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From Financial Exclusion to Financial Inclusion: The Neoliberal Rolling Back - Rolling Out Paradox and the Growth of Mobile Money in Tanzania

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Abstract

This thesis aims to show the neglected inclusive face of neoliberalism through transformation from higher levels of financial exclusion to increased levels of financial inclusion in Tanzania facilitated by mobile money (MM) growth. I illustrate that, in the case of Tanzania, the roll-back and the roll-out of neoliberal policies aided the advent of MM. I argue that classical and neoclassical perspectives, as perceived in the political-economic sense, informed the neoliberal roll-back and roll-out policies, which promoted the growth of MM and its role in moderating the factors of financial exclusion. Thus, I deploy and develop a conceptual framework that includes both classical and neoclassical perspectives to explain the roll-out and roll-back neoliberal policies and how they facilitated financial inclusion through MM. Most scholars neglect the inclusive role of neoliberalism. They also underestimate the role of classical perspectives by putting more emphasis on neoclassical views. Moreover, they do not explain the role of MM in facilitating financial inclusion through the neoliberal lens. This thesis addresses these gaps. I ask three questions to address the above issues. First, how did neoliberalism facilitate the growth of MM in Tanzania? Second, how did MM moderate the factors of financial exclusion in Tanzania? Third, what was the response of the banking sector to increasing levels of financial inclusion caused by MM in Tanzania? Therefore, the significance of this study is that it informs our empirical and theoretical understanding of inclusive neoliberalism and MM by introducing a focus on the transition from financial exclusion to financial inclusion through classical and neoclassical lenses hitherto lacking. Literature suggests the need for qualitative research in this field. Thus, the in-depth unstructured interviews/focus groups and content analysis of key documents/literature inform our empirical understanding of roll-back and roll-out neoliberal policies and their role in facilitating MM growth and financial inclusion.

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Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the *University's Regulations and Code of Practice for Research Degree Programmes* and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Chapter 5 has been published, see, Mhella (2019). Chapter 6 has also been published, see, Mhella (2020). The content may be available online. Chapter 7 was presented in the 2019 International Congress on Technology, Science and Society. Some parts of Chapter 7 may as well appear in the Congress's publications. Work done in collaboration with, or with the assistance of others, is indicated as such. Any views expressed in the dissertation are those of the author.

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Dedication

This dissertation is dedicated to my father, late Joseph K. Mhella and to late Fr. Silvestro Monteduro for their unforgettable and invaluable support.

Eternal rest grant unto them,

O Lord, and let perpetual light

shine upon them

May their souls rest in peace

Amen.

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Abbreviations

ADSL	Asymmetric Digital Subscriber Line
AFI	Alliance for Financial Inclusion
AirtelMoney	Airtel Mobile Money Service
AMLA	Anti-Money Laundering Act
ASL	Application Service License
ATM	Automated Teller Machine
BCBS	Basel Committee on Banking Supervision
BCX	Business Connexion Solution
BFIA	Banking and Financial Institutions Act
BIS	Bank of International Settlements
BOA	Bank of Africa
BOT	Bank of Tanzania
BTCA	Better Than Cash Alliance
CBA	Commercial Bank of Africa
CDMA	Code Division Multiple Access
CEO	Chief Executive Officer
CGAP	Consultative Group to Assist the Poor
CGFS	Committee on the Global Financial System
CLF	Converged Licensing Framework
CPMI	Committee on Payments Market Infrastructure
CPSS	Committee on Payment and Settlement Systems
CRDB	Cooperatives and Rural Development Bank
CSL	Content Service License
DFID	United Kingdom’s Department for International Development
DFS	Digital Financial Service
DSE	Dar es Salaam Stock Exchange
EAPS	East African Payment System
EBPP	Electronic Bill Presentment and Payment
EDGE	Enhanced Data for GSM Evolution
EFT	Electronic Funds Transfer
EMS	Express Mail System
EPCA	Electronic and Postal Communications Act
EPSGs	Electronic Payment Schemes Guidelines

ESAP	Economic and Social Action Programme
ETA	Electronic Transaction Act
EzyPesa	Zantel Mobile Money Service
FAFT	Financial Action Task Force
FCA	Fair Competition Act
FCC	Fair Competition Commission
FCT	Fair Competition Tribunal
FDIC	Federal Deposit Insurance Federation
FE	Financial Exclusion
FI	Financial Inclusion
FIs	Financial Institutions
FIEG	Financial Inclusion Experts Group
FINCA	International Not for Profit Microfinance Organization
FinScope	Financial Surveys Conducted by the Financial Sector Development Trust in Tanzania
FIU	Financial Intelligence Unit
FSDT	Financial Sector Development Trust
FSP	Financial Service Provider
GDP	Gross Domestic Product
GPE	Global Political Economy
GPFI	Global Partnership for Financial Inclusion
GPSS	Global Payment System Survey
GSMA	Global System for Mobile Communications Association
HaloPesa	Halotel Mobile Money Service
IAIS	International Association of Insurance Supervisors
ICT	Information Communication Technology
ICTD	Information and Communications Technology for Development
IEG	World Bank's Independent Evaluation Group
IFAD	International Fund for Agricultural Development
IFC	International Finance Cooperation
IFI	International Financial Institution
IFS	IMF's International Financial Statistics
IMF	International Monetary Fund
IOSCO	International Organisation of Securities Commissions
KYC	Know Your Customer Requirements

LNO	Letters of No Objection
LRAS	Long Run Aggregate Supply
LVPS	Large Value Payment Service
Maxicom -	MaxMalipo Payment Platform
MFIs	Micro Finance Institutions
MFS	Mobile Financial Service
MM	Mobile Money
MM4P	Mobile Money for Poor People
MNO	Mobile Money Provider
MoF	Ministry of Finance
M-Pesa	Vodacom Mobile Money Service
MPR	Mobile Payment Regulation
NBC	National Bank of Commerce
NC	National Council
NESP	National Economic Survival Programme
NFEF	National Financial Education Framework
NFIC	National Financial Inclusion Committee
NFIF	National Financial Inclusion Framework
NFIP	National Financial Inclusion Policy
NFIS	National Financial Inclusion Strategy
NFL	Network Facility License
NMB	National Microfinance Bank
NPS	National Payment System
NPSA	National Payment System Act
NPSEMRs	National Payment Systems Electronic Money Regulations
NPSLARs	National Payment Systems Licensing Approval Regulations
NSL	Network Service License
NTP	National Telecommunications Policy
OECD	Organisation for Economic Cooperation and Development
PAFI	Payment Aspects on Financial Inclusion
PPPIs	Public-Private Partnership Initiative
POS	Point-of-Sale
PRSP	Poverty Reduction Strategy Paper
PSEMRs	Payment System Electronic Money Regulation

PSLARs	Payment Systems Licensing and Approval Regulations
P2P	Person-to-Person Transfers
RCA	Regulatory Capitalist Approach
RPSs	Retail Payment Systems
SACCOs	Savings and Credit Cooperatives
SAP	Structural Adjustment Programme
SDA	Social Dimension of Adjustment
SDG	Sustainable Development Goal
Selcom	Selcom Mobile Platform
SIM	Subscriber Identity Model
SIRESS	SADC Interbank Regional Electronic Payment Settlement Scheme
SME	Small and Medium Enterprise
STK	SIM Tool Kit
TAMNOA	Tanzania Mobile Money Operators Association
TANESCO	Tanzania Electric Supply Company Limited
TBA	Tanzania Bankers Association
TCA	Tanzania Communications Act
TCRA	Tanzania Communications Regulatory Authority
TCRAA	Tanzania Communications Regulatory Authority Act
TIB	Tanzania Investment Bank
TigoPesa	Tigo Mobile Money Service
TIRA	Tanzania Insurance Regulatory Authority
TISS	Tanzania Interbank Settlement System
TNCFI	Tanzania National Council for Financial Inclusion
TRA	Tanzania Revenue Authority
TTCL	Tanzania Telecommunications Company Limited
TTCLPesa	Tanzania Telecommunications Company Limited Mobile Money Service
UCSAA	Universal Communications Service Access Act
UK	United Kingdom
UMTS	Universal Mobile Telecommunications System
UNCDF	United Nations Capital Development Fund
UNCTAD	United Nations Conference on Trade and Development
URT	United Republic of Tanzania
US	United States

USAID	United States Agency for International Development
VAT	Value Added Tax
WCDMS	Wideband Code Division Multiple Access Service
WLL	Wireless Local Loop
ZRB	Zanzibar Revenue Board

Chapter 1: Introduction

1.1 Introduction

There is a strong case to be made that neoliberalism is inclusive in some cases. The advent of mobile money (MM) and its role in moderating or weakening some factors of 'Financial Exclusion' (FE) to facilitate 'Financial Inclusion' (FI) of financially-excluded individuals can be used to demonstrate the inclusive character of neoliberal policies. This is one of the most critical and credible ways of bringing the neoliberal inclusive case to political-economic literature and the development of academic discussions and debates. The crucial point here is that neoliberalism facilitated the advent and growth of MM, which helped to provide access to formal financial services to financially-excluded and poor individuals. Findings in Tanzania have shown fallen levels of FE, since the advent of MM. I define MM as money stored using a mobile phone as opposed to an account in conventional banking (also see: Section 5.2.2). MM has become the most efficient way of providing access to formal financial services for financially-marginalised individuals in Tanzania. Before MM, specific segments of the population in Tanzania, especially the rich and wealthy, were granted access to formal financial services. At the same time, poor and financially-marginalised people were denied that access. This mode of financial resource allocation and arrangements was, and still is a political-economic issue in many countries across the world.

Most serious studies and surveys, of course, provide a more nuanced account of increased levels of FI in Tanzania, which helps to explain the transformation from higher levels of FE to increased levels of FI (Mazer and Rowan, 2016; GSMA, 2015a; FinScope, 2009; FinScope, 2013a; FinScope, 2018; InterMedia, 2014a; InterMedia, 2017; InterMedia, 2018). Nevertheless, with some notable exceptions, most researchers depict the exclusiveness of neoliberal policies and their financial implications (Christiaens, 2018; Duménil and Lévy, 2011; Dymski, 2008). In contrast, this thesis adopts classical and neoclassical perspectives that conceptualise the neoliberal agenda as a transformative force bringing financially-excluded individuals into the mainstream financial sector by granting them access to formal financial services. The principal argument is that neoliberalism can be transformative and inclusive. I use MM, and classical and neoclassical views to empirically demonstrate these facts. Classical and neoclassical perspectives help me to investigate the neoliberal roll-back and roll-out policies that facilitated the transformation mentioned above.

To this effect, this research advances three arguments: (a) neoliberalism facilitated the growth of MM in Tanzania; (b) MM moderated and weakened some factors of FE, and by doing so it helped increase levels of FI; (c) the response of the banking sector and other key stakeholders to increased levels of FI helped catalyse the implementation of FI strategies (see section 1.3 for further details on the research themes, questions, and objectives). Section 1.4 provides the underlying analytical framework.

