to participate. The letters were designed using simple Chichewa and English languages to ensure that all the prospective participants could understand what was expected of them during the research process. The research was also announced to prospective participants by NBS Bank Pafupi Agent Manager as gatekeepers at local community gatherings. Participants were invited to take part from April 2019 to November 2019 after obtaining ethical clearance (see ethical considerations below). Trained research assistants were used to obtain participants' consent forms and keep them private and confidential.

### **3.2.2 The Case Study Mixed Research Methods**

The mixed research case study (Yin, 2018) provided rich, detailed information to elicit different perspectives from agents, customers, and staff on the performance and challenges of NBS bank financial inclusion interventions. The multiple holistic case



study placed customers essential to the investigation while supplementary information was supplied by secondary informers (staff and agents) and determined the effect and challenges of financial inclusion initiatives by NBS Pafupi Savings Account and Bank Pafupi agency networks from 2012 to 2020.

### **3.2.2.1 Case study**

In the present study, a case study is a context-dependent, in-depth investigation of a single example of a phenomenon (NBS Bank Pafupi). It focuses intensively on a single case (Bank Pafupi Agent networks)), and the case in focus (NBS Bank Malawi) is supposed to be representative of a larger group of cases, even though they recognize that some case studies are carried out solely for descriptive purposes ((Elman *et. al.* 2016:375).

Case study participants were purposely selected (Creswell, 2013). Cases were designated to incorporate participants that contribute to the financial inclusion phenomenon meaningfully (Eisenhardt & Graebner, 2007). A careful assortment of numerous cases assisted the researcher's capability to substantiate and/or distinguish preliminary findings through later cases. The nuanced, in-depth descriptions of numerous participants prepared a contextual and robust understanding of different financial inclusion interventions in terms of effect and challenges.

The researcher paid much attention to potential power disparities between the research assistant and the contributors and deliberately took measures to allow their views to guide the investigation. For example, including agents and customers as primary participants as opposed to NBS bank Executive and staff-driven research and decisions that would usually exclude agents' and customers' experiences and views in line with the transformative paradigm, brought agents' and customers' views and experiences to the forefront. The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they were taken, how they were implemented, and what result. The decision was taken to launch, and implement, the Pafupi Savings account and Bank Pafupi financial inclusion products.

### **3.2.2.2 Interview Demographic Information (Agents and Staff)**

The staff and banking agents were in the age range of 21 – 30 years, 31 – 40 years, and 41 - 50. The agents, customers and NBS Bank staff had worked and done business in the range of (a) 2 – 5 years, (b) 5 – 10 years, (c) 5 – 10 years, (d) 15 – 20 years, and (e) 10 – 15 years at NBS bank. NBS Bank executives all held bachelor's or master's degrees, while staff were holders of bachelor's degrees, diplomas and postgraduate degrees. The majority of the staff were Bank, NBS Bank executives and agents.

### **3.2.2.3 Survey Demographic Characteristics (Agents and Customers)**

The participants who voluntarily took part in this study were aged between 30 and 60 years of age. The contributors were classified based on their developmental stages and the estimated ages linked to these phases, thus, young adults (roughly 31 – 40 years), middle adults (around 41 - 50 years) and elders (60 + years) (data presented subsequent Chapters). Most of the participants were male. A larger proportion was married, followed by those that were single, then those that were divorced and widowed. A larger number were holders of Malawi School Certificate of Education (M.S.C.E.), diploma holders, Junior Certificate of Education (J.C.E), and Primary School Leaving Certificate of Education (P.S.L.C.E). The least did not attain any educational qualification. Most of the participants were farmers, casual labour, teachers, labourers, health professionals, and teachers and a few did not disclose their profession and were not employed.

### **3.2.2.4 Case Study Selection: NBS Bank Malawi Limited Plc**

The researcher chose NBS Bank Malawi as the case study because it is a pioneer of financial inclusion in Malawi through the Pafupi savings account and agency banking in Malawi (NBS Bank, 2018). Secondly, the researcher is the CEO of NBS Bank and the study provided him and other stakeholders with a policy direction for bank profitability and poverty alleviation. The bank recognized financial inclusion as a vehicle for economic empowerment. In pursuance of this view, NBS Bank made a deliberate effort to enable women to access affordable banking services so that they could actively participate in the social and economic development of the country (NBS Bank, 2015). In 2012, the bank introduced a tailor-made Pafupi Savings Account,

developed to drive inclusive banking with a specific focus on women. The account allows women who were previously excluded from formal banking to save and grow their money (NBS Bank, 2015). NBS Bank has showcased a history of deliberately supporting women in various communities by promoting financial inclusion. For example, in 2009 and 2010, NBS Bank partnered with World Bank and IFC, training over 1500 women in business management and giving them loans to inject capital into their businesses. Additionally, the Bank worked with UNCDF on a program which aimed to develop a product specifically for women (Chingaipe, 2022).

### 3.2.3 Population Sampling and Size

According to Shukla (2020), a population refers to the set or group of all the units on which the findings of the research are to be applied. Saunders (2007) describes a sample as a segment of the populace that has the characteristics of the total population.

*Table 2: Targeted Population Sample*

<b>NBS Bank Affiliate (Stakeholders)</b>	<b>Population size</b>	<b>Sample size targeted</b>	<b>Sample percentage</b>	<b>Reason for inclusion in the research study</b>
Directors	9	5	56%	To provide direction on the bank's strategy and policy
Senior Management	18	9	50%	To provide information on operational strengths and weaknesses and the banks' culture.
Employees	752	75	10%	To provide information on culture, job security and service quality.
Customers (excluding Pafupi)	300000 234267	800	0.3%	To give information on the quality of customer service and the bank's products and performance of the bank's digital banking services.
Pafupi savings customers	100268	300	0.3%	To provide information and their assessment of the bank's financial inclusion and digital banking.

<b>NBS Bank Affiliate (Stakeholders)</b>	<b>Population size</b>	<b>Sample size targeted</b>	<b>Sample percentage</b>	<b>Reason for inclusion in the research study</b>
Bank Pafupi Agents	343	68	20 %	To provide information and their assessment of the bank's financial inclusion and digital banking.
<b>Total</b>	<b>301388</b>	<b>100</b>	<b>80%</b>	<b>Participants responded</b>

**Source:** Researcher, NBS Bank, (2018)

### 3.3 Sampling Techniques

The researcher adopted the simple random sampling method for the recruitment process. The main advantage of the technique is that it guarantees a bias-free sampling process since every participant has an equal opportunity to participate in the study (Singh & Masuku, 2014). The researcher had full autonomy in the recruitment process and ensured there was no connection between the different participants. One of the advantages of using the random sampling method is the simplicity of participant assemblage since everyone has the same recruitment opportunity (Cash *et al.* 2021). Another advantage is the presence of random variety, which improves populace representativeness. The representative sample and unprejudiced irregular grouping are essential for achieving sound research results. The trouble of collecting a total list of respondents is a significant disadvantage of the random sampling method. The simple random technique was used to select NBS Bank agents, customers and staff from all branches in Malawi as participants in the study. Convenience sampling was used to choose from among Pafupi Savings and Bank Pafupi customers and staff that were conveniently available and willing to participate in the study.

### 3.3.1 Population Sample Size and justification

## Sample Size Calculator

### Find Out The Sample Size

This calculator computes the minimum number of necessary samples to meet the desired statistical constraints.

#### Result

Sample size: **97**

This means 97 or more measurements/surveys are needed to have a confidence level of 80% that the real value is within  $\pm 5\%$  of the measured/surveyed value.

Confidence Level:

Margin of Error:  %

Population Proportion:  % Use 50% if not sure

Population Size:  Leave blank if unlimited population size.

Figure 3: Population sample size

Source: Raosoft inc.(1984)

Estimating an appropriate sample size from a population requires careful consideration of various factors. These factors encompass the nature of the research questions, the research philosophical paradigm, the underlying rationale for conducting the research, the time available for data collection, the chosen method of data collection, and the resources at the disposal for the researcher (Ganesha & Aithal, 2022).

To arrive at the sample size used, this study adopted the online Raosoft sample size calculator. The Raosoft online tool calculated a target sample size of 97 (Figure 3). The study utilized the Raosoft Calculator to determine an appropriate sample size, considering the parameters of a population size of 301,386, a desired confidence level of 80%, a marginal error of 5%, and a known population proportion of 18%. This implies that 18% proportion represent 54,249 banki pafupi savings customers drawn from the main population of 301,386. The other 82% represents other segments of customers including corporates, small and medium enterprises (SMEs), retail as well

as private banking customers which were excluded because was not targeted population. With these inputs, the calculator determined that a sample size of 97 is necessary to achieve the desired confidence level while maintaining a marginal error of 5%.

The justification on the choice of Raosoft calculator was based on several key factors including its accuracy and precision in determining sample size, ensuring robust statistical method is used (Smith, 2017). Additionally, the chosen calculator helped to achieve a representative sample, enhancing the generalizability of study findings (Johnson et al., 2018). Another motivation for the choice is that the calculator also takes into account statistical power, allowing the researcher to estimate an appropriate sample size for meaningful analysis (Simundic et al., 2019). Further, it promotes efficiency and cost-effectiveness by optimizing sampling approaches (Sukmak et al., 2016). In a nutshell, the Raosoft sample size calculator offers accuracy, representativeness, statistical power, and efficiency, making it a valuable tool to achieve credible results. According to the Raosoft calculator, a minimum sample size of 97 participants was determined. However, the researcher successfully collected data from 100 participants, achieving the minimum sample requirement by 103%. This demonstrates that saturation was achieved in the study.

### **3.4 Data Collection Methods**

#### **3.4.1 Survey approach**

In the exploratory survey, the 100 questionnaires that were used to collect data from agents and customers provided vital data on the effect of finance on poverty alleviation, as well as revealed the challenges encountered by the interventions. The questionnaire was developed for the express purpose of capturing information concerning the financial inclusion of the unbanked population in Malawi. Although the aim was not to generalize findings across the globe, this survey approach allowed the researcher to gather information to gain a reliable overview of the status quo.

#### **3.4.2 Unstructured Interviews**

In-depth (unstructured) interviews were conducted to gain a deeper understanding of NBS Bank's poverty alleviation challenges and bank profitability strategies.

Additionally, bank executives provided more clarity on the financial inclusion policies and regulations, the role Information Technology plays in financial inclusion strategies and which partnerships exist to facilitate these strategies.

In-depth interviews involves collecting data through direct, one-on-one engagement with individual participants. In-depth interviews were conducted face-to-face or in some cases over the phone for approximately ten (10) minutes.

Steps to be followed for the conduct of in-depth interviews:

1. The researcher obtained the necessary ethical clearance and applied the inclusion and exclusion criteria to identify prospective interviewees.
2. The researcher made a script or a list of topics to cover. This made it easy to add secondary questions. The researcher scheduled interviews at times and dates of the participants' choice.
3. The researcher asked questions confidently and let the interviewees feel comfortable so that they too were confident and answered difficult questions with ease.
4. The researcher had set a maximum duration time for the interviews so as not to exhaust participants.
5. The researcher adhered to the code of ethics set out in the Annexures, A, B, E, and F- I throughout the process as outlined in ethical considerations.
6. The researcher transcribed the recordings and verified them with the interviewee (Heron *et al.* 2021).

The In-Depth Interview ethical protocols followed included: The researcher established rapport with participants to make them feel more comfortable, which generated more insightful responses – especially regarding sensitive topics (for example, policy, technology, and strategic plan). The researcher had greater opportunity to ask follow-up questions, probe for additional information, and circle back to key questions (Patton, 2014) later in the interview to generate a rich understanding of financial inclusion policy, strategy, and the role of IT as well as Bank Pafupi performance and effect on poverty alleviation and bank profitability. The researcher monitored changes in tone and word choice to gain a deeper understanding and also focused on body language. There was a higher quality of sampling compared to some

other data collection methods. The researcher needed fewer participants (the executive) to glean useful and relevant insights. The in-depth interviews were potentially so insightful, the researcher could identify highly valuable findings quickly. It started as a concurrent design (Creswell & Plano Clark, 2018), where quantitative and qualitative data were collected at the same time. The textbook example started as an explanatory sequential design with the collection of quantitative data only, later followed by qualitative data collection.

### **3.4.3 Criteria for the Information Collection**

Harrison *et al.* (2017) strongly advocate for the power of a case study as a methodology. In particular, (Yin, 2018:4) acknowledges the strength of a case study to not only answer the 'what' research question but also to explore 'why' and 'how'. The research design of case studies consists of a six-fold approach: (1) plan, (2) design, (3) prepare, (4) collect, (5) analyse, and (6) share. For the first step, the researcher developed a study question (or proposition) from theory, defined the unit of analysis, and prepared the collection of evidence and its analysis (Cresswell, 2014). In consequence, the validity of results can be ensured (Yin, 2014).

As this thesis used an exploratory case study, the researcher used research questions for exploratory case studies. For all case studies, the researcher developed a semi-structured interview guideline (Yin, 2014:96). This guideline was checked by independent researchers and by employees of NBS Bank Limited. The guideline was developed iteratively during the process of considering the findings.

In all cases, the units of analysis (Kumar, 2018) were financial inclusion interventions, challenges and digital financial inclusion capabilities. However, due to the availability of data, the researcher conducted two single case studies (embedded design case studies), and one multiple cases (holistic) design case study. Single case study design can be used to confirm, challenge, or extend theory, while multiple case study designs (in the Maldives by Naseer (2018) and in Nigerian by Ezechukwu (2021)) can be used to address a digital financial inclusion explanation and therefore build a base for a proposed Malawi NID Digital Interoperability Financial Inclusion model.

Based on previous literature, (Ezechukwu, 2021; Ozili, 2018, 2020; World bank, 2020), the researcher explored financial inclusion explanations for differences in digital



financial inclusion interventions using replication logic within the multiple case study design (Hunziker & Blankenagel, 2021) thereby contributing to first insights on antecedents on digital financial inclusion. In addition, the first single case study conducted in the Maldives (World Bank, 2018) confirms the theory. The second single case study, conducted in Nigeria (Ekong & Ekong, 2022), extends the theory (Ridder, 2017) by proposing the Malawi NID Digital Interoperability Financial Inclusion model.

For the analysis, the researcher collected multiple data such as screen-shots, and internal descriptions (Merriam & Tisdell, 2016) and observed NBS Bank's financial inclusion interventions. The researcher used the following process for the explorative case studies:

The researcher analysed the data with the involved research assistant and discussed controversies. In cases in which controversies could not be solved, (Schoonenboom, 2019) the research assistant conducted follow-up interviews. This allowed the researcher to derive propositions.

As a first step, the researcher developed theoretical dimensions from the literature being used as a base to adapt the semi-structured interview guideline (DeJonckheere & Vaughn, 2019). Using findings from the first case study, the researcher validated and enriched the theoretical dimensions, and formed provisional categories and some initial first-order codes by applying a “top-down” open coding process (Henderson, 2017). Provisional categories were consolidated and theoretical dimensions were derived, representing the move from open to axial coding (Scott & Medaugh, 2017). This first step resulted in a data structure with theoretical dimensions, theoretical categories, and first-order codes (Mishra, 2021).

In the second step, inter-dependencies were identified by using an induction and deduction approach and revisiting the data in the second step (Yin, 2018). Independent coding of data such as internal documents, screen-shots, and observations allowed the researcher to resolve rival statements (Yin, 2018). Hence, the researcher complied with quality criteria (validity of results) for case studies.

In the third step, based on Heerman, Wilkins, and Barkin, (2021) the researcher aggregated his findings, allowing him to identify inter-relations between antecedents of digital financial inclusion interventions, and their effect on poverty alleviation and

profitability. Further, the findings enabled the researcher to explain the importance of antecedents for digital financial inclusion interventions and provide an explanation of how antecedents have to be aligned to ensure poverty alleviation and bank profitability. The use of case study research helped the researcher to analyse a real-world problem and provide suggestions on how to solve it (Bazeley, 2018).

### **Phase 1: Interview: Qualitative Data Collection**

Starting with introducing the research assistant to the Agent's Manager at NBS bank. The Agents Manager provided the research assistant with his full details and those of all agents across Malawi and their contacts. Then he held a full day and online orientation with the research assistant on the operations of agents across Malawi. The research assistant consulted the manager throughout the data collection.

### **Phase 2: Survey – Quantitative Data Collection**

Introductions and entry into the community. The Agents manager introduced the research assistant to all agents through phone calls and WhatsApp. The process permitted time to build relationships between the assistant, the agents and the customers. The multiple sites visited by the research assistant and the iterative process of constructing the research were in keeping with the traditions and culture of the participating community and adhering to their norms and values of respect by building partnerships and allowing participants to take the lead in choosing appropriate research times and sites (Chilisa, 2012). The process allowed participants to take the lead with invitations and to determine the next steps for the research process. Next, invitations to participate were extended, followed by obtaining participant permission and consent. The researcher reviewed the information according to the research questions. The sources of information included a review of empirical studies review, interviews, questionnaires, policy documents and annual reports. Bazeley's (2018) description of data analysis within a mixed methods case study is based on the case study as "an empirical method that investigated a contemporary phenomenon (the 'case') in depth and within its real-world context" (Yin, 2018:15).

#### **3.4.4 Agents and Customers' Data (Quantitative)**

The researcher met agents and staff individually at their offices and workplaces during

business times. To establish rapport and get to know their schedules, they completed an interactive file activity to draw a picture of their business's daily activities programme. The researchers engaged with agents and staff according to the practices outlined by (Boaz, Hanney, Borst, *et al.* 2018) allowing free movement and respecting and valuing their contributions. Arrangements were made to gather data on separate occasions for each of the visual participatory methods listed below. Some may find why-questions difficult to answer (Glaw, *et al.*, 2017), so the researchers included sub-question probes. Such questions sought explanations and activities that they felt helped or hindered their business, as well as the ways support was provided (Who and what helped agents?) The researchers met with agents and staff on several occasions following data generation to supplement or clarify their explanations.

### 3.4.5 NBS Bank Executives' and Agents' Data

Interviews are an inseparable part of case study research (Yin, 2018). The interviewer listened well and probed the interviewee's answers to questions to clarify explanations. In-depth Interviews allowed the researcher to introduce topics not spontaneously presented by the interviewee that had to be covered as part of the focus of the research. Based on Deng, Zhang, and Lam, (2020) opinion or value questions were used as shown below, the interviewer initiated conversations that provided a greater understanding of the interviewees' thoughts and experiences and insight into the things they do. The table below indicates the areas regarding which the researcher questioned the executive about the rationale for the setting up of NBS bank's Financial, inclusion strategy.

*Table 3: Executive interview questions*

POLICY QUESTIONS	PRODUCT QUESTIONS	TECHNOLOGY QUESTIONS
1. Malawi has a national policy (banking sector) on financial inclusion - Malawi National Strategy for Financial Inclusion (2010 - 2014). Has this been effectively	1. What was the rationale for setting up Bank Pafupi? 2. Considering the	1. Technology is divided into 2 categories - banking-oriented and non-banking

POLICY QUESTIONS	PRODUCT QUESTIONS	TECHNOLOGY QUESTIONS
<p>rolled out?</p> <p>2. What strengths and weaknesses Strategy were encountered regarding this strategy?</p> <p>3. NBS drew down from the National financial inclusion Strategy to come up with its policy on inclusion. Did the Bank interpret it well?</p> <p>4. What are the key tenets of the NBS Financial Inclusion Policy?</p> <p>5. How effective has the rollout of the NBS Financial Inclusion Policy Strategy been?</p> <p>6. What were the strengths and weaknesses of the NBS Financial Inclusion Policy?</p> <p>7. The current drive in the banking industry across the world is that of having fewer branches but more virtual banking. Is this applicable to Malawi taking into consideration the level of low technology appreciation to a wider</p>	<p>rationale, would you consider it effective in the drive for a financial inclusion strategy</p> <p>3. What was the rationale for setting up Agent Banking?</p> <p>4. Considering the rationale, would you consider it effective in the drive for a financial inclusion strategy</p>	<p>oriented. Could you please take me through how NBS has utilised these in the past</p> <p>2. What is the future of technology in NBS?</p> <p>3. What is your view on the National ID as a tool for financial inclusion?</p> <p>4. What would you see as a way forward to a much more enhanced drive by NBS for financial inclusivity?</p>

POLICY QUESTIONS	PRODUCT QUESTIONS	TECHNOLOGY QUESTIONS
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population?

8. How effective is the NBS Customer Engagement policy?

9. What are the rationale and tenets of the NBS Technology Policy?

The NBS Bank executive as policymakers and decision-makers was required to provide the rationale for the setting up of the NBS bank Financial, inclusion strategy. They also needed to shed more light on the role of Information Technology in driving financial inclusion.

Twelve (12) Pafupi agents from the southern region of Malawi were interviewed to balance the executives. The interviews were conducted by the Research Assistant and took over an hour. The interviews were expected to help address the research questions more specifically or to concentrate more on the topic itself. The researcher himself studied and read the transcripts of the interviews.

### 3.5 Data Analysis

This current study followed methodological procedures to analyse the data. The data analysis procedures followed are described in Table 4.

*Table 4: Data analysis methods and tools*

PLANNING	1. QUALITATIVE ANALYSIS  (Thematic Analysis): The data from in-depth interviews were analysed using thematic analysis. Additionally, the researcher analyzed data into NVivo: Step 1 – Reviewed research	2. QUANTITATIVE ANALYSIS - SPSS version 25 and Microsoft Excel  Method: First, manually loaded raw data from questionnaires into an excel file and kept the excel	3. CASE STUDY / DOCUMENT ANALYSIS -  The researcher processed methodically
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	<p>questions and/or research approach and imported them into NVivo for easy reference. Step 2 read a few transcripts and wrote summarised memos. The researcher opened a transcript and clicked on the memo link in the ribbon to create a linked memo to the transcript to write up key points. Step 3 - created a research journal and developed a coding strategy. The researcher reviewed the summarized memos for the transcripts created a research journal as a memo and wrote up the key issues coming out of the interviews, related to the research questions and developed an initial broad coding strategy. Step 4 - coded for the broad topic areas (themes) by selecting the text and then dragging it onto the code. The researcher conducted NVivo coding using the mind map by a coding framework, coded for the broad topic areas (themes), reviewed the coding, reorganised the codes, explored data using coding queries, and identified the themes.</p>	<p>file ready with all data inserted using the right tabular forms.</p> <p>Secondly, imported the data into SPSS. Import raw data into SPSS through the researcher's excel file, and then SPSS analysed it</p>	<p>Prepare. To begin, the researcher identified the documents relevant to the study</p> <p>Ekong, U.M. and Ekong, C.N. (2022). Nigerian case</p>
<p>Case 1: Agents and customers</p> <p>Case 2: Executives and staff</p> <p>Case 3: A case study / Document analysis</p>	<ul style="list-style-type: none"> <li>• Reducing the data into meaningful segments by coding (naming) segments that are "essence-capturing</li> <li>• Combining the created codes into</li> </ul> <p>Themes</p> <ul style="list-style-type: none"> <li>• Displaying and describing the data</li> <li>• Comparison - diagrams, tables, and discussions</li> </ul>	<ul style="list-style-type: none"> <li>• Reducing the data /coding</li> <li>• Data entry into Excel and SPSS for graphs, pie charts and tables</li> <li>• Statistical analysis and presentation into a word document</li> </ul>	<ul style="list-style-type: none"> <li>• Inductive processes for in-case analysis to explore in-depth codes for each case unit</li> <li>• Cross-case analysis for comparison</li> <li>•</li> </ul>
<p>INITIAL IN-CASE AND CROSS-CASE ANALYSIS</p> <ul style="list-style-type: none"> <li>• Banking industry financial inclusion policy and Malawi Financial Inclusion strategy review process team (UNCDF, 2017).</li> </ul>			
<p>MIXED ANALYSIS</p>			
<ul style="list-style-type: none"> <li>• Data reduction (that is, reducing the dimensionality of the quantitative data and qualitative data)</li> </ul>			

<ul style="list-style-type: none"> <li>• Data display (that is, describing visually the quantitative data and qualitative data)</li> <li>• Data transformation (that is, quantizing and/or qualifying data)</li> <li>• Data correlation (that is, correlating quantitative data with quantized data or correlating quantitative data with qualified data)</li> <li>• Data consolidation (that is, combining both quantitative and qualitative data to create new or consolidated variables or data sets) (Yin, 2018. Creswell, 2018).</li> <li>• Data comparison (that is, comparing data from quantitative and qualitative data sources)</li> <li>• Data integration (that is, integrating both qualitative and quantitative data into a coherent whole).</li> </ul>
CONCEPTUALISATION
<p>The researcher conceptualized a seven-step process for mixed analyses: (a) data reduction (that is, reducing the dimensionality of the quantitative data and qualitative data), (b) data display (describing visually the quantitative data and qualitative data), (c) data transformation (that is, quantizing and/or qualifying data), (d) data correlation (that is, correlating quantitative data with quantized data or correlating quantitative data with qualified data), (e) data consolidation (that is, combining both quantitative and qualitative data to create new or consolidated variables or data sets), (f) data comparison (that is, comparing data from the quantitative and qualitative data sources), and (g) data integration (that is, integrating both qualitative and quantitative data into a coherent whole).</p>
FINALISATION
<ul style="list-style-type: none"> <li>• Input from participants (agents, customers and executives through member reflections)</li> <li>• Reflection processes aided contextualized understandings of the effect of financial inclusion interventions and challenges</li> <li>• The researcher continued to analyze the data individually and in collaboration with other national and international researchers, that is, local and distal researchers forming part of the Banking industry financial inclusion policy, Malawi Financial Inclusion strategy, IT experts</li> <li>• The aforementioned processes finalized the empirical analysis within each case and across cases</li> <li>• By linking the current study's empirical findings with literature and theory explaining the phenomena, the researcher constructed deductive links with extant literature to explain the findings</li> </ul>

The researcher first, conducted a thematic analysis of qualitative data using NVivo followed by a quantitative analysis of the qualitative codes that emerged from the qualitative analysis and that was transformed into quantitative data using, exploratory factor analysis of the themes that emerged from a constant comparison analysis of qualitative data. (Javadi & Zarea, 2016).

The goal of thematic analysis was used to identify themes, that is, patterns in the data that were important or interesting, and used these themes to address the research. Thematic analysis interpreted the data and made sense of it (Clarke & Braun, 2013). Typically, this reflected the fact that the data was summarised and organised, rather

than analysed.

The thematic analysis was used to analyse the qualitative data collected from interviews. Once the data was coded, the researcher identified themes, looking for the most common responses to questions, identifying data or patterns that could answer research questions, finding areas that had been further explored then categorising themes for description as final results. Qualitative data were transcribed and translated. Themes were developed from the data collected from the key informants by looking at what was repeatedly being said by the interviewees. Thereafter sub-themes were identified from each theme. These themes and sub-themes were reported as the study findings for qualitative data.

The researcher converted qualitative data (themes and sub-themes) into numerical codes that were analyzed quantitatively (that is statistically – which is called quantizing). For example, the researcher conducted a qualitative analysis of qualitative data followed by a quantitative analysis of the qualitative codes that emerged from the qualitative analysis and that was transformed into quantitative data using the exploratory factor analysis of themes that emerge from a constant comparison analysis of qualitative data. Such conversion of qualitative data into numerical codes that were analyzed quantitatively (that is statistically), is called quantizing.

Secondly, the researcher conducted a quantitative analysis using SPSS version 20 and compared it with qualitative analysis of the quantitative data that emerged from the quantitative analysis and that was transformed into qualitative data.

The researcher found it vital to have an analysis strategy from the planning stage and conceptualisation of the research to the completion of the study with data dissemination (Cresswell, 2017). Part of the analytical strategy included a clear plan on how to organise the cases and documents making up the data sources for the research project (Yin, 2018). The researcher anticipated an extensive, in-depth data pool from all the qualitative and quantitative methods included in the case studies. Each case consisted of data gathered for agents, customers and staff of NBS Bank. This resulted in three case units, each comprising data gathered for the primary informant (agents and customers), with their associated secondary informants (NBS Bank executive). Additional case documentation was grouped to provide context-



based information that could deepen researchers' understanding of the financial inclusion interventions' effects and challenges using documentation, field notes, observations and researcher reflections.

The analysis was conducted concurrently with data collection in a cyclical process (Creswell, 2017) to ensure that data were analysed alongside data generation while allowing an opportunity to follow up with participants in the field. This simultaneous iterative analysis and data generation process presented typical case-study research and provided the researcher with an opportunity to systematically develop conceptually sound research through "logical coherence" that was data-driven (Nowell, *et al.*, 2017).

Three basic strategies for analysis informed data analysis: (a) reducing the data into meaningful segments by coding (naming) segments that are "essence-capturing" (Nowell, *et al.*, 2017), because it informed the research questions; (b) combining the created codes to form broader categories or themes that related well; and, (c) displaying and describing the data that allowed the comparison of findings through diagrams, tables, and discussions (Creswell, 2017). The initial analysis followed inductive processes for in-case analysis to explore in-depth codes for each case unit followed by cross-case analysis for comparison (Yin, 2018).

Mixed analyses involved, for example, four phases of analysis: (a) data transformation, (b) data correlation and comparison, (c) analysis for inquiry conclusions and inferences, and (d) using aspects of the analytic framework of one methodological tradition within the analysis of data from another tradition (Yin, 2018). Based on Creswell & Hirose, (2019) the researcher conceptualized a seven-step process for mixed analyses: (a) data reduction (i.e., reducing the dimensionality of the quantitative data and qualitative data), (b) data display (describing visually the quantitative data and qualitative data), (c) data transformation (quantizing and/or qualifying data), (d) data correlation (correlating quantitative data with quantified data or correlating quantitative data with qualitized data), (e) data consolidation by combining both quantitative and qualitative data to create new or consolidated variables or data sets, (f) data comparison (comparing data from the quantitative and qualitative data sources), and (g) data integration (that is, integrating both qualitative and quantitative data into a coherent whole).

The researcher analysed the data systematically and consistently with the aid of computer-based analysis programmes (SPSS version 20 and Microsoft Excel) as described by Soratto and Pires (2018). The researcher applied analysis strategies that allowed inductive in-depth exploration of the data to produce nuanced descriptions from multiple sources in the context (Miles *et al.*, 2014).

The researcher presented the initial in-case and cross-case analyses to the Banking industry financial inclusion policy and Malawi Financial Inclusion strategy review process team. The team comprised the primary investigator for Malawi and South Africa, supervisors and other researchers on the project (two PhD candidates who worked on different cases as part of the larger project). Through collaborative decision-making, a comprehensive, systematic coding system was developed as part of a codebook (Creswell & Hirose, 2019). The code book contained codes created for this study as well as the larger banking industry financial inclusion policy and Malawi Financial Inclusion strategy review process team and NBS Bank IT Team. Where applicable, the researcher applied any codes co-created for the larger project codebook deductively to data segments for this study. The coding system was applied by three independent co-coders. Once the three independent co-coders completed their analyses, they met to reach a consensus. The final analysis was evaluated and reviewed by an external coder not invested in the project.

The finalisation of the data analysis included getting input from participants on the data analyses through member reflections (Creswell & Poth, 2018; Yin, 2018). Reflection processes aided contextualised understandings of the effect of financial inclusion interventions. Member reflections emphasised collaboration with participants as a strategy to gain additional insights from participants (Creswell & Hirose, 2019). Following the participants' reflections, the researcher continued to analyse the data individually and in collaboration with other national and international researchers including local and distal researchers forming part of the Banking industry financial inclusion policy, Malawi Financial Inclusion strategy, and IT experts. The aforementioned processes finalised the empirical analysis in each case and across cases.

To link the current study's empirical findings with literature and theory explaining the phenomena, the researcher constructed deductive links with extant literature to

explain findings where possible (Creswell & Hirose, (2019). Quantitative data were analysed using SPSS version 20 and came up with tables, frequencies and pie charts concerning the specific objectives. In addition, descriptive statistics were computed for the variables using the chi-square test at 5 % significance.

### **3.6 Trustworthiness, Reliability and Validity**

This study followed Tracy's (2010) criteria for trustworthiness. The model serves as a benchmark for the demonstration of credibility, rigour, and other criteria. This study is parsimonious and promotes dialogue amongst qualitative scholars from different paradigms. It achieved these qualities by providing a conceptualization that differentiated between the end goals of qualitative research (universal hallmarks of quality) and the myriad practices and variant methods, or means, that a researcher may choose from to achieve these goals. This distinction between research "means" and "ends" provides an expansive or "big tent" structure for quality while still promoting complex differences in paradigmatic practices (Denzin, 2008; Tracy, 2013).

The topic was worthy as it was relevant, timely, significant, and compelling. For example, the study's main goal was to analyze the effect of financial inclusion interventions and challenges. The findings would improve access to digital financial services and strengthen the competitiveness of the Malawian economy through digitalization. It also supports strengthening capacities in light of lessons learnt from the COVID-19 pandemic when digitalization has become more critical for in-service delivery. Secondly, although financial inclusion levels remain low, with two-thirds of Malawians without access to formal financial services, Malawi has made significant strides in rolling out its advanced digital National ID (NID) card to over ninety-eight per cent (98%) of the adult population. This means that ninety-eight per cent (98%) of the adult population has been registered and ninety-three per cent (93%) of the adult population has been issued the NID card. A robust and universal National Identification System provides an essential foundation for accessing financial services and thus holds significant potential for improving access to financial services for Malawians.

Secondly, the topic may develop importance over time within a specific discipline or be specifically contracted for further study by institutions or agencies. A phronetic approach to qualitative research (Tracy, 2013) suggests that contextual priorities are

integral when developing a project. The recruitment of a researcher in a consultant-type role represents one way that a topic's worthiness can be established by a third party, as when studies or reports are commissioned by institutions. The focus of research occurred suddenly through shifts in a researcher's personal or societal landscape. For example, a study by Mburu, Bansal & Porteous, (2018) in Malawi found that approximately 9.2 million Malawians that are 16 years of age and over had been registered for a NID and 8.6 million NID cards had already been issued. Over ninety-eight per cent (98%) of the adult population had been registered and over ninety-three per cent (93%) of the registered adult population had been issued NID cards. The worthiness is on the basis that the researcher's proposed digital interoperability financial inclusion model is much dependent on national identity (NID). The advanced, digital NID card in Malawi is a particularly significant innovation in Malawi given the high costs and complexities of conducting Know-Your-Customer (KYC) due diligence. Although two-thirds of Malawians lack formal financial services, the National Identity (NID) card that was issued to most adults in 2017-18 establishes a good foundation for rapidly increasing access. With a regulatory commitment to its use and further investment to enable electronic know-your-customer (e-KYC), the NID has the potential to enable easier access, not just to payments but also to savings, credit, insurance, and investment products, especially for marginalized segments of the population. By embracing the digital features of the NID, there exists a potential to reduce customer on boarding costs by up to eighty per cent (80%), making customer acquisition a more viable business proposition for FSPs. Lower customer on boarding costs, enabled by digital ID, can make it possible to offer suitable products for low-income customers (Kettles, 2018). The digital NID card enables e-KYC measures, and this is particularly important for driving financial inclusion. The digital NID card can promote remote account opening and empower agents to execute e-KYC measures; Efficient e-KYC measures also have the potential to enable persons who currently don't meet KYC requirements to access formal financial services; Ultimately, e-KYC can lower outreach costs by supporting the end-to-end provision of products and services digitally, thus targeting underserved areas. Other than improving customer due diligence processes, the digital NID card can be used for various other use cases, which can drastically promote the financial inclusion of individuals. This includes the creation of a robust credit bureau infrastructure and using digital ID as a vehicle for cash transfer programmes. Overall, digital IDs can decrease the costs and risks for

FSPs, thereby enabling innovation for greater financial inclusion (Kettles, 2018).

Thirdly, the worthiness of the study lies in it having challenged theoretical, practical, and/or methodological assumptions (Tracy, 2013) on the part of the researcher or researched community, therefore catalyzing new contributions and understandings of the social world - the proposed digital financial inclusion model. Such a topic might reveal an aspect of life that has been misunderstood or overlooked -the poor financially excluded, -or examine a commonly accepted practice in a new (Bank Pafupi networks) in a novel way. Counterintuitive research, questions taken for granted assumptions, or challenges, and well-accepted ideas are often worthwhile and interesting and point out surprises that shake readers from their common-sense assumptions and practices. Thus, the topic was worthy of study, but the researcher made a significant contribution to the topic itself.

### **3.6.1 Rich Rigour**

In qualitative research, the researcher demonstrated rigour through careful attention to detail, methodological thoroughness, the precision of evaluation, and the generation of the requisite variety concerning data richness and complexity. Requisite variety refers to the need for a tool or instrument to be at least as complex, flexible, and multifaceted as the concept, interaction, situation, or actors being studied. Qualitative research benefitted the researcher who read widely and provided clarity about the different concepts and data by which he arrived at findings and assertions. The researcher demonstrated rigour in the methodology section of the research report through the description of data collection and analysis. The researchers detailed the amount of data collected, the duration of time spent in the field, and the different kinds of data contributing to the study (Tracy & Rivera, 2010).

In terms of data analysis, the researcher accounted for the translation of raw data into field notes, the organization of the data, and the analysis process by which he made claims and conclusions. The researcher's rigorous analysis practices included disclosing the number of pages of typed field notes and/or interview transcriptions which contributed to the analysis, the time gap between fieldwork and the development of field notes, the number and length of interviews, the appropriateness and breadth of the interview sample given the goals of the study, and transparency regarding the

process of sorting, choosing, and organizing the data.

### **3.6.2 Sincerity**

In qualitative research, the researcher achieved sincerity through self-reflexivity, vulnerability, honesty, and transparency. The use of the term sincerity is not meant to connote a single, authentic reality or truth, but is instead meant to convey honesty about the researcher's background and biases and how these factors might play a role in the execution of data collection and analysis.

The researcher's self-reflexivity was evidenced by the sharing of motivations, strengths, and shortcomings of the study. The researcher practised self-reflexivity even before stepping into the field by being introspective, assessing his own biases and motivations, and asking whether they are well suited to examine their chosen sites or topics at this time. Awareness of and authenticity about one's own identity and role within the research context is a central component of a researcher's sincerity. This reflexivity is evidenced by researchers' shared accounts of members' reactions to the participation in the site, using the first person, "I" to remind readers of the researcher's presence, influence, and role within the research context, and balancing these personal accounts with claims made from the data.

In addition to being honest and vulnerable through self-reflexivity, another practice of sincerity was transparency. The Researcher was transparent about how he accessed the context of the study, the level of participation and immersion, field note practices, and the level of detail in transcription. Truthfulness and transparency about mistakes made in the access or data collection process, the extent to which those mistakes impacted data collection and analysis, and whether surprises were addressed and resolved along the way all contribute to the sincerity of a researcher and the final report. Transparent research was marked by disclosure of the study's challenges, methods of funding, unexpected twists and turns, and revelation of the ways research foci transformed over time. Transparent researchers give credit where it is due in terms of author order and acknowledgements to participants, funding sources, research assistants, and supportive colleagues.

### **3.6.3 Credibility**

In quantitative research, credibility was achieved through the reliability, replicability, consistency, and accuracy of the study's findings. The researcher attained qualitative credibility through the use of thick description, crystallization of data, evidence of multivocality (providing opportunities for voice from a range of stakeholders that included NBS Bank agents, customers, staff and an executive staff), and engaging in member reflections with participants. These four practices contributed to the dependability and trustworthiness of the researcher, as well as the expression of an empirical reality that was plausible or seemed true and accurate. Credibility was significant in creating confidence that people acted upon data and findings to make decisions in their own lives, work, families, or future research settings.

One of the most important means of achieving credibility in qualitative research is thick description (Geertz, 1973). Thick description contributed to credibility through extensive accounts, portrayals, and depictions of interactions and communicative processes as they occurred in the field. To illustrate the data's complexity, the researcher shared information, meaning that he provided enough detail for readers to come to their conclusions about the environment. Sincerity was evidenced by the researcher's awareness and explanation of inward motivations and thought processes and the outward focus of thick description provided researchers with a detailed account upon which to base their claims as evidenced by observed interactions occurring in context. Crystallization and triangulation are other practices that resulted in credibility. Crystallization (Ellingson, 2008) and triangulation entail the inclusion of multiple data points, sources, and researcher points of view.

Crystallization analysed the research sites to gain credibility by including multiple kinds of data, people, and ways of understanding the world. These practices encouraged the researcher to gather multiple types of data and employed various methods, research assistants, and numerous theoretical frameworks. This helped solidify findings but also opened up the scene in a more complex, in-depth, but still thoroughly partial, manner. Multivocality represented the inclusion of multiple voices evident within the research context. In addition to providing an empathetic understanding, attending to multivocality provided space for a variety of opinions. In qualitative research, the researcher does not put words in members' mouths but rather attends to viewpoints that diverge from those of the majority, or the author. By understanding

how different groups may understand the same communication phenomenon in different ways, the researcher maintained credibility by demonstrating to readers that due diligence has been paid to the multiple interpretations of a given communication interaction.

Lastly, member reflections, wherein the researcher shared preliminary findings with participants and made note of reactions to themes and issues that emerged in the analysis are linked to qualitative credibility. Member reflections allowed the researcher to gauge the effect and relevance of their findings and used participant impressions to inform continued data collection. Member reflections also allowed for sharing and discussing the study's findings with participants and provided opportunities for questions, critique, feedback, affirmation, and even collaboration. Member reflections also helped the researcher to learn whether members found the research comprehensible and meaningful. Member reflections were differentiated in this model from "member checks" which were focused on ensuring that participants agreed with the data and emerging themes. Member reflections were useful whether or not participants agreed.

### **3.6.4 Resonance**

Resonance is the extent to which a text meaningfully impacts an audience such that a reader can make connections between the themes or findings in the study at hand, and generalize those trends to his or her own life or other areas of research. In contrast, qualitative research engages in an in-depth study that generally produces historically and culturally situated knowledge (Pafupi savings account). Through the process of naturalistic generalizations, readers made choices based on their intuitive understanding of the scene, rather than feeling as though the research report was instructing them what to do. Rather than using their findings to predict, generalized, and controlled future interactions and contexts, qualitative researchers conducted in-depth, situated analyses of contexts, rhetorical situations, and embodied experience in such a way that readers appreciated the study's findings and then intuitively applied, or transferred, those findings to their situations.

Resonance in qualitative research was achieved through aesthetic merit, evocative writing, and formal generalizations as well as transferability. All high-quality qualitative



reports impacted stakeholders beyond the researcher or research team. The way the qualitative report was written or presented was significantly intertwined with its content, meaning that the construction of the text had the potential to aesthetically affect its readers. The quality of description and calibre of writing made transferability easier for their readers than others. Through his thick description, the researcher painted a picture of how life unfolds in a given context (financially excluded) or how a concept (digital financial inclusion) can be better understood. However, it is eventually up to the reader to make connections between the researcher's findings and familiar contexts germane to his or her own life experience.

### **3.6.5 Significant Contribution**

The significance of the study was largely judged by whether or not the findings extended, transformed, or complicated existing bodies of knowledge, theories, or practices in new important, and insightful ways.

Qualitative research was significant in that a theoretical contribution extended, built, or critiqued existing theory, or applied a given theory in a new, novel way as an analytical framework. For instance, the researcher took the concept of digital financial inclusion intervention and saw how it manifested among business professionals (agents and customers). However, theoretical significance required the researcher to go beyond mere (re)application of existing theory. Rather, research that built theory extended or problematized current theoretical assumptions. Such contributions offered new and unique understandings that emerged from the data analysis conceptualizations that helped explain social life in unique ways and may be transferred to other contexts.

A heuristic contribution offered new information on a particular topic or communicative phenomenon in a new context or among unique populations, moving people to further explore, research, or act upon the research in the future - an area for further studies. The researchers increased heuristic significance by providing readers with substantive and interesting suggestions for future research. The research was also heuristic when it influenced a variety of audiences such as policy-makers, research participants, or the lay public to engage in action or change. This overlapped with practical

significance.

Practical contributions helped people (financially marginalized, agents and staff) engage in practices and behaviours in a new, improved, or more informed manner (digital finances), given the findings of the study. Such contributions empowered participants to see the world in new ways or help shed light on, transform, or valuably reframe a problem.

Methodological contributions took the form of a distinctive approach to applying or extending methods of inquiry, either concerning a new context, site, or concept. The research yielded unsurprising theoretical findings that nonetheless provided a significant contribution by introducing and explicating a new methodological approach. For instance, methodological significance emerged from the qualitative study of a concept that was previously examined solely quantitatively or experimentally. In this way, methodological contributions lead to new kinds of theoretical insights as a result of investigating and applying a theory in a new way.

### **3.7 Ethical Considerations**

Ethical qualitative research is categorized in four ways. The first type is procedural ethics, which is behaviour that fulfils the bureaucratic standards often set forth by an institutional review board and is considered to be universal or required to protect participants against unnecessary risk from their involvement in the study. For example, DaVinci research ethical guidelines were followed (see Addendum). Procedural ethics includes the importance of accuracy and avoiding fabrication, fraud, omission, and contrivance. The standards followed by the researcher included ensuring participants' rights to confidentiality, anonymity, and the protection of participants' identity and privacy (Tracy & Hinrichs, 2017).

Situational ethics refer to a researcher's "in-the-moment" enactment of upholding rules and standards of ethical behaviour, such as choosing when and where to audio- or video-record participants (for example NBS Bank executives were recorded in their respective offices), as well as which stories to include in an article and assessing if the data's disclosure might negatively impact participants. The researcher repeatedly reflected upon, critiqued, and questioned his ethical decisions and constantly reflected upon his methods and sensibly considered which data was worth exposing. Relational

ethics encouraged the researcher to be aware of the impact he had on people within the research site and to treat participants with dignity, acknowledging them as people with values, voices, and beliefs, rather than merely as subjects of observation. Relational ethics (van der Meiden, Noordegraaf & van Ewijk, 2020) involves an ethical self-consciousness in which the researcher is mindful of his character, actions, and the consequences of his actions upon others. Throughout their inquiry, the researcher considered the impact of the study, its implications, and his role in the research site. He considered his being with participants, whether he was acting kindly or empathetically (Tracy & Hinrichs, 2017).

Lastly, existing ethics refer to the care and thoughtfulness of how the researchers leave the site (agents and offices) and shares result with the scholarly community. The current researcher had full control over how his work will be read, understood, and used. He considered how best to present the research to avoid unjust or unintended consequences for the participants, particularly those who were members of marginalized populations such as the unbanked rural community as recommended by Tracy and Hinrichs (2017).

Meaningful coherence refers to the overall consistency, soundness, and rationality of a study (Tracy & Hinrichs, 2017). The literature reviewed gave rise to and established, a fitting context for related research questions. The research questions were suitably addressed by appropriate methods that fitted the paradigmatic. The data, stories and findings fitted with the literature and research questions. The goals of the intended study were achieved in the analysis and included implications that spoke to issues, questions, concerns, or controversies identified in the literature review. Meaningful coherence is also about the logical and intuitive connection of various arguments or concepts in a single study.

The research had a meaningful coherence, as in each section of the study, the introduction, literature review, methodology, findings, conclusions and implications flow together to be both meaningful and coherent for the reader. The study achieved the stated purpose, used methods that partnered appropriately with the espoused theories and paradigms and connected current literature with the research foci, methods, and findings (Tracy & Hinrichs, 2017).

The researcher applied a set of criteria to ensure the trustworthiness of the qualitative research.

**Credibility.** Credibility depended on the richness of the data and analysis and was enhanced by triangulation rather than relying on sample size, aiming at representing a population. There are four types of triangulation used by the researcher in conjunction with each other. Firstly, data triangulation, where different sources of data were used from existing research. Secondly, methodological triangulation, where more than one method was used. The mixed methods approach focused on qualitative methods. Thirdly, investigator triangulation, where more than one researcher added to the credibility of the study to mitigate the researcher's influence. In this case, a research assistant was used as well as research by women's world banking. Fourthly, theoretical triangulation. The researcher used more than one theory as a conceptual framework.

**Transferability.** The researcher gave a thorough description of the research context and underlying assumptions. By providing this information, the research results may be transferred from the original research situation to a similar situation.

**Dependability.** The researcher aimed to replace reliability, which required that when replicating, the same results should be achieved. As this would not be expected to happen in a qualitative setting, alternative criteria were general understandability, the flow of arguments and logic. Both the process and the product of the research were consistent.

**Conformability.** Instead of general objectivity in quantitative research, the researcher's neutrality in research interpretations was required. This was achieved by a conformability audit that included an audit trail of raw data, analysis notes, reconstruction, process notes and personal notes, as well as preliminary developmental information. The sampling approach differed significantly in quantitative and qualitative research. Qualitative samples were small and were selected purposefully to select information-rich cases for in-depth study. There were ten participants. Qualitative research used more documentation than quantitative research to establish trustworthiness. Quantitative research, on the other hand, used more effort during the research design phase.

**The trustworthiness** of the study was achieved by conducting the research in a real-life situation and natural environment for both quantitative and qualitative participants. The key informants, who were the bank managers, were interviewed at their working place. The data collection tools were pretested to remove unclear information. A good sample consisting of participants who knew about bank financing was purposively sampled. The interviewer posed more follow-up questions to the participants to enhance the collection of hidden information. Information was triangulated by examining evidence from all participants' categorised as key informants. In addition, primary data in the form of exact words spoken by the participants were included in the findings to demonstrate the basis upon which the researchers' conclusions are drawn. To ensure that the collected data was accurate and reliable from the source, the questionnaires were physically handed over directly to the intended respondents and sealed in envelopes with the official introduction letter from DaVinci. A consent form was prepared by the researcher for the participants. In addition, the respondents completed the questionnaires in the presence of the researcher.

For quantitative analysis, SPSS version 20 was used to generate graphs, tables and figures to summarise and present the findings. Excel was used present data in tables, plotted and plotted as graphs to display the trends in each variable. SPSS is the most popular quantitative analysis software program used by social scientists. Made and sold by IBM, it is comprehensive, flexible, and can be used with almost any type of data file. However, it is especially useful for analysing large-scale survey data. It can be used to generate tabulated reports, charts, and plots of distributions and trends, as well as generate descriptive statistics such as means, medians, modes and frequencies, in addition to more sophisticated statistical analyses like regression models (Crossman, 2018).

Data were analysed inductively alongside data gathering processes such as iterative, and inductive analysis (Creswell & Poth, 2018). The inductive in-case analysis was exploratory (heuristic) (Saldana, 2016) as part of the first cycle of coding. The researcher used pattern analysis and axial coding to organise codes into categories renamed codes where necessary and regrouped and organised the codes into groups. Comparisons of analysis across cases followed the comprehensive in-case analysis. When a code was created in one case, but not in others, the researcher coded

deductively across cases for comparison. Next, the codes were compiled to create a codebook that was evaluated by an external qualitative researcher. These analyses were facilitated by Nivo, which allowed the researcher to provide an audit trail and structure for the analysis (Woolf & Silver, 2018).

### 3.8 Quantitative Research

The researcher assessed quality by (a) internal validity, (b) external validity, (c) reliability and (d) objectivity as described below.

**Internal validity.** The study was internally valid as it was able to determine whether a causal relationship exists between one or more independent variables and one or more dependent variables (Heffner, 2017). That is, it was explanative. The study was internally valid as there were as few confounding variables as possible. For example, the researcher made sure to take note of when a change in the independent variable (or the 'cause') might influence a change in the dependent variable (or the 'effect'). Causation indicates that Bank Pafupi as a financial inclusion intervention is the result of the occurrence of the other event (Information Technology). There is a causal relationship between the two events.

**External validity.** External validity was achieved as the researcher could generalize the study, which was not particularly threatened since the researcher correctly chose people, places and times. External validity can be improved if the study is replicated (Jiménez-Buedo & Russo, 2021) For example, a set of three criteria was developed to identify high-quality evidence. Each of the criteria (study design, data collection methods, analysis) was rated as strongly agree, agree, disagree and strongly disagree, thus achieving an overall methodological rating.

**Reliability.** In this research, reliability meant that the study achieved “repeatability” or “consistency”; as the measure always provided the same result (Yoshida, *et al.*, 2017). For example, findings from interviews and questionnaires both indicated that Bank Pafupi is a poverty alleviation tool as discussed in Chapters 4 and 5. The researcher adopted a subjective approach to research which, on the other hand, is consciously allowed in qualitative research (Kalu, 2019). For example, some policy issues required his input.

**Objectivity:** The researcher distanced himself from what he studied so findings depended on the nature of what was studied rather than on the personality, beliefs, and values of the researcher. When the study's results were generalized, its repetition offered the same results (Harding, 2015).

### **3.8.1. Bias**

The researcher deeply searched the literature wide enough to include studies with divergent viewpoints, variables and results. During planning at every stage of the research, the research had put much emphasis on bias at every stage, mainly, sampling and effect size. Research Assistants, Research consultants, and editors were used outside the study review, research plan and data. Being the CEO and the fact that the study was conducted within the institution, the researcher used Research Assistants to collect data. Several academic staff from different Universities independently analysed and evaluated the data. Overgeneralisation was avoided during the interpretation of the findings. The researcher kept records and was transparent enough.

### **3.9 Conclusion**

This study applied a case study methodology to explore the effect of financial inclusion at an NBS bank. The methodological choices and procedures followed were clearly stated and motivated. This chapter describes the procedures by which the data were collected and interpreted in this study. It discusses the rationale for selecting the chosen research method, the development of the questionnaire, and the data analysis techniques and tools that were utilised. It concludes with a brief discussion of the ethical implications raised by the study.





## CHAPTER FOUR

### FINDINGS AND DISCUSSION

#### 4.0 Introduction

This chapter provides quantitative and qualitative case study results with descriptive demographical information. This investigation intended to understand the effect of financial inclusion interventions on agents/bank profitability and customers at NBS Bank Pafupi savings and Agent banking. To address this aim, quantitative and qualitative data were collected via questionnaires, documents and semi-structured interviews.

The data were analyzed in three phases. Firstly, questionnaires were distributed to Pafupi Savings account, operating at Bank Pafupi, Agency banking clients. Secondly, in-depth interviews were conducted with banking executives and agents. The researcher conducted interviews using a question guide with twenty (20) participants, including eight (8) executives and twelve (12) agents that worked at NBS Bank from 2012 to 2020. Thirdly, the Bank Pafupi Agency network and policy documents were analyzed. The analyses are presented in terms of the objectives of this study that they address.

This investigation intended to understand the effect of financial inclusion interventions on agents/bank profitability and customers at NBS Bank Pafupi savings and Agent banking.

The Specific objectives were:

- i. To undertake an effect analysis of Pafupi savings account and Bank Pafupi agent networks as Financial inclusion interventions from 2012 to 2020.
- ii. To assess the effect of digital banking (Bank Pafupi agent networks financial services) on customers' and bank profitability.
- iii. To explore NBS Bank's financial inclusion capabilities and processes on agents/bank profitability and customers.
- iv. To explore barriers to NBS Bank Financial inclusion products from 2012 to 2020.

- v. To propose banking and non-banking models for financial inclusion for NBS bank profit and customer satisfaction.

#### **4.1 Response Rate of Surveys**

A total of hundred (100) questionnaires were distributed to participants, and eighty (80) out of the hundred participants responded, representing an eighty per cent (80%) response rate.

#### **4.2 Effect Analysis of Financial Inclusion Interventions**

This section presents integrated data obtained from the questionnaire and interview guide on the performance of NBS bank limited Pafupi savings account and Bank Pafupi agent networks as financial inclusion products from 2012 – 2020.

##### **4.2.1 Business Performance**

This section aimed to measure the effect of Pafupi savings account and Bank Pafupi agent banking on the financial and business performance of NBS bank.

Data collected using a questionnaire from customers and agents show 62 respondents (68%) rated the performance as very high, 8 (10%) as high, 3 (4%) as very poor, and 2 (3%) as poor. Participants indicated that they believe the savings account and agent banking do positively influence the performance of NBS bank. Additionally, although some participants (bank employees) indicated that the initiatives negatively affect bank performance, other evidence suggests that savings account and agent banking have consistently performed well from 2012 to 2020 (Women's World Banking and NBS Bank, 2018).

##### **4.2.1.1 Perceptions, the Use And the Connection/Activation**

Participants generally believe that the use and the connection/activation positively affect NBS (78%). However, some seven per cent (7%) believe that it is not so successful despite evidence to the contrary. Secondly, ninety-point six per cent (90.6%) of the participants indicate that they have an account and the majority have connected it to Bank Pafupi. One point three per cent (1.3%) of the participants, however, do not receive, or cannot receive, international funds via their accounts or

agent banking. [The data can be accessed on the accompanying flash drive.]

#### 4.2.1.2 NBS Bank Strategies to Alleviate Poverty and Address Financial Exclusion

The researcher analyzed inputs from in-depth interviews with executives and agents, asking if NBS Bank Pafupi is doing enough to include the financially excluded and poverty alleviation. A high number of staff and agents confirmed that they believed that NBS Bank Pafupi is doing enough to include the financially excluded and address poverty alleviation as depicted in Figure 4.

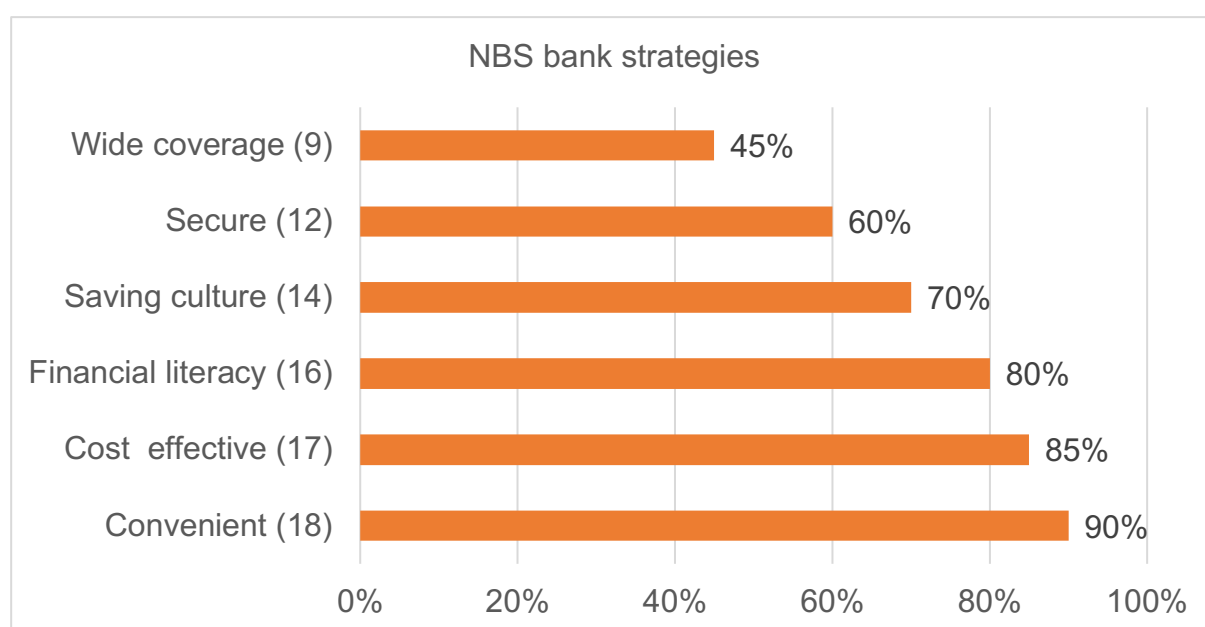


Figure 4: NBS strategies to alleviate poverty and address financial exclusion

NBS bank is applying strategies to alleviate poverty and address financial inclusion. Forty-five per cent (45%) of the participants have indicated that they experience these initiatives on different levels.