Hence, the research focuses on how the roll-back and roll-out neoliberal policies aided MM growth, and how this growth reduced FE and increased FI. The key period of this study is between 2005 and 2017. Old data covering the period before 2005 has also been used to help explain the research findings. Like earlier works in neoliberalism, which associate neoliberalism with exclusion (Dymski, 2005; Muñoz and Pantazis, 2019; Christiaens, 2019a; Chollet, 2013), this work acknowledges the forms of exclusion created by neoliberal policies. It also distinguishes itself by adding the neoliberal inclusive agenda through re-regulation, deregulation, liberalisation, and MM technology. Using the data available for FI, and by studying MM through in-depth unstructured interviews and secondary official documents, I can tell the neoliberal transformation and inclusion story. Firstly, the contexts of FE and FI in Tanzania and globally are provided, using classical and neoclassical perspectives, which are crucial to the process of neoliberalisation and the advent of MM. The context includes the description of the patterns of FE and FI over time in Tanzania and worldwide. Secondly, the advent of MM and what helped it to launch, grow, and survive is discussed. Thirdly, the role of MM in moderating the factors of FE, its role in increasing FI is placed into context. Fourthly, an investigation of the role of the banking sector in responding to increasing levels of FI caused by non-banking institutions such Mobile Network Operators (MNOs) is undertaken. This introductory chapter will: (i) explain how my interest in MM, FE, and FI developed; (ii) describe the contexts of MM, FE and growth in a neoliberal era both nationally and globally; (iii) give a brief outline of the analytical frameworks drawn upon; (iv) state the thesis contribution to the field; and (iv) introduce the organisation of the chapters.

1.2 Background, Motivation and Research Gap

MNOs increased the levels of FI in Tanzania and moderated some factors of FE to help reach financially-excluded individuals (FinScope, 2009; FinScope, 2013a; FinScope, 2018; InterMedia, 2014a; InterMedia, 2017; InterMedia, 2018). The provision and use of MM services not only helped the growth of MM services, but also reinforced the provision of formal financial services by non-banking institutions. MM provides easy access to financial services as it breaks the physical barriers and distance from financial institutions (Morawczynski and Pickens, 2009; Mbiti and Weil, 2016). It also cuts down the costs incurred in the provision of financial services, and therefore ensures the affordability of financial services to all (Donavan, 2012; Porteous, 2007). Also, it helps manage some risks that were once associated with the refusal by banks to provide financial services to poor individuals. Hence, there are institutions other than banks that offer some limited financial services through digital platforms and other innovations, many of whom come from the telecommunications sector. These institutions and their financial services are worth researching because they are recent, successful, and seek to make neoliberal policies inclusive (see Chapter 5 and 6 for the MNOs contribution). Surprisingly, the inclusivity of neoliberal policies through MM has not been well researched. When it comes to MM, its growth and its role in moderating FE, as well as its role in increasing FI, are issues which have not been given much attention. This research tries to bridge this gap, and this is its contribution to the field.

Nearly 2.5 billion people worldwide lack access to formal financial services (GPFI, 2014:3; Demirguc-Kunt et al., 2015). Most of them live in developing countries and are in dire need of financial services. In 2006, only 9% of the population of Tanzania were formally included in mainstream financial sector systems (FinScope, 2006). There are different reasons for their exclusion from mainstream financial services. Some of these are socioeconomic and political reasons. Neoliberalism has also been partly blamed for its role in excluding poor individuals from accessing and reaping the benefits of financial services (Dymski, 2005; Duménil and Lévy, 2011). It has also been praised for preparing a conducive environment that allowed the advent of digital financial services for the poor such as MM services. These services have also helped the inclusion of many individuals who were previously excluded by neoliberal policies (Leistert, 2013). Neoliberalism calls for small governments and stronger markets. Whether neoliberalism has made markets stronger than the government is a paradox. So far, neoliberal reforms have never achieved the creation of small governments (Kiely, 2018; Griffith, 2006). In fact, in some countries, for specific markets to succeed, the government has to play an active role. Tanzania demonstrates this through the roll-out and roll-back of neoliberal policies, where the role of the government decreased during the roll-back (deregulatory) phase and increased during the roll-out (reregulatory) phase. It was during the roll-back phase (the period of deregulation, liberalisation, and privatisation), that FE increased. It was also during the roll-out phase that MM growth increased. This triggered a significant response by the banks to get involved in the provision of inclusive financial services (see chapter 7). Therefore, this dissertation first looks at FE, both nationally and globally, and then at how neoliberal policies, through roll-out and roll-back policies, as explained by classical and neoclassical views facilitated FI through MM. Accordingly, I assert that not only the role of the government through deregulation and re-regulation facilitated the development of MM, but also the capability of MM to moderate the factors of FE was key to increasing FI. I also demonstrate the response of the banking sector to MM services as well as the role of key stakeholders in promoting MM growth and FI. The inclusive role of neoliberalism through FI and MM, the role that has been forgotten by researchers, will also be placed in proper context.

My interest in the topic was first stimulated by Cahill et al. (2012) who analysed neoliberalism beyond the free markets, and Peck et al. (2012) who analysed the Regulatory Capitalism Approach (RCA) to explain the roll-out and roll-back processes of neoliberalisation (see section 3.6 for further details on regulatory capitalism). Edwards et al. (2012) broadened my interest with their chapter on theoretical and methodological perspectives that facilitated the discussions and analyses of neoliberalism. Porter and Craig (2004), Klak et al. (2011), Golooba-Mutebi and Hickey (2010), and Konings (2016) also added to my intrigue with their research works on 'inclusive' or 'positive' neoliberalism, with Scott (2006) expanding my thinking on the political economy of capitalism. Furthermore, Booth (1997) discussed the political economy of regulation, reviewing socialist market, neoclassical, and public interest approaches to regulation; all informed my understanding of deregulation and re-regulation. Some of these approaches were also explained in detail by Majone (1992) and Majone (1997) who elaborated on neoclassical and classical perspectives with views related to deregulation, re-regulation, privatisation, and liberalisation. Self (2000) provided the details on the process of rolling back the markets and the observed consequences, which were key to helping to select the constructivist paradigm as a paradigm for this research. Mooslechner et al (2006) also analysed in detail the political economy of financial market regulation and the dynamics of inclusion and exclusion. Likewise, Klimina (2011) reinforced my views with his argument that there are two sides to economic liberalisation, namely, libertarian and constructivist. Moreover, Folgelberg and Kulkarni (2006) discussed neoclassical theory of development, neoliberalism and the Kenyan experience on the one hand, and Hurwitz and Manne (2018) examined classical liberalism and the problem of technological change with explanations of libertarianism and technology, which depended heavily on neoclassical perspectives on the other hand. Furthermore, Pennington (2011), Thweatt (1988), and O'Brien (2004) informed my views on classical and neoclassical political economies. From all these scholars and their arguments, it seemed clear that neoclassical and classical perspectives not only fit well with roll-back and roll-out neoliberalisation policies, but also with technological changes and innovations. The two views also worked well with Leistert's (2013) explanations of political rationality of mobile media and modalities of neoliberalism. Also, Christiaens (2019a) linked the neoliberal discussions with forms of exclusion. He discussed finance, financialisation, and the expulsion of surplus populations. After a thorough evaluation of the afore-mentioned research works, I could see the validity and importance of the present research argument. I was blown away by these findings and started assembling the different related arguments to write my Ph.D. dissertation.

In order to further explore MM growth and its relation to FE and FI in the neoliberal era, a theoretical framework using the ideas from the 'RCA' (Edwards et al, 2012:5, Braithwaite, 2008; Levi-Faur, 2005) has been created (see Sections 1.4 and 3.6). This framework examines the significant transformations brought by neoliberal policies by exposing the 'destructive and deregulatory moment' ('roll-back phase'), as well as the 'creative and regulatory moment ('roll-out phase') (Peck et al., 2012: 24; Peck and Tickell, 2002; Peck, 2010). Neoclassical and classical perspectives also supported the two phases, as the two perspectives are complementary. Together, they explain the roll-out and roll-back phases as well as the support that the two phases provide to innovations such as MM and other digital forms of technology (Butter and Hofkes, 2006). There is also the role of 'technology neutrality' (Maxwell and Bourreau, 2014:19) that allowed the creation of the 'Converged Licensing Framework' (CLF) (Mfungahema, 2006), which also permitted the advent of MM. The neoclassical theory of innovation also supported the CLF through the concept of '*permissionless innovation and technology*' (Hurwitz and Manne, 2018). Both classical and neoclassical views cannot only explain the roll-back and roll-out neoliberal policies, but also the processes associated with those policies such as deregulation, re-regulation, liberalisation, and privatisation of state-owned enterprises and sectors. There are also details of financialisation and its role in exclusion and inclusion, which explain why some populations are financially excluded while others are financially included (Fama and Jensen (1983); Sassen, 2010; Sassen, 2014; Christiaens, 2019a; Jensen and Meckling, 1976; Streeck, 2017; Davis and Walsh, 2017; and Vogl, 2017).

The availability of relevant views, theories and data to support my claims that inclusive neoliberal agenda aided the growth of MM and facilitated FI made it possible to demonstrate the growth of MM and FI. It is hard to find similar research that argues in terms of neoliberal policies and their role in facilitating the growth of MM services to increase FI. The closest research being done by Leistert (2013), who mentioned mobile devices and their uses in the neoliberal era, including the facilitation of making digital transactions. Madise (2019) discusses the issues with the regulation of MM in sub-Saharan Africa. Asongu and Asongu (2018) explore MM services in inclusive development. Di Castri (2013a) and Di Castri and Gidvani (2014) researched MM regulations and policies. Ho (2018) examined the development of MM in China, India, and the Philippines. Mandalu et al. (2017) researched neoliberalism and Tanzania, but he did not include MM research. There is research on financial sector reforms, development and transformation that did not include MM development or FE and FI in detail (Mbowe, 2010; Ndanshau, 1996; World Bank, 2005; World Bank, 2003; Lwiza and Nwako, 2002; Collier and Gunning, 1991; Ndalichako, 2014). There is also a small body of research done to show how the telecommunications sector deregulated. Some of them show how deregulation policies created the CLF, which became crucial for the advent of innovations such as MM (Mwalongo and Hussein, n.d.; Mfungahema, 2014; Majone, 1992; Torre, 2009; Macra, 2014; Garcia-Murillo, 2005; Bezzina, 2005; Bar and Sandvig, 2000). However, these analyses did not link the development of MM and FI directly. In some cases, research has covered the political economy of FI, but fell short of including MM development and FI (Dafe, 2011; Dafe, 2013; Johnson and Williams, 2013; Johnson and Williams, 2016). This research tries to bridge these gaps by discussing inclusive neoliberalism through MM, and how it facilitates FI via the moderation of some FE factors.

There was already a substantial body of work not only on financial reforms, financial neoliberalism, deregulation and re-regulation of MM, but also on the telecommunications sector, FI, and FE in general. Therefore, it made sense to explore the issues of MM growth and how they moderated FE to increase FI, in a context that would satisfy present research objectives which might eventually be of practical value. I became aware that MM and FI issues had become important for inclusive neoliberal policies. In addition, states, International Financial Institutions (IFIs), and other global political economy bodies proposed 'inclusive neoliberalism' for inclusive economic growth and development (Porter and Craig, 2004; Klak et al., 2011; and Golooba-Mutebi and Hickey, 2010) as discussed later in Section 1.5.

As I recognise the importance of the inclusive neoliberal concept, it appears that the discussions on neoliberalism are more focussed on its exclusivity and neglect the importance of MM as an important tool for FI, guided by neoliberal policies. There was a limited uptake of formal financial services through the banking sector in Tanzania of 17% in 2017, compared to 65%

through MM (TNCFI, 2018). In summary, although MM growth has developed over the last 13 years, its political economy or how it is a neoliberal tool of inclusion is something that has remained of low priority amongst researchers. It also emerged that despite the growing interest in MM, with the notable exceptions of the works of Dahlberg et al. (2008), Duncombe and Boateng (2009), Diniz et al. (2012), and Kim et al. (2018) who analysed 73 peer-reviewed papers, 43 research papers (17 peer-reviewed and 23 non-peer-reviewed), 196 papers (94 peer-reviewed and 92 non-peer reviewed) and 54 academic research papers (vis-a'-vis the nexus of mobile financial services, FI and development) respectively, the neoliberal role in facilitating the growth of MM and its role in supporting FI has not been a priority amongst the academics.