- (a) There is comprehensive coverage and it is affordable. A quote from an interview and references to the policy or internal documents that supported this.

“Customers can access financial services at their doorstep, mobility is easy, customers can save their travelling costs, they have more operating hours, with no long queues” - Bank Pafupi Agent – Jali in Zomba.

- (b) There is a savings culture at NBS as mentioned by seventy per cent (70%) of the participants.

The findings from an interview with the executives indicate that Bank Pafupi has enabled and encouraged customers to save money.

“Here at Muloza in Mulanje, we are at the border with Mozambique. As such most of the people were financially excluded as [they have] been without bank branches for many years. Most people had to travel a long distance from Muloza to Mulanje Boma, even to Blantyre to access banking services. This was indeed a challenge in terms of the security of our money as we had to move with large lump sums. Of course, there was Airtel money and Mpamba, but these could not allow payments like salaries, utility bills, schools fees etc., but also, with Bank Pafupi savings account and agent network, most customers who were unbanked are now being encouraged to save their income - hence a saving culture” - Agent at Muloza. Mulanje.

- (c) Financial literacy was mentioned by eighty per cent (80%) of the participants

In response to the questionnaire and interviews, agents, customers and executives revealed that NBS prioritized financial literacy even before rolling out the Pafupi savings account and Bank Pafupi agency banking. Financial literacy enabled the financially excluded into the formal financial system. This focus on financial literacy brought profits and savings and therefore benefited the Bank as well as its clients.

“Since I started operating Bank Pafupi as an agent, I have made a lot of profits and saved to the extent of buying bicycles, iron sheets, paying school fees etc.” – Agent at Muloza in Mulanje.

Convenient, secure, and affordable. Ninety per cent (90%) of the respondents indicated that Bank Pafupi is convenient, secure, and affordable.

An interview with the executives indicated that Bank Pafupi has enabled and encouraged customers to save money. It is also convenient and secure as customers deposit and withdraws their money at any time and anywhere through Bank Pafupi

Agents.

“Bank Pafupi has been a consideration for vulnerable and marginalized grassroots in Malawi to easily access secured banking products and services” - Bank Pafupi Agent – Enegem, Ndirande market.

#### **4.2.2 Effect of Digital Banking**

This section presents data collected from questionnaires and interviews on digital banking (Pafupi savings account and Bank Pafupi agent networks initiatives that are used as a poverty alleviation strategy, and how it affects bank profitability. Poverty alleviation and bank profitability are two crucial themes discussed in this section:

##### **Poverty alleviation**

Eighty-eight per cent (88%) of survey respondents indicated that Pafupi Savings and Agent Banking allowed many poor people into the formal financial system. Seven per cent (7%) were of the contrary view. Participants agreed that these products are good strategies for alleviating poverty. They believe this for different reasons.

- a. Forty-five per cent (45%) of survey respondents indicated that products are geared to serve rural communities.
- b. (b) It provided much-needed access to formal financial systems to less fortunate communities. This belief is found in the literature, indicating that access to financial services empowers poor people to save and borrow. As a result, they can buy assets, invest in education and open businesses to improve living standards (Baidoo *et al.*, 2019; Sakyi *et al.*, 2021).

From the study findings, ninety-five per cent (95%) of the participants mentioned that Pafupi Savings and Agent Banking allowed many poor people into the formal financial system resulting in poverty alleviation, while five per cent (5%) contradicted this. The findings were supported by in-depth interviews with the executives and agents who cited that the savings account and Bank Pafupi have financially included the rural masses as well as shortened the distance to the bank resulting in poverty alleviation:

“This has helped people in rural areas to access banking services at

their convenient time since over seventy per cent (70%) of people are in remote areas, so it has helped them to access financial products and services” - NBS Bank Agent – Machinga.

From the questionnaire study findings, the majority (52%) agreed that Pafupi savings account and agent banking provided low-cost account opening. In contrast, thirteen per cent (13%) found it expensive to open an account. These findings were also noted from the interview with the executive, who agreed that Pafupi savings account and agent banking provided low-cost account opening. Fifteen point seven per cent (15.7%) disagreed.

### **Access to valuable, and affordable financial products**

According to the majority (83%) of Pafupi savings account holders, agent banking has enabled more people to access an account. This was supported by interview findings that show thirty-four point four per cent (34.4%) of the participants agree that Pafupi savings account and agent banking have enabled more people to access an account. From the findings, it is evident that the Pafupi savings account and Bank Pafupi have been successful in digital transactions, but lag behind the interims of insurance and medical schemes. According to the study findings, the majority (95%) paid for farm inputs. Ninety per cent (90%) of the participants made utility bill payments. Sixty per cent (60%) paid school fees. Only fifteen per cent (15%) of participants indicated that they transact insurance policies and medical schemes. The survey findings show that Pafupi Agent banking has not done much in financial inclusion in terms of insurance and medical schemes. According to the findings, eighty-one point three per cent (81.3%) of participants indicated that online transactions in Pafupi Agent banking are effective. At the same time, eight per cent (8%) of the participants mentioned that payments were ineffective. Fifty per cent (50%) of the survey respondents indicated that online transactions on Pafupi savings accounts and Bank Pafupi agent networks are not effective but thirty per cent (30%) felt that payments were effectively made. Much needs to be done to improve the effectiveness of the transactions to achieve financial inclusion.

According to eighty-six point three per cent (86.3%) of the survey respondents, Pafupi savings account and Bank Pafupi Agent banking transactions fees are very cheap,

while ten per cent (10%) found the transaction fees to be expensive. As a majority find the fees cheap, Pafupi savings account and Bank Pafupi fulfil the financial inclusion objective of poverty alleviation.

### **Access to useful and affordable financial products and services.**

From interviews, the majority, ninety per cent (90%), indicated that Pafupi savings account and Bank Pafupi Agent banking transaction fees are very cheap while twenty-five per cent (10%) found the transaction fees to be expensive. As a majority find the fees cheap Pafupi savings account and Bank Pafupi fulfils the financial inclusion objective of poverty alleviation.

### **Bank profitability.**

The document analysis results from the quantitative survey, and themes that emerged from the semi-structured interviews, highlight two broad aspects: The digital performance of Bank Pafupi and the Pafupi savings account and the influence of customer satisfaction on bank profitability, as discussed below.

### **The digital performance of Bank Pafupi and the Pafupi savings account.**

The digital finance performance regarding bank profitability of Pafupi Savings account and Bank Pafupi Agent Banking was also assessed as part of the effect analysis. Results show that 71 (89%) of the participants strongly agree, 6 (8%) agreed, 2 (3%) strongly disagree, and 1 (1.3%) of the participants disagreed on the digital performance of Pafupi savings and bank Pafupi. In the study, the majority (97%) of the participants were satisfied, while four points one per cent (4.1%) were not satisfied with the performance of the Pafupi savings account and Bank Pafupi.

The study findings from in–depth interviews found that agents who operated from 2012 to 2017 experienced high performance and profits.

“One of the oldest Bank Pafupi agents is in Karonga, they make lots of profits”- Timothy Ngwira, NBS Agent Banking Manager.

The findings from agents operating at Muloza in Mulanje, Ntoso and Manase/Nancholi Blantyre showed that more profits were realized.

“I have made profits since I became an agent of NBS Bank Pafupi, for example, I built a house” – Agent at Muloza, Mulanje.

The influence of customer satisfaction on bank profitability.

Study findings from questionnaires found that sixty-five points three per cent (65.3%) of the participants were highly satisfied, while twenty-four points eight per cent (24.8%) incurred losses.

The researcher investigated customer service through in-depth interviews and found that most of the customers got satisfactory customer service. The study findings from the majority, forty point six per cent (40.6%) strongly agreed that Pafupi provided satisfactory customer service.

The study explored whether customers will likely use Pafupi savings accounts and agent banking shortly. The study found from interviews that customers are likely to use Pafupi savings accounts and Bank Pafupi agent banking shortly. According to the study questionnaire findings, forty-six point nine per cent (46.9%) of the participants strongly agreed that customers are likely to use Pafupi savings accounts and Bank Pafupi agents shortly.

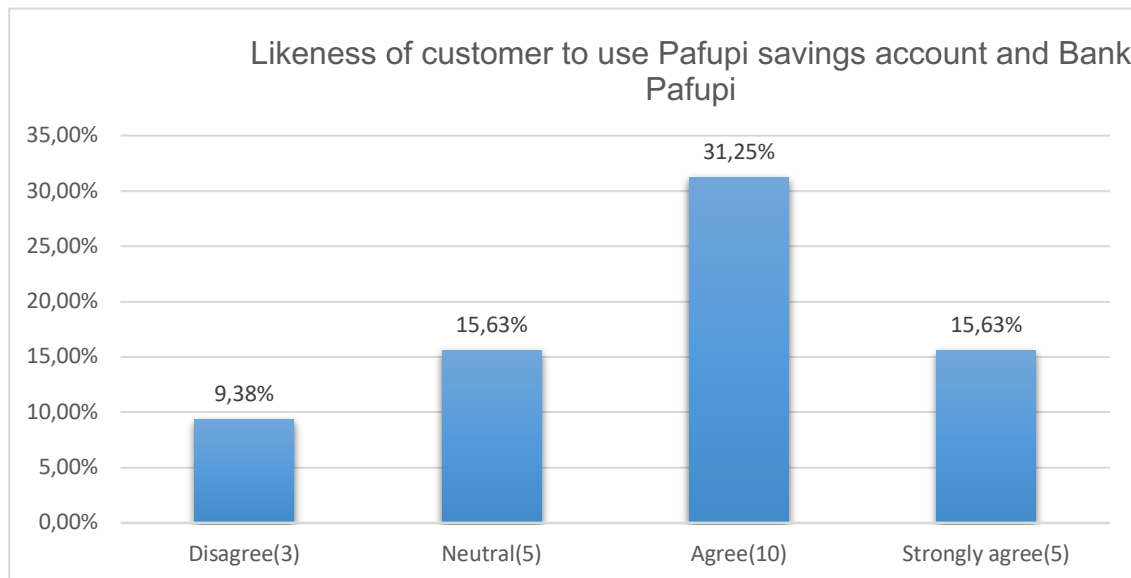


Figure 5: Likeliness of customers to use Pafupi Agent Account



### 4.3 The Barriers to Financial Inclusion at NBS Bank

#### 4.3.1 Challenges of Pafupi Savings Account and Bank Pafupi

Interview participants indicated that despite the successful performance, Bank Pafupi had not done much to include the excluded poor in the formal financial system. Challenges included agent liquidity.

“Agents usually have little liquidity which in turn affects customers when they want to withdraw. Queues in the banking halls are still long as the agents are recruiting without matching their liquidity. They get happy to receive only deposits” - NBS Bank Agent – Ndirande market).

The questionnaire findings from eighty-nine per cent (89%) of the participants who were agents operating at Limbe market, Ginnery corner, Chilomoni – Nthukwa market, Bangwe market, Enegen in Ndirande, Blantyre, Holy family in Phalombe, Chitakale in Mulanje, Jali in Zomba, Milepa in Chiradzulu bemoaned:

- i. Lack of patronization by customers.
- ii. Lack of awareness by customers. For example, there is a lack of posters.
- iii. Lack of biometric machine from NBS bank.
- iv. Lack of bank information on profit or bonus calculations.
- v. Competition with Airtel and Mpamba (MNOs) among varied challenges they encountered.

Similar findings were found during the literature review (Chetty, *et al.*, 2019) found that challenges experienced by fintech stakeholders are as follows. Mobile-wallet transaction costs for low-value transfers are unsustainably high for the low-income segment in both East and Southern African countries. Products are not designed appropriately for the needs of the low-income segment. Financial literacy remains a challenge amongst the low-income segment. The regulatory environment within Southern and East Africa. High transaction costs (Natamba *et al.*, 2013). Macro-prudential policies and rural branch networks exacerbate the high costs of financial intermediation (Beck and Samuel Munzele, 2012). Poor infrastructure in Africa, Latin America, East Asia, and Sub-Saharan Africa (World Bank, 2014). High poverty levels and banking charges (World Bank (2013). Sparse population in SSA (World Bank,

2014). Religious and cultural (Kim *et al.*, 2018). Poverty and Unemployment (FinScope Malawi, 2008).

#### **4.4 Critical Reflection on Empirical Findings**

Globally, about 1.7 billion adults remain unbanked without an account at a financial institution or through a mobile money provider. They lack access to formal financial services like credit insurance, payment services or savings accounts (Ponnuraj & Nagabhushanam, 2015). Because account ownership is nearly universal in high-income economies, virtually all these unbanked adults live in the developing world. Indeed, nearly half live in just seven developing economies: Bangladesh, China, India, Indonesia, Mexico, Nigeria, and Pakistan (Demirgüç-Kunt, *et al.*, 2018). Despite being a universal challenge, the financially excluded in developing countries is higher, with about eighty per cent (80%) of bankable adults in sub-Saharan Africa being financially exempted. This implies that about three hundred and twenty-five million people are unbanked (Achugamonu *et al.*, 2020).

#### **4.5 Literature Perspectives**

The cases presented are selected to illustrate the salient features of financial inclusion that emerged from the review of services in Chapter 2, and some of these are identified below.

##### **4.5.1 Account Ownership and Savings**

In chapter two, studies by Osili, (2018, 2020), Demirguc-Kunt *et al.* (2017) and others present an empirical overview of the risks and benefits of financial inclusion concerning payment services, credit, savings products and insurance and the problems that these products pose for financial inclusion.

The 2017 Global Findex indicated that twenty-five per cent (25%) of account holders in developing countries had not used their accounts for a deposit or withdrawal during the prior year (the dormancy rate; Demirguc-Kunt *et al.* 2018.). India, which rolled out 300 million accounts in a few years under its Jan Dhan Yojana scheme, had a forty-eight per cent (48%) dormancy rate by 2017 (Bull, 2018b). Although women's access to financial services improved over time, the gender gap in account ownership

decreased slightly from 9.6 percentage points in 2011 to 8.8 percentage points in 2017. Women's account ownership neared fifty per cent (50%) in low- and middle-income countries. However, cultural and legal norms inhibited their ownership and usage in some countries. Furthermore, although the poor's access to accounts improved, exceeding fifty per cent (50%) in low- and middle-income countries, the gap between rich and poor did not improve between 2014 and 2017, holding at fourteen per cent (Demirguc-Kunt *et al.*, 2018). Rural access increased strongly, especially in China and India, but in Africa, a rural access gap persisted (Bull 2018a).

In Bangladesh, Ghosh and Bhattacharya (2019) show that financial inclusion was achieved through financial innovations such as 'SureCash' to penetrate the oligopolistic financial market to reach women and poor adults in Bangladesh. Nanziri (2016) investigated the state of financial inclusion concerning the gender gap in South Africa and found that women mainly use formal transactional products and informal financial mechanisms while men use formal credit, insurance, and savings products in South Africa, although there were no differences in the welfare of financially included men and women.

Fungáčová and Weill (2015) analyze the state of financial inclusion in China and find a high level of financial inclusion in China through greater use of formal accounts and formal savings compared to other BRICS countries. They observe that financial exclusion, (not having a formal account), is mainly voluntary in China.

In developing Asia, Ayyagari and Beck (2015) show that fewer than twenty-seven per cent (27%) of adults in developing Asia had an account in a formal financial institution, and only thirty-three per cent (33%) of enterprises report having a line of credit or a loan from a financial institution. They also found that high costs, geographic access, and lack of identification were the most common barriers to financial inclusion in developing Asia.

#### **4.5.2 Bank Profitability**

In Chapter Two banks' strategies were discussed and interventions were found to place a greater emphasis on resource investment to improve services or introduce new services to meet customers' needs and achieve higher returns for optimal performance. Opening new bank branches, installing more ATMs, or implementing

new e-facilities are examples of strategies that can significantly impact profit, especially if the costs are unrelated to sales revenues (Shihadeh *et al.* 2018). Empirical research on this topic provided evidence that the increase in financial inclusion on a global scale could increase household income through enhanced welfare, reduced poverty and initiating and expanding business and risk management. All of this will eventually lead to expansive opportunities for the banking sector (Zachosova *et al.* 2018; Zhang and Posso 2019). An increase in the number of individuals who are financially included in the formal financial system is predicted to benefit the bank as this would increase the demand for financial services offered by the bank (Zhang & Posso 2019). For example, Kumar *et al.* (2021) sampled 122 Japanese banks from 2004 to 2018 to determine the effect of financial inclusion on the banks' profitability. They found a positive relationship between the number of branches (a measure of financial inclusion) and the bank's profitability (ROA and ROE). In contrast, the authors found that financial inclusion in the form of the number of loan accounts and ATMs had no significant relationship with the banks' profitability.

Shihadeh *et al.* (2018) examined the effect of financial inclusion on gross income and ROA of thirteen commercial Jordanian banks using data from 2009 to 2014. Six financial inclusion variables were employed, namely SMEs' deposits and credits, ATMs, ATM services and new services, and credit cards (predictors of the variable). Shihadeh and Liu (2019, the study sampled 189 countries (national level) and 701 banks and found evidence of the positive effect of financial inclusion on the bank's activities, which led to higher returns. The profitability of the banks was positively affected by the number of ATMs, the number of ATM services and the number of SMEs' credits, but it was not affected by the number of credit cards and new services or by SMEs' deposits.

Akhisar *et al.* (2015) investigated the effects on the bank's profitability performance based on electronic-based banking services. The effects on ROA and ROE performance were analyzed based on data from twenty-three developed and developing countries' electronic banking services from 2005 to 2013 using dynamic panel data methods. The results showed that bank profitability in developed and developing countries was significantly affected by the ratio of the number of branches to the number of ATMs but was insignificantly affected by the electronic banking

services offered.

Owen and Pereira (2018) analysed data from eighty-three countries over 10 years and found that greater banking industry concentration is associated with more access to deposit accounts and loans. Countries, where regulations allow banks to engage in a broader scope of activities, have greater financial inclusion.

#### **4.5.3 Digital Financial Inclusion**

The school of thought that financial innovation and technology can increase financial inclusion because it can by-pass existing structural and infrastructural barriers to reach the poor was discussed in Chapter Two (Al-Mudimigh & Anshari, 2020; Chinoda & Kwenda, 2019; Ouma *et al.*, 2017).

The research showed that digital technologies had played a central role in expanding the reach of financial services (Omar & Inaba, 2020). Globally, fifty-two per cent (52%) of adults had sent or received digital payments in 2017, compared with forty-two per cent (42%) in 2014. In low-income countries, this rate increased from fifteen per cent (15%) in 2014 to twenty-six per cent (26%) in 2017 (World Bank, 2021). The 2017 Global Findex indicated that although only four per cent (4%) of adults globally had a mobile money account, twenty-one per cent (21%) of adults had one in Sub-Saharan Africa. The use of digital payments depends heavily on physical and financial infrastructure, as well as the existence and enforcement of appropriate laws and regulations, including consumer protection (World Bank, 2021). The government of Argentina used financial inclusion to draw more people into the formal banking system. Consumers began to use less cash and increased their usage of credit and debit cards, causing more consumption to occur in formal markets, which the government could easily tax. Evans (2018) examined the relationship between the internet, mobile phones and financial inclusion in Africa from 2000 to 2016 and found that the internet and mobile phones improved the ability of individuals to access essential financial services, thereby increasing the level of financial inclusion.

Ouma *et al.* (2017) showed that financial innovations, like the availability and usage of mobile phones, were used to offer financial services that promoted savings at the household level and improved the amounts saved, while Chinoda and Kwenda (2019) showed that mobile phone innovation improved financial inclusion in 49 countries. In

Southeast Asia Al-Mudimigh and Anshari (2020) observe that the region had a large number of internet users and a high number of Fintech companies which helped to improve the level of financial inclusion, especially for the unbanked population.

Other schools of thought argue that financial inclusion can be achieved through other strategies and interventions such as smartphone-based micro-lending (Bravo *et al.*, 2018), women empowerment (Shetty & Hans, 2018), increased regulations (Chen and Divanbeigi, 2019), foreign bank entry (Leon & Zins, 2019), creating microfinance institutions or banks (Yi *et al.*, 2018), Islamic banking (Naceur *et al.*, 2017), optimal monetary policy (Mehrotra & Yetman, 2014), integrating financial services into post office shops (Pollin & Riva, 2002; Anson *et al.*, 2013), entrepreneurship (Kimmitt & Munoz, 2017), using self-help groups (Pati, 2009), agent banking (Diniz *et al.*, 2012), improved consumer protection reforms (Dias & McKee, 2010), building financial capability (Sherraden, 2013), reducing the distance to a bank (Demirgüç-Kunt & Klapper, 2012), access to point-of-sale (POS) and point-of-transaction (POT) devices (Banka, 2014), mobile money (Donovan, 2012), rural branching (Aggarwal & Klapper, 2013), and many more

#### **4.5.4 Poverty Alleviation**

The transmission mechanism of digital finance to poverty was also examined in Chapter Two. Whilst the literature recognises the importance of digital finance, the channels through which it affects poverty are not known. Using a cross-country data set, the transmission mechanism was estimated using a structural equation model (SEM). The results showed that the cost of remittances, ease of business, financial depth and the real interest rate are the strongest predictors of poverty reduction through digital finance (Osili, 2020). Financial inclusion, measured as access to and use of financial services, is a key enabler in eradicating poverty and enhancing prosperity (Kim *et al.*, 2018).

Bongomin *et al.* (2018) showed that social networks, through social cohesion, improved the level of financial inclusion in Uganda. De Matteis (2015) showed that migrants residing in the EU were deeply affected by the economic crisis in Italy and were particularly exposed to social and financial exclusion and that policies aimed at meeting the financial needs of migrants led to greater integration into the destination

society for migrants. In Argentina Mitchell and Scott (2019) analysed how the government of Argentina used financial inclusion to generate a significant amount of public revenue in taxes. In Comoros, Ali (2019) showed that barriers hindered access to Islamic financial services for disadvantaged women. Ali (2019) showed that women in Comoros either have no money or lack knowledge of relevant financial services, making it difficult to lift them out of poverty.

Park and Mercado (2015) found that financial inclusion significantly reduced poverty levels and income inequality in developing Asia. Neaime and Gaysset (2018) examined how financial inclusion affected poverty levels and income inequality in eight MENA countries from 2002 to 2015. They found that, although financial inclusion decreased income inequality, financial inclusion did not affect poverty levels. In contrast, larger population sizes, high inflation and trade openness significantly increased poverty levels in the MENA region.

#### **4.5.5 Financial Literacy**

As discussed in Chapter Two, financial knowledge, linked to financial literacy, plays a significant role in promoting financial inclusion, creating an enhanced ability to plan, save and react to financial shocks, and attempting to achieve poverty eradication and economic stability (Furtado, 2018). Studies have broadly explored financial literacy to advance the measurement of individual literacy levels in terms of financial stability and the context of decisions and outcomes. Lyons and Kass-Hanna (2019) investigated the impact of financial literacy on financial inclusion using the data from Global Findex for the MENA region and concluded that financial literacy affects financial inclusion depending upon the subjects under study and their economic and social vulnerability. It helps improve financial inclusion among the poor and decreases the likelihood of informal borrowings for younger groups. Financial literacy acts as a moderator of financial behaviour (Mutlu & Özer, 2021) and resulted in firm growth in countries like Ghana (Adomako, Danso & Ofori Damoah, 2016) and Uganda (Bongomin, Ntayi *et al.*, 2017). Chikalipah (2017) investigated the determinants of financial inclusion in Sub-Saharan Africa for the year 2014 and found that illiteracy is the major hindrance to financial inclusion in Sub-Saharan Africa.

## 4.6 Challenges and Gaps

Implementing financial inclusion interventions is not necessarily a problem due to a lack of funding but could arise because of other barriers that may need to be tackled before financial inclusion can increase. These barriers and gaps are discussed in Chapters Two and Four. For example, one emerging problem in financial inclusion policy debates is the inactive user problem. When individuals are brought into the formal financial system, they become active or inactive users of financial services. Even after exerting tremendous effort to bring the excluded population into the financial sector, these individuals come into the formal financial sector and may choose to become inactive users of financial products and services after a while. They open formal accounts but refuse to get credit cards or debit cards. They do not keep deposits in their formal accounts, and they do not initiate financial transactions from their formal accounts. They only use their formal accounts to receive money, but they do not use their formal accounts to send money to others. These inactive users create a new problem for policymakers because economic inactivity reduces the volume of financial transactions, the revenue to financial institutions, and the tax revenue to the government, which in turn affects the economic output.

Another issue is the paucity of critical studies in the financial inclusion literature. Critical studies mean studies that challenge the proxies used, and the assumptions underlying current financial inclusion models. There are few critical studies on financial inclusion as stated by Mader (2018). The small number of critical studies in the financial inclusion literature may be attributed to the fact that policymakers, development economists and practitioners prefer to undertake research that produces results and solutions that are pro-poor and pro-financial inclusion, and they are not interested in critical research. This has led to increased demand for positivist research on financial inclusion through increased research funding and attractive research grants for financial inclusion research, which subsequently led to low demand for critical research on financial inclusion. Despite this, most academics interested in financial inclusion research are taking a positivist (pro-poor) approach to financial inclusion. There is a need for more critical studies to help increase the commitment of researchers to ensure that the existing and new proxies of financial inclusion measure what they intend to measure.



The identity problem in financial inclusion occurs when the excluded members of the population cannot be accurately identified.

Another issue is that financial institutions may not cooperate with policymakers seeking financial inclusion through banks. Banks will usually conduct an internal cost-benefit analysis before participating in financial inclusion projects. If the cost exceeds the benefits banks may be reluctant to participate in financial inclusion projects, especially when the government is unwilling to reimburse the cost to banks. In countries where private-sector and public-sector banks exist, private-sector banks may be reluctant to participate in financial inclusion projects because the private-sector banks expect the government to use its public-sector banks to achieve its financial inclusion projects.

Many efforts have been made to expand inclusion, yet large populations in Africa remain outside the reach of formal financial services. Even when access efforts have been successful, the use of available services is still very low (Prina, 2015). Innovations in technology have changed the financial sector landscape and expanded access to digital financial services (DFS) to large segments of the poor. Nevertheless, such access is still very limited to remittances and payments, mainly because of the underdevelopment or absence of complementary markets. Although there have been some developments in digital savings and credit, the lack of related regulations around digital credit has increased vulnerability for the poor. Furthermore, the exclusion of the poor from financial markets is exacerbated by a mismatch between the services provided by financial institutions and the financial needs of the poor.

There is evidence from various studies (Durst & Gerstlberger, 2021; Rudolph *et al.*, 2022; Wernick & Correia, 2020) on gender gaps in access, training and use of the products and services offered by the financial sector. In Latin America and the Caribbean, the evidence from scientific studies agrees that there is a gender gap. Moreover, almost seventy per cent (70%) of small and medium-sized companies belonged to women who, when requesting a loan, could not obtain it through banking institutions. In this sense, the population resorts to informal savings and financing mechanisms, excluding investment opportunities or risky alternatives with little return.

Gender inequality restricts women's access to financial services. The results of the

study by Girón and Kazemikhasragh (2021) show that gender inequality negatively impacts economic growth and that women with low educational levels are more affected by gender inequality. Another study by Moşteanu (2020) indicated that the inclusion of women in new financial services had increased investment and production and economic growth in the countries studied. According to Escobar *et al.* (2020) and Kong and Loubere (2021), the importance of creating financial opportunities and new technologies that integrate coordinated and articulated actions to reverse an exclusive financial system expands coverage and promotes the integration of women in the education and financial sector. Fowowe and Folarin (2019) showed that inclusive growth occurs directly and indirectly through financial inclusion.

Pearce (2011) assessed the state of financial inclusion in the MENA region and suggests (i) the need for a legal, regulatory and supervisory framework that enables access to finance primarily through banks, (ii) providing regulatory space for the use of agents and mobile phone technology, (iii) a finance company model for microcredit and leasing, (iv) prudent competition between financial service providers should be promoted, and (v) barriers to the growth of Islamic financial services should be removed so that they can better meet market demand. Akhtar and Pearce (2010) showed that the factors promoting financial inclusion in the MENA region are: mobile and branchless banking, electronic payments of salaries and pensions through bank accounts, Islamic microfinance; basic bank accounts; leasing, factoring and insurance; and utilizing postal systems. Some challenges facing financial inclusion in the region include a weak financial infrastructure; the lack of a robust regulatory framework, and the unwillingness of non-governmental organisations (NGOs) to contribute to financial inclusion programs in the region because of the political and religious conflict in the region.

#### **4.7 Financial Inclusion Models**

Financial inclusion models were discussed in Chapter Two. For example, Kenya – Mpesa, the Maldives National Identity, Nigeria, Tanzania and Zimbabwe for example. (Chapter 2, page numbers) Standard models of providing finance may not be effective, and mainstreaming informal finance or linking it to formal finance may be an innovative way to tackle financial inclusion in the African context. This is covered in Chapter 2, in which the performance of corporative financial institutions globally was investigated.

Digital finance is an opportunity to remodel the provision of financial services for those who have previously been excluded. These services are covered in Chapters 2, 4 and 5, which investigate the transmission mechanism of digital finance.

#### **4.7.1 NBS Bank Case**

Since the New Building Society (NBS) bank introduced its financial inclusion product of Pafupi Savings and Agent Banking, the Bank has delivered huge losses and inadequate financial and business performance. The Bank's customers and agents involved in the Bank's financial inclusion products have never been evaluated to understand the impact this product has on them in terms of poverty alleviation. Secondly, the digital world has advanced greatly since the Bank introduced its financial inclusion product. However, the Bank is still using the same outdated procedures and processes to implement financial inclusion strategies. Due to this, the Bank lags and might be overtaken by competitors, leading to more losses.

The study employed exploratory and descriptive surveys making use of a mixed methods (qualitative and quantitative research) approach. A target population size of 100 was sampled using stratified and simple random techniques. Primary data was collected using questionnaires and interview guides and secondary data from books, journals, official documents and the Internet. Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 2.0, MS Excel and Thematic qualitative content analysis, which was manually done.

According to the findings of this study, NBS Bank Pafupi Savings and Agent Banking are available in the residential areas of the majority of the participants. The majority of participants are using Pafupi Savings Account. In terms of the financial inclusion initiative, the Pafupi product has a high penetration in all regions of Malawi. The findings indicate that Pafupi Savings and Agent Banking have assisted those who have been financially excluded. Most participants were registered with Airtel Money and Telekom Networks Malawi (TNM) Mpamba. Despite registering with mobile money banking, most people do not receive or send money internationally through Pafupi Saving and Agent Banking. According to the current study, Pafupi agent banking performed very favourably over the past ten years, despite some rating it as performing very poorly as the financial product incurred losses. As a financial inclusion

product, the Pafupi savings account performed well from 2012 to 2018. Despite such high performance, over fifty per cent (50%) of participants indicated that Pafupi performed very poorly. The effect of Pafupi Savings Account and Agent Banking on customers in line with the framework of the financial inclusion model was:

- i. Access to more accounts;
- ii. Low-cost accounts;
- iii. Satisfactory customer service; and
- iv. The solution to poverty alleviation.

According to the study findings, most participants agreed that customers will likely use Pafupi Agent Banking shortly. The study found that digital banking played a role in Pafupi Agent Banking financial inclusion at NBS bank as follows:

- i. Adoption of mobile banking;
- ii. Network Operators (MNO) Airtel and TNM teamed up with Pafupi agents for mobile banking;
- iii. Online payments were made through Pafupi Agent Banking.

However, according to most of those interviewed, online transactions on Pafupi Agent Banking are ineffective despite a few indicating that transactions were effectively made. Pafupi Savings and Agent Banking were rated as satisfactory to very satisfactory. The study found from the majority that the transaction fees were affordable, therefore Pafupi fulfils the financial inclusion objective of poverty alleviation. Pafupi Savings and Agent Banking allowed many poor people into the formal financial systems, proving that Pafupi worked well as a model for poverty alleviation. From the study findings, most participants agreed that Pafupi Savings and Agent Banking enabled individuals to access useful and affordable financial products. The study learned from most participants that ATM and Mobile banking was the online channels participants used. Secondly, participants used Point of Sale (POS) and Auto Teller Machines (ATM).

#### **4.8 Discussion of the Findings**

Based on empirical studies, research findings and the DaVinci TIPS model, the study proposed a Malawi/Africa national digital interoperability financial inclusion model.

From the discussion in previous chapters and the presentation of findings, it is clear that specific gaps still exist in applying financial inclusion models. The formal financial sector in Malawi remains small, and outreach remains concentrated on a narrow client base. It is dominated by commercial banks whose products and commercial focus do not target the rural poor that are financially excluded except for the services of Microfinance Institutions (MFIs) and Financial cooperatives (FCs). In recognition of the above, the Government of Malawi (GoM), with support from the International Development Association (IDA) of the World Bank, in the form of credit is, through the Reserve Bank of Malawi (RBM), implementing a five-year Financial Sector Technical Assistance Project (FSTAP) to support its initiatives of developing the requisite infrastructure, robust policy and institutional framework aimed at growing the financial sector's capacity to increase outreach (RBM Register, 2017).

The current landscape of the Malawi Microfinance and Financial cooperatives industry comprises one deposit-taking microfinance institution, nine non-deposit-taking microfinance institutions, thirty (30) credit-only agencies concentrated in specific urban areas and some thirty-four (34) Financial cooperatives. Typically, all these MFIs and FCs process small but numerous financial transactions using manual or rudimentary processing mechanisms as most cannot afford the initial capital cost of setting up sophisticated Management Information Systems (MIS) and the necessary personnel that are qualified enough to manage such robust systems (RBM Register, 2017).

As part of FSTAP, the RBM planned for the design, set-up, commissioning and operation of a microfinance Transaction Processing Hub (the Hub) that will allow MFIs and FCs to share a common integrated platform with a shared interoperable electronic data processing infrastructure to meet all their MIS needs. It is envisaged that the Hub will help institutions reduce operating costs, streamline lending processes, scale up rapidly, and integrate with other entities such as credit bureaus, other financial institutions, regulators and international payment networks. In addition, it will reduce related infrastructure costs, facilitate timely and accurate reporting to the regulator, apex bodies, financiers and other stakeholders, and guarantee data security (RBM Register, 2017).

The successful design, set-up and rollout of an efficient, effective and robust Hub will necessitate capital investment in property, equipment and other resources. These

resources include but are not limited to, hardware, software, and the training of personnel, as well as integration/interface costs to deliver a robust (resilient and high availability) infrastructure platform that allows a consortium of MFIs and financial cooperatives to share transaction processing infrastructure (payment system connectivity). The processing infrastructure also includes core banking applications, mobile-banking integration, account opening, loan disbursements, payment processing, customer acquisition, customer complaints logging, compliance and reporting connectivity following set governance rules and regulations. It also includes Audit trails with time stamps and access control integrated with analytical and reporting tools compliant with open system concepts and supporting multi-channels (branch and branchless banking delivery channels) (RBM Register, 2017).

The TPH project is part of the broader interventions in the Malawi Financial Sector that aim to put the basic infrastructure for payment services in place. The TPH is a small value transaction processing infrastructure that will provide MFI and FC payment system functionality (core banking applications, mobile-banking integration, account opening, loan disbursements, payment processing, customer acquisition, customer complaints logging, compliance and reporting, connectivity) following set governance rules and regulations; an audit trail with time stamps and access control; integrated analysis and reporting tools; compliant with open systems concepts to allow interface and integration with other key payment systems infrastructure in Malawi to support multiple channels (branch and branchless banking delivery channels) (RBM Register, 2017). The Hub's main objective is to leverage technology to improve processing efficiency for small small-value payments while increasing financial inclusion in Malawi.

The overall objectives of the Hub are to:

- i. Enable MFIs and FCs to share an interoperable electronic data processing infrastructure for the MIS requirements using industry-tested and modern technology platforms;
- ii. Help MFIs and FCs to reduce infrastructure set-up and operating costs that hinder market entry;
- iii. Streamline core processes (customer acquisition and management, loan

management, payments etc.);

- iv. Scale up rapidly and integrate with other vital entities like Credit Reference Bureaus (CRBs), National Switch, key government institutions like National Registration Bureau (NRB), financial institutions, regulators and oversight bodies and international payment networks; and.
- v. Facilitate timely and accurate reporting to the regulator, industry apex bodies and government.

The key drivers of implementing the Hub are as follows (RBM Register, 2017):

**i. Increasing Financial Inclusion**

Reducing the financially excluded in Malawi is a central Government initiative. This is anticipated by utilising technology to enable current MFIs and FIs to deliver services to the unbanked and those unreachable by the traditional banking channels. The implementation of the Hub will result in increased financial inclusion by extending services to the unbanked through technology that will be availed to all MFIs and FCs. This is the development objective of the Hub.

**ii. Provision of World Class Core Banking Applications to MFIs/FCs**

From the Needs Assessment exercise that was conducted across MFIs and FCs, it emerged that most of them do not have Management Information Systems that can be used in the management of the core banking functions and services offered to customers. At the same time, most of them indicated their inability to invest in such systems due to the cost implications associated with implementation. The Hub, therefore, will provide world-class core banking applications to MFIs and FCs in Malawi at a funded cost by the World Bank and the Government of Malawi. The core banking applications are supplemented by critical institutional systems like HR, payroll, financial management and asset recording systems which have all been designed into the Hub. Every licensed MFI, FC, apex body like MUSCCO and MAMN, and all stakeholders who require information from the sector will be the major beneficiaries.

**iii. Leveraging Technology Trends to Deliver Services**

Implementing the Hub will allow MFIs and FCs to be efficient and effective in in-service delivery. The Hub will enable market players to improve the speed at which they perform their functions, improve the integrity and quality of information available, and reduce the time taken to retrieve and report such information. These factors should contribute significantly to improving the market player's ability to increase their clients' services while increasing financial inclusion in Malawi.

#### **iv. Integrated MFI/FC Ecosystem of Applications**

The Hub is expected to interface with critical systems like the credit reference bureaus, collateral registry, national identification, passport system, Road Traffic database, PSM system and RBM's BSA. It is also designed to be interconnected to the national switch, offering many opportunities and potential services to the end customers of MFIs and FCs. These interconnections will result in an interconnected MFI/FC ecosystem that will allow the sector's growth through the exchange of information and delivery of new and improved services from and to the non-sector-based organisation but with critical information needed by MFIs and FCs. Interfacing with MISs of large institutions with robust systems will follow guidelines issued by the Registrar of Financial Institutions.

#### **v. Empowering End Users**

The Hub will bring technology to the end customers of MFIs and FCs through the provision of core banking access on devices like phones, POS and ATMs. This user experience will largely depend on the changes in the delivery of services the MFIs and FCs will configure on the Hub core banking application.

#### **The Target System**

The Hub targets to put in place a shared core banking application with the following features:

- i. The Hub application will be a modern core banking system complemented by critical financial, agency banking, e-channels and human resource management modules with state-of-the-art functionalities to enable MFIs and FCs to fulfil their day-to-day functions;



- ii. The Hub system will be based on well-established, user-friendly, easily customisable, commercially available, multi-user, multi-tenancy software capable of operating in a cloud environment or hosted locally in centralised servers. It will be appropriately sized for the Hub environment recognising the scale of operations, technical skills, infrastructure and resource availability while catering for the diverse needs of the individual MFIs and FCs.
- iii. The Hub applications will provide a full range of generally accepted functionality for all MFIs and FCs, allowing for a growth path of the system for future needs. The designed system will have the following characteristics:
  - a. Multi-user access;
  - b. Multi-location access over the Hub Wide Area Network (WAN) allowing for remote access by MFI and FCs;
  - c. Multi-tenancy configuration for all MFIs and FCs;
  - d. State-of-the-art customisable core banking and associated package functionality based on efficient transaction data processing; and
  - e. Centralised data management of information and system resources, providing secure access to data over the Hub WAN.
- iv. The Hub will be implemented within ten months from the commencement of the implementation activities by a contracted supplier, allowing immediate commencement of use by MFIs and FCs.
- v. The Hub will interface and integrate with critical third-party systems allowing the direct exchange to and from the Hub of the key information required by all MFI and FC stakeholders (RBM Register, 2017).

Based on the Davinci TIPs model, and through the Reserve Bank of Malawi (RBM), implementation of a five-year Financial Sector Technical Assistance Project (FSTAP) to support its initiatives of developing the requisite infrastructure, robust policy and

institutional framework aimed at growing the financial sector's capacity to increase outreach (RBM Register, 2017). The researcher proposed and designed Malawi/Africa digital national identification financial inclusion interoperability model about the Davinci TIPS model.

#### **4.9 Proposed Designed National Identification (NID) Model**

Following the document analysis, personal reflections as a stakeholder, interviews and survey findings, the researcher developed a proposed model for Malawi.

The researcher has designed an integrated NID bank and non-banking model for Malawi and Africa. The NID model will integrate financial institutions like banks, microfinance institutions (MFIs), financial cooperatives (FCs), Mobile Network Operators (MNOs) led model and agents led model. It will operate by the interoperability of the Reserve Bank of Malawi, National Registration Bureau (NRB), (Malawi Nation Identification NID card), the banking industry, MFIs and FCs, MNOs, passports and Agents. This will allow the NID to act as an interoperability ATM card.

The NRB will facilitate interoperability by linking customers' National IDs to the financial institutions, including the banking industry, MFIs and FCs, MNOs, passports and Agents. The customer's National ID number will act as an account number, instead of the bank account number. The NRB will ensure that all banks - visa cards (universal access), MNOs and Agents' accounts link to the National ID. Thus, the National ID will hold a customer's personal and financial details on its chip. The NRB will link these details to Bank servers, MNOs products like Airtel Money, TNM Mpamba and Agents (Post Offices, Admarc depots, supermarkets, groceries, lottery outlets, and retail vendors.). Hence the interoperability. A customer will be able to access financial services at Point of Sale (POS), agents, ATMs, personal computers (PC), and phones anywhere in Malawi and abroad.

There will be biometric machines linked to National ID where a customer will be able to swipe to access financial services. The customer will use the Nation ID in all the banks' agents and MNOs' agents to access financial services. The Reserve Bank of Malawi (RBM) should declare the NID as the primary and mandatory identification document for use in the financial sector (accounts). Banks will have to invest in digital card readers with biometric finger scanners. NRB should support banks to implement

offline KYC using NID. Similarly, NRB should support financial inclusion by working with the Mastercard, offering NID direct integration with databases of banks, MFIs, FCs, MNOs and Agents to enable instant, offline verification through NIDs (e-KYC). Promoting e-KYC is very important in driving financial inclusion as it would support remote account openings and even empower agents to execute KYC. This would lower the cost of on-board customers and allow for faster and more accurate KYC. Further, it would allow many marginalised people who do not currently meet KYC requirements to access formal financial services. In addition, it would lower outreach costs by supporting the end-to-end provision of products and services digitally, thereby facilitating access in underserved areas of Malawi and Africa.

In this case, NRB should partner with RBM Master Card to integrate the databases of the Passport, all financial institutions like the banking industry, MFIs, FCs, MNOs and agents into one multi-functional NID MasterCard.

- i. Mandate all regulated financial entities to link financial accounts with NID
- ii. Credit bureau regulations must be modified to include NID as the primary identifier.
- iii. Issue regulations for offline e-KYC to match on NID MasterCard model.
- iv. Issue regulations for online e-KYC integration with NRB database.

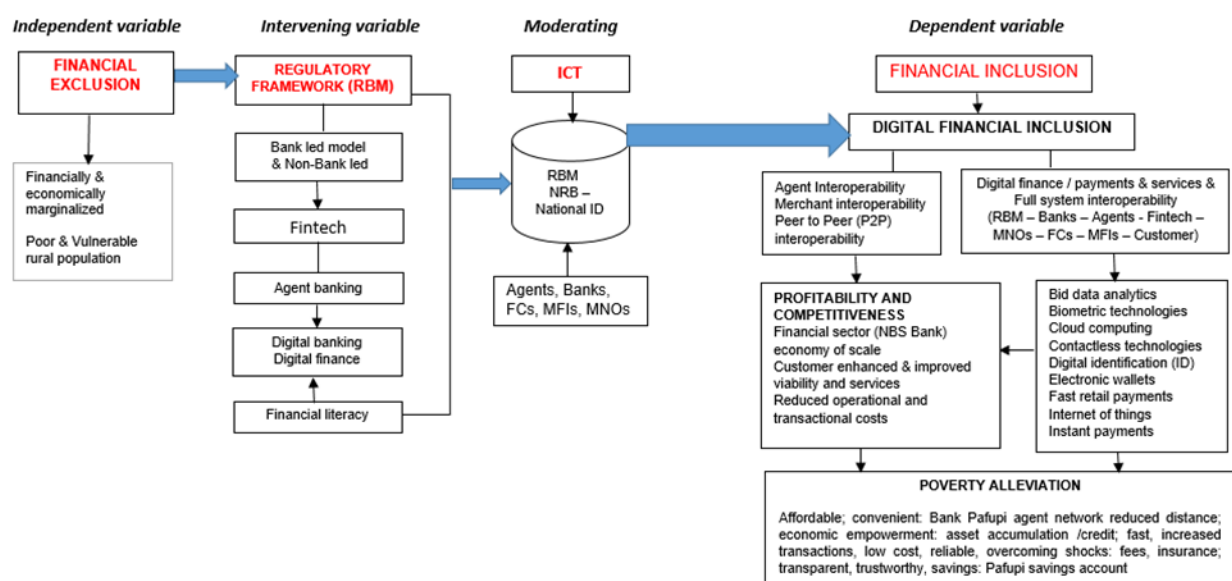


Figure 6: Malawi / Africa Interoperability Model (Source: Ngwenya, 2020)

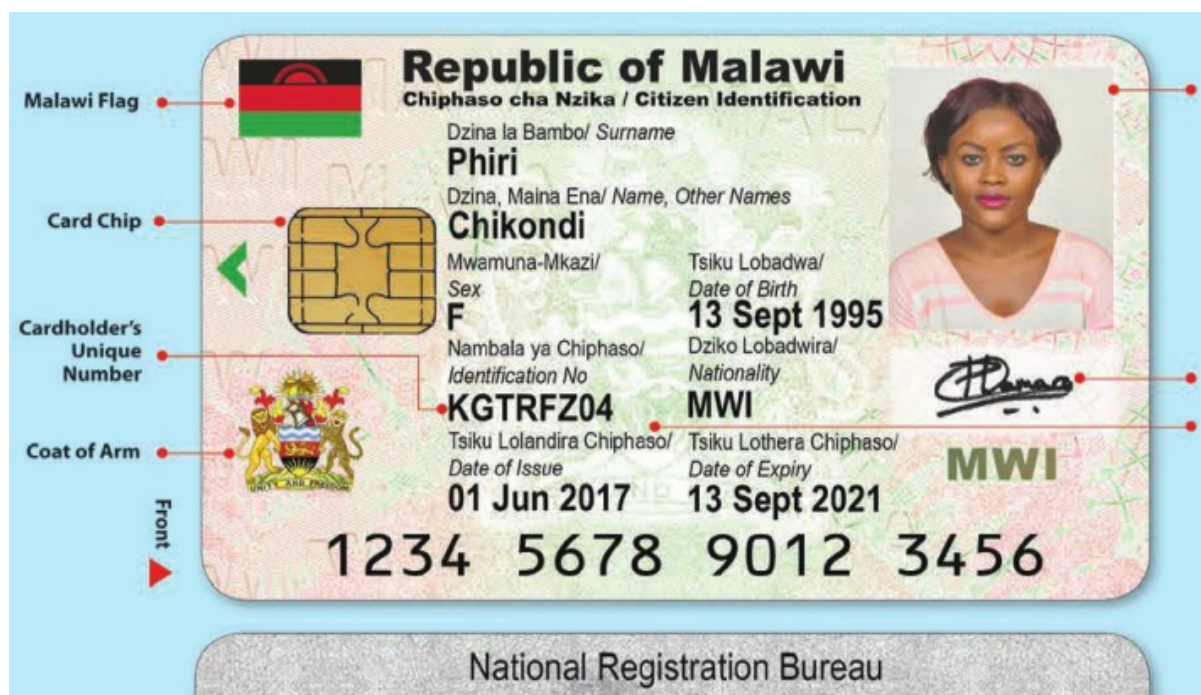


Figure 7: Malawi National Identification Card

A NID MasterCard used in the financial sector will facilitate the financial inclusion of the previously excluded. Expected benefits for financial inclusion emerging from the NID include the following.

- i. e-KYC could support remote account opening and perhaps enable formal savings mobilisation. Rolling out agency banking models would expand reach to the underserved. e-KYC is expected to aid such agents in supporting account openings outside the limited branch network. With e-KYC, agents could reliably identify and verify customers. It is also expected that the required KYC information fields would automatically be captured based on the stored NID data, hence reducing the risk of errors and fraud.
- ii. e-KYC could promote the roll-out and take-up of digital financial services, which in other markets have proved to achieve greater scale faster than traditional financial services, e.g., digital savings and instant loan products, digital investment, and remittance products.
- iii. Less expensive outreach that lowers costs to customers. For instance, with the ability to identify and verify customers digitally, loan applications, evaluations, and authorisation could also be carried out digitally. This would lower the cost

of operations. Such savings can then be transferred to the customer through lower interest rates.

- iv. NID MasterCard identity could facilitate the expansion of credit to an underserved market. The ability to uniquely identify and verify customers makes it easier to track their behaviour despite them having multiple accounts at various institutions. This lowers the credit risk and encourages providers to be less conservative when it comes to lending. This is especially so if industry data is shared with and adequately collated by the Credit Reference Bureau (CRB). Furthermore, NID digital verification would promote the disbursement of digital loans to those with limited physical access.

NID MasterCard is likely to expand the target market for conservative providers beyond formal employees. Many of the formal providers currently target the urban and formal sectors. Most people in this segment are likely to hold passports and driving licenses compared to the rural and informally employed population. Stakeholders expect that ultimately the NID will be universally held irrespective of social status or location, including the underserved, into the potential market for FSPs.

## CHAPTER FIVE

### DISCUSSION OF THE FINDINGS

#### 5.0 Introduction

The findings of the current study are discussed in this chapter. From the discussion in previous chapters and the presentation of findings, it is clear that specific gaps still exist in the application of financial inclusion models in Malawi and across the globe. Based on empirical studies, research findings, and the DaVinci TIPS model, the current study proposed a Malawi/Africa national digital interoperability financial inclusion model that will provide a measurable impact on macroeconomic outcomes such as long-term growth, enhancing income equality or reducing poverty and bank profitability.

The study found that Pafupi Savings and Agent Banking have assisted those financially excluded. Pafupi agent banking performed favourably over the past ten years, despite challenges. As a financial inclusion product, the Pafupi savings account performed well from 2012 to 2018. It was in line with the framework of the financial inclusion model as clients had the following. (1) Access to more accounts. (2) Low-cost accounts. (3) Satisfactory customer service. (4) Solution to poverty alleviation and bank profitability. Digital banking played a role in Pafupi savings account and Bank Pafupi Agent Banking financial inclusion at NBS bank as follows: (1) Adoption of mobile banking. (2) Network Operators (MNO) Airtel and TNM that teamed up with Pafupi agents for mobile banking. (3) Online payments were made through Pafupi Agent Banking. However, online transactions are ineffective. Transaction fees were affordable so Pafupi fulfils the financial inclusion objective of poverty alleviation. The process allowed many poor people into formal financial systems and enabled individuals to access practical, valuable and affordable financial products. ATMs, Mobile banking, Point of Sale (POS) and Auto Teller Machines (ATM) were highly used.

Research by Hembruff and Soederberg (2019) shows that payday lenders, a type of micro-finance lenders, not only benefit at the expense of the poor people through their expensive loans, they also create a lending system that makes poor people dependent on such loans to meet their basic needs. Mader and Sabrow (2019) argue that the

recent shift from microfinance to financial inclusion lacks an underlying rational innovation for poverty alleviation and is at best a myth.

## **5.1 Discussion**

### **5.1.1 Effect Analysis of Financial Inclusion Interventions**

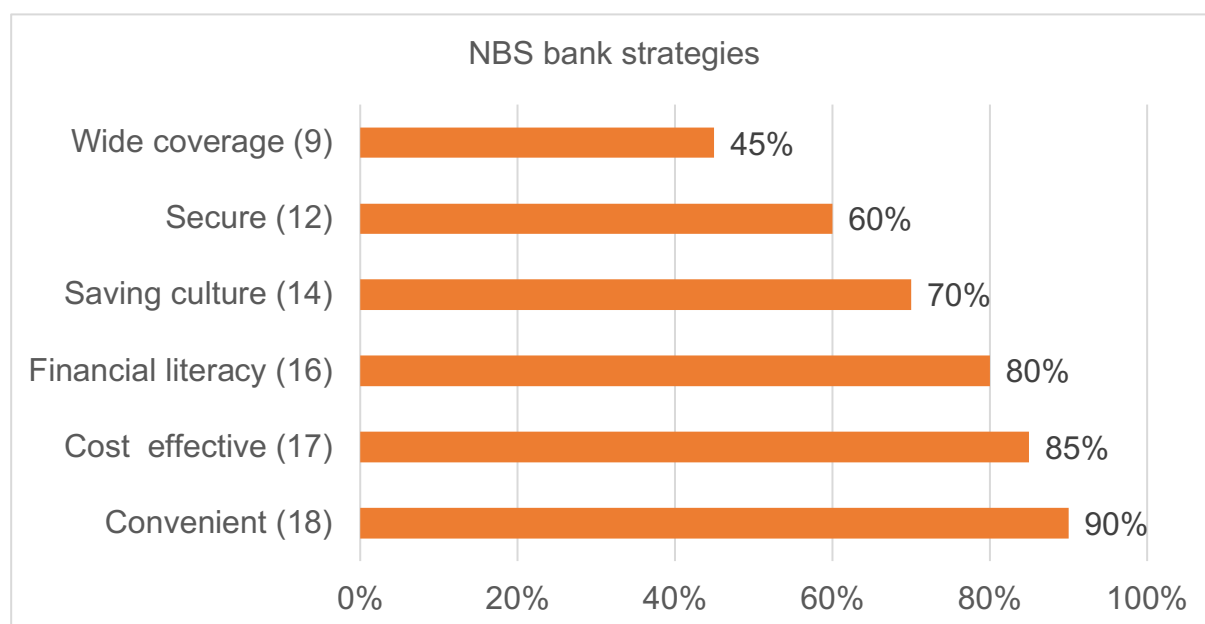
Business performance of Pafupi savings account and Bank Pafupi networks as financial inclusion intervention from 2012 – 2020

Data collected using a questionnaire completed by customers and agents show 62 (68%) very high, 8 (10%) high and 3 (4%) very poor, and 2 (3%) poor. Participants indicated that they believe the savings account and agent banking do positively influence the performance of NBS Bank. Additionally, although some participants (bank employees) indicated that the initiatives negatively affect bank performance, other evidence suggests that savings account and agent banking have consistently performed well from 2012 to 2020 (Women's World Banking and NBS Bank, 2018).

#### **Perceptions, the use and the connection/activation`**

In terms of the TIPS model of technology and innovation focus, participants generally believe that the Bank Pafupi model and Pafupi savings account positively affect NBS (78%). However, some seven per cent (7%) believe that it is not so successful despite evidence to the contrary. Secondly, ninety-point six per cent (90.6%) of the participants indicate that they have an account, and the majority have connected it to Bank Pafupi. One point three per cent (1.3%) of the participants, however, do not receive or cannot receive international funds via their accounts or agent banking. The data can be accessed on the accompanying flash drive.

## NBS bank strategies to alleviate poverty and address financial exclusion



NBS bank is applying strategies to alleviate poverty and address financial inclusion. Forty-five per cent (45%) of the participants have indicated that they experience these initiatives on different levels:

First, there is comprehensive coverage, and it is affordable. A quote from an interview and the references to the policy or internal documents that supported this:

“Customers can access financial services at their doorstep, mobility is easy, customers can save their travelling costs, they have more operating hours, with no long queues”  
- Bank Pafupi Agent – Jali in Zomba.

Secondly, there is a savings culture as mentioned by seventy per cent (70%) of the participants. The findings from an interview with the executives indicate that Bank Pafupi has enabled and encouraged customers to save money. For example, participants from Muloza in Mulanje, bordering Mozambique, were financially excluded as they have been without bank branches for many years. Most people had to travel a long distance from Muloza to Mulanje Boma, or even to Blantyre, to access banking services. “This was indeed a challenge in terms of security of our money as we had to move with large lump sums” Of course, there was Airtel money and Mpamba, but these do not allow payments like salaries, utility bills, school fees etc. With Bank Pafupi, savings account and agent network, most customers who were unbanked are



now being encouraged to save their income resulting in a saving culture.

Thirdly, financial literacy was mentioned by eighty per cent (80%) of the participants. In response to the questionnaire and interviews, agents, customers and executives revealed that NBS prioritized financial literacy even before rolling out the Pafupi savings account and Bank Pafupi agency banking. Financial literacy enabled the financially excluded to enter the formal financial system. This focus on financial literacy brought profits and savings and therefore benefited the Bank as well as its clients.

“Since I started operating Bank Pafupi as an agent, I have made a lot of profits and saved to the extent of buying bicycles, iron sheets, paying school fees etc.” – Agent at Mloza in Mulanje.

Fourthly, convenience, security and affordability. Ninety per cent (90%) of the respondents indicated that Bank Pafupi is convenient, secure and affordable. An interview with the executives indicated that Bank Pafupi has enabled and encouraged customers to save money. It is also convenient and secure as customers can deposit and withdraw their money at anytime, anywhere, through Bank Pafupi Agents.

“Bank Pafupi has been a consideration for vulnerable and marginalized grassroots in Malawi to easily access secured banking products and services” - Bank Pafupi Agent – Enegem, Ndirande market.

The effect of digital banking (Pafupi savings account and Bank Pafupi agent networks on customers' poverty alleviation and bank profitability)

### **Poverty alleviation**

With linkage to the TIPS model society focus, eighty-eight per cent (88%) of the survey respondents indicated that Pafupi Savings and Agent Banking allowed many poor people to enter the formal financial system. By contrast, seven per cent (7%) had the opposite view. Participants agreed that these products are good strategies for alleviating poverty. They believe this for different reasons:

- a. Forty-five per cent (45%) of survey respondents indicated that products are geared to serve rural communities.
- b. It provided much-needed access to formal financial systems to less fortunate

communities. This belief is supported by the literature indicating that access to financial services empowers poor people to save and borrow. As a result, they can buy assets, invest in education and open businesses to improve living standards (Baidoo *et al.*, 2019; Sakyi *et al.*, 2021).