In the light of the current status quo, it seemed to me that there was a context in which my initial findings on neoliberalism and the development of MM, as well as, the role of the latter in moderating some factors of FE to increase FI might be of some value. Discussed in Section 1.3 are the research objectives.

1.3 Scope, Research Questions, Objectives, and Value

The research aims to understand particular aspects of neoliberalism and its impact on MM growth in relation to the facilitation of the transition from FE to FI in Tanzania, and to fill in the knowledge gaps in such aspects. To do so the neoclassical and classical views of neoliberalism are essential and complementary in guiding the analysis of this research (see section 1.4). With the help of researchers studying neoliberalism and regulatory issues, the 'RCA' (under which the classical and neoclassical perspectives operate) as discussed in Chapter 3, facilitates the analysis. Data analysis is done through a 'thematic analytical approach' as specified in Chapter 4. This thesis addresses the three main research themes, and each theme answers its research question, and has its objectives discussed in detail in Chapters 5-8. Below, I explain the main research themes, questions, and objectives.

The first research theme is: "*Neoliberalism and how it facilitates the growth of MM.*" The theme tries to answer the following research question: "How did neoliberalism facilitate the growth of MM in Tanzania?" The objective of the above research question is to explore the advent and successful growth of MM in Tanzania with the view to determine how it happened. This is research *Objective Number 1*. What inspired the formulation of the research question and Objective Number 1 is the fact that the advent of MM occurred some years after the implementation of neoliberal reforms in Tanzania. Neoliberal reforms succumbed the state to the logic of the market. The neoliberal political economy prompted the state as well as the financial sector to include or exclude people according to their endowment of human, financial, economic, and emotional capital. In tandem with the first objective, as mentioned earlier, *Objective Number 2* seeks to study the levels of FE and FI in Tanzania to understand the seriousness of these issues, and how they relate to MM, and neoliberalism.

The second research theme is: "*MM and the moderation of some factors of FE.*" The second theme seeks to reply to the second research question: "How did MM moderate the factors of FE in Tanzania?" The objective of the above research question is to assess the role of MM in moderating FE. This is research Objective Number 3. This objective seeks to determine whether the moderation of the factors of FE was one of the driving forces that helped the survival as well as growth of MM. MM survival in a competitive financial sector depended on specific distinctive features that distinguished it from the other formal financial services such as those offered by the banking sector.

The third research theme is: "the *response of the banking sector to the increasing levels of FI caused by MM*." The third theme attempts to respond to the third research question: "What was the response of the banking sector to increasing levels of FI through MM in Tanzania?" The objective of the third research question is to investigate the possibility of any changes in the banking sector caused by the successful penetration of MM services in the sector. This is research *Objective Number 4*. What triggered the formulation of this objective was the fact that it was inconceivable to imagine that banking institutions were so relaxed and did nothing to stop the expansion of MM services. It is naive to think that they did not perceive MM as a rival. Hence, there was a need to understand the reaction of the banks and the roles played by other Financial Service Providers (FSPs) to allow the growth of MM.

As far as I am aware, these issues were not thoroughly investigated in Tanzania, which led me to formulate these research themes, questions, and objectives. The expressed research themes, questions, and objectives help to explore these issues and add value and knowledge to this field of study. They also facilitate the analysis. Each of the three research questions demanded a slightly different analytical focus. However, the theories used were mostly guided by classical and neoclassical perspectives, and their relations to neoliberal roll-back and roll-out policies. The two approaches were used together because they complemented each other, and none of the two alone, answered the research questions thoroughly.

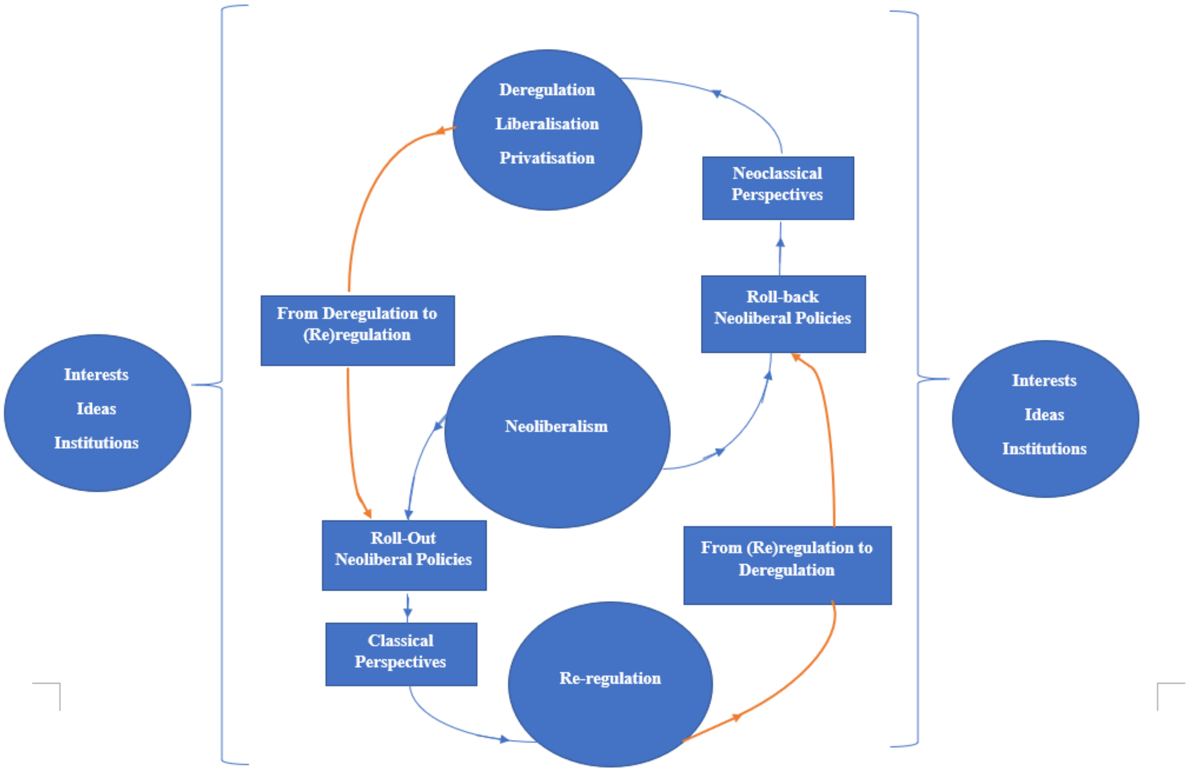
1.4 Analytical Framework

My intention at the outset was to examine the growth of MM and how it dealt with FE and FI issues. Neoliberal policies controlled exclusion and inclusion issues. Neoliberal policies controlled exclusion and inclusion issues. At the early stages of neoliberal policies, the capitalist class benefited. In many countries, these neoliberal policies and reforms put the poor in a disadvantaged position. There were no long-lasting safety nets for the inclusion of the poor, both socio-economically and financially. After lessons learned from the wave of neoliberal reforms in the 1990s, the new inclusive neoliberal policies and agendas emerged (also see: Duménil and Lévy, 2011; Rodrik, 2006; Darder, 2019; Martin, 2004; Kushnir, 2020; Pensera and Owen, 2018; Chandra, 2010; Klak et al., 2011). When inclusive changes arrived, neoliberal policies opened the markets for new entrants such as the MNOs. These changes were vital in moderating the factors of FE. They also increased FI, as discussed throughout this dissertation. Diagram 1.1 summarises the theoretical perspectives underpinning this research developed from the key research findings and literature reviews (appearing in chapters 2,3, and 4). At the centre is neoliberalism. Using Diagram 1.1, moving from the centre to the upward direction through the blue line, neoliberalism demanded the roll-back of state regulatory and interventionist policies. The neoclassical perspectives supported this view. They claimed that deregulation, liberalisation, and privatisation policies helped to improve the efficiency of the markets. The same policies helped individuals and firms to maximise utility and profits. To support the rollback services, both individuals and firms were required to make rational decisions, and that deregulation, liberalisation, and privatisation of the economic and financial sectors created open markets and enhanced competitive economic and financial activities (also see Chapter 3). I will illustrate later how deregulation favoured the advent of MM in Chapter 5.

Neoliberalism also supports limited regulatory activities to create conducive environments for economic and financial operations. Using Diagram 1.1, from the centre moving downward with the blue line, neoliberalism triggers the rolling out of state regulatory and interventionist policies to correct market failures. Classical perspectives guide this process. Classical perspectives acknowledge market failures. In this case, the disadvantaged people cannot make rational decisions because they do not have the resources or information they need to do so. Hence, from the classicist point of view, some regulatory activities are required to protect new industries and consumers. I will later demonstrate how new regulations protected the survival of MM in Chapters 5, 6, and 7. As an economy deregulated, it could re-regulate and vice-versa.

In Diagram 1.1, the bold yellow line shows this process. Whether an economy deregulates or re-regulates, it addresses the interests and ideas of the institutions and individuals. The brackets on both sides indicate this process. In this regard, the deregulation or re-regulation of the financial and telecommunications sector were implemented to serve the interests and ideas of the financial and non-financial institutions and individuals (see Chapters 5 and 7). Both neoclassical and classical views were critical in facilitating the transformation from a financial sector that excluded the poor to a more inclusive financial sector. The research findings suggest this in the next chapters. See Chapter 3 for the details of the theoretical and research framework.

Diagram 1.1 Theoretical Framework



1.4.1 Reasons for the Selected Approach to Studying Neoliberalism, MM and its Relation to FE and FI in Global Political Economy (GPE)

Three essential perspectives inform research in Global Political Economy (GPE), namely: the ‘economic-nationalist’, ‘liberal’, and ‘critical’ (also referred to as the ‘structural’ perspective) (O’Brien and Williams, 2016). The economic-nationalist view perceives the global political economy as “constituted through the actions of rational states” (O’Brien and Williams, 2016). In this case, the role of the state and its power are critical in guiding outcomes in GPE. From the economic-nationalist perspective, the state comes before the market and that it is the political power that influences how the markets work. Likewise, the liberal view deals with the individual or a wide range of individuals and actors “from the state to the cooperation to interest groups” (O’Brien and Williams, 2016). The liberal perspective emerged to oppose the economic nationalist or the ‘mercantilist view’ arguing against protectionism and restrictions of economic activities by the state. Adam Smith and his colleagues supported a method of wealth creation through the liberalisation of commerce and the support of broader national and international markets (Smith, [1776] 1983). As economic activities are mostly liberalised, the GPE today mostly operates using liberal and neoliberal principles. There is a wide variety of liberal thoughts ranging from classical to neoclassical perspectives. From those who see a limited role of the state in economic activities as emerging from liberalisation policies and a borderless world dominated by multinational corporations (Ohmae, 1999, O’Brien and Williams, 2016) to liberal institutionalists who emphasise the role of the state and the interdependence between the state and international organisations. In reacting to the liberal perspective, a structural or critical perspective emerged to contest the world order and to change the world. The theories under the critical perspective include Marxist, feminist, environmentalist, cultural, post-structural, etc.