From the study findings, ninety-five per cent (95%) of the participants mentioned that Pafupi Savings and Agent Banking allowed many poor people into the formal financial system resulting in poverty alleviation, while five per cent (5%) contradicted this. The findings were supported by in-depth interviews with the executives and agents who cited that the savings account and Bank Pafupi have financially included the rural masses as well as shortened the distance to the bank also resulting in poverty alleviation:

“This has helped people in rural areas to access banking services at their convenient time since over seventy per cent (70%) of people are in remote areas, so it has helped them to access financial products and services” - NBS Bank Agent – Machinga.

From the questionnaire study findings, the majority (52%) agreed that Pafupi savings account and agent banking provided for the opening of a low-cost account. Contrarily, thirteen per cent (13%) found it expensive to open an account. These findings were also noted from the interview with the executive, who agreed that Pafupi savings account and agent banking provided low-cost account opening, while fifteen point seven per cent (15.7%) disagreed.

The current findings are similar to Mohammed *et al.* (2017) who pointed out that financial Inclusion is envisaged to favour only low-income earners such as the poor. He further intimated that theoretically, Financial Inclusion is said to facilitate many welfare benefits important to the poor. Empirical evidence shows little benefit. Using thirty-five (35) countries, the authors investigated the determinants and the relationship between financial Inclusion and poverty reduction in SSA, using the Treatment Effect version of the Heckman Sample Selection Model and propensity score matching (PSM) for robustness checks. The outcome of the study showed that the use of bank accounts, savings, withdrawals and access to credit, significantly reduced poverty.

## **Access to valuable and affordable financial products**

According to the majority (83%) of Pafupi savings accounts, Bank Pafupi agent banking has enabled more people to access an account. This was supported by interview findings that show thirty-four point four per cent (34.4%) of the participants agree that Pafupi savings accounts and agent banking has enabled more people to access an account. From the findings, it is evident that Pafupi savings accounts and Bank Pafupi have been successful in digital transactions but lag behind the interims of insurance and medical schemes. According to the in-depth interviews study findings, the majority (95%) paid for farm inputs. Ninety per cent (90%) of the participants made utility bill payments. Sixty per cent (60%) paid school fees. Only fifteen per cent (15%) of participants indicated that they transact insurance policies and medical schemes. The survey findings show that Pafupi Agent banking has not done much in financial inclusion in terms of insurance and medical schemes. According to the findings, eighty-one point three per cent (81.3%) of participants indicated that online transactions in Pafupi Agent banking are effective. At the same time, eight per cent (8%) of the participants mentioned that payments were ineffective. Fifty per cent (5%) of the survey respondents indicated that online transactions on Pafupi savings account and Bank Pafupi agent networks are not effective, while thirty per cent (30%) mentioned that payments were effectively made, much needs to be done so that transactions must be effective to achieve financial inclusion.

According to eighty-six point three per cent (86.3%) of the survey respondents, Pafupi savings account and Bank Pafupi Agent banking transactions fees are very cheap, while ten per cent (10%) of the respondents found the transaction fees to be expensive. As the majority find the fees cheap, Pafupi savings account and Bank Pafupi fulfil the financial inclusion objective of poverty alleviation by providing access to useful and affordable financial products. From the interviews, the majority (90%) indicated that Pafupi savings account and Bank Pafupi Agent banking transaction fees are very cheap while twenty-five per cent (25%) found the transaction fees to be expensive. As the majority find the fees cheap Pafupi savings account and Bank Pafupi fulfils the financial inclusion objective of poverty alleviation.

## **Bank profitability.**

The document analysis results from the quantitative survey, and themes that emerged from the semi-structured interviews, highlight two broad aspects: The digital performance of Bank Pafupi and the Pafupi savings account and the influence of customer satisfaction on bank profitability. These are discussed based on the TIPS technology and innovation focus on the NBS bank below.

### **The digital performance of Bank Pafupi and the Pafupi savings account**

The effect of the digital finance performance of Pafupi Savings Account and Bank Pafupi Agent Banking on bank profitability was also assessed as part of the effect analysis. The results show that 71 (89%) of the participants strongly agreed, 6 (8%) agreed, 2 (3%) strongly disagreed, and 1 (1.3%) participants disagreed with the digital performance of Pafupi Savings and Bank Pafupi. In the study, the majority of the participants (97%) were satisfied, while four points one per cent (4.1%) were not satisfied with the performance of the Pafupi savings account and Bank Pafupi.

The study findings from in–depth interviews found that agents who operated from 2012 to 2017 experienced high performance and profits.

“One of the oldest Bank Pafupi agents is in Karonga, they make lots of profits”- Timothy Ngwira, NBS Agent Banking Manager.

The findings from agents operating at Muloza in Mulanje, Ntoso and Manase/Nancholi Blantyre showed that more profits were realized.

“I have made profits since I became an agent of NBS Bank Pafupi. For example, I built a house” – Agent at Muloza, Mulanje.

### **The influence of customer satisfaction on bank profitability.**

In line with the TIPS model focus on systems thinking and people survey findings showed that sixty-five point three per cent (65.3%) of the participants were highly satisfied, while twenty-four point eight per cent (24.8%) incurred losses.

The researcher investigated customer service through in–depth interviews and found that most of the customers got satisfactory customer service. The study findings from

this group, (40.6%) strongly agreed that Pafupi provided satisfactory customer service.

The study explored whether customers will likely use Pafupi savings accounts and agent banking soon. The study found from interviews that customers are likely to use Pafupi savings accounts and Bank Pafupi agent banking in future. According to the study questionnaire findings, forty-six point nine per cent (46.9%) of the participants strongly agreed that customers are likely to use Pafupi savings accounts and Bank Pafupi agents shortly.

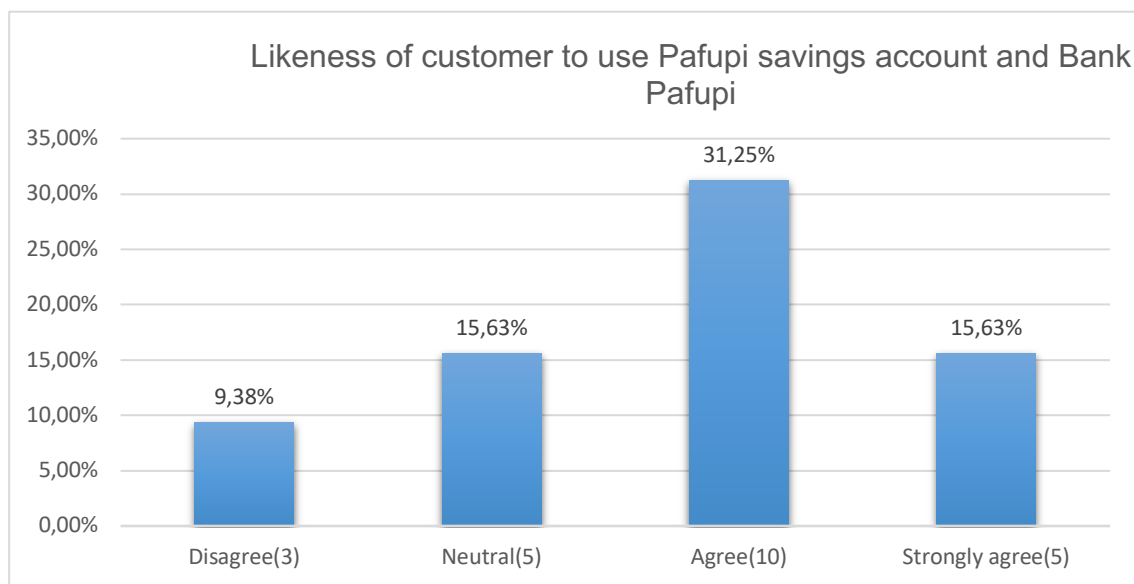


Figure 8: Likeliness of customers using Pafupi Agent Account

### 5.1.2 Explore the Barriers to Financial Inclusion at NBS Bank

Interview participants indicated that despite the successful performance, Bank Pafupi had not done much to include the excluded poor in the formal financial system. An example was liquidity challenges.

“Agents usually have little liquidity which in turn affects customers when they want to withdraw. Queues in the banking halls are still long as the agents are recruiting without matching their liquidity. They get happy to receive only deposits” - NBS Bank Agent – Ndirande market).

The findings from eighty-nine per cent (89%) of the participants who were agents operating at Limbe market, Ginnery corner, Chilomoni – Nthukwa market, Bangwe

market, Enegen in Ndirande, Blantyre, Holy family in Phalombe, Chitakale in Mulanje, Jali in Zomba, Milepa in Chiradzulu bemoaned the following: Poverty, cultural and religious issues; Lack of patronization by customers; High transaction costs; Lack of awareness by customers, e.g. lack of posters; Lack of biometric machine from NBS bank; Lack of bank information on profit or bonus calculations; Competition with Airtel and Mpamba (MNOs) among varied challenges they encountered; Liquidity challenges; Lack of policy compliance and support.

### **Liquidity challenges and lack of patronization by customers.**

“Agents usually have little liquidity which in turn affects customers when they want to withdraw. Queues in the banking halls are still long as the agents are recruiting without matching their liquidity. They get happy to receive only deposits” - NBS Bank Agent – Ndirande market).

### **Poverty, religious and cultural**

Findings from the interview show that poverty and religious and cultural issues posed challenges, especially in the Muslim community, hence a lack of interest or trust in financial services. Kim *et al.* (2018), find evidence that religious discrimination represents a significant barrier to the use of financial services and that this same form of discrimination also causes differences in literacy, income and occupation. Lacking sufficient means (poverty) is one of the main causes why the poor fail to maintain a vanilla bank account. According to a World Bank (2013), survey, eighty-one per cent (81%) of respondents cited a lack of funds as the main reason for not opening a formal bank account. In addition, the difficulties in securing proper documentation needed to open a bank account are commonly cited as the barrier to not accessing formal financial services (Akudugu, 2013; Hendricks & Chidiac, 2011). Nearly all the countries in SSA require customers to hold a minimum book balance. In most cases, the balance can be as high as fifty per cent (50%) of gross national income (GNI) per capita (Fosu, 2013). This traditional bank practice of maintaining a minimum book balance with the bank is also a major deterrent for many to access formal financial services. Furthermore, the exorbitant bank charges such as medical levies, withdrawal fees and bank monthly maintenance fees further aggravate the situation (Tchouassi, 2012). Lastly, the average annual bank charges in SSA account for about twenty per cent

(20%) of the country's GNI per capita and for some commercial banks, the bank service charges account for a quarter of their revenue (Beck & Munzele, 2012).

### **High transaction costs**

During the interview, it was found that high transaction costs pose a challenge. Similar findings were found during the literature review (Chetty, *et al.*, 2019). Challenges experienced by fintech stakeholders are as follows. Mobile-wallet transaction costs for low-value transfers are unsustainably high for the low-income segment in both East and Southern African countries. Products are not designed appropriately for the needs of the low-income segment. High transaction costs (Natamba *et al.*, 2013). Macro-prudential policies and rural branch networks exacerbate the high costs of financial intermediation (Beck & Munzele, 2012). Similar findings were found in the literature review. Chetty *et al.* (2019) noted that mobile-wallet transaction costs for low-value transfers are unsustainably high for the low-income segment in both East and Southern African countries. Products are not designed appropriately for the needs of the low-income segment. Macro-prudential policies and rural branch networks exacerbate the high costs of financial intermediation (Beck & Munzele, 2012).

### **Lack of awareness by customers, e.g. lack of posters**

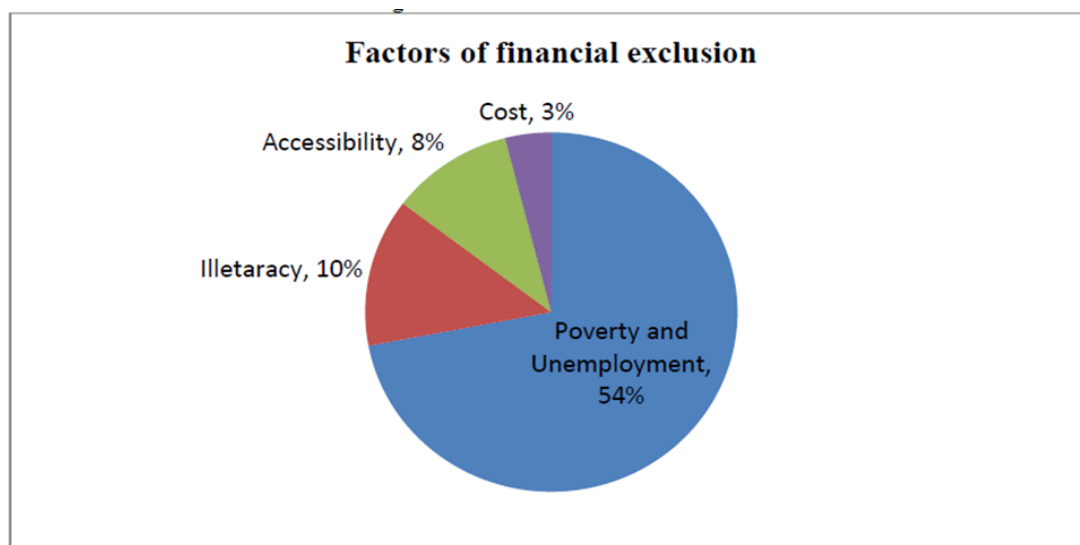
According to the findings from the interviews, NBS Bank conducted awareness campaigns but still, there were gaps in financial literacy. This was supported by extant literature. Financial literacy remains a challenge amongst the low-income segment (World Bank, 2014).

Chetty, *et al.* (2019) found significant challenges identified by fintech stakeholders though with some differences from the current research. Financial literacy remains a challenge amongst the low-income segment and is compounded by limited capabilities in literacy, numeracy, digital literacy and general awareness of financial products. Importantly, many respondents agree that policymakers should not mistake the effects of poor product designs and of not catering for the needs of the low-income segment and low financial literacy. Recognising this caveat, greater support is needed to develop general and financial general education programmes in low-income areas.

### **High transaction costs**

Empirical evidence indicates that providing smaller financial products usually does not yield a greater financial return than the operating and finance costs of providing them (Natamba *et al.*, 2013). In addition, it costs more to tailor and provide small financial services for the poor (Bag, 2013). It is for this reason that the banking network in SSA is predominantly concentrated in densely populated commercial towns. Also, the bank's services are skewed towards serving its affluent customers (Beck & Munzele, 2012). Macro-prudential policies and the costs of managing a rural branch network exacerbate the high costs of financial intermediation in the region (Beck & Munzele, 2012).

A study by FinScope Malawi, (2008) revealed that poverty and unemployment are the major causes of financial exclusion in Malawi. This is followed by a lack of financial literacy among the population, then accessibility to financial services, and the least influential factor is the cost of accessing financial services, as shown in Figure 9.



Source: FinScope Malawi (2008)

Figure 9: Factors of financial exclusion

### Poor infrastructure.

Africa is ranked the lowermost among the developing economies in terms of access to infrastructure, far behind Latin America and East Asia. Essential infrastructure such as security services, telecommunication facilities and proper road networks are still underdeveloped: The situation is much worse in rural areas (World Bank, 2014). Batuo



(2015) notes that telephone lines are predominantly provided in urban areas and the average teledensity in the region is roughly one per cent (1%) and thirteen per cent (13%) for fixed and mobile lines, respectively (Wilson *et al.*, 2014). There is a growing mountain of evidence indicating that providing adequate infrastructure is an important step towards alleviating poverty and accelerating economic growth. Finally, the dismal infrastructure in SSA has been poignantly found to contribute to the negative effect of slow economic growth in the past decades (Kessides, 2012).

### **Lack of patronisation, lack of biometric machine from NBS bank and competition**

The interview found a lack of patronisation of bank Pafupi and Pafupi savings accounts. The lack of biometric information leads to Bank Pafupi agents being unable to assist a customer resulting in a lack of patronisation. It was found that Airtel Money and TNM Mpamba, as well as informal financial access, pose a challenge. The findings were also presented in chapter four and echoed in the extant literature as well.

Financial inclusion is not necessarily due to a lack of funding but could arise because of other barriers that may need to be tackled before financial inclusion can increase. These barriers and gaps are discussed in Sections 2.2.5 and 4 (pages 205, 212 -215). For example, one emerging problem in financial inclusion policy debates is the inactive user problem. When individuals are brought into the formal financial system, they become active or inactive users of financial services. Even after exerting tremendous effort to bring the excluded population into the financial sector, these individuals come into the formal financial sector and after a while may choose to become inactive users of financial products and services.

Demirgüç-Kunt *et al.* (2018) reveal a substantial difference between men and women in borrowing and savings. Men are more likely to formally borrow and save than women due to factors related to income and asset ownership. Being a woman increases the likelihood of one being financially excluded because women have an inferior level of income, lower financial literacy and less business experience. They, therefore, rely more on informal financial services. This was evidenced in chapter four, pages (205 – 206) where the study found a lack of awareness by customers. For

example, there was a lack of posters for NBS Bank. They open formal accounts but refuse to get credit cards or debit cards. They do not keep deposits in their formal accounts and do not initiate financial transactions from their formal accounts. They only use their formal accounts to receive money, but they do not use their formal accounts to send money to others. These inactive users create a new problem for policymakers because their financial inactivity reduces the volume of financial transactions. This in turn reduces the revenue to financial institutions and tax revenue to the government, which affects the economic output.

### **Lack of studies, models and policy and regulatory support**

The study found that financial inclusion faces a policy support challenge. NBS bank faced policy and regulatory challenges to support Bank Pafupi as a financial inclusion intervention. A study by Chetty, *et al.* (2019) found that the regulatory environment is a challenge within Southern and East Africa. Whilst the regulator works to protect the financial-services ecosystem, improving safety and standardising the industry, restrictive regulations will have an exclusionary effect on innovations. Often the regulatory landscape is unclear and innovators are not sure how to develop new technologies aligned with the regulatory needs of the country. Further, this uncertainty inhibits partnerships with foreign, large-scale, fintech operators, as they are unclear of the medium to long-term prospects of their products in a new market.

Another issue is the paucity of critical studies in the financial inclusion literature, that challenge the proxies used, and the assumptions underlying current financial inclusion models (Ozili, 2020). There are few critical studies on financial inclusion such as Mader (2018). The identity problem in financial inclusion occurs when the excluded members of the population cannot be accurately identified.

Pearce (2011) assessed the state of financial inclusion in the MENA region and suggests (i) the need for a legal, regulatory and supervisory framework that enables access to finance primarily through banks, (ii) providing regulatory space for the use of agents and mobile phone technology, (iii) a finance company model for microcredit and leasing, (iv) prudent competition between financial service providers should be promoted, and (v) barriers to the growth of Islamic financial services should be removed so that they can better meet market demand.

## **Lack of policy compliance**

Another issue is that financial institutions may not cooperate with policymakers seeking financial inclusion through banks. Banks usually conduct an internal cost-benefit analysis before participating in financial inclusion projects. If the cost exceeds the benefit, banks may be reluctant to participate in financial inclusion projects, especially when the government is unwilling to reimburse the cost to banks. In countries where private-sector and public-sector banks exist, private-sector banks may be reluctant to participate in financial inclusion projects because the private-sector banks expect the government to use its public-sector banks to achieve its financial inclusion projects. An optimal level of financial inclusion would be obtained when policies succeed in extending financial services to a broad segment of the population and have done so efficiently and sustainably (Barajas, *et al.*, 2020). Akhtar and Pearce (2010) show that the factors promoting financial inclusion in the MENA region are: mobile and branchless banking, electronic payments of salaries and pensions through bank accounts, Islamic microfinance, basic bank accounts, leasing, factoring and insurance and utilizing postal systems while some challenges facing financial inclusion in the region include a weak financial infrastructure, the lack of a robust regulatory framework and the unwillingness of non-governmental organisations (NGOs) to contribute to financial inclusion programs in the region because of the political and religious conflict in the region.

Many efforts have been made to expand inclusion, yet large populations in Africa remain outside the reach of formal financial services. Even when access efforts have been successful, the use of available services is still deficient (Prina 2015). Innovations in technology have changed the financial sector landscape and expanded access to digital financial services (DFS) to large segments of the poor. Nevertheless, such access is still limited to remittances and payments, mainly because of the underdevelopment or absence of complementary markets. Although there have been some developments in digital savings and credit, the lack of related regulations around digital credit has increased vulnerability for the poor. Furthermore, the exclusion of the poor from financial markets is exacerbated by a mismatch between the services provided by financial institutions and the financial needs of the poor.

### **5.1.2.1 Gaps in Financial Inclusion**

The findings from an interview with an NBS bank executive showed that there are risks and costs associated with financial inclusion leading to involuntary exclusion. For involuntary exclusion, there is a strong case against policymakers attempting to drive it to zero in all cases, for two main reasons - risks and costs. In the credit market, some borrowers may be too risky. As this market is characterized by having information asymmetries - lenders (banks) do not have perfect information on potential borrowers' riskiness - a situation emerges which was first described by Stiglitz and Weiss (1981). In the extant literature, Barajas, *et al.* (2020) added that banks will voluntarily choose to limit the interest rate charged on loans and ration borrowers out of the market, even some who would be willing to pay a higher rate. As a result of adverse selection, the lender knows that increasing the lending rate will only increase the riskiness of borrowers, thereby reducing profits from lending. Thus, there will be an optimal maximum interest rate at which a customer will be willing to lend, even if it leaves some demand unsatisfied. A key point is that this produces an equilibrium or rational outcome arising from the conditions that lenders face. Thus, lack of inclusion, in this case, does not necessarily warrant a policy action to close the gap. It would be detrimental to society to include borrowers that are too risky. The findings from the NBS Bank executive concluded that the introduction of the National Identification card solved the problem and closed the gap on risky customers.

There is evidence from various studies (Durst & Gerstlberger, 2021; Rudolph *et al.*, 2022; Wernick & Correia, 2020) on gender gaps in access, training and use of the products and services offered by the financial sector. In Latin America and the Caribbean, the evidence from scientific studies agrees that there is a gender gap. Moreover, almost seventy per cent (70%) of small and medium-sized companies belonging to women who requested a loan could not obtain it through banking institutions. In this sense, the population resorts to informal savings and financing mechanisms, excluding investment opportunities or risky alternatives with little return.

### **Gender inequality restricts women's access to financial services.**

The results of the study by Girón and Kazemikhasragh (2021) show that gender inequality negatively impacts economic growth and that women with low educational levels are more affected by gender inequality. Another study by Moşteanu (2020) indicates that the inclusion of women in new financial services has increased

investment and production and economic growth in the countries studied. According to Escobar *et al.* (2020) and Kong and Loubere (2021), the importance of creating financial opportunities and new technologies that integrate coordinated and articulated actions to reverse an exclusive financial system that expands coverage and promotes the integration of women in the education and financial sector. Fowowe and Folarin (2019) show that inclusive growth occurs directly and indirectly through financial inclusion.

## **5.2 Financial Inclusion Models**

Chapter two discussed financial inclusion models such as those of Kenya – Mpesa, Maldives National Identity, Nigeria, Tanzania and Zimbabwe. Standard models of providing finance may not be effective, and mainstreaming informal finance or linking it to formal finance may be an innovative way to tackle financial inclusion in the African context. This is covered in Chapter 2, which investigates the performance of corporative financial institutions globally. Digital finance is an opportunity to remodel the provision of financial services for those who have previously been excluded. These services are covered in Chapters 2 and 4, which investigate the transmission mechanism of digital finance.

## **5.3 NBS Bank Case**

Since the New Building Society (NBS) bank introduced its financial inclusion product of Pafupi Savings and Agent Banking, the Bank has delivered huge losses and inadequate financial and business performance. The Bank's customers and agents involved in the Bank's financial inclusion products have never been evaluated to understand the effect this product has on them in terms of poverty alleviation. Secondly, the digital world has advanced greatly since the Bank introduced its financial inclusion product. However, the Bank is still using the same outdated procedures and processes to implement financial inclusion strategies. Due to this, the Bank lags and might be overtaken by competitors, leading to more losses.

This investigation intended to understand the effect of financial inclusion interventions on agents/bank profitability and customers at NBS Bank Pafupi Savings and Agent Banking. The study employed exploratory and descriptive surveys that adopted mixed methods conducting qualitative and quantitative research. A target population size of

100 was sampled using stratified and simple random techniques. Primary data was collected using questionnaires and interview guides, and secondary data from books, journals, official documents and the Internet. Data were analysed using the Statistical Package for the Social Sciences (SPSS) version 2.0, MS Excel and Thematic qualitative content analysis, which was manually done.

According to the findings of this current study, NBS Bank Pafupi Savings and Agent Banking are available in the residential areas of the majority of the participants. The majority of participants are using Pafupi Savings Account. Regarding the financial inclusion initiative, the Pafupi product has a high penetration in all regions of Malawi. The findings indicate that Pafupi Savings and Agent Banking have assisted those who have been financially excluded. Most participants were registered with Airtel Money and Telekom Networks Malawi (TNM) Mpamba.

According to the study findings, most participants agreed that customers are likely to use Pafupi Agent Banking shortly. This study discussed the relevance of the current findings for the bank, for the financial sector in Malawi and beyond.

#### **5.4 Malawi's Formal Financial Sector**

The formal financial sector in Malawi remains small, and outreach remains concentrated on a narrow client base. It is dominated by commercial banks whose products and commercial focus do not target the rural poor that are financially excluded but make use of Microfinance Institutions (MFIs) and Financial cooperatives (FCs). It is observed that the Malawi Microfinance and Financial Co-operatives sector plays a critical role in the country's social-economic development by promoting financial inclusion of the unbanked, but bankable, population. In recognition of the above, the Government of Malawi (GoM), with support from the International Development Association (IDA) of the World Bank in the form of credit, is, through the Reserve Bank of Malawi (RBM), implementing a five-year Financial Sector Technical Assistance Project (FSTAP) to support its initiatives of developing the requisite infrastructure, robust policy and institutional framework, aimed at growing the financial sector's capacity to increase outreach (RBM Register, 2017).

The current landscape of the Malawi Microfinance and Financial cooperatives industry comprises one (1) deposit-taking microfinance institution, nine (9) non-deposit-taking

microfinance institutions, thirty (30) credit-only agencies concentrated in specific urban areas, and some thirty-four (34) Financial Co-operatives. Typically, all these MFIs and FCs process small but numerous financial transactions using manual or rudimentary processing mechanisms as most cannot afford the initial capital cost of setting up sophisticated Management Information Systems (MIS) and the necessary personnel that are qualified enough to manage such robust systems (RBM Register, 2017). The digital financial inclusion intervention can address the challenge.

As part of FSTAP, the RBM planned for the design, set-up, commissioning and operation of a microfinance Transaction Processing Hub (the Hub) that will allow MFIs and FCs to share a common integrated platform with a shared interoperable electronic data processing infrastructure to meet all their MIS needs. It is envisaged that the Hub will help institutions reduce operating costs, streamline lending processes, scale up rapidly and integrate with other entities such as credit bureaus, other financial institutions, regulators and international payment networks. In addition, it will reduce related infrastructure costs, facilitate timely and accurate reporting to the regulator, apex bodies, financiers and other stakeholders and guarantee data security (RBM Register, 2017).

The successful design, set-up and roll-out of an efficient, effective and robust Hub will necessitate capital investment in property, equipment and other resources that include but are not limited to hardware, software, and personnel training (World Bank, 2019). Additionally, it will integration/interface costs to deliver a robust (resilient and high availability infrastructure) platform that allows a consortium of MFIs and financial cooperatives to share transaction processing infrastructure (payment system connectivity, core banking application, mobile-banking integration, account opening, loan disbursements, payment processing, customer acquisition, customer complaints logging, compliance and reporting) as per set governance rules and regulations. It will produce audit trails with time stamps and access control; integrated with analytical and reporting tools It will be compliant with open system concepts and support multi-channels (branch and branchless banking delivery channels) (RBM Register, 2017).

The TPH project is part of broader interventions in the Malawi Financial Sector that aim to put in place the basic infrastructure for payment services (World Bank, 2019). The TPH is a small value transaction processing infrastructure that will provide MFIs

and FCs and in particular, NBS Bank Pafupi payment system functionality (core banking application, mobile-banking integration, account opening, loan disbursements, payment processing, customer acquisition, customer complaints logging, compliance and reporting, connectivity) following set governance rules and regulations. It will also provide an audit trail with time stamps and access control; integrated analysis and reporting tools compliant with open systems concepts to allow interface and integration with other key payment systems infrastructure in Malawi. This will support multiple channels (NBS branch and branchless banking delivery channels) (RBM Register, 2017). The Hub's main objective is to leverage technology (in the current study, Bank Pafupi agency networks) to improve processing efficiency for NBS bank small value payments while increasing Bank Pafupi's financial inclusion and Malawi's financial sector in general. The overall objectives of the Hub are to:

- i. Enable MFIs and FCs to share an interoperable electronic data processing infrastructure for the MIS requirements using industry-tested and modern technology platforms;
- ii. Help MFIs and FCs to reduce infrastructure set-up and operating costs that hinder market entry;
- iii. Streamline core processes (customer acquisition and management, loan management, payments);
- iv. Scale up rapidly and integrate with other key entities like Credit Reference Bureaus (CRBs), National Switch, key government institutions like National Registration Bureau (NRB), financial institutions, regulators and oversight bodies and international payment networks.
- v. Facilitate timely and accurate reporting to the regulator, industry apex bodies and government.

The key drivers of implementing the Hub are as follows (RBM Register, 2017):

**i. Increasing Financial Inclusion**

Reducing the financially excluded in Malawi is a central Government initiative. This is anticipated to be achieved by utilising technology to enable current MFIs and FCs to deliver services to the unbanked and the unreachable by the traditional banking channels. The implementation of the Hub will result in increased financial inclusion by



extending services to the unbanked through technology that will be availed to all MFIs and FCs. This is the development objective of the Hub. The Government of Malawi (GoM) recognizes the importance of financial inclusion as a vehicle for achieving inclusive and sustainable economic growth. Over the years, GoM has made efforts to enhance financial inclusion. Among the efforts included; the development of the first National Strategy for Financial Inclusion (NSFI) for 2010-2015; the institution of the Financial Sector Development Strategy in 2010; and the implementation of the Financial Sector Technical Assistance Project (FSTAP) 2011–2017 (Nkuna *et al*, 2018).

## **ii. Provision of World Class Core Banking Applications to MFIs/FCs**

From the Needs Assessment exercise conducted across MFIs and FCs, it emerged that most of them do not have Management Information Systems that can be used in the management of the core banking functions and services offered to customers. At the same time, most indicated their inability to invest in such systems due to the cost implications associated with implementation. The Hub, therefore, will provide world-class core banking applications to MFIs and FCs in Malawi at a funded cost by the World Bank and the Government of Malawi. The core banking applications are supplemented by critical institutional systems like HR, payroll, financial management and asset recording systems which have all been designed into the Hub. Every licensed MFI, FC, apex body like MUSCCO and MAMN, and all stakeholders who require information from the sector will be the primary beneficiaries (World Bank, 2019).

## **iii. Leveraging Technology Trends to Deliver Services**

Implementing the Hub will allow MFIs and FCs to be efficient and effective in in-service delivery. The Hub shall enable market players to improve the speed at which they perform their functions, improve the integrity and quality of information available, and reduce the time taken to retrieve and report such information (Nkuna, Banda & Chirwa, 2021). These factors should contribute significantly to improving the market player's ability to increase the services they offer to their clients while increasing financial inclusion in Malawi. For sixty-eight per cent (68%) of the survey respondents, the effect of Pafupi Savings Account and Agent Banking on customers is in line with the

framework of the financial inclusion model, including access to more accounts, low-cost accounts, satisfactory customer services and the provision of a solution to alleviate poverty.

#### **iv. Integrated MFI/FC Ecosystem of Applications**

The Hub is expected to interface with critical systems like the credit reference bureaus, collateral registry, national identification, passport system, Road Traffic database, PSM system and RBM's BSA. It is also designed to be interconnected to the national switch, offering many opportunities and potential services to the end customers of MFIs and FCs. These interconnections will result in an interconnected MFI/FC ecosystem that will allow the sector's growth through the exchange of information and delivery of new and improved services from and to non-sector-based organisations, with critical information needed by FCs. Interfacing with MISs of large institutions with robust systems will follow guidelines issued by the Registrar of Financial Institutions.

#### **v. Empowering End Users**

The Hub will bring technology to the end-user customers of MFI and FCs through the provision of core banking access on devices like phones, POS and ATMs. This user experience will largely depend on the changes in the delivery of services the MFIs and FCs will configure on the Hub core banking application.

#### **The Target System**

The Hub aims to put in place a shared core banking application with the following features:

- i. The Hub application will be a modern core banking system complemented by critical financial, agency banking, e-channels and human resource management modules with state-of-the-art functionalities to enable MFIs and FCs to fulfil their day-to-day functions;
- ii. The Hub system will be based on well-established, user-friendly, easily customisable, commercially available, multi-user, multi-tenancy software capable of operating in a cloud environment or hosted locally in centralised servers. It will be appropriately sized for the Hub environment recognising

the scale of operations, technical skills, infrastructure and resource availability while catering for the diverse needs of the individual MFIs and FCs.

- iii. The Hub applications will provide a full range of generally accepted functionality for all MFIs and FCs allowing for a growth path of the system for future needs. The designed system will have the following characteristics:
  - a. Multi-user access;
  - b. Multi-location access over the Hub Wide Area Network (WAN) allowing for remote access by MFI and FCs;
  - c. Multi-tenancy configuration for all MFIs and FCs;
  - d. State-of-the-art customisable core banking and associated package functionality based on efficient transaction data processing; and
  - e. Centralised data management of information and system resources, providing secure access to data over the Hub WAN.
- iv. The Hub will be implemented within ten months from the commencement of the implementation activities by a contracted supplier, allowing immediate commencement of use by MFIs and FCs.
- vi. The Hub will interface and integrate with critical third-party systems allowing the direct exchange to and from the Hub of the vital information required by all MFI and FC stakeholders (RBM Register, 2017).

In terms of the features presented above, the hub will address challenges and gaps. For example, by providing user-friendly, easy-to-understand and accessible services that are inclusive (savings account, credit account, investment in stocks, mutual funds, insurance, international remittances and mobile money) and will assist educated and uneducated clients, resulting in poverty alleviation. This will be easier to adopt for rural customers, allowing for financial inclusion. With the Hub application being a modern core banking system, complemented by critical financial, agency banking and e-channels, NBS bank profitability will be realised. In Malawi, financial inclusion could be higher in urban areas compared to rural or peri-urban areas because most financial institutions are located in urban cities and urban-district towns (Nkuna *et al.*, 2021). As

such, the multi-location access over the Hub Wide Area Network (WAN) will close the gap and the challenge by allowing for remote access by MFI and FCs through Bank Pafupi agent networks.

Based on the analysis of the formal financial sector in Malawi, the Reserve Bank of Malawi (RBM) implementation of a five-year Financial Sector Technical Assistance Project (FSTAP) to support its initiatives of developing the requisite infrastructure, robust policy and institutional framework, aimed at growing the financial sector's capacity to increase outreach (RBM Register, 2017), the researcher proposed and designed a Malawi/Africa national identification digital financial inclusion interoperability model presented in the next section based on the Davinci TIPS Model (DaVinci, 2017).

### 5.5 Proposed Design For A Digital Bank

Based on the TIPS model with a focus on innovation, document analysis, personal reflections, return of investments as a stakeholder, interviews and survey findings, the researcher developed a proposed National Identification Digital Financial Inclusion interoperability model for Malawi.

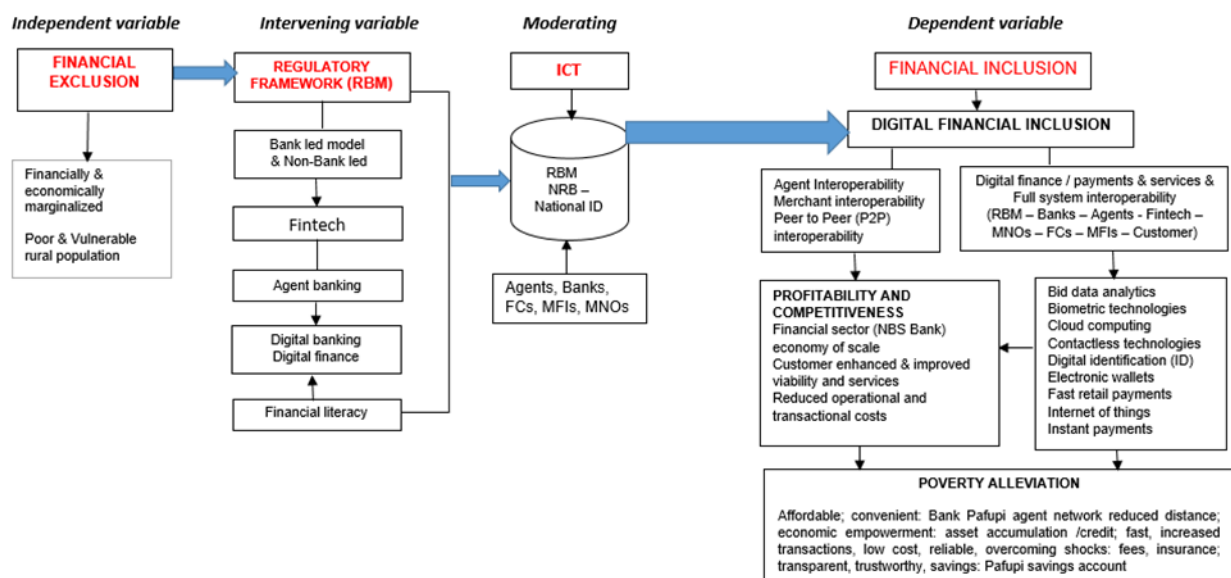


Figure 10: Malawi / Africa Interoperability Model (Source: Ngwenya, 2020)

The researcher has designed an integrated NID bank and non-banking model for Malawi and Africa. The NID model could be integrated into financial institutions like banks, microfinance institutions (MFIs), financial cooperatives (FCs), Mobile Network Operators (MNOs) led models and agents-led models. It will operate by the interoperability of the Reserve Bank of Malawi, National Registration Bureau (NRB), Malawi Nation Identification Card (NID), the banking industry, MFIs and FCs, MNOs, passports and Agents. This will make the NID perform as an interoperability ATM card.

The NRB will facilitate interoperability by linking customers' National IDs to the financial institutions, including the banking industry, MFIs and FCs, MNOs, passports and Agents. A customer will be able to access financial services at Point of Sale (POS), agents, ATMs, personal computers (PCs), and phones anywhere in Malawi and abroad. The customer's National ID number will act as an account number, instead of the bank account number. The NRB will assure that all banks - visa cards (universal access), MNOs, and Agents' accounts link to the National ID. Thus, the National ID will hold all the personal and financial details of a customer on its chip. The NRB will link these details to bank servers, MNOs products like Airtel Money, TNM Mpamba and Agents (Post Offices, Admarc depots, supermarkets, groceries, lottery outlets, and retail vendors) ensuring interoperability.

There will be biometric machines linked to the National ID where a customer will be able to swipe to access financial services. The customer will use the Nation ID in all the banks' agents and, MNO's agents to access financial services. The Reserve Bank of Malawi (RBM) should declare the NID as the primary and mandatory identification document for use in the financial sector (accounts). Banks must invest in digital card readers with biometric finger scanners. NRB should support banks to implement offline KYC using NID.

Similarly, NRB should support financial inclusion by working with the Mastercard offering NID direct integration with databases of banks, MFIs, FCs, MNOs and Agents to enable instant, offline verification through NIDs (e-KYC). Promoting e-KYC is crucial in driving financial inclusion as it would support remote account openings and even empower agents to execute KYC. This would lower the cost of onboarding customers and allow faster and more accurate KYC. Further, it would allow many marginalised people, who do not currently meet KYC requirements, to access formal financial

services. In addition, it would lower outreach costs by digitally supporting the end-to-end provision of products and services, thereby facilitating access in underserved areas of Malawi and Africa.

In this case, NRB must partner with RBM, Master Card, to integrate the Passport databases, all financial institutions like the banking industry, MFIs, FCs, MNOs and agents into one multi-functional NID MasterCard that will have the following benefits:

- i. Mandate all regulated financial entities to link financial accounts with NID
- ii. Credit bureau regulations must be modified to include NID as the primary identifier.
- iii. Issue regulations for offline e-KYC to match on NID MasterCard model.
- iv. Issue regulations for online e-KYC integration with NRB database.

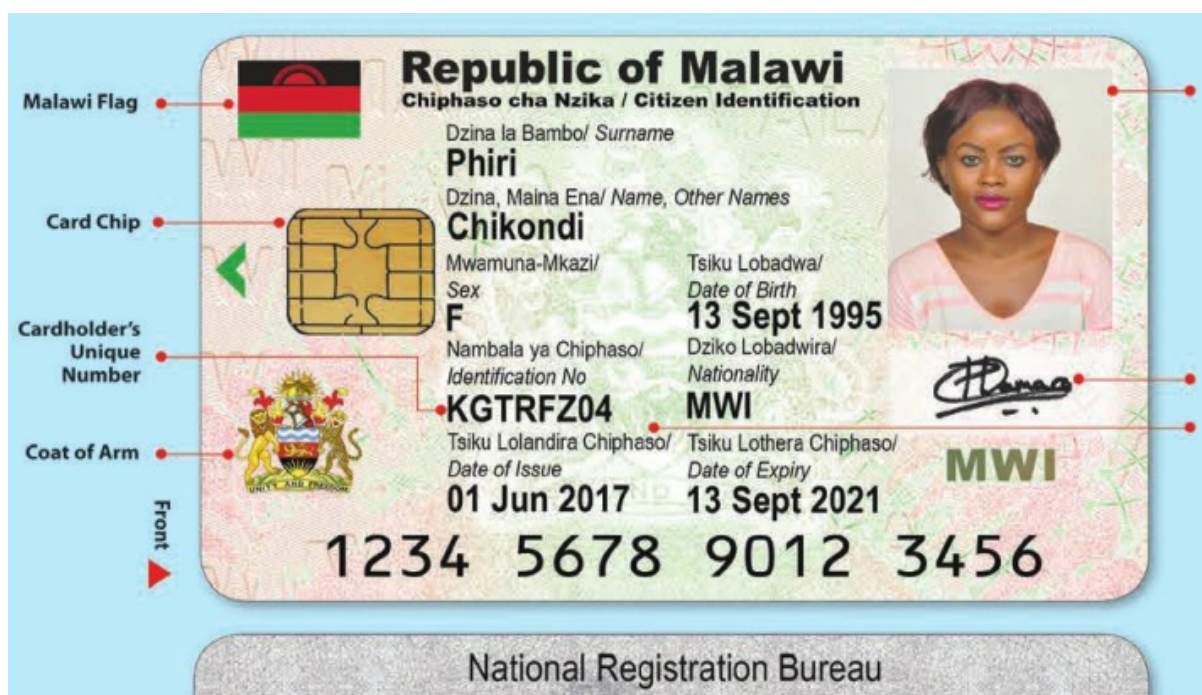


Figure 11: Malawi National Identification Card

The suggested NID will facilitate financial inclusion. A NID MasterCard used in the financial sector will facilitate the financial inclusion of the previously excluded. Expected benefits for financial inclusion emerging from the NID will include.

- i. e-KYC could support remote account opening and perhaps enable formal savings mobilisation. Rolling out agency banking models would expand the

reach of products to the underserved client base. e-KYC is expected to aid such agents in supporting account openings outside the limited branch network. With e-KYC, agents could reliably identify and verify customers. It is also expected that the required KYC information fields would automatically be captured based on the stored NID data, reducing the risk of errors and fraud.

- ii. e-KYC could promote the roll-out and take-up of digital financial services, which in other markets have achieved greater scale faster than traditional financial services such as digital savings and instant loan products, digital investment and remittance products.
- iii. Less expensive outreach that lowers costs to customers. For instance, with the ability to identify and verify customers digitally, loan applications, evaluations, and authorisation could also be carried out digitally. This would lower the cost of operations. Such savings can then be transferred to the customer through lower interest rates.
- iv. NID MasterCard identity could facilitate the expansion of credit to an underserved market. The ability to uniquely identify and verify customers makes it easier to track their behaviour despite them having multiple accounts at various institutions. This lowers the credit risk and encourages providers to be less conservative in lending. This is especially so if industry data is shared with and adequately collated by the Credit Reference Bureau (CRB). Furthermore, NID digital verification would promote the disbursement of digital loans to those with limited physical access.
- v. NID MasterCard will likely expand the target market for conservative providers beyond formal employees. Many of the formal providers currently target the urban and formal sectors. Most people in this segment are likely to hold passports and driving licenses compared to the rural and informally employed population. Stakeholders expect that, ultimately, the NID will be universally held, irrespective of social status or location, including the underserved, into the potential market for FSPs.

## **5.6 Chapter Conclusion**

This chapter discussed results from the mixed method research involving a case study with descriptive demographical information. This investigation aims to understand the

effect of financial inclusion interventions on agents/bank profitability and customers at NBS Bank Pafupi Savings and Agent Banking. To address this aim, quantitative and qualitative data were collected via questionnaires, documents and semi-structured interviews.

The chapter discussed the business performance of the Pafupi savings account and Bank Pafupi networks as a financial inclusion intervention from 2012 – 2020. It also explained NBS bank strategies to alleviate poverty and address financial exclusion. Perceptions and the use and connection/activation were also analyzed.

The chapter discussed the challenges and gaps in financial inclusion. Financial inclusion models were discussed in the chapter. The findings from the NBS Bank case study were discussed

This chapter presented data collected from questionnaires and interviews on digital banking (Pafupi savings account and Bank Pafupi agent networks initiatives) that are used as a poverty alleviation strategy and how it affects bank profitability. Empirical studies from various African countries were analysed. The cases presented are selected to illustrate the salient features of financial inclusion that emerged from the review of services in Chapter 2.

The chapter discussed findings from document analysis, results from the quantitative survey and themes that emerged from the semi-structured interviews highlighting two broad aspects: The digital performance of Bank Pafupi and the Pafupi savings account and the influence of customer satisfaction on bank profitability.

The study findings from the interviews show that despite the successful performance, Bank Pafupi has not done much to include the excluded poor in the formal financial system or addressed issues such as liquidity challenges.



## CHAPTER SIX

### CONCLUSION AND RECOMMENDATIONS

#### 6.0 Introduction

The study closes the loop with chapter one by concluding according to each research objective coupled with the research reflection that is based on the Davinci TIPs model linkage to the study.

**To undertake an effect analysis of Pafupi savings accounts and Bank Pafupi agent networks as financial inclusion interventions from 2012 – 2020.**

The contemporary banking theory is relevant to this study concerning Pafupi savings accounts and Bank Pafupi agency networks that operate a network of branches. Instead, NBS bank implemented digital financial inclusion interventions through Pafupi savings accounts and Bank Pafupi agency networks across Malawi. In line with the Davinci TIPS model where “s” represent systems thinking, Information Technology (IT) artefacts (Bank Pafupi agency banking and Pafupi Savings account) are systems or are involved with NBS Bank systems). The environment of Information systems (IS) artefacts comprises people (Customers), organizations (NBS Bank, and technology (NBS Bank Information Technology (IT) and MNOs). NBS bank Technology Policy is premised on making sure that the bank is using technology to generate revenue whilst assisting customers at the same time. The bank pushes the Financial Inclusion agenda at a profit, not at a loss, that is the key, because NBS Bank is a profit-making organization. The evaluation also considered the side effects (Challenges of financial inclusion interventions) of the artefact on its environment. Studies represent an imperative phenomenon of information systems (Digital financial inclusion); they make a substantial influence on the field; artefacts are realizable and testable; artefacts deliver improved resolutions than prevailing systems (Pafupi savings account and Bank Pafupi agency networks); and the experience obtained from the process of system building is generalisable. According to NBS Bank executives, the rationale for setting up Pafupi Savings is the same as the rationale for setting up Bank Pafupi. It is effective since the bank no longer spends money on physical buildings but partners with business people who already have structures in those areas. Customers can

transact business in locations closer to them. Rural customers feel comfortable transacting their business at agencies rather than the bank because the bank ambience sometimes intimidates rural clients.

In terms of completeness, consistency, accuracy, performance, and efficiency, customers have a Pafupi savings account operated at Bank Pafupi agencies and are connected to NBS Bank. Pafupi Savings account and Bank Pafupi agent banking are available in the remote residential areas of Malawi. The majority of customers are using Pafupi Savings Account. Bank Pafupi agencies and Pafupi savings accounts have a high penetration in all regions of Malawi. The findings indicate that Pafupi Savings and Agent banking has assisted the financially excluded to be fully banked. Most customers were registered with Airtel Money and Telekom Networks Malawi (TNM) Mpamba. Customers are likely to use Pafupi Agent Banking shortly.

Bank Pafupi agent banking and Pafupi Savings account have enabled more people to have access to an account. Pafupi savings accounts and Bank Pafupi have been successful in digital transactions but lag behind the interims of insurance and medical schemes. Farmers were able to buy farm inputs, made utility bill payments, paid school fees. , very few transact insurance policies and medical schemes. The survey findings show that Pafupi Agent banking has not done much in financial inclusion in terms of insurance and medical schemes. Pafupi savings account and Bank Pafupi Agent banking transactions fees are very cheap. The Pafupi savings account and Bank Pafupi fulfil the financial inclusion objective of poverty alleviation by providing access to useful and affordable financial products.

There is comprehensive coverage, and it is affordable. Customers can access financial services at their doorstep, mobility is easy, customers can save their travelling costs, and they have more operating hours, with no long queues. There is a savings culture. Bank Pafupi and Pafupi savings accounts have enabled and encouraged customers to save money. For example, customers from Muloza in Mulanje, bordering Mozambique, were financially excluded as they have been without bank branches for many years. Most people had to travel a long distance from Muloza to Mulanje Boma, or even to Blantyre, to access banking services. This was indeed a challenge in terms of the security of money as they had to move with large lump sums. Despite the presence of Airtel money and Mpamba, payments like salaries, utility bills, and school

fees were not possible. With the Pafupi savings account and Bank Pafupi agent network, most customers who were unbanked are now being encouraged to save their income resulting in a saving culture.

NBS bank prioritized financial literacy even before rolling out the Pafupi savings account and Bank Pafupi agency banking. Financial literacy enabled the financially excluded to enter the formal financial system. This focus on financial literacy brought profits and savings and therefore benefited the Bank as well as its clients. Agents that started operating Bank Pafupi as an agent made a lot of profits and saved to the extent of buying bicycles, iron sheets, paying school fees etc.

Fourthly, Bank Pafupi agent banking and Pafupi savings account are convenient, secure and affordable. Bank Pafupi has enabled and encouraged customers to save money. It is also convenient and secure as customers can deposit and withdraw their money at anytime, anywhere, through Bank Pafupi Agents. Bank Pafupi has been a consideration for vulnerable and marginalized grassroots in Malawi to easily access secured banking products and services.

**To assess the effect of digital banking (Bank Pafupi agent networks and Pafupi savings account financial services on customers and bank profitability.**

Survey findings showed that customers and staff were all satisfied with Bank Pafupi agent networks and Pafupi savings accounts. Most of the customers got satisfactory customer service. Some mentioned that losses were incurred. Customers are likely to use Pafupi savings accounts and Bank Pafupi agent banking soon.

The study found that customers were satisfied with the digital performance of Pafupi Savings account and Bank Pafupi Agent Banking. It was found that agents who operated from 2012 to 2017 experienced high performance and profits. For example, agents operating at Muloza in Mulanje, Ntoso and Manase/Nancholi Blantyre made more profits. According to the findings, online transactions and payments in Pafupi Agent banking and Pafupi Savings are effective.

The NBS Bank's rationale in the drive for a financial inclusion strategy was very effective. The bank managed to open more than 100,000 accounts and mobilized close to a billion deposits through this product and provided banking to otherwise unbanked communities. In measuring the effectiveness of Bank Pafupi, validity and

reliability were used interchangeably. Validity was the degree to which the artefact (Bank Pafupi) worked correctly, that is, correctly achieved its goal with reliability. Consistency is the harmony or agreement of features or parts to a whole or one another.

On banking-oriented technologies; the executives explained that NBS has used banking-oriented technologies, in this sense, on the core banking systems and other privy systems to keep data as a data engine source for all banking transactions and make decisions on how NBS can use that data to the best of our abilities. So NBS core banking system is like a data repository because everything done for a customer is dumped into the system and intelligence is used to interpret that data e.g. the amount of a loan to be accessed.

As for banking-oriented technology; the bank has been using the core-banking application using Temenos T24 R14 with financial crime mitigation (FCM) modules to adhere to banking regulations. Besides, the bank has been: using systems to manage loan and credit facilities using Credit Quest; providing alternative means to access banking services using auto teller machines (ATMs), point of sale (POS) devices, USSD and smartphone-based applications and internet banking services. The bank has also been integrated into national and international money transfer networks such as Nat Switch and SWIFT to conduct business.

**Non-banking-oriented technologies** have been used as data sources to determine customer behaviour, for example, using MNO's platforms. NBS Bank zeroed into customers' behaviour in terms of their expenditure and the other services they are obtaining elsewhere. For NBS bank, both technologies are being used as data sources where intelligence can be sought to make decisions.

Non-banking technology has been used to run the general functions of the business, such as managing collaboration and communication using the Microsoft Office 365 product suite, financial management and human resources management, and connecting branches and office locations using virtual private networks (VPNs). NBS is already using the National ID card for authorization of over-the-counter transactions. Bank transactions use facial recognition and fingerprints.

**To explore NBS Bank's financial inclusion capabilities and processes on agents/bank profitability and customers.**

The digital banking (Pafupi savings account and Bank Pafupi agent networks) had a positive effect on customers' poverty alleviation and bank profitability. Many poor people entered the formal financial system. These products are good strategies for alleviating poverty. They believe this for different reasons: Products are geared to serve rural communities, secondly, they provided much-needed access to formal financial systems to less fortunate communities. As a result, they can buy assets, invest in education and open businesses to improve living standards. Pafupi Savings and Agent Banking digitally allowed many poor people into the formal financial system resulting in poverty alleviation. The savings account and Bank Pafupi agencies have financially included the rural masses as well as shortening the distance to the bank resulting in poverty alleviation. This has helped people in rural areas to access banking services at their convenience in remote areas to access financial products and services.

The evaluation was the main instrument for learning the design of artefacts (NBS Bank Financial inclusion interventions) that fitted the purpose (Poverty alleviation and bank profitability). It established whether research (The current research) has assisted in handling the challenges it sought to resolve. The evaluation was enabled by a clear-cut statement of discernible results at the beginning of the research design and the compilation of appropriate data during its life.

The evaluation methodology followed both qualitative and quantitative techniques for the evaluation of various research processes done by the researcher (Creswell & Plano Clark, 2018). The quantitative evaluation involved appraisal of the effect of artefacts (Digital financial inclusion) by a comparison of results among the agents/customers and NBS bank staff and executives. The qualitative evaluation relied upon the choices evaluators' views about the impact and functioning of the design artefacts (Pafupi savings account and Bank Pafupi agent banking), including surveys (Interview guide and questionnaire), case studies (that included Bank Pafupi, Malaysia, Mpesa in Kenya, Tanzania, Maldives and Nigeria), national identification and peer reviews. Qualitative evaluation involved mainly (In-depth interviews with the NBS bank executive) individual discussions, and provided information outside that linked with quantitative appraisals.

## **To explore barriers to NBS Bank financial inclusion products from 2012 to 2020.**

The study found that despite the successful performance, Bank Pafupi and Pafupi savings accounts encountered challenges. Agents had liquidity which in turn affects customers when they want to withdraw. Queues in the banking halls are still long as the agents are recruiting without matching their liquidity.

The findings from agents operating at Limbe market, Ginnery Corner, Chilomoni – Nthukwa market, Bangwe market, Enegen in Ndirande, Blantyre, Holy family in Phalombe, Chitakale in Mulanje, Jali in Zomba, Milepa in Chiradzulu bemoaned the following:

- i. Poverty, cultural and religious issues
- ii. Lack of patronization by customers
- iii. High transaction costs
- iv. Lack of awareness by customers, e.g. lack of posters
- v. Lack of patronisation, lack of biometric machine from NBS bank and competition: the lack of patronisation of Bank Pafupi and Pafupi savings account. There was a lack of biometric information led to Bank Pafupi agents being unable to assist customers resulting in a lack of patronisation. Airtel money and TNM Mpamba, as well as informal financial access, pose competition.
- vi. Lack of bank information on profit or bonus calculations
- vii. Competition with Airtel and Mpamba (MNOs) among varied challenges they encountered
- viii. Liquidity challenges.
- ix. Lack of policy compliance and support.
- x. Lack of studies, models and policy and regulatory support.

The study found that financial inclusion faces policy support challenges. NBS bank faced policy and regulatory challenges to support Bank Pafupi as a financial inclusion intervention.

**To propose a banking and non-banking model for financial inclusion for NBS bank profit and customers.**

## **6.1 Recommendations**

### **6.1.1 Operational Recommendations for the NBS Bank**

The study recommends NBS Bank Management to practically apply the study findings and recommendations to their financial inclusion strategy. The lessons from case study analysis, the studying and recommendations provide best solutions.

#### **Upgrade the current network for sustainable financial inclusion**

The study recommends a Malawi / Africa National Digital NID Interoperability model with an upgraded network: NBS Bank must upgrade the network for sustainable financial inclusion. This is in line with the Da Vinci TIPS Model. NBS Bank must manage technology to best position its products or services to maximize market share. This requires that the management of technology must involve the 'tools' and the use of metrics organizations to gain a competitive advantage. This focus should be on synthesising all organisational activities and performances systemically in an attempt to solve unique problems. In the current study, financial inclusion interventions by NBS Bank are recommended. The present study redesigned the Bank Pafupi agent network and other NBS bank financial inclusion interventions and innovations based on recommendations from extant literature and empirical findings.

**NBS Bank should introduce more products and services: insurance policies, loans, medical schemes, MRA, and funeral plan products for both Agents and clients.**

NBS Bank must first capitalise on the ideation process to develop an innovative product, service, and process of the system, and, as a result, commercialise and implement such innovations (Da Vinci Institute, 2019). Agents should be regarded as part and parcel of NBS Bank, not as intruders. As such, they should resume opening accounts. The management of people involves the human interface. It embraces both the employee and the end user. It is about the processes organisations deploy in engaging people, how people choose their levels of engagement, creating and sharing

of knowledge by all involved, their participation in incentive practices and their contributions towards securing the organisation's longevity (Da Vinci Institute, 2019).

### **6.1.2 Recommendations for Financial Inclusion**

The study recommends that government and other stakeholders in finance must ensure financial and digital literacy, quality of institutions, and access to infrastructure as main drivers of digital inclusion in finance.

### **6.1.3 Recommendations to Improve Financial Inclusion**

The study recommends that value must be added by developing a Malawi / Africa National Digital NID Interoperability model for financial inclusion that could be applied in other banks as well to enhance existing financial inclusion strategies.