This research selected the use of the liberal perspective, specifically the neoliberal perspective, to advance its claims. Liberal theorists see the market being at the centre of economic life. The markets are not always optimal as sometimes market failures occur. Classical and neoclassical theories are the main variants in the liberal thoughts. From the neoclassical perspective, the state’s intervention in the market is most likely to reduce market efficiency. From the classical perspective, the state should only interfere when there is a dire need for it to do so, to reverse market failures. Liberals focus on the behaviour of individuals, firms, and states, which allow this research to focus on FE and FI and how roll-out and roll-back neoliberal policies facilitate the growth of MM. To increase FI, MM growth has been key to moderating the factors of FE. The research applies classical and neoclassical assumptions to study neoliberalism to understand the growth of MM, and how MM shapes FE and FI (I associate classical perspectives with the thinking developed from Adam Smithian thinking and that kept on changing, and that the neoclassical perspectives emerged from this thinking). The research perceives markets as socially constructed realities, and that classical and neoclassical perspectives inform the neoliberal political economy on how to develop and sustain the markets (see sections 1.4.2.1 and 1.4.2.2). In this case, the research explores the construction of the MM service market in Tanzania and its role in facilitating FI through neoliberal policies.

1.4.2 How Does This Research Connect to Trends in Contemporary GPE Theory?

In GPE, there are three trends helping researchers to contextualise their research in contemporary GPE theory. These are ‘consolidation’, ‘integration’, and ‘expansion’ (O’Brien and Williams, 2016). Consolidation occurs when researchers view their research topic as being part of the politics of international economic relations. In this case, they investigate the issues of their research and employ appropriate methods that explain the relevance of their research issues in the politics of international economic relations (O’Brien and Williams, 2016). As it regards ‘integration’, researchers attempt to study GPE with other wider political-economic issues, using comparative political-economic methods or classical political-economic perspectives, to mention a few methods. Among other topics, the emphasis could be on global structures, domestic structures, national diversity, varieties of capitalism, and the changing nature of capitalism. Researchers through this tradition have also become aware of the global processes affecting competition and regulation in national political economies. In most part, GPE shares with the classical political economy: “a commitment to integrating politics and economics” (O’Brien and Williams, 2016). ‘Expansion’ is the third trend that seeks to expand global political-economic issues by developing new areas of inquiry such as race, FE and FI, the role of mobile phones and money in GPE, etc. These new non-traditional issues are nothing to ignore as they require interdisciplinary expertise and methods. Moreover, global economic processes and the inequality effects they have generated, are at rates too alarming to be ignored. This research has been designed to alternate between the ‘integration’ and ‘expansion’ trends in the contemporary GPE. Firstly, it expands GPE scholarship to study the issues of MM, FE and FI, which are the areas not studied thoroughly in GPE. Secondly, it brings back the classical perspective in a world influenced much by the neoclassical perspective with an argument that both classical and neoclassical perspectives inform the operations of the current neoliberal political economy, which facilitated the growth of MM in Tanzania.

1.4.2.1 The Neoclassical Perspective and How It Informs Neoliberalism

Cook (2016) studied the impact of neoclassical economics on progressive neoliberal reforms. He found that neoclassical perspectives derive from mathematical models or cost-benefit formulas. He also asserts that the world is made up of two social classes, namely the educated and the ignorant. Thus, it is considered that the former dominates the latter. According to Cook (2016), law and economics, rational choice theory, or public choice models as perceived in political science have a close affinity to neoclassical views, and that the expansion of these views became known as 'neoliberalism'. With neoliberalism, he argues:

> "individual decisions are conducted according to a calculus of utility, benefit or satisfaction against a microeconomic grid of scarcity, supply and demand, and moral value neutrality" (Cook, 2016:257).

Harvey (2010) describes the neoclassical theories used to implement the neoliberal reforms. He stresses that neoliberalism follows the logic of neoclassical principles. Neoclassical views assume that individuals are rational and self-interested. These views coincide with the neoliberalist agenda of free market reforms.

Davies (2019) acknowledges the relationship between neoliberalism and neoclassical economics by asserting that neoliberalism has emerged as a reaction to previously existing economic policies:

> "meaning the discarding of the previous set of intellectual and policy preferences and their replacement by neoclassical economic policy proposals identified by John Williamson and others".

Harvey (2007), Larner (2000), and Peck (2010) also concur with these views. Davis and Walsh (2017) also claim that neoliberalism creates state institutions with a broader set of ideas and values, which include individualism, laissez-faire, and free choice with principles tied to neoclassical economics and economic liberalism. I define neoliberalism as a political-economic ideology that enhances laissez-faire and free-market capitalism through policies of deregulation, re-regulation, privatisation, economic and financial liberalisation, which help to reduce state's intervention in the market and the economy.

1.4.2.2 The Classical Perspective and How It Informs Neoliberalism

According to Merino et al. (2010:274):

> "neoliberalism should not be viewed as a simple extension of either classical or neoclassical theories … Classical liberal theories stressed the need for competitive markets and posited a minimum role for government, but they recognised that markets were amoral, and some government oversight was needed".

Some neoliberal aspects omit one aspect of Adam Smith's theory, which is the moral aspect of Smith's treatise (Merino et al., 2010). Thus, I emphasise the classical perspective role in informing the neoliberal roll-out policies. Dean (2014) tries to understand neoliberalism in relation to classical liberalism and its approach to crisis management. He asserts that neoliberalism resembles classical economy in the sense that it fosters:

> "free-market political philosophy and a wide range of innovations in public management to patterns and processes found in and across diverse political spaces and territories around the globe" (Dean (2014:150).

Like classical perspectives, neoliberalism desires to construct market and market-like relations as well as to enhance and utilise capacities of economic freedom through specific practices and policies. Moreover, neoliberalism opponents are economic protection, state economic planning, state intervention, and state regulation (Foucault, 2008). In this respect, neoliberalism shares some of its philosophical foundation with classical perspectives, which puts classical perspectives in a position to inform neoliberal policies. Hence, neoliberalism in big part has *"no rupture with classical liberalism*" (Dean, 2014:154; Mirowski, 2009).

Classical perspectives as manifested in 'Manchester Liberalism' (also see: Jackson, 2010; Dean, 2014) are founded on the belief that markets required a self-regulating mechanism and that the state's role was to abstain from intervening in the markets. In this regard, the classical perspectives have a resemblance to neoliberalism. However, over the years, the classical schools have agreed to minimal state intervention to protect individuals' rights, freedoms, and the efficient allocation of resources.

1.5 Inclusive Neoliberalism

According to Klimina (2011), constructivist neoliberals forged collectivist strategies that made institutions support strong private rights and free markets. The view was that the two tools could not start from below. Hence, it was in the state's interest to create, protect, and maintain institutional frameworks that favoured private property and liberalised markets (Klimina, 2011; Harvey, 2005; Mirowski, 2009).

In the 1990s, neoliberal policies came under criticism. There was a growing dissatisfaction of their outcomes. According to Rodrik and Subrimanian (2003) and Williamson (2003), the same Washington Consensus policies highlighted the creation of 'market-friendly' state forms and modes of governance and regulations. The post-Washington Consensus policies created roll-out policies and emphasised the role of the state in creating vibrant markets (Buchanan, 1997:152).

The post-Washington Consensus policies came under criticism for their lack of ability to resolve issues of inequality, structural causes of poverty, and their carelessness in the matters of class power in societies. This brought the idea of creating inclusive neoliberal policies into the spotlight (Stiglitz, 2008; Birdsall and de la Torre, 2001; Fine, 2000: 134-136).

I will further elaborate upon the concepts of neoliberal roll-back and roll-out development agenda, which facilitate the understanding of what the inclusive neoliberal agenda is.

1.5.1 Neoliberal Roll-Back Development Policy Agenda

Roll-back and roll-out neoliberalism is also well explained in Chapter 3. Between the 1980s and 1990s, the World Bank and the IMF reinforced and supported roll-back neoliberal policies that promoted certain development policies under the previously described Washington Consensus (Williamson, 1990). The roll-back policies were used to revive the economies of Latin American countries which struggled to restore the soundness of their balance of payments in the 1970s and 1980s. They later spread throughout the world through the World Bank and the IMF, as they became institutionalised.

The Washington Consensus incorporated the following policy recommendations: minimal government intervention and the elimination of subsidies, fiscal policy discipline, broadening of the tax base through tax reforms, freeing of interest rates, competitive exchange rates, trade liberalisation, liberalisation of state-owned businesses, property rights, deregulation to abolish regulations impending market entry or all factors restricting competition; and independent central banks (Williamson, 1990).

From the above policy recommendations, the World Bank and the IMF prescribed macro-stabilisation and structural adjustment policies (SAPs). The SAPs became the standard packages for reforms in developing countries (Ferreira, 1992; Ghai, 1991). As the IFIs implemented the neoliberal agenda, the roll-back neoliberal policymakers used the SAPs in the early 1980s to create economic development policies. The SAPs had the following two objectives. Firstly, and in the short run, they sought the stabilisation of financial and budget deficits. This was done at the macro-level. The IMF's policy recommendations included austerity measures to curb budget deficits, currency devaluation, and price liberalisations. Secondly, at the micro-economic level and in the long-run, the SAPs sought to achieve market efficiency through resources allocation and by global market alerts (also see: Bienefield, 2000:534) as well as the minimal role of the state in the markets (Engel, 2006:7). At the microlevel, the SAPs promoted privatisation of state enterprises, trade, and financial liberalisation, tax, and labour market reforms. The SAPs era conforms with the "roll-back" neoliberal policies as described by Peck and Tickell (2002) and as demonstrated in Chapter 3.

1.5.2 The Roll-Out Development Policy Agenda

The SAPs had more failures than successes (Naastepad, 2002; Please, 1996). This meant that the neoliberal development policies required state and regulatory support to recover from market failures. Despite some of SAP's failures, roll-back neoliberal development policies extended and concretised the free markets. The issue in the late 1990s was not the market extension issue, but rather how to create institutional frameworks capable of reversing the neoliberal failures. If the SAPs were the first generation of market reforms, there was a need for a second generation of market reforms. This second generation of reforms was successful as it included more effective social and economic institutions capable of giving neoliberalism a more "human face" (Pastor and Wise, 1999). Increasingly, the role of institutional economists became prominent in their efforts to advocate for a 'human face' neoliberalism. Joseph Stiglitz was key in popularising the idea of letting the IFIs revert to the interventionist states to help construct the regulatory environment capable of enabling markets to work efficiently. Attracted by these ideas, the IFIs allowed a significant neoliberal turn to rolling out the state in their development agenda while keeping the free market economies (World Bank, 1997). Hence, a new development approach emerged to address the neoliberal issues of inequality, poverty, and other issues of neoliberal adjustment policies. Scholars have referred to this approach as the 'inclusive' neoliberal development policy (Klak et al., 2011; Klimina, 2011).

1.5.3 Inclusive Neoliberal Development Policy

Several policy initiatives were undertaken in the 2000s to reverse the issues of exclusion, inequality and poverty. The most prominent policy initiative was the 'Poverty Reduction Strategy Paper' (PRSP). The IFIs reoriented from their agenda of neoliberal policies and focused on economic growth. Poverty reduction became an equally important goal of the development policy of inclusive neoliberal agenda (Klak et al., 2011 citing Craig and Porter, 2007; Porter and Craig, 2004). This new 'inclusive' neoliberal development agenda attempted to silence the critics of neoliberalism by creating a development policy that was 'more country-driven' and owned by the developing countries themselves (became an equally important goal of the development policy of inclusive neoliberal agenda) (Klak et al., 2011 citing Craig and Porter, 2003: 53; Fine, 2001:12). Hence, poverty reduction strategies became one of the core strategies of the development policies in the developing world (Porter and Craig, 2004; Craig and Porter, 2003).