## **6.2 Contribution of the Study**

The contributions made here are:

- i. A critical document analysis showcasing the gaps and challenges in extant literature. This alone is significant as it can prevent other scholars from reinventing the wheel when it comes to financial inclusion strategies.
- ii. Concepts in the research introduced new ideas and helped identify problems and appropriate solutions in new ways. Conceptually, reviewing financial inclusion concepts and strategies will help scholars know what works and what does not work in an African context. The study has contributed greatly to the existing body of literature. In Malawi, there were no comprehensive studies carried out. As such, this work has contributed enough literature for references. The conceptual use of research is a potentially powerful way to inform policy. The research conceptually introduced new ideas, helped NBS Bank management and policymakers identify problems and appropriate solutions, and provided new frameworks to guide thinking and action.
- iii. Theories helped to design a research question, guide the selection of relevant data, interpret the data, and propose explanations of the underlying causes or influences of observed phenomena. Theory assisted to predict



facts and to identify unexplored areas/research areas. They established the relationship among attributes, variables or data. They explained why the research problem under study exists. Theoretically, the application of different theories, first provided the underlying logic of the occurrence of natural or social phenomenon (Financial inclusion interventions) by explaining key drivers and key outcomes of Financial Inclusion and why, and what underlying processes (Digital financial finance and agent banking) are responsible driving that phenomenon. Second, they assisted in sense-making by helping to synthesize prior empirical findings within a theoretical framework and reconcile contradictory findings by discovering contingent factors influencing the relationship between two constructs in different studies. Third, theories guided future research by helping identify constructs and relationships that are worthy of further research. Fourth, theories contributed to cumulative knowledge building by bridging gaps between other theories and by causing existing theories to be reevaluated in a new light.

- iv. The empirical findings contributed to our understanding of financial inclusion in Africa, specifically Malawi. It showcased the operational and theoretical differences in understanding and highlighted how challenges should be addressed practically.
- v. The current study added value by developing a Malawi / Africa National Digital NID Interoperability model for financial inclusion, a model that could be applied in other banks as well to enhance existing financial inclusion strategies. This was a result of the effect analysis of NBS Bank's Pafupi savings account and Bank Pafupi agent networks. The model will assist the profitability of NBS bank and poverty alleviation of the customers, as well as all Malawians in general. The model is not only theoretical but addresses practical challenges and needs.

### **6.3 Area for Further Study**

There is a need to carry out a further study that will test the application and effective operations of the proposed digital national identification financial inclusion interoperability model for financial inclusion.

## **6.4 Limitations of the study**

During the study several limitations were encountered. Firstly, the researcher faced challenges in balancing their responsibilities as the CEO of NBS Bank and managing the research work. This could have affected the time and resources available for conducting the study effectively. Secondly, the collection of data in all regions of Malawi posed a constraint due to time limitations. Additionally, some participants were unavailable or too busy to respond to the questionnaire, which may have introduced selection bias. The implementation of COVID-19 protocols further hindered the collection of data. Moreover, religious issues impacted the composition of the research team, potentially influencing the study outcomes. Lastly, network issues in rural areas would pose challenges in implementing the National Identification Digital Financial Inclusion Interoperability model. These limitations should be considered when interpreting the findings of the study.

## **6.5 Research Reflection**

At my workplace, NBS Bank, I emphasised an existing financial inclusion product (Pafupi Savings Account and Bank Pafupi Agent Banking) that did not perform well as it incurred losses. This discovery coincided with my enrolment in the PhD program. Then I felt that this is the right time and opportunity to find a solution to my grandparents' problems, which are widespread in Malawi and the African continent. Hence, my grandparents' problems and the poor performance of the Pafupi savings account transacted by the Bank Pafupi agency prompted me to conduct a research study on financial inclusion. The reflection is based on the Davinci TIPS.

## **Technology**

The study found that Information technology (IT) artefacts (Bank Pafupi and agency banking) are systems (or are involved with systems). The environment of Information systems (IS) artefacts comprises people (Customers), organizations (NBS Bank, and technology (NBS Bank Information Technology (IT) and MNOs). NBS bank Technology Policy is premised on making sure that the bank is using technology to generate revenue whilst assisting customers at the same time. The bank pushes the Financial Inclusion agenda at a profit, not at a loss, that is the key, because NBS Bank

is a profit-making organization. The rationale of the NBS Technology Policies is to enable the bank to execute the business strategy and support business operations. The tenets of the policies are based on ISO 27001/27002 and 31000 standards, and COBIT 5 IT governance frameworks.

As CEO of the Bank, I thought of financial inclusion as a solution to poverty alleviation and bank profitability. This was evident from the study. Bank Pafupi and Pafupi Savings has digitally enabled the unbanked and underbanked into more affordable, convenient, safe, and satisfactory formal financial systems. For example, NBS bank Tidalirane Village Bank is digitally linked to NID for e-KYC where customers get loans and savings. It reconciles the customer's details and those of NID. Cash and loans are digitally delivered to Bank Pafupi and then to the customer through the phone. Bank Pafupi agencies and Pafupi Saving's accounts have progressed very well and transformed into a full bank and completely accomplished its purpose of poverty alleviation and bank profitability. They are digitally opening accounts, paying out and paying in, paying utilities, access to loans, payment of utility bills like water and electricity, payment of school fees, e-KYC using NID, partnership with Agora etc. For example, NBS bank provides seamless processes for accessibility that is, taking banking closer to the people; expanding digital payments securely to customers. NBS bank scaled down the number of branches from 32 to 26 branches and increased bank Pafupi agencies from zero to over 100, 000 actively driving the digital agenda, including self-service channels and a plan to roll out digital branches (NBS bank, 2020).

This research work has gratified and transformed me so much. I have believed for some years that the growth of the economy in Africa lies in the unbanked and underbanked communities. As a driver of technology and innovation at the NBS Bank workplace, I believe that with the right partnership and sound technology infrastructure, a large number of people who are currently not in the mainstream of the economy could be a part of the growth of the economy and contribute positively to the Gross Domestic Product (GDP) of Malawi and other African countries. This can only be achieved if they are properly empowered and educated with the right digital financial solutions to save/borrow money to grow their business. I strongly believe that my life as a young man and that of my grandparents could have been better if

technology was as available then as it is now and that the speed of innovation was as fast as now. It will only remain in my imagination as to what could have become of my grandparents if only they had had access to these latest technologies and been able to save their money in a bank account or equivalent. This project has fulfilled my dreams of developing the economy from the bottom of the pyramid using technology and innovation.

## **Innovation**

The goal of the evaluation was to assess whether the artefact or theory works and the usefulness of the artefact or theory. The rationale for the Pafupi Saving product was to reach low-income earners who had the vision to save. Most customers were not saving because of distance, monthly charges and lack of proper IDs. Pafupi products brought convenience, removed monthly charges, made book balance affordable and allowed customers to open accounts with simplified KYC. All this was done to enable more unbanked and under-banked people to access formal banking products, pushing the financial inclusion agenda. The NBS Bank's rationale in the drive for a financial inclusion strategy was very effective. The bank managed to open more than 100,000 accounts and mobilized close to a billion deposits through this product and provided banking to otherwise unbanked communities. In measuring the effectiveness of Bank Pafupi, validity and reliability were used interchangeably. Validity was the degree to which the artefact (Bank Pafupi) worked correctly, that is, correctly achieved its goal with reliability. Consistency is the harmony or agreement of features or parts to a whole or one another.

The evaluation was the main instrument for learning the design of artefacts (NBS Bank Financial inclusion interventions) that fitted the purpose (Poverty alleviation and bank profitability). It established whether research (The current research) has assisted in handling the challenges it sought to resolve. An evaluation was enabled by a clear-cut statement of discernible results at the beginning of the research design and the compilation of appropriate data during its life.

Studies represent an imperative phenomenon of information systems (Digital financial inclusion); they make a substantial influence on the field; artefacts are realizable and testable; artefacts deliver improved resolutions than prevailing systems (Pafupi

savings account and Bank Pafupi agency networks); and the experience obtained from the process of system building is generalisable. According to NBS Bank executives, the rationale for setting up Pafupi Savings is the same as the rationale for setting up Bank Pafupi. It is effective since the bank no longer spends money on physical buildings but partners with business people who already have structures in those areas. Customers can transact business in locations closer to them. Rural customers feel comfortable transacting their business at agencies rather than the bank because the bank ambience sometimes intimidates rural clients.

The researcher evaluated the artefact (Bank Pafupi and digital financial inclusion) by utilising empirical methods to establish how well the artefact performed (global financial inclusion interventions). Due to the multiple disciplinary disposition of information systems, the researcher used empirical evaluation and benchmarking proofs (for example, Malaysia and Mpesa in Kenya and Tanzania) for appraisal of the study artefacts. Artefact evaluation of Bank Pafupi agencies and Pafupi Savings account determined, objectively, and systematically the efficiency, effectiveness, and relevance of an activity. Analysis of the effect of NBS Bank's financial inclusion interventions in terms of its objectives (poverty alleviation and bank profitability), contained the investigation (data analysis) and the administrative and implementation management (proposed digital interoperability financial Inclusion model) activity.

On banking-oriented technologies; the executives explained that NBS has used banking-oriented technologies, in this sense, on the core banking systems and other privy systems to keep data as a data engine source for all banking transactions and make decisions on how NBS can use that data to the best of our abilities. So NBS core banking system is like a data repository because everything done for a customer is dumped into the system and intelligence is used to interpret that data e.g. the amount of a loan to be accessed.

As for banking-oriented technology; the bank has been using the core-banking application using Temenos T24 R14 with financial crime mitigation (FCM) modules to adhere to banking regulations. Besides, the bank has been: using systems to manage loan and credit facilities using Credit Quest; providing alternative means to access banking services using auto teller machines (ATMs), point of sale (POS) devices, USSD and smartphone-based applications and internet banking services. The bank

has also been integrated into national and international money transfer networks such as Nat Switch and SWIFT to conduct business.

**Non-banking-oriented technologies** have been used as data sources to determine customer behaviour, for example, using MNO's platforms. NBS Bank zeroed into customers' behaviour in terms of their expenditure and the other services they are obtaining elsewhere. For NBS bank, both technologies are being used as data sources where intelligence can be sought to make decisions.

Non-banking technology has been used to run the general functions of the business, such as managing collaboration and communication using the Microsoft Office 365 product suite, financial management and human resources management, and connecting branches and office locations using virtual private networks (VPNs). NBS is already using the National ID card for authorization of over-the-counter transactions. Bank transactions use facial recognition and fingerprints.

The evaluation methodology followed both qualitative and quantitative techniques for the evaluation of various research processes done by the researcher (Creswell & Plano Clark, 2018). The quantitative evaluation involved appraisal of the effect of artefacts (Digital financial inclusion) by a comparison of results among the agents/ customers and NBS bank staff and executives. The qualitative evaluation relied upon the choices evaluators' views about the effect and functioning of the design artefacts (Pafupi savings account and Bank Pafupi agent banking), including surveys (Interview guide and questionnaire), case studies (that included Bank Pafupi, Mpesa in Kenya, Tanzania, Maldives and Nigeria), national identification and peer reviews.

## **People**

I have also learnt that policies and strategies must not be implemented over a long period. This makes it difficult to implement them as they collide with other important strategies.

## **System thinking**

With study linkage to the Davinci TIPs model "I" for innovation, "S" for "system thinking, Proper application of Digital Financial Inclusion (DFI) increases the profitability of

banks, which brings financial growth and stability (Ozili, 2018). García and José (2016) show that FI and financial stability move in parallel and financial stability is an indicator of banking stability. Reviewing the existing literature, they also show the nexus between financial inclusion and financial stability. Being the recent phase of FI, scholars reckon that DFI is more effective in terms of ensuring financial stability, which is related to banking stability. Moreover, inclusive finance brings banking stability and economic sustainability.

Bank Pafupi agency model as a system supported by digital systems is all over Malawi close to the people with access to finances on the phone using USSD or the bank App. Such an increase in Bank Pafupi agencies and Pafupi Savings account assist NBS bank in building the balance sheet that improves bank profitability and poverty alleviation. In profit maximization and satisfying society, the bank is serving two birds with one stone in the sense that whilst doing Key Performance Areas (KPAs) for the bank in delivering Key Performance Indicators (KPIs) for the institution (NBS bank) which are: Return of Investment (RIO), Return of Equity (ROE), profit maximization, dividend payout, growing balance sheet, keeping customers happy, the bank as well extend financial development to the underdeveloped society, thus the unbanked and underbanked community.

The study was linked to the Davinci TIPs model and assisted the researcher to design an integrated Interoperability bank and non-banking model Fish Model for Malawi and Africa. The NID model will integrate financial institutions like banks, microfinance institutions (MFIs), financial cooperatives (FCs), Mobile Network Operators (MNOs) led model and agents led model. It will operate by the interoperability of the Reserve Bank of Malawi, National Registration Bureau (NRB), (Malawi Nation Identification NID card), the banking industry, MFIs and FCs, MNOs, passports and Agents. This will allow the NID to act as an interoperability ATM card.

The NRB will facilitate interoperability by linking customers' National IDs to the financial institutions, including the banking industry, MFIs and FCs, MNOs, passports and Agents. The customer's National ID number will act as an account number, instead of the bank account number. The NRB will ensure that all banks - visa cards (universal access), MNOs and Agents' accounts link to the National ID. Thus, the National ID will hold a customer's personal and financial details on its chip. The NRB

will link these details to Bank servers, MNOs products like Airtel Money, TNM Mpamba and Agents (Post Offices, Admarc depots, supermarkets, groceries, lottery outlets, and retail vendors.). Hence the interoperability. A customer will be able to access financial services at Point of Sale (POS), agents, ATMs, personal computers (PC), and phones anywhere in Malawi and abroad.

## **6.6 Return on Investment**

This section discusses personal ROI, professional ROI, organisational ROI and societal ROI.

### **Personal ROI**

The researcher's gratification for the study is on the premises that his grandfather and grandmother were farmers growing crops and rearing domestic animals for a living. They did not have anywhere to keep their money realised from milk and crop sales which could have improved my lifestyle as a person. They kept the money in a secret place on the mountain and a storekeeper at a distance trading centre. Because of these challenges, they came across keeping money somewhere, their money stolen and used by the storekeeper. The situation always bothered the researcher as such he was gratified to find a permanent solution to saving the money safely.

Personally, the researcher now has a feeling of his grandparents' challenges and can provide a solution to the next grandparents or the next generations. To this end, the researcher is gratified to find a solution so that another person's grandparents and society would not suffer the same fate as my grandparents and my personal life.

My gratification is to find a permanent solution to solve a problem that bothered me over the years. As such this study is very personal to the researcher. Now as a CEO of NBS bank, it means that the study assists in the decisions and directions of the bank in twofold: profit-making and satisfying stakeholders, i.e. making profits for shareholders, Return on Investment (ROI) and keeping all stakeholders happy. The key stakeholders are mainly the society that is the unbanked and under-banked community that needs to be satisfied. In profit maximization and satisfying society, the bank is serving two birds with one stone in the sense that whilst doing Key Performance Areas (KPA) for the bank in delivering Key Performance Indicators



(KPIs) for the institution (NBS bank) which are: Return of Investment (RIO), Return of Equity (ROE), profit maximization, dividend payout, growing balance sheet, keeping customers happy, the bank as well extend financial development to the underdeveloped society, thus the unbanked and underbanked community.

### **Professional ROI**

In reading widely about Financial Inclusion from different scholars across the globe, for example, in Maldives, Kenya, Malaysia, Nigeria, Philippines, and Tanzania, the study was convincing with confidence that Financial Inclusion is achievable. For example, the Malaysia case is very clear that Financial Inclusion is possible and achievable. The country managed to move from 46% to 97% which is a very good indication that Financial Inclusion is possible and achievable.

Reading broadly has given the researcher confidence, as a professional banker that indeed Financial Inclusion models in which agent banking products are like Bank Pafupi agencies, and Pafupi savings accounts that are supported by less expensive and affordable digital systems and platforms would uplift the unbanked and underbanked community to be fully banked.

The first measure of a fully banked community is that from a previously zero unbanked community, Bank Pafupi was able to attract and bank over 100, 000 active Pafupi savings accounts that have positive growing balance sheets that serve that bank's balance sheet. This gives confidence that society can be uplifted positively and be fully banked.

The second measure is that the study helped the researcher to appreciate and be confident that Financial Inclusion is possible and achievable. The research has proven differently that both the Financial Inclusion agenda and profit maximization can simultaneously be done together. The bank can further produce more products and still make profits. In the past years before the researcher join the bank as CEO, it showed that the bank made huge losses due to the Financial Inclusion agenda. Now as the CEO of this has been proven differently as the bank made huge profits while having the Financial Inclusion agenda in place. For the past 4 – 5 years as CEO, the study has proven that the bank was making huge profits with Bank Pafupi in place.

Reading broadly has enriched his knowledge of Financial Inclusion, financial development, and over and above all knowledge around Financial Inclusion and commercial banking as it was. The study had given the researcher discipline to appreciate that research is valuable in any institution. Once there is a problem, it is important to research to find out the effect of such a problem on society or others. The research whether qualitative, quantitative or mixed methods provide more information that one could not come across under normal circumstances. For example, quantitative evaluation involved appraisal of the effect of artefacts (Digital financial inclusion) by a comparison of results among the agents/ customers and NBS bank staff and executives. The qualitative evaluation relied upon the choices evaluators' views about the effect and functioning of the design artefacts (Pafupi savings account and Bank Pafupi agent banking), including surveys (Interview guide and questionnaire), case studies (that included Bank Pafupi, Malaysia, Mpesa in Kenya, Tanzania, Maldives and Nigeria), national identification and peer reviews. Qualitative evaluation involved mainly (In-depth interviews with the NBS bank executive) individual discussions, and provided information outside that linked with quantitative appraisals.

Under normal circumstances, it is assumed that giving a solution to the society or community is by producing new products and services, but without knowledge of the effect it has on them. Conducting a research study will provide real feedback from the community (customers) who is the end user of the product or service. Hence, research is the right tool that can be used to make the right decision that is backed by scientific evidence. The research exposed a lot of tools that can be used to do in-depth analysis. That would assist in terms of the processes and tools that are used. For example, as a research tool, the researcher evaluated the artefact (Bank Pafupi agency banking and digital financial inclusion) by utilising empirical methods to establish how well the artefact performed globally (global financial inclusion interventions). Due to the multiple disciplinary disposition of information systems, the researcher used empirical evaluation and benchmarking proofs (for example, Malaysia and Mpesa in Kenya and Tanzania) for appraisal of the study artefacts. Artefact evaluation of Bank Pafupi agencies and Pafupi Savings account determined, objectively, and systematically the efficiency, effectiveness, and relevance of an activity. Analysis of the effect of NBS Bank's financial inclusion interventions in terms of its objectives (poverty alleviation

and bank profitability), contained the investigation (data analysis) and the administrative and implementation management (proposed digital interoperability financial Inclusion model) activity.

The research proved wrong the assumption or theory or the view that NBS bank was not making profits since the implementation of Bank Pafupi agencies and Pafupi Savings account. In this regard, the research has proven that Bank Pafupi and Pafupi Savings accounts were making profits in the past four to five years. The research has expanded the researcher's knowledge and given him the appreciation that NBS bank has the information somewhere that gives confidence to confidence to invest more in that area.

### **Organisation ROI**

With Bank Pafupi agencies and Pafupi Savings accounts, NBS bank is building the balance sheet by increasing Bank Pafupi agencies and Pafupi Savings accounts. This will allow re-investments in other financial instruments like treasury bills, and treasury notes to make money for the bank which will enable it to continue and expand more. Such re-investments will improve bank profitability and hence increase community services.

The increase in Bank Pafupi agencies and Pafupi Saving's accounts enable the increase in the bank's balance sheet. Hence reaching out to society. As a bank, the growth and increase in banks' balance sheet increase product and service solutions to the community.

With the Bank Pafupi agency model, NBS bank can be everywhere in the village without brick and mortar in those respective villages. The size of the village would not carry the capital costs and operational costs to have a fully operational bank in those villages. But with Bank Pafupi agencies supported by digital systems, NBS bank is now everywhere close to a customer where they get access to finances on the phone using USSD or bank App for those with smartphones.

### **Society ROI**

It is about changing people's lives. Effectively delivering Financial Inclusion (FI) and

financial development would mean that when the unbanked and underbanked increase, the income per capita would increase as well hence removing the country (Malawi) from low-income capital to middle-income capital. The view is that a financially empowered society, for example, women, would save money safely for a good course that will enable the right support to the family and society at large. They would make the right decision for their children's health and with proper health and the right schools. With this background and support, the children will become part of the bigger economy in the country (Malawi).

With Bank Pafupi agencies and Pafupi Savings account, farmers can save money from their farm produces sales into NBS bank. They could be assured of their safety and save to earn interest. With good savings and transactions made, they build credit worthiness hence they borrow money from the bank and pay it back with the backing of the savings. Thus influencing the future population that is: more financially informed and independent, more educated, and financially worthy that can serve generations to generations to come.

With Bank Pafupi agencies and Pafupi Savings account, international donors and organisations, and non-Governmental Organisations (NGOs), are coming up with plans and support for the society through Farmse. They include plans and support for Micro to Small and medium Enterprises (SMEs). The study is a mixed bag of personal gratifications by coming up with models of Financial Inclusion that would serve the next generations.

By coming up with the Financial Inclusion models, as CEO, I can serve the society and the next grandparents and Malawi as a whole. This service will assist them to save so that they do not lose their money and keep in mountains and relatives just like the pain that was experienced by my grandparents which I experienced with pain. Such pain, gratified me to provide permanent solutions to generations and generations to come.

## **6.7 Concluding Remarks**

An estimated 1.7 billion adults remain unbanked globally without a bank account at any financial institution or mobile money provider (Demirgüç-Kunt, Klapper, Singer, Ansar & Hess, 2018). Unbanked adults lack access to formal financial services like

credit insurance, payment services or savings accounts (Ponnuraj & Nagabhushanam, 2015). Furthermore, approximately fifty per cent (50%) of individuals and enterprises have an account with a commercial bank, and ATM services have become popular in Africa (World Bank, 2018). In emerging and developed countries, several central banks have implemented various initiatives to promote financial inclusion (AFI, 2011). Despite this, the Bank is still using outdated procedures and processes to implement financial inclusion strategies. As a result, the Bank was not competing in the market and might be overtaken by competitors. This investigation intended to understand the effect of financial inclusion interventions on agents/bank profitability and customers at NBS Bank Pafupi Savings and Agent Banking.

This study applied a case study methodology to explore the effect of financial inclusion at an NBS bank. The methodological choices and procedures followed were clearly stated and motivated. The researcher used several methodologies to collect and analyse the data to address the research question. Firstly, questionnaires (survey-based) were used to explore the effect of financial inclusion interventions and solicit the participants' views regarding financial inclusion. The exploratory survey collected qualitative and quantitative data from all participants. Second, in-depth interviews were conducted with experienced agents and executives. Third, document analysis was conducted to review the financial inclusion strategies employed at NBS Bank.

Pragmatic philosophy (Kaushik & Walsh, 2019) was adopted to “investigate the effect of financial inclusion interventions on poverty alleviation and bank profitability and for the adoption of the proposed digital interoperability financial inclusion model.

An exploratory study (Yin, 2017) was adopted as the research study. The study adopted abductive and deductive and applied qualitative and quantitative approaches. The study employed a case study using a Mixed Methods Research (MMR) design

Exclusion criteria on interviews, survey -questionnaires and document analysis were factors that would make a study ineligible to be included. These include the characteristics of eligible individuals that make them highly likely to be lost to follow-up, such as missed appointments to collect data, provision of inaccurate data, comorbidities that could bias the results of the study, or increase their risk for adverse

events.

Interview and Survey demographic characteristics (agents and customers). Population sampling and size were all agents, customers and staff of NBS bank and the sample size was 100. The research was conducted in all NBS bank centres and Bank Pafupi agents in all three regions of Malawi.

The researcher adopted the simple random sampling method for the recruitment process. Convenience sampling was used to choose from among Pafupi Savings and Bank Pafupi customers and staff that were conveniently available and willing to participate in the study. The target sample size of 97 participants was calculated by Raosoft online

In the exploratory survey, 100 questionnaires were used to collect data from agents and customers. In-depth (unstructured) interviews were conducted to gain a deeper understanding of NBS Bank's poverty alleviation challenges and bank profitability strategies. The In-Depth Interview ethical protocols were followed that included rapport with participants and the criteria for information collection.

The quantitative data (surveys) were uploaded to a Microsoft Excel spreadsheet and analysed using SPSS version 20 and used to generate graphs, tables and figures to summarise and present the findings. Excel was used present data in tables, plotted and plotted as graphs to display the trends in each variable. Sophisticated statistical analyses like regression models. Data were analysed inductively alongside data gathering processes such as iterative, and inductive analysis. The qualitative data (in-depth interviews) were analysed using manual thematic analysis. In addition, the researcher analyzed data in NVivo.

This current study followed methodological procedures to analyse the data that included thematic for qualitative, SPSS for quantitative and document analysis. This study followed Tracy's (2010) criteria for trustworthiness. In qualitative research, the researcher demonstrated rigour through careful attention to detail, methodological thoroughness, the precision of evaluation, and the generation of the requisite variety concerning data richness and complexity. In terms of data analysis, the researcher accounted for the translation of raw data into field notes, the organization of the data, and the analysis process by which the researcher made claims and conclusions. The

researcher's rigorous analysis practices included disclosing the number of pages of typed field notes and/or interview transcriptions which contributed to the analysis, the time gap between fieldwork and the development of field notes, the number and length of interviews, the appropriateness and breadth of the interview sample given the goals of the study, and transparency regarding the process of sorting, choosing, and organizing the data.

In qualitative research, the researcher achieved sincerity through self-reflexivity, vulnerability, honesty, and transparency. In quantitative research, credibility was achieved through the reliability, replicability, consistency, and accuracy of the study's findings. Crystallization analysed the research sites to gain credibility by including multiple kinds of data, people, and ways of understanding the world. Resonance in qualitative research was achieved through aesthetic merit, evocative writing, and formal generalizations as well as transferability.

Qualitative research was significant in that a theoretical contribution extended, built, or critiqued existing theory, or applied a given theory in a new, novel way as an analytical framework. Methodological contributions took the form of a distinctive approach to applying or extending methods of inquiry, either concerning a new context, site, or concept. Ethical qualitative research is categorized in four ways. The first type is procedural ethics, which is behaviour that fulfils the bureaucratic standards often set forth by an institutional review board and is considered to be universal or required to protect participants against unnecessary risk from their involvement in the study. For example, DaVinci research ethical guidelines were followed (see Addendum). Procedural ethics includes the importance of accuracy and avoiding fabrication, fraud, omission, and contrivance. The standards followed by the researcher included ensuring participants' rights to confidentiality, anonymity, and the protection of participants' identity and privacy (Tracy & Hinrichs, 2017).

Credibility depended on the richness of the data and analysis and was enhanced by triangulation rather than relying on sample size, aiming at representing a population. There are four types of triangulation used by the researcher in conjunction with each other. Firstly, data triangulation, where different sources of data were used from existing research. Secondly, methodological triangulation, where more than one method was used. The mixed methods approach focused on qualitative methods.

Thirdly, investigator triangulation, where more than one researcher added to the credibility of the study to mitigate the researcher's influence. In this case, a research assistant was used as well as research by women's world banking. Fourthly, theoretical triangulation. The researcher used more than one theory as a conceptual framework.

The trustworthiness of the study was achieved by conducting the research in a real-life situation and natural environment for both quantitative and qualitative participants. In quantitative research, the researcher assessed quality by (a) internal validity, (b) external validity, (c) reliability and (d) objectivity.

The study found that NBS bank is applying digital strategies to alleviate poverty and address financial inclusion. Pafupi Savings and Bank Pafupi networks have significantly assisted the financially excluded in the formal financial system and poverty alleviation. Bank Pafupi performed very well from 2012 to 2020. Bank Pafupi digital banking played a role in financial inclusion as mobile banking with affordable transactions hence fulfils the financial inclusion objective of bank profitability poverty alleviation. The study found that Bank Pafupi faced network, liquidity and financial literacy challenges. The NBS bank has strategies in place but they could be improved hence recommended an interoperability Financial Inclusion model. Additionally, NBS bank could invest in its digital operations for profitability and poverty alleviation.

The contributions made were a critical document analysis showcasing the gaps and challenges in extant literature. This alone is significant as it can prevent other scholars from reinventing the wheel when it comes to financial inclusion strategies. Secondly, the review of financial inclusion strategies will help scholars to know what works and what does not work in an African context. The study has contributed greatly to the existing body of literature. In Malawi, there were no comprehensive studies carried out. As such, this work has contributed enough literature for references. Thirdly, the empirical findings contributed to our understanding of financial inclusion in Africa, and more specifically in Malawi. It showcased the operational and theoretical differences in understanding and highlighted how challenges should be addressed practically. Fourthly, the current study added value by developing a Malawi / Africa National Digital NID Interoperability model for financial inclusion, a model that could be applied in other banks as well to enhance existing financial inclusion strategies. This was a result of



the effect analysis of NBS Bank's Pafupi savings account and Bank Pafupi agent networks. The model will assist the profitability of NBS bank and poverty alleviation of the customers, as well as all Malawians in general. The model is not only theoretical but addresses practical challenges and needs.

The study suggested a further study that will test the application and effective operations of the proposed digital national identification financial inclusion interoperability model for financial inclusion. The study reflected much on the thought of financial inclusion as a solution to poverty alleviation and bank profitability. It emphasised an existing financial inclusion product (Pafupi Savings Account and Bank Pafupi Agent Banking) that did not perform well as it incurred losses. This discovery coincided with the researcher's enrolment in the PhD program. This researcher's work has gratified and transformed the researcher.

The study concluded with a discussion on the return on investments as personal ROI, professional ROI, organisational ROI and societal ROI.