The development of financial markets was encouraged to increase financial depth to promote economic growth, and to increase FI. Financial innovation was also encouraged to facilitate competitive prices, which promoted efficiency in the allocation of financial resources (Mohan, 2019).

Efforts to make inclusive neoliberalism popular prioritised FI around the world. Empirical evidence also suggested that FI could help reduce exclusion, poverty and inequality by helping the poor smooth their consumption and manage their financial risks (Demirguc-Kunt al., 2017; Williams et al., 2017). Mobile phones facilitate FI through MM, as demonstrated in Chapter 5. Leistert (2013:48) argues that the mobile phone is a political technology that facilitates the spread of the neoliberal agendas as it pushes forward the neoliberal paradox:

> "Mobile phones integrate many more people into the liberalised financial system and make them partakers of the market. Of course, changes in the banking model occur in parallel, as the companies that provide these services are not banks. As the costs for accounting and administration are lower, smaller balances already produce a good return of investment. Mobile phones are able to integrate larger parts of the population whose productivity has not been brought under the rule of a regulated economy. The incentives had been too low so far. Mobile media change the scale".

According to Leistert (2013) and Miller and Roses (2008:16), mobile media can bring the authorities and the people closer in "locales that were often distant". Mobile phones, therefore, bridge the distance between the people and the authorities as well as these two and the markets. In this way, mobile phones become the address for people without addresses, and this allows them to open MM accounts. Donner (2009) and Leistert (2013) perceive mobile phones as 'market enforcers'. According to Donner (2009), mobile phones ameliorate the efficiency of markets as they enforce the law of one price-reducing waste. They also increase productivity. He further claims that the social relations established by mobile phones facilitate transactions and productive activities which promote economic development. In other words, mobile phones reinvent banking services. Sinha (2005:11) also argues that mobile phones facilitate direct payments. Mobile phones facilitate forms of exchange or transactions. They also store monetary value. They are also used as devices that spread inclusive neoliberal agenda through the dissemination of mobile phones around the world with a high penetration rate.

1.6 The Thesis Structure

The structure of this thesis, which addresses the outlined themes, research questions, and objectives, is illustrated in Diagram 1.2. Chapter 1 introduces the topic detailing the background, motivation, research gap, scope, research questions, objectives, value, and the structure of the thesis. The chapter also presents the efforts to make neoliberalism inclusive, which raises awareness to make the provision of financial services more inclusive. Chapter 2 introduces, defines, and elaborates FE and FI. It also prepares the discussions on: (i) FE and FI; (ii) the role of MM in moderating the factors of FE; (iii) MM development in Tanzania; and (iv) the changing banking sector and its response to MM. Moreover, it provides the context of FE and FI globally to help depict Tanzania's situation. It also presents the national and global contexts of FE and FI. The chapter briefly explains the lack of a national FI policy in Tanzania. It also provides statistics on FE and FI, which provide a clear picture in terms of FI and MM development in Tanzania.

In Chapter 3, I present the theoretical framework that forms the basis for conceptualising the role of neoliberalism in facilitating the growth of MM, and how it facilitates the transition from higher levels of FE to increasing levels of FI in Tanzania. The theoretical framework also demonstrates the development of MM through the rolling back (deregulatory) and rolling out (re-regulatory) phases of neoliberalism on the one hand, and by using the classical and neoclassical perspectives on the other. Additionally, the chapter presents the 'RCA', which also facilitates the analysis of the study.

In Chapter 4, I outline the methodology, the methods of data collection, the processing of data, and the data analysis. The chapter facilitates the discussions. It also facilitates the analysis of neoliberalism and its role in promoting MM growth as well as its role in increasing FI. The chapter also discusses methodological perspectives. It links them with the research questions, research design, methods for data collection, data analysis, and with the processes used to collect and interpret the available data.

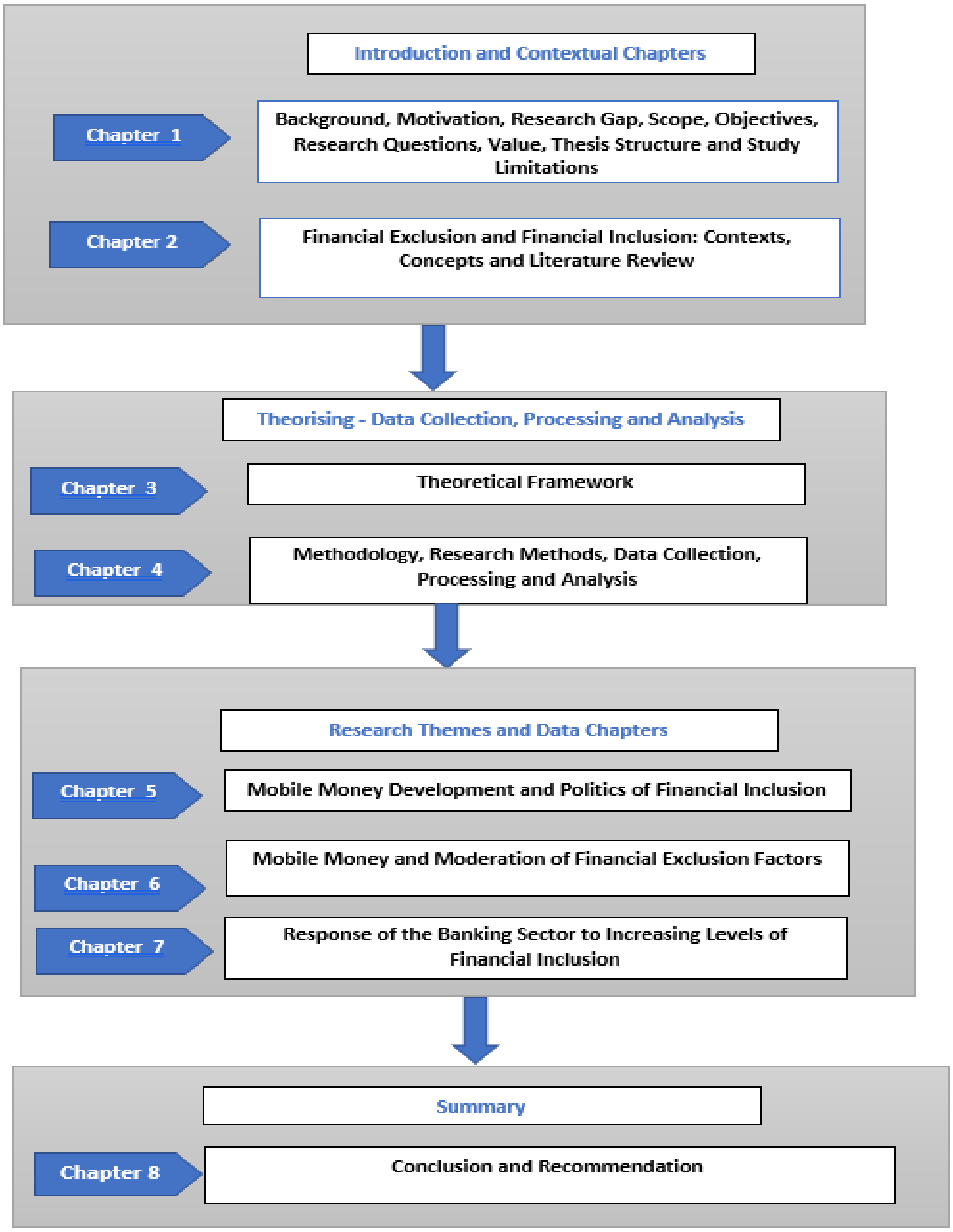
Chapter 5 analyses the development of MM in Tanzania and the politics of FI that enhanced it. The chapter recognises the role played by MM in reaching financially-unreached and excluded people, overtaking banking and other financial services in Tanzania in this regard. Although FE was a significant issue in Tanzania and the banks were in a better position to curb FE by far, they failed to do so. It is, therefore, crucial to understand the development of MM as they increased the rate of FI better than the banks did.

Chapter 6 explores the role of MM in moderating FE and in supporting FI. The chapter credits MM for making the delivery of financial services to financially-excluded people easier. The chapter investigates and acknowledges that MM moderates some FE factors. How this happens is explained in Chapter 6.

Chapter 7 analyses the response of the banking sector to increasing levels of FI resulting from MM innovations or services. The chapter clearly explains the difference between deposit and non-deposit taking institutions and how they use the National Payment Systems (NPS). The Bank of Tanzania (BOT), as the regulator for the NPS, established the roles of the banks and the MNOs. The chapter investigates where the banks and MNOs collaborate, and where they do not. It also seeks to explore whether the banking sector transforms due to the presence of MM innovations.

Chapter 8 concludes the thesis by summarising the research findings as well as providing the key conclusions and the recommendations that the research makes. The chapter will return to the key issues and arguments of the dissertation and will give some evaluation and/or interpretation of the research findings. The recommendations I will make in this chapter will help to point forward to what I think future research should investigate or further explore.

Diagram 1.2: Layout and Structure of the Thesis



1.7 Study Limitations

This study employs a qualitative methodology. The findings of the study are only valid in Tanzania. The results are only accurate for Tanzania. To generalise the findings of this study elsewhere, caution must be taken. However, the study offers a possible explanation for the growth of MM and its role in moderating the factors of FE to increase the rates of FI. Although there is evidence to suggest that some other countries took a similar or different path to develop MM services (Ondiege, 2015; Muthiora, 2015), it is in the best interest of the research design to limit the applicability of the research findings to Tanzania. Although I use global and national data to contextualise MM development, FE, and FI; it is not the focus of the study to compare Tanzania and other countries directly. While those comparisons may inform this research, the focus is solely on the Tanzanian reality. Lastly, FI and income inequality are two different concepts. Thus, I did not depend much on the concepts of income inequality to discuss FI. Please, refer to the definition of FI on Chapter 3.

1.8 Conclusion

In this chapter, I have introduced the topic for this research and outlined the rationale of my interests in MM development and its relation to FE and FI. I also provided the background information about the research itself as well as my motivations to explore the research questions and objectives, as well as how I arrived at them. I indicated what I set out to achieve in this study by outlining the chapters that explain the context, theoretical framework, methodology, findings and data, as well as the conclusions and recommendations. Lastly, I understand the limitations of this study that FI and income inequality are two different concepts. Thus, I did not depend much on the concepts of income inequality to discuss FI.

Chapter 2: Financial Inclusion and Financial Exclusion: Contexts, Concepts and Literature Review

2.1 Introduction

According to the GPFI (2014:3) and Demirguc-Kunt et al. (2015), about 2.5 billion adults, who are about half the total working-age population of the world, are financially excluded. As it regards those, who are financially included, about 89% of adults living in high-income countries report that they have an account at a formal financial institution. Only about 41% of adults living in developing countries report having an account at a formal financial institution. "Overall, 23% of adults in Africa have an account at a formal financial institution" (Triki and Faye, 2013: 44). This chapter defines and elaborates FE and FI. It also presents the national and global contexts of FE and FI. It also introduces the debates and discussions on FE and FI and how they relate to MM and neoliberalism, including the two perspectives, namely, classical and neoclassical, which are the key informants of neoliberalism. I also present the literature critically on these issues to find the research literature gaps. Furthermore, I seek to explain how my research fits in with these research gaps to demonstrate its worthiness, in the light of what has already been researched and known. This chapter, therefore, illustrates what we know about FI, FE, and the research gaps. It sets the ground for the study to address the main research questions in the next chapters. Chapters 3 and 4 identify other theoretical and methodological gaps.