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## **ANNEXURE A: REQUEST TO COLLECT DATA AT NBS BANK**

Mr Kwanele Ngwenya

The Da Vinci Institute for Technology Management, South Africa

Cell: 0999935355

20 February. 2018.

The Board Chairman

NBS Bank Malawi Ltd.

P.O. Box 32251

Blantyre

### **REQUEST TO COLLECT DATA AT NBS BANK**

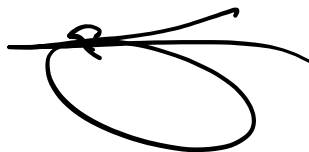
**Dear Sir,**

I am **Kwanele Batshele Ngwenya**, a student carrying out a research titled: **IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS AND AGENT BANKING**, Thesis submitted in fulfillment for the degree Doctor of Philosophy in the Management of Technology and Innovation at The Da Vinci Institute for Technology Management, South Africa.

I therefore Sir, request your approval to collect data from staff and customers of NBS Bank Malawi, Limited. I assure you that all information provided in the survey will be strictly confidential and participants' identities will remain anonymous. Results and findings will be reported in general terms, with no specific individuals identified in the report. The findings of this study will be used to design a digital financial inclusion model for NBS Bank profitability and poverty alleviation for all Malawians.

Thank you in advance,

Yours sincerely,



**Kwanele Batshele Ngwenya**

## ANNEXURE B: EDITING CONFIRMATION



*Management Development & Education  
Consulting*

Phone: 082 804 2912

E-Mail: hamishfynn@yahoo.com

To whom it may concern,

### Editing Confirmation

I confirm that I, Henry Francis Fynn, edited the PhD report entitled,

**IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS  
AND AGENT BANKING**

by **Kwanele Batshele Ngwenya** on **1<sup>st</sup> February 2023**. The document was edited with respect to English grammar and spelling, and limited lay-out changes were made in keeping with standard practices.

A handwritten signature in black ink, appearing to read "H.F. Fynn", with a long horizontal stroke extending to the right.

Henry Francis Fynn

**1<sup>st</sup> February 2023**

*Management Development & Education Consulting  
(Associate Member - Professional Editor's Guild)*

**ANNEXURE C: CUSTOMERS QUESTIONNAIRE - ENGLISH**



**Letter of Introduction**

**Date:**

**Dear Respondent,**

**REQUEST TO PARTICIPATE IN THE RESEARCH QUESTIONNAIRE**

I am **Kwanele Batshele Ngwenya**, a student carrying out a research titled; **IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS AND AGENT BANKING**, Thesis submitted in fulfilment of the requirements for the degree Doctor of Philosophy in the Management of Technology and Innovation at The Da Vinci Institute for Technology Management, South Africa. This questionnaire has been designed to assist in collecting data concerning the impact of financial inclusion. You have been identified as one of the respondents in the study and therefore you are requested to complete the questionnaire. Participation is voluntary as such you may withdraw at will at any point. The information provided will only be used for the purpose of the study and confidentiality is highly assured.

You are assured that all information provided in the survey will be strictly confidential. Results and findings will be reported in general terms, with no specific individuals identified in the report. Therefore, I request you to answer the questions as honest and objective as possible in order to contribute to the success of this research. The findings of this study will be used to improve financial inclusion and design a digital financial inclusion model for NBS bank profitability and poverty alleviation for all Malawians.

Your participation is considered very important.

**Participant signature**.....

Thank you very much for sparing your time to complete this survey.

Yours sincerely,

A handwritten signature in black ink, consisting of a large, stylized loop and a horizontal line extending to the right.

**Kwanele Batshele Ngwenya**

(Cell: 0999935355)

**SECTION A: DEMOGRAPHIC INFORMATION**

1. What is your age range?

- 1. 20 – 30
- 2. 31 - 40
- 3. 41 – 50
- 4. 15- 60

1. What is your gender?

- 1. Marital status
- 2. Single
- 3. Married
- 4. Widow
- 5. Divorced

2. Education level

- 1. None
- 2. PSLCE
- 3. JCE
- 4. MSCE
- 5. Diploma
- 6. Degree

3. Location

/Residence.....

4. What is your occupation?

- 1. Farmer
- 2. Casual labour
- 3. Teacher
- 4. Banker
- 5. Health
- 6. Un employed



7. Other  
(specify).....  
.....

**SECTION B: GENERAL QUESTIONS**

**IMPACT ANALYSIS OF NBS BANK FINANCIAL INCLUSION INTERVENTIONS  
2012 - 2020 (MAIN OBJECTIVE ONE)**

5. Business performance of Pafupi savings account and Bank Pafupi networks as financial inclusion intervention from 2012 – 2020

(1) Very high (b) high (3) very poor (4) poor.

**What is the perceptions, the use and the connection/activation of users to Pafupi savings account and Bank Pafupi?**

6. Do you have any Bank account?

Yes            2. No

If not, why

.....  
.....  
.....

7. Have you heard about the Pafupi Savings Account?

Yes  2. No.

8. Do you have a Pafupi Agent banking in your area?

1. Yes  2. No

9. Which mobile money are you registered with and connected to your Pafupi Savings Account and Agent banking

1. TNM Mpamba  2. Airtel Money  3. Other (specify)

10. Are you able to receive money internationally using Pafupi Agent Banking?

1. Yes  2. No

11. What strategies did NBS bank used to alleviate poverty and address financial exclusion

1. Convenient  2. Cost effective  3. Financial literacy  4. Saving culture   
 5. Secure  6. Wide coverage  7. Other (specify).....

**Impact of digital banking (Pafupi savings account and Bank Pafupi agent networks on customers' poverty alleviation and bank profitability**

**12. Impact of Pafupi Savings and Agent banking on NBS Bank agents and customers in line with the framework of the financial inclusion model**

Account opening services.

<b>Opinion</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>
More people have access to an account					
More people have usage to an account					
Enabled people to open low-cost accounts, including mobile and digitally-enabled payments					
Customer process offered by the Pafupi agent bank is satisfactory					
Account opening documentation process by the Pafupi agent banks is satisfactory					
Account opening documentation by Pafupi agent bank makes it to open an account					
The Pafupi agent bank does take long to give feedback after submitting account opening documents					

Customer services offered by Pafupi Savings and Agent Banking

<b>Opinion</b>	<b>Strongly disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly agree</b>

The services given by pafupi agent banks to the clients is satisfactory					
To a larger extent the products and services given by Pafupi agent bank enhanced the performance of poor people businesses					
The pafupi agent bank takes short time to process financial transactions e.g. loans					
The complaint resolution by an agent bank has enhanced the performance of poor peoples' businesses to a large extent					
Pafupi Agent bank is a solution to poverty alleviation					
Likelihood of Customer to use Pafupi Agent banking in the near Future					
I would recommend a Pafupi Account to a friend					

### The digital performance of Bank Pafupi and the Pafupi savings account.

13. Do you agree that performance of Pafupi Savings account and Bank Pafupi Agent Banking impacted on bank profitability?

1. Strongly agreed  2. Agreed.  3. Strongly disagree  4. Disagree

14. Which Mobile Network Operators NBS banks had teamed up with for mobile banking from 2008 to 2017?

1. Airtel  2. TNM  3. MTL  4. Other (specify)

15. Which payments were made through online channels?

1. Utility bills (water, electricity)
2. Insurance policies
3. Funeral plans
4. MRA
5. Medical schemes

6. Others.....  
.....

**17. Pafupi Savings and Agent banking allowed many poor excluded people from the formal financial system to perform financial transactions relatively cheaply, securely, and reliably.**

- 1. Strongly agree
- 2. Agree
- 3. Strongly disagree
- 4. Disagree

Give reasons to your answer.

.....  
.....

18. What is your agreement to the influence of customer satisfaction on bank profitability?

- 1. Strongly agree
- 2. Agree
- 3. Neutral
- 4. Disagree

**EXPLORE THE BARRIERS TO FINANCIAL INCLUSION AT NBS BANK (MAIN OBJECTIVE TWO)**

19. What Challenges are encountered by Pafupi savings account and NBS Bank Pafupi?

.....  
.....

20. What would you want NBS to do to make your banking easier?

.....  
.....

THANK YOU – END OF QUESTIONNAIRE

## ANNEXURE C1: MAFUNSO M'CHICHEWA



### MAFUNSO KWA ALIYENSE

Cholinga cha mafunso awa ndikutolera mfundo zothandiza kafukufuku pa mutu woti: **IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS AND AGENT BANKING: KULONDOLEZA KUTHEKERA KOTI ANTHU ONSE AZIKHALA MU NDONDOMEKO ZA NDALAMA MMALAWI: KUSANTHULA BUKU NDI THUMBA LA PAFUPI LA NYUMBA YOSUNGIRA NDALAMA YA NBS.**

Kufukufuku uyu ndi mbali imodzi yokwaniritsa zofunikira kulandira degree ya udolo wa Philosophy mu Kumasalira upangiri watsopano ndi luso pa sukulu ya ukachenjede ya Da Vinci Institute for Technology Management, mdziko la South Africa.

Khalani osasuka kutenga nawo mbali ndipo mfundo zanu sizidzagwiritsidwa ntchito ina iliyonse koma yokhudza kafukufuku uyu basi. Simuzaululidwa ndipo tikusungira

Tikuthokozani chifukwa chobvomeredza kutengapo mbali.

**Langizo:** Chonde chongani yankho loyenera komanso lembani yankho lanu kungsi kwa mzere waperekedwa pansipansi.

### GAWO A: MBIRI YA OYANKHA MAFUNSO

1. Zaka zanu zikuchokera pati ndi kulekedzera pati?

- 1. 20 – 30
- 2. 31 - 40
- 3. 41 – 50
- 4. 15- 60

2. Kodi ndinu wamkazi kapen wa mwamuna?

1. Mwamuna

2. Mkazi

**3. Mbiri ya banja**

1. Opanda banja

2. Wapabanja

3. Mamasiye

4. Banja lidatha

**5. Maphunzira mudalekedzera pati?**

1. Palibe

2. Pulayimale

3. JCE

4. MSCE

5. Dipuloma

6. Ukachenjede

**7. Mumakhalira**

kuti.....

**8. qMumagwira ntchito yanji?**

1. Mlimi

2. Maganyu

3. Mphunzitsi

4. Mnyumba zosunga ndalama

5. Za umoyo

6. Lova

7. Bizinesi

8. Zina.....

...

**GAWO B: MAFUNSO**

**9. Mudatsegula buku ku nyumba yotsungira ndalama iliyonse?**

Eya

2. Ayi

**Ngati simunatsegule nanena chifukwa chake**

.....  
.....  
.....

**10. Ndi nyumba iti yotsungira ndalama komwe munatsegula buku lanu?**

- Eco Bank       2. NBS       Malawi Savings Bank       FDH Bank   
Indebank       CDH Bank       International Commercial Bank       First  
Merchant Bank       Standard Bank Malawi       Opportunity International  
Bank       Nedbank

**11. Kodi muli ndi buku ku nyumba yotsungira ndalama ya NBS?**

- Eya       2. Ayi

**12. Mungafune mutakhala ndi buku lililonse ku nyumba yotsungira ndalama ya NBS?**

- Eya       2. Ayi

**13. Kodi ndinu membala wa Bungwe lokhudza ndalama?**

- Eya       2. Ayi

**14. Mudamvapo za buku losungira ndalama lotchedwa Pafupi?**

- Eya       2. Ayi.

**15. Kudera komwe mumakhala kuli anthu otumikira kudzera njira ya Pafupi?**

1. Eya       2. Ayi

**16. Ndi njira iti ya pa lamyana yolumikizana ndi Pafupi yosungira kapena kutengera ndalama yomwe mudalembetsa**

1. Mpamba       2. AirtelMoney       3. Njira  
zina.....

**17. Mumatha kulandilira ndalalima zochokera mmaiko ena kudzera mu Pafupi?**

1. Eya       2. Ayi

**18. Kuthekera kwa buku ndi thumba la Pafupi la nyumba yosungiramo ndalama ya NBS ku ma kasitomala ake mogwirizana ndi ndondomeko yoti anthu onse azikhala mu ndondomeko za ndalama Mmalawi.**

**Njira zotsegulira buku la thumba la Pafupi**

<b>Maganizo</b>	<b>Sindiku gwirizana nazo kwambiri</b>	<b>Sindiku gwirizana nazo</b>	<b>Pakati kati</b>	<b>Ndiku gwirizana nazo</b>	<b>Ndikugwirizana nazo kwambiri</b>
Anthu ambiri anatsegula buku komanso akutha kufikira thumba la Pafupi					
Anthu ambiri akugwiritsa ntchito thumba ndi buku la pafupi					
Yathandidza anthu kutsegula buku motchipa kuphatikizanso, njira za pafupi lamya ndi za maukonde					
Ma kasitomala amakhutitsidwa ndi ndondomeko zoyendetsera pafupi					
Ma kasitomala amakhutitsidwa ndi ndondomeko zotsegulira buku la mthumba la pafupi					
Ndondomeko zotsegulira buku la mthumba la Pafupi ndiyophweka					
Zimatenga nthawi yaitali kuti kasitomala alandire zotsatira za ndondomeko zotsegulira buku la thumba la Pafupi zomwe anapereke					

**Njira zotumikira kasitomala zoperekedwa pa buku la Pafupi and thumba la la pafupi**

<b>Maganizo</b>	<b>Sindiku gwirizana nazo</b>	<b>Sindiku gwirizana nazo</b>	<b>Pakati kati</b>	<b>Ndiku gwirizana</b>	<b>Ndikugwirizana</b>



	kwambi ri			zana nazo	nazo kwambiri
Ma kasitomala amakhutitsidwa ndi njira zotumikira thumba la Pafupi					
Njira ndi kutumikira koperekedwa mu thumba la Pafupi zimathandiza kukuza kayendetsedwe ka bizinesi za anthu osauka					
Zimatenga nthawi yotchepa kuyendetsa ndondomeko ya ndalama za mu thumba la Pafupi monga ngongole					
Kumva madando mu thumba la Pafupi kwathandizira kwambiri kukuza kayendetsedwe ka bizinesi za anthu					
Thumba la Pafupi ndi njira yothechera umphawi					
Pali kuthekera mtsogolomu kotu ma kasitomala adzigwiritsabe ntchito thumba la Pafupi					
Ndikhoza kukopa nzanga kutsegula buku la Pafupi					

**19. Ndi mabungwe ati a lamya ndi mauthenga a makonde omwe anachita ubale ndi nyumba yosungira ndala ya NBS kuti azigwiritsa ntchito lamya posunga ndikutengera ndalama kuyambira 2008 kufikira 2017?**

1. Airtel  2. TNM  3. MTL  4.

Ena.....

**20. Ndi njira zoti zolipilira zomwe zinachitika pogwiritsa ntchito njira za lamya ndi uthenga wa maukonde?**

1. Kulipira zofunika pa khomo (madzo, magetsi, ndi zina)
2. Njira zodziteteza pa ngozi
3. Maliro
4. MRA

5. Njira za umoyo

6. Zina

.....  
.....

**17. Buku and thumba la Pafupi lathandzia osauka omwe analibe mwayi osunga ndi kutenga ndalama mu njira zovomelekeza kutha kugwiritsa ntchito ndondomeko za ndalama motsika mtengo, motetezeka, ndi modalilika.**

- 1. Ndikugwirizana nazo kwambiri
- 2. Ndikugwirizana nazo
- 3. Sindikugwirizana nazo kwambiri
- 4. Sindikugwirizana nazo

**Perekani chifukwa za maganizo anu pa yankho lanu la funso 17**

.....  
.....  
.....  
.....

**18. Munagufune kuti NBS idzitsata njira ziti zokuthandizani kuti kusunga ndi kutenga komanso kugwiritsa ntchito bwino ndalama mosavuta komanso kuthetsa umphawi?**

.....  
.....

ZIKOMO – MAFUNSO ATHERA POMENEPA

## ANNEXURE D: INTERVIEW SCHEDULE – NBS BANK EXECUTIVES



### INTERVIEW SCHEDULE FOR NBS EXECUTIVES - KEY INFORMANT

I am **Kwanele Batshele Ngwenya**, a student carrying out research titled: IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS AND AGENT BANKING, Thesis submitted in

fulfillment of the requirements for the degree Doctor of Philosophy in the Management of Technology and Innovation at The Da Vinci Institute for Technology Management, South Africa.

I therefore Sir, request your participation in informant interview. I assure you that all information provided in the survey will be strictly confidential and participants' identities will remain anonymous. Results and findings will be reported in general terms, with no specific individuals identified in the report. The findings of this study will be used to academic purposes only.

Thank you in advance,

Yours sincerely,

A handwritten signature in black ink, appearing to read "Kwanele Batshele Ngwenya", written over a horizontal line.

**Kwanele Batshele Ngwenya**

### INTERVIEW QUESTIONS

#### Rationale

The Executives at NBS are key informants and as policy makers, it is prudent to deal with the policy issues that drive NBS financial inclusiveness. The researcher is engaging them at that level.

**Nodes** - the key nodes/themes for the content analysis and lived experiences will be:

1. Appropriateness of policies
2. Understanding of policies - relevance
3. Product appreciation
4. Public engagement - awareness

#### Demographic

5. Position at the bank- Chief Operating Officer

6. Length of service – 23 Years

i) Banking Sector.....

ii) NBS Bank

7. Qualification

I) Academic – B.Acc, ACMA, CBMBA, CIB(UK)

II) Industry or professional related - Banking

## **NBS BAK EXECUTIVE**

### **Policies**

1. Malawi has a national policy (banking sector) on financial inclusion - Malawi National Strategy for Financial Inclusion (2010 -2014). Has this been effectively rolled out?
2. What were the strengths and weaknesses of this Strategy that were encountered?
3. NBS drew down from the National financial inclusion Strategy to come up with its own policy on inclusion. Did the Bank interpret it well?
4. What are the key tenets of the NBS Financial Inclusion Policy?
5. How effective has the rollout of the NBS Financial Inclusion Policy Strategy?
  
6. What were the strengths and weaknesses of the NBS Financial Inclusion Policy?
7. The current drive in the banking industry across the world is that of having fewer branches but more virtual banking. Is this whole applicable to Malawi taking into consideration the level of low technology appreciation to a wider population?
8. How effective is NBS Customer Engagement policy?

9. What is the rationale and tenets of the NBS Technology Policy?



### Product

10. What was the rationale for setting up Pafupi Banking?
11. Taking into consideration of the rationale, would you consider it effective in the drive for financial inclusion strategy.
12. What was the rationale for setting up Agent Banking?
13. Taking into consideration of the rationale, would you consider it effective in the drive for financial inclusion strategy.

### Technology

14. Technology is divided into 2 categories - banking oriented and non-banking oriented. Could you please take me through how NBS has utilized these in the past?
15. What is your view on the National ID as a tool for financial inclusion?
16. What would you see as a way forward to a much more enhanced drive by NBS for financial inclusivity?
17. **What Challenges are encountered by Pafupi savings account and NBS Bank Pafupi?**
18. What would you want NBS to do to make your banking easier?

***Thank you for your time. I greatly appreciate it. I will transcribe this and come back to you with the transcription to authenticate it as a true reflection of our interview.***

***Zikomo.***

## **ANNEXURE E: NBS Bank Board Approval letter**

The Board Chairman  
NBS Bank Malawi Ltd.  
P.O. Box  
Blantyre  
20 February. 2019

Mr. Kwanele Ngwenya  
NBS Bank Malawi Ltd.  
P.O. Box  
Blantyre  
Dear Sir

### **APPROVAL TO COLLECT DATA AT NBS BANK**

Upon your request for permission to collect data from NBS Bank, the board has approved and granted you permission.

The board also informs all staff that Mr. Ngwenya is a student under The Da Vinci Institute for Technology Management, South Africa. As such he is undertaking research titled; IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS AND AGENT BANKING, Thesis submitted in fulfilment of the requirements for the degree Doctor of Philosophy in the Management of Technology and Innovation at The Da Vinci Institute for Technology Management, South Africa. Therefore, all staff are requested to provide the necessary information for his academic purposes.

Your assistance will be highly appreciated.

**BOARD CHAIRMAN**

## **ANNEXURE F: INTERVIEW SCHEDULE: Consent letter**

Mr. Kwanele Ngwenya

The Da Vinci Institute for Technology Management, South Africa

Cell: 0999935355

20 February. 2018.

**Dear Respondent,**

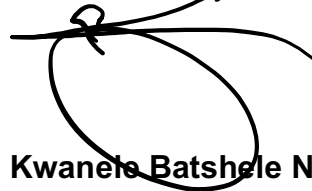
### **REQUEST TO PARTICIPATE IN THE RESEARCH QUESTIONNAIRE**

I am **Kwanele Batshele Ngwenya**, a student carrying out a research titled: IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS AND AGENT BANKING, Thesis submitted in fulfilment of the requirements for the degree Doctor of Philosophy in the Management of Technology and Innovation at The Da Vinci Institute for Technology Management, South Africa. This questionnaire has been designed to assist in collecting data from NBS Bank. You have been identified as one of the respondent in the study and therefore request you to complete the following questions. The information provided will only be used for the purpose of the study and confidentiality is highly assured.

You are assured that all information provided in the survey will be strictly confidential. Results and findings will be reported in general terms, with no specific individuals identified in the report. Therefore, I request you to answer the questions as honest and objective as possible in order to contribute to the success of this research. Your identities will remain anonymous. The findings of this study will be used to design a digital financial inclusion model for NBS Bank profitability and poverty alleviation for all Malawians.

Your participation is considered very important. Thank you very much for sparing your time to complete this survey. Thank you in advance,

Yours sincerely,



**Kwanele Batshele Ngwenya**



**ANNEXURE G: INTERVIEW SCHEDULE: Letter of Introduction**

**Date:**

**Dear Respondent,**

**REQUEST TO PARTICIPATE IN THE RESEARCH QUESTIONNAIRE**

I am **Kwanele Batshele Ngwenya**, a student carrying out a research titled; **IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS AND AGENT BANKING**, Thesis submitted in fulfilment of the requirements for the degree Doctor of Philosophy in the Management of Technology and Innovation at The Da Vinci Institute for Technology Management, South Africa. This questionnaire has been designed to assist in collecting data concerning the impact of financial inclusion. You have been identified as one of the respondent in the study and therefore you are requested to complete the questionnaire. Participation is voluntary as such you may withdraw at will at any point. The information provided will only be used for the purpose of the study and confidentiality is highly assured.

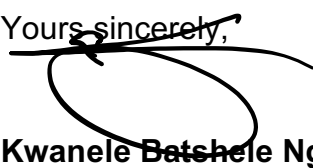
You are assured that all information provided in the survey will be strictly confidential. Results and findings will be reported in general terms, with no specific individuals identified in the report. Therefore, I request you to answer the questions as honest and objective as possible in order to contribute to the success of this research. The findings of this study will be used to improve financial inclusion and design a digital financial inclusion model for NBS bank profitability and poverty alleviation for all Malawians.

Your participation is considered very important.

**Participant signature**.....

Thank you very much for sparing your time to complete this survey.

Yours sincerely,



**Kwanele Batshele Ngwenya**

(Cell: 0999935355)

**ANNEXURE H: INTERVIEW SCHEDULE: Confirmation as informant**

Mr. Kwanele Ngwenya

NBS Bank Malawi Ltd.

P.O. Box

Blantyre

NBS Executive

NBS Bank Malawi Ltd.

P.O. Box

Blantyre

Dear Sir

**CONFIRMATION AS KEY INFORMANT INTERVIEW**

I am **Kwanele Batshele Ngwenya**, a student carrying out a research titled: IMPACT ANALYSIS OF FINANCIAL INCLUSION IN MALAWI: THE CASE OF NBS BANK PAFUPI SAVINGS AND AGENT BANKING, Thesis submitted in fulfillment of the requirements for the degree Doctor of Philosophy in the Management of Technology and Innovation at The Da Vinci Institute for Technology Management, South Africa.

I requested your participation in informant interview. I assured you that all information provided in the survey will be strictly confidential and participants' identities will remain anonymous. Results and findings were reported in general terms, with no specific individuals identified in the report. The findings of this study were used for academic purposes only and will be shred to NBS bank upon formal request.

Therefore, I request your confirmation that were engaged as key informant and as policy makers that drive NBS financial inclusiveness as well as in agreement with the study findings.

- 1. Name.....  
Signature..... Date .....
- 2. Name.....  
Signature..... Date .....
- 3. Name.....  
Signature..... Date .....

Thank you in advance,

Yours sincerely,



**Kwanele Batshele Ngwenya**

## ANNEXURE I: Letter of support



Registered with the Ministry of higher and tertiary Education

3 Grosvenor rd highlands

P.O Box RV6 Runniville Harare ,Zimbabwe

Tel , +263242 443631/2

Cell: +263774 422 625 ,+263 776 387 383

bt@btdevelopment.net

In association with



**19 October 2018**

### **TO WHOM IT MAY CONCERN – LETTER OF SUPPORT**

This letter is to confirm that Mr. Kwanele Batshele Ngwenya is currently enrolled with Davinci University of south Africa which is working in conjunction with BTD Consultancy Services in Zimbabwe. Mr. Ngwenya is studying towards the Doctor of Philosophy (PhD) in the Management of Technology and Innovation.

He is working on his research work towards his thesis. His topic is, ” **Impact analysis of financial inclusion in Malawi: a case study of NBS Bank Pafupi savings and agent banking**”.

During this time of his studies, it is recommended that he apply his work, knowledge and experience in his area of study.

The study will benefit him, your area and the country at large. Mr. Ngwenya will cater for all his expenses during this period and so we kindly ask if you may assist him in this noble cause.

For any further information, please do not hesitate to contact our offices on the numbers above

Yours faithfully

*J.P. Muchineripi*

Dr J.P. Muchineripi

## ANNEXURE J: INTENTION TO SUBMIT DISSERTATION / THESIS FOR EXAMINATION

### **Important information:**

1. TO BE COMPLETED AND RETURNED TO YOUR PROGRAMME CONVENER THREE MONTHS BEFORE SUBMISSION DUE DATE (This is by the 5<sup>th</sup> February 2020 to be considered for the 2020 Graduation).
2. **NOTE:**
  - According to higher education regulations, no student is permitted to graduate in less than the minimum duration of 2 years in the case of the masters degree and 3 years in the case of a doctorate degree..
  - Additionally, no student may submit a thesis for examination if the required approval of the proposal has not been completed.
  - All Programme requirements must be complied with before examination will proceed.
3. The following documents must be submitted to the Programme Convener with the notification of submission from Moodle: - **Access to Moodle submission page will be activated on receipt of this Notice Form.**
  - a. Editor's letter confirming Academic Language editing and proofreading
  - b. Recent certified copy of Identity document or passport
  - c. Consent to submit the form – must be signed by Supervisor
  - d. Copy of Ethical clearance letter where applicable
4. Ensure that your student account is paid up in full – Examination will not proceed until full programme fees have been paid.
5. Master students to ensure that all programme modules are completed and passed

I, **Kwanele Batshele Ngwenya** hereby give notice that I intend to submit my dissertation / thesis for examination with a view to graduate at the graduation ceremony to be held in **May, 2023**.

*(NB: Graduation cannot be guaranteed for the particular graduation period due to external factors influencing the approval of the final result (e.g., corrections to be made before the final copies can be submitted, etc.), but submission prior to the closing date will enhance the possibility thereof.)*

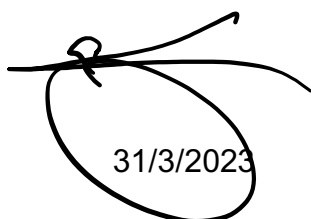
Full Name & Surname	Kwanele Batshele Ngwenya
*as per ID or passport	68050460071086
Student number	8247

<b>Group/Cohort</b>	
<b>Date of Registration</b>	<b>2015</b>
<b>Thesis/Dissertation title*</b>	<b>Impact analysis of Financial Inclusion in Malawi: The case of NBS Bank Pafupi Savings and Agent banking</b>
<b>Planned submission date</b>	<b>31 January, 2023</b>
<b>Submission due dates</b>	<b>Doctorate thesis: 31<sup>st</sup> January, 2023</b>

*\*Note the final title is subject to the approval of the Research Committee and recommendations of Examiners.*

Supervisor's name	<b>DR. Paul Muchineripi</b>
Supervisor's e-mail address	<b>muchineripip@btdevelopment.net</b>

I declare that my supervisor has been consulted and supports submission and endorses the final title cited above.



31/3/2023

.....  
STUDENT SIGNATURE DATE

.....  
SUPERVISOR SIGNATURE DATE

---

**Internal Process:**

Office use only

Intent to submit form (Date received)

Moodle access completed

Student Account confirmed

Masters: student modules completed

Moodle Turnitin similarity percentage; below 10%

Consent to submit form (Academic and Field supervisor) (date received)

Editors letter (date received)

Ethical Clearance (if applicable)

Internal Quality Assurance report (date received)

Evaluation Sign-off form (Supervisor and Co-Supervisor) (date received)

Full Names	Kwanele Batshele Ngwenya
Student No.	• 8247
Qualification	Doctorate : Doctor of Management in Technology and Innovation
Thesis Title	An Effect Analysis Study of Financial Inclusion in Malawi: a Case Study of the NBS Pafupi Savings and Agent Banking
Supervisor	P. Muchineripi, PhD
Co-Supervisors	
Report Date	2015

---

---

**Student Signature**

**Date**

---

---

**Supervisor Signature**

**Date**

*Notes:*

- *If your study has more than seven chapters, add additional section(s) with separate chapter header(s). If your study has less than seven chapters, delete the unused section.*
- *You are advised to go through the report systematically and make the corrections. If there are any disagreements, and changes are NOT made, you need to substantiate fully in the Error Correction Report. In the Error Correction Report, do not merely write DONE, but summarise what you have done, and the page references. See the attached Communication letter for reference on the next steps.*