The case for the research is that FE is a problem. The numbers and surveys demonstrate this reality (see Section 2.1). The need for FI is dire. All of these are political-economic issues. It is about who has access and who does not have access to formal financial services. The transition from higher levels of FE to increased levels of FI in Tanzania has not been linked to neoliberal policies. Different alternative solutions were employed to help with inclusion, but not as successfully as it has been with MM. From the literature review, past research had a lot written on mobile/digital devices, financial services and development (Kim et al., 2018; World Bank, 2012a; Kpodar and Andrianaivo, 2011; Waverman et al., 2005; Saker and Wells, 2003; Leistert, 2013; Qiang et al., 2011; Aker, 2010; Duncombe and Boateng; 2009; Dahlberg et al., 2008). This literature also includes studies on MM, financial services and FI (Peruta, 2015; Duncombe and Boateng, 2009; Maurer, 2011; Morawczynski and Pickens, 2009; Mbiti and Weil, 2016; Donavan, 2012, Jack and Suri, 2011; McKay and Pickens, 2010). Also, the literature has focused more on FI and development (DFID, 2004; Klapper et al., 2004; Morduch and Haley, 2002; Sarma and Pais, 2011; Beck et al., 2007a; Demirguc-Kunt and Klapper, 2012a). The literature has also focused on MM and development (Mendoza and Thelen, 2008; Spence and Smith, 2010; USAID, 2013; GSMA, 2015a; Beck et al., 2015; Aker et al., 2016; Sekabira and Qaim; 2017; Chale and Mbamba, 2015; Nan, 2019). The available literature does not thoroughly investigate neoliberal policies and how they facilitate FI and the moderation of some factors of FE through MM growth. My research has identified this literature gap. The chapter demonstrates this gap and seeks to prepare the discussions that bridge the gap in the next chapters. To do so, I cannot escape the debate on FI and FE issues, as MM facilitates FI and moderates some factors of FE. Its growth depends much on these roles.

This chapter contains ten sections. Section 2.2 briefly introduces the issues of FE, discussing what we know about it. It details the key concepts, global context, indicators, and the urgency of FE. Section 2.3 discusses the relationship between FE and FI. Section 2.4 defines FI. It explains the barriers to FI as well the importance of FI and its systematic indicators. Section 2.5 introduces the exclusion debates, FE, and neoliberalism. Section 2.6 discusses the context of Tanzania's FE and FI to provide an understanding of Tanzania's situation. Section 2.7 discusses the changing banking sector that has finally adopted the inclusive financial agenda. The section also details what went wrong in the past, and what has changed over the years. Section 2.8 presents the global and national emergence of the FI agenda. Section 2.9 discusses FE issues and MM. Section 2.10 concludes the chapter.

2.2 What Do We Know About FE?

FE received attention in the late 1990s and early 2000s. IFIs and economies realised the role of the financial sector in increasing economic growth and poverty reduction. At least 67 empirical studies confirm this (Valickova et al., 2013; Beck et al., 2000). Literature suggests that the role of the financial sector in poverty reduction is controversial (World Bank, 2008a; World Bank, 2008b). Furthermore, FE received attention when there was clear evidence that neoliberal policies had widened the gap between the rich and the poor (Duménil and Lévy, 2011). Also, IFIs and governments shifted the financial sector development agenda from microfinance to warranting access to formal financial services for all (Demirguc-Kunt et al., 2008). It was this shift in focus that made researchers and policymakers interested in investigating FE in all its forms. According to the Financial Services Authority (2000), the issue of FE has received particular attention recently because financial product ownership has increased tremendously in the past 30 years. However, those excluded stand out in a more pronounced manner. Moreover, the debate on FI has also moved on from its initial focus on location-based exclusion to digital technologies such as MM. These technologies have financially included many of the previously excluded people (also see: Mpogole et al., 2008; Asongu and Asongu, 2018).

2.2.1 Definition and Key Concepts

There is not a universally accepted definition of FE. However, in the academia the definitions tend to reflect the inability, lack of or reluctance to access appropriate 'mainstream' (also referred to as 'formal') financial services (also see: Mitton. 2008; McKillop and Wilson, 2007; Koku, 2015:655; Leyshon and Thrift, 1995:314). My research adopts this definition. Different researchers, IFIs, and global institutions also define FE similarly or differently depending on their research objectives, mission, vision, or operations.

A person is considered financially excluded, if she/he does not have access to any or all available formal financial services. Likewise, she/he is excluded if she/he does not make use of these services:

> "It is, therefore, useful to use the term 'financially excluded' for those who lack all products and 'marginally' excluded for those who have limited access" (Lämmermann, 2010: 26).

Simpson and Buckland (2009: 967), the European Commission (2008), and Federal Deposit Insurance Cooperation (FDIC) (2011) also use the terms 'unbanked' and 'underbanked' to refer to financially-excluded and marginally-excluded people. 'Unbanked' people are those without any mainstream bank account while 'underbanked' people are those depending mostly on fringe and/or informal financial services for cashing cheques, serving, getting loans and credit, saving or making payment services (Simpson and Buckland, 2009).

According to Aduda and Kalunda (2012:97), FE brings about social classes and divisions. Those lacking social services comprise of certain exclusive groups of people and that forms an essential component of a much broader exclusion. Devlin (2009: 1021) supports this view as he asserts that FE is "*seen as closely linked to wider social exclusion*". According to Chibba (2009), financially excluded people are more often than not average citizens. Aduda and Kalunda (2012:97) echo this view by asserting

> "the included become fearful and distrustful of the excluded and vice-versa culminating to polarised societies that are unhealthy for the economy".

Furthermore, Leyshon and Thrift (1995) and Conroy (2005) perceive FE in terms of processes that deter specific individuals or group of individuals from accessing the formal financial system. Carbo et al. (2005) define FE as the inability of some social groups to access the financial system. Panigyrakis et al. (2002:55) define FE as "the inability of some financial service segments to access financial services in an appropriate form". Carbo et al. (2007) describe FE as an invariable experience of the poorer members of society, whether they live in developed or developing countries. Mohan (2006) defines FE as "lack of access to appropriate, low cost, fair, and safe financial services" by certain groups in the society from mainstream providers. In summary, Koku (2015) asserts that FE is "a global problem that has been studied by scholars from different academic fields".

The FE debate has broadened to: (i) investigate more closely the types of people that are likely to be excluded; and (ii) the types of FE. Kempson and Whyley (1999) provide a list of dimensions of FE that are within the debates mentioned above. The list of aspects includes: access exclusion, condition exclusion, price exclusion, marketing exclusion, and self-exclusion (also see: Sinclair et al., 2009). While access exclusion occurs as a result of risk assessment or management where risky people are excluded (Demirguc-Kunt et al., 2008), condition exclusion occurs when conditions are attached to financial products and services, making some people unwilling or unable to access them (Devlin, 2005:77). Moreover, while price exclusion occurs when some people cannot afford financial services subject to high prices (Corr, 2006:65), marketing exclusion occurs when marketing and sales activities target only a specific segment of the population and excludes others (Sinclair, 2001:15). Likewise, some people tend to self-exclude due to past experiences or the fear of being rejected (Fuller, 1998:147).

Just as the above paragraph identifies the dimensions of FE, literature has also identified several more causes of FE. To start with, the Financial Services Authority (2000) identifies some economic, socio-cultural, and demographic trends that assist in causing FE. Moreover, recent economic growth might have created FE of some groups of people, as the neoliberal policies of the 1990s were exclusive. Furthermore, neoliberal financial reforms have generated economic growth in some countries. However, the redistribution of wealth and income generated by this growth might not have been equal. Also, in some states, the demographics have changed. For instance, there are more single parents and older people who do not have sustainable means of sustenance. In some cases, homelessness has increased due to various factors such as illnesses, being an orphan, or bankrupt. All of the factors mentioned above have contributed to FE in some contexts.

FE, therefore, can be understood by studying basic banking and digital financial services such as MM. By examining these basic banking and digital financial services, we determine the percentage of the population who use these services and those who do not use these services. By doing so, we can learn the portion of the population that is still in exclusion. According to McKillop et al. (2007), studying FE is a complex issue, and that it is interconnected with the non-usage of financial products, poverty, level of education, unemployment, predatory lending, family breakdown and so forth. The Financial Services Authority (2000) and Hogarth and O'Donnell (1997) echoed this view. They found that some factors impact the level of ownership of various financial services and products, including income, employment status, region, race and ethnicity, and marital status.

Moreover, in some instances, gender and age were also essential in explaining exclusion from savings, insurance, and pension, but not current account. For example, Devlin (2005) studied the UK market and concluded that mixed evidence on gender and age explained exclusion from the above-mentioned financial products. Those aged between 16 and 25 were more likely to be excluded. Contrarily, the Financial Services Authority (2000) remains less convinced that either gender or age explains FE in an effective manner.

Furthermore, some scholars see marital status, family, and race as factors that may cause FE. For instance, Devlin (2005) and the Financial Services Authority (2000) argue that divorced individuals with children are likely to be financially excluded. They also say that households with low income are also vulnerable to exclusion. As far as race is concerned, Hogarth and O'Donnell (1997), as well as the Financial Services Authority (2000), all found that race and ethnicity could, at times, influence FE.

Other scholars see FE as one of the issues catalysed by neoliberal policies. Free markets exclude and include. Neoliberal globalisation has, in some cases, created the losers and winners; the haves and have-nots; the rich and poor. The gap between the rich and poor has widened. It is with this view that the Financial Services Authority (2000) claims that financial markets, social class, level of education, and career path can be sources of exclusion. Moreover, Marron (2013) argues that FE can be well "understood as a generic process produced by economic and political transformations of recent decades". Market and neoliberal reforms are only a few examples of economic and political transformations. These processes of change marginalise certain social groups or classes from engaging within financial markets (Marron, 2013). Technological advancement has also been mentioned as one of the causes of exclusion.

Hogarth and O'Donnell (2000) see technological advancements impacting on FE by affecting the poor who are less likely to have access to technology, or such channels. According to Devlin (2005) and Lee (2002), the poor are less likely to use electronic banking, except for ATMs. More importantly, financial institutions have used technology to identify and exclude some people they consider undesirable due to the risks they pose to them (also see: Van Steenis, 2019:6).

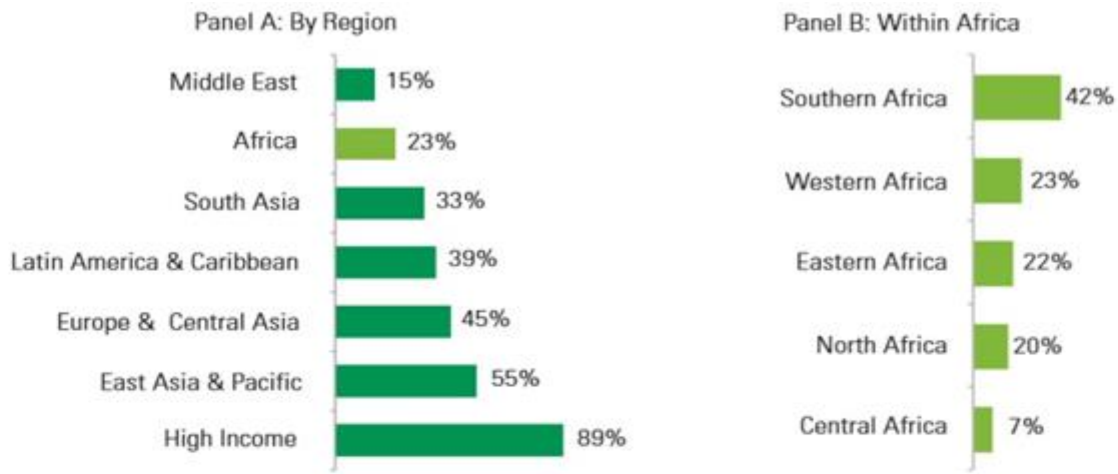
2.2.2 The Global Context of FE

FE is a global problem that has been studied by scholars from different academic fields (Koku, 2015:665). FDIC (2009) and FDIC (2011) demonstrates that access to standard banking services is not universal. According to Fernández-Olit et al. (2016), early studies on FE in developed countries researched the issues of geographical access to formal financial services and their determinants. Leyshon and Thrift (1993, 1994, 1995) and Carbo et al. (2005) have also researched on geographical access issues of FI. After several more studies, FE has been regarded as the issue of a lack of access to formal financial services, and a lack of use and utilisation of formal financial services (Dymski and Li, 2003; Hill and Kozup, 2007; De Meza et al. 2008; World Bank, 2014a).

Earlier studies of FE before the early 2000s demonstrate that FE had small but growing literature, particularly in the United States and the United Kingdom (Simpson and Buckland, 2009; Leyshon and Thrift, 1995). Also, the literature for Canada and Europe was slimmer, and so was the literature for the global south, where literature was based more on microcredit and microfinance (Simpson and Buckland, 2009). In Europe, for instance, some countries have the highest levels of FI in the world, while some others have FE issues. Those with higher levels of FI include Denmark (96.1%), Netherlands (98.9%), Sweden (98%) and Finland (96.7%) (Simpson and Buckland, 2009: 968). Those with stunning levels of people without a bank account included: Italy (22.4%), Greece (17.9%), Ireland (16.8%), Portugal (16.7%), Austria (13.5%) and the UK (10.5%) (Carbo et al., 2007). As it regards the USA, the FDIC estimated that about 7.7% of US households in 2013 did not have a bank account and that an additional 20% were underbanked but also gained access to alternative financial services (AFS) outside the mainstream banking system (FDIC, 2014; Mylonidis et al., 2019). As it regards Canada, about 3% of Canadian households and about 8% of low-income households were unbanked. (Ipsos-Reid Corporation, 2005).

Overall, 23% of adults in Africa had an account at a formal financial institution by 2012 (Demirguc-Kunt and Klapper, 2012a). See Diagram 2.1. Africa's account ownership statistics vary from 42% in Southern Africa to 7% in Central Africa. The highest levels of FE were recorded in the Democratic Republic of Congo and the Central African Republic, with about 95% of adults lacking access to formal financial services. In North Africa, about 23% of adults had an account at a formal financial institution (Demirguc-Kunt and Klapper, 2012a:4). Also, with regard to levels of access to formal financial services, Latin America and the Caribbean had 39%, the Middle East had 15%, South Asia had 33%, East Asia and Pacific had 55%, and high-income countries had 89% (Demirguc-Kunt and Klapper, 2012a:5) . These statistics also concur with Affleck and Mellor's (2006) claim that FE is a world-wide problem that leaves poor communities disconnected from mainstream financial services (Triki and Faye, 2013:44).

Diagram 2.1: Account Penetration (% Adults)



Source: Triki and Faye (2013:44).

From the global reality, neoliberal roll-back policies facilitated an increase in unemployment rates as more workers faced redundancy. They also made them lose their earnings, health coverage and means of sustenance (Rhine and Greene, 2006; Campbell et al., 2012; and Rhine and Greene, 2013) which also facilitated FE. Furthermore, liberalisation policies if analysed from the supply perspective, could enhance FE. This would depend on the quality of the environments in which financial institutions operated, the costs of enforcing contracts and whether financial institutions operated under public or private settings (Beck et al., 2007a).

FE remained a social issue, regardless of where it occurred. Previous literature on FE traced the issue to the deregulation of the financial sector, during the roll-back phase of neoliberalism (Koku, 2015; Chava et al., 2013; Devlin and Wright, 1995; Harrison, 2000; Carbo et al., 2007).

The literature attributed it to the sector's tendency to segment the market into two: the 'upmarket' and the 'downmarket' and let most of the financial institutions focus on the more profitable 'segments' (Koku, 2015; Pollard, 1996; Dymski, 2005:454), which is a neoclassical perspective. Some studies found that banks became larger after deregulation and that large banks were very unlikely to serve small businesses or financially-excluded people (also see: Cole et al., 2004; Berger et al., 2005). Small banks may have comparative advantages in lending to small businesses and low-income people than large banks (also see: Berger et al., 1998). However, at times they fail to survive the competition from the big banks.

Banking activities were highly regulated around the world until the final decades of the 20th century (Bernard et al. 2008). Thus, banks were not able to employ competitive solutions available from other industries, such as prices and location. At times, banks could not open new branches in certain locations, and the interest ceilings on credits and deposits, not only reduced the geographical area but also curbed price competition. Prior to the implementation of financial deregulation programmes in the early 1990s by most countries of the world:

> "all signs of the financial repression such as excessively high-reserve requirements, credit controls, interest rate controls, strict entry barriers, operational restrictions and predominance of state-owned banks were present" (Kumar and Gulati, 2004: 201)

around the world. The introduced neoliberal reforms sought to end:

> "*the regime of financial repression and to promote a diversified, efficient and competitive banking system. Deregulatory measures like lowering of statutory pre-emption, easing of directed credit rules, interest rates deregulation, and lifting of entry barriers for de novo private and foreign banks were undertaken to induce efficiency and competition into the banking sector*" (Kumar and Gulati, 2004:201).

On deregulation, there is empirical literature on developed nations (Grabowski et al., 1994; Christopolous and Tsionas, 2001; Zaim, 1995; Giradone et al., (2004); Chortareas et al., 2009). Before the mid-1990s, the banking literature focused more on the availability of financial services in the US than elsewhere (Leyshon and Thrift, 1995). The literature compared different US regulatory schemes and their effects on service and accessibility of financial services. According to Bernard et al. (2008), this literature traced its origins to the articles written by Lanzilotti and Saving (1969), Seaver and Fraser (1979), Savage and Humphrey (1979) or Evanoff (1988). In developing countries, significant literature emerged in the 2000s.

Other literature supports the role of deregulation in reversing FE. Chava et al. (2013) argue that "deregulation leads to an active market" and lowers entry barriers and therefore increases competition. It also increases the bargaining power of the banks and encourages them to invest in relationships that benefit them (Rajan, 1992; Petersen and Rajan, 1994; Petersen and Rajan, 1995). There is empirical evidence showing the benefits of deregulation. For instance, the elimination of branching restrictions, and reduction of interest rates led to the expansion of financial services, and created more efficient FIs (Fuentelsaz and Gómez, 2001; Jayaratne and Strahan, 1997). Alternatives to bricks-and-mortar branches were imperative (Bierman et al., 1996). Avery (1991) provided a significant analysis as he studied the period between 1977 (before deregulation) and 1989 (after deregulation) in the US. This analysis facilitated deregulatory analysis elsewhere. Moreover, the development of other alternatives, such as digital financial services could help serve less-favoured communities (Leyshon et al., 2006). Most of the global literature on FE also fails to include MM services.

Some researchers argued that liberalisation facilitated exclusion. Bierman et al. (1996) studied several bank branches between 1985 and 1993. Their findings demonstrated that liberalisation increased the number of financial services in higher-income communities and decreased those services in low-income areas. Midgley (2005) came closer to these views after studying deregulation and geographical issues in Britain. Midgley concluded that deregulation changed the patterns of financial service provision and that bank and branch closures had been one of the reasons for branch rationalisation (Bernard et al., 2008). Melnik and Shy (2015) argue that liberalisation provides market power to the banks and that market power 'in the retail banking sector' can be a cause of price distortions and market segmentation, which can block some people from accessing certain financial services. Stiglitz (2000) argued that financial market liberalisation had increased the frequency of 'financial crises' (also see Ang, 2010:697; Ranciere et al., 2006:3342), and according to Dymski (2005:451-454), financial crises facilitate FE.

Some other researchers argued that liberalisation facilitated FI. According to Bernard et al. (2008), Gunther (1997) studied the relative number of branches per 1,000 inhabitants between 1980 and 1990 and concluded that the removal of branching restrictions increased financial services in rural areas. With the absence of efficient digital financial services prior to the late 1990s, branches were the primary means of providing access to financial services and that branch network size mattered for better financial service availability (Leyshon and Thrift, 1995; Kempson, 2000; Leyshon et al. 2004; Leyshon et al., 2006). There is also literature that supports the importance of branches in protecting against FE (Dymski and Veitch, 1996; HM Treasury, 1999). Kempson (2000) argues that by then branches were suitable for low-income people who risked being financially excluded, especially when they depended on ‘hard-to-reach’ or distant branches. Beck et al. (2007a) and Beck et al. (2008) surveyed 62 countries and found that liberalisation or low barrier levels in retail markets affected competitive banking systems. Ranciere et al. (2006:3342) claim that financial liberalisation ‘relaxes borrowing constraints and increases growth’. Dell’Aricia and Marquez (2004a) and Dell’Ariccia and Marquez (2004b) argue that financial liberalisation leads to risks, which gives rise to boom-bust credit cycles.

There are different views on liberalisation and its role in FE and FI. Financial liberalisation is an integral part of financial sector development. Ang and McKibbin (2007) suggest that policies that remove interest rate controls and other restrictions on banking operations are also key to financial development and economic growth, which are also vital in eliminating FE. However, Ang and McKibbin (2007:218) also argue that financial liberalisation may cause:

> “fragility or deepen the financial system, but its long-term benefits on the economy are ambiguous from both empirical and theoretical perspectives”.

Due to these different perspectives on liberalisation and its effects on FE and FI, two schools of thought are used to explain the two different positions. Ang and McKibbin (2007) refer to these schools as the ‘McKinnon-Shaw school of thought’ and ‘Financial Endogenous Growth’ (Shaw, 1973; McKinnon, 1973). According to Dymski (2005:443):

> “Shaw (1973) and McKinnon (1973) provided definitive expositions of the neoliberal approach to financial markets and development.”

Firstly, the ‘McKinnon-Shaw’ school of thought:

> “proposes that government restrictions on the operation of the financial system such as interest rate ceiling, direct credit programmes, and high reserve requirements (dubbed financial repression) may hinder financial deepening. This may in turn affect the quality and quantity of investments and retards the development of the financial systems. Therefore, the McKinnon-Shaw financial repression paradigm implies a poorly functioning financial system may negatively influence economic growth’ (Ang and McKibbin, 2007:218).

Secondly, according to Ang and McKibbin (2007:218), the endogenous growth theory developed by King and Levine (1993):

> “also shows that financial repression may have a negative impact on financial development. In this case, financial development is less likely to be effective in stimulating economic growth in the presence of a repressed financial system. In fact, the cross-country evidence of Rossi (1999) suggests that financial restraints can hamper financial development”.

Chava et al. (2013) found that financial development benefits economic growth as it relaxes financial constraints and boosts innovation. Their evidence also suggests that financial development benefits small and young businesses that are more likely to transform ‘industries with their technological breakthroughs’ than large businesses who are innovative path-dependent.

In the short-run financial liberalisation efforts in countries like Tanzania failed to produce higher levels of FI. Arestis and Demetriades (1999) provided reasons why financial liberalisation failed to produce positive results. They argue that financial liberalisation agenda depended on a set of impractical presuppositions, including the presence of perfect competition, lack of information asymmetry, robust and conducive institutional and regulatory frameworks, and the limited influence of stock markets. These beliefs were unlikely to be met in the short-run and could explain the failure of liberalisation to boost FI in the 1990s. In the long-run, financial liberalisation produced positive results such as MM and FI as discussed in this dissertation.

As demonstrated in this section, much of the literature links FE with the banks and not with MM financial services. Hence, I am bringing in the MM and FE discussions.

2.2.3 Indicators and Urgency of FE

Financially-excluded adults usually do not have access to formal financial services like savings accounts, credit, insurance, and payment services. Being financially excluded does not mean that one does not have access to finances. Instead, it means that one does not have access to formal financial services. For instance, in developing countries most financially-excluded adults tend to depend on informal mechanisms for loans and savings to protect themselves against financial risks. Due to a lack of access to formal financial services, financially-excluded adults rely on moneylenders. Informal moneylenders lend money to them at high-interest rates, and in case of emergencies they often have to pawn assets. Diagram 2.2 illustrates the consequences of resulting from being financially excluded or unbanked. Firstly, financially-excluded people do not have access to affordable credit. Secondly, they may have difficulties in opening bank accounts. Thirdly, they may be at risk of not having any forms of insurance.

Fourthly, they may find it hard to manage money or plan for the unforeseeable future. Fifthly, they may be unable to make the most use of their finances.

Diagram 2.2: The Consequences of FE

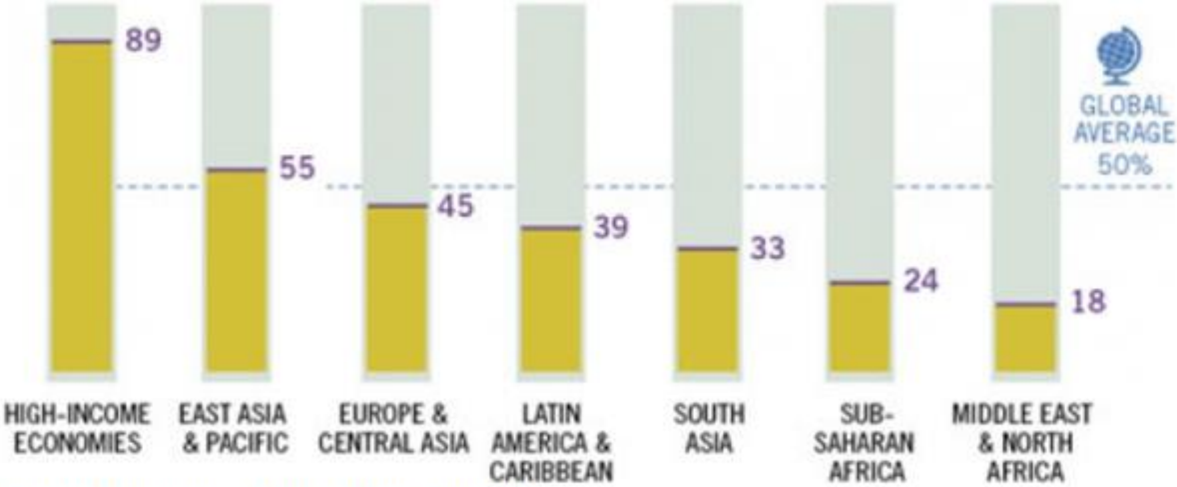
Moreover, Sahrawat (2010:4) claims:

"… it needs to be emphasised that mere ownership of a financial product does not result in financial inclusion".

It is the usage of the financial product that indicates whether a person is financially excluded or included. In other words, the opening of an account, by an individual is treated as an indicator of FI. What makes an individual financially excluded or included is how often he/she uses his/her bank accounts, and how the FSPs reflect the value derived by that individual in the mainstream financial system.

FE is measured either by the percentage of the adult population with no access to formal financial services or the percentage of the adult population who have limited access to formal financial services (also see: Demirguc-Kunt and Klapper, 2012a). Other researchers use the two leading indicators as 'unbanked' and 'underbanked' (also see: Demirguc-Kunt and Klapper, 2012a). Diagram 2.3 demonstrates the 'banked' versus the 'unbanked' populations.

Diagram 2.3: Account Penetration (Adults with an Account at a Formal Financial Institution) (%).



Source: Demirguc-Kunt and Klapper (2012b)

In high-income economies, account penetration is 89%, while in middle- and low-income economies account penetration is only 41% (see Diagram 2.3 for regional data). Operationalising the 'unbanked' or 'lack of access to formal financial services' concepts is straightforward. The indicator is either a bank account or any formal financial account such as an e-wallet account for MM users. Operationalising the underbanked is more complicated as it may require different definitions, for instance:

> "defining a minimum frequency of account use, defining a minimum set of bank account services, identifying reliance on fringe or informal financial services, or simply asking respondents if they have adequate access to financial services through a mainstream bank" (Simpson and Buckland, 2009:967).

Having defined FE and its key concepts, I relate it to FI in Section 2.3.

2.3 What Do We Know About the Relationship Between FE and FI?

In a neoliberal world, there is a growing role in terms of the power of finance in the political economy of capitalism and development (Kotz, 2008). According to Kotz (2008:1), also quoting Duménil and Lévy (2004:1-20) and Duménil and Lévy (2005:17):

> "… neoliberalism is the expression of the desire of a class of capitalist owners and the institutions in which power is concentrated, which we collectively call 'finance', to restore … the class's revenue and power … some analysts view the rise of what might be called 'finance dominance' as the underlying development that explains not only the emergence of the neoliberal order but also the associated form of globalisation in this era".

There is empirical evidence that neoliberalism produced ‘financial dominance’ of particular groups of people (Duménil and Lévy, 2011). It also created the concept of ‘financialisation’, which increased the role of finance in economic activities. ‘Financial dominance’ was accelerated by the neoliberal reforms and restructuring of various sectors of the economy. Epistein (2005:3) and Kotz (2008) define financialisation as:

> “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of domestic and international economies”.

It is the financial dominance of the few that excludes the majority of people from the financial system. Hence, those deprived of economic resources and small businesses do not have access to, or belong to finance. Kotz (2008: 6-7) and Duménil and Lévy (2005:21-22) interpret finance as:

> “… both institutions (the financial system: commercial and investment banking, pension funds, insurance, …) and individuals, [that is,] capitalists … or a fraction of capitalists since some capitalists are more ‘financial’ than ‘others’ … The capitalists specified to be excluded from ‘finance’ include the ‘small shareholder or the owner of a small firm’ who ‘does not actually belong to finance’ …”.

Finance, in the neoliberal era of the 1980s and 1990s, created inequality, as depicted in this chapter. The consequences of inequality beyond political and social instability also caused financial instability and stagnant economic growth (Ostry et al., 2016). Inequality was not good for economic growth due to its links with financial instability and global financial crises (Lim and Khor, 2011). The rising disparity generated by neoliberal policies was among the leading causes of global financial crises (Ostry et al., 2016). The IFIs such as the World Bank and the IMF, as well as, the G-20 countries became aware of the inequality, poverty, and forms of FE. They sought ways to change these situations, as discussed later in this chapter. This change came under the name of “FI”.

2.4 Defining FI

I define FI as the provision of affordable access to formal financial services for every adult, as well as the use of those financial services by every adult. According to Kuriakose and Iyer (2014), and Demirguc-Kunt and Klapper (2012a), FI is unarguably a fundamental part of economic development and growth. FI is also a world-wide problem (Demirguc-Kunt et al., 2015; and Mehrotra and Yetman, 2015). About 2.5 billion people worldwide did not have access to formal financial bank accounts or financial services in 2015 (Demirguc-Kunt and Klapper, 2012b).

Unfortunately, there is no standard universal definition of FI (TNCFI, 2014:13; IEG, 2015:3). According to Kodan and Cchikara (2013) and Kempson and Whyley (1999), the different views about FI prevail across the globe because of the need for financial products that vary from individual to individual and country to country. Bhaskar (2013) claims that many definitions of FI have characteristics that are symptomatic of broad access to financial services. The proposed definitions have tended to view FI as a "universal access" to a "wide range of financial services" at a "reasonable price" (TNCFI, 2014; Aduda and Kalunda, 2012; Tabaro, 2011; CGAP, 2009; World Bank, 2008a; World Bank, 2014a; FATF, 2011; Thorat, 2006; FATF, 2011, Dev, 2006; Accion International, n.d.).

Some definitions emphasise the provision of formal financial services to 'all', 'poor', 'vulnerable', 'unbanked', 'excluded', 'disadvantaged' and 'low-income' groups and the 'different segments of the population' (CGAP, 2009:1; Chakrabarty, 2010:3; Thorat, 2006; Sarma and Pais, 2011:613; Dev, 2006; Hanag and Jansen, 2010:1; Accion International, n.d.). According to Kodan and Cchikara (2013), FI should be available in either: (i) a 'broader sense' (meaning the availability of all banking services at an affordable cost, in reasonable time and quantity to all needy people) or (ii) a 'narrower sense' (meaning through the minimum essential financial services). Most of the definitions originate from these 'broader' or 'narrower' points of view.

Beck and Torre (2006) argue that FI, as analysed through the view of modern economic and social development perspectives, emphasises access to financial services for two main reasons. Firstly, the theoretical and empirical literature shows the importance of a well-developed financial system which has a positive impact on economic development and poverty alleviation. Secondly, some literature describes FI as a public good. It calls for broad participation in the mainstream financial sector (also see: Peachey and Roe, 2004).

Tanzania defines FI as: "regular use of financial services by individuals and businesses through financial infrastructures to save, manage cash flows, invest in productive capacities and mitigate shocks, which are delivered by formal providers through a range of appropriate solutions with dignity and fairness" (TNCFI, 2018:7). Most of the above literature emphasises "access" and "use" separately. I have decided to highlight both "access" and "usage" in my definition of FI. This definition considers access to appropriate formal financial services at an affordable cost, fairly and transparently, for all segments of the adult populations. It also considers the use of financial services by all sections of the adult populations. By all parts of the adult populations, the research refers to individuals and firms. These individuals and firms include vulnerable groups such as those from the weaker sections of society, the low-income and disadvantaged groups, the unbanked and underbanked people, the financially-excluded and marginalised people, as well as the rich and the poor. The provision of financial services, in this case, comes from the regulated mainstream FSPs.

IEG (2015:3) asserts that attempts to define FI have been by:

> "an array of different definitions that vary according to the types of services, the degree of formality of the depth of access".

This definition is vital because financial service providers have their interests and seek to protect them. They need to define what FI is for them, in an attempt to preserve their interests, as well as to provide financial services according to the laws of the countries they operate in. This research selected MM and tried to study its role in moderating FE and in increasing FI during the neoliberal era. The key argument seeks to discuss the increasing role of neoliberalism in supporting the growth of MM, and in aiding its role in increasing FI. Researchers rarely study this argument.

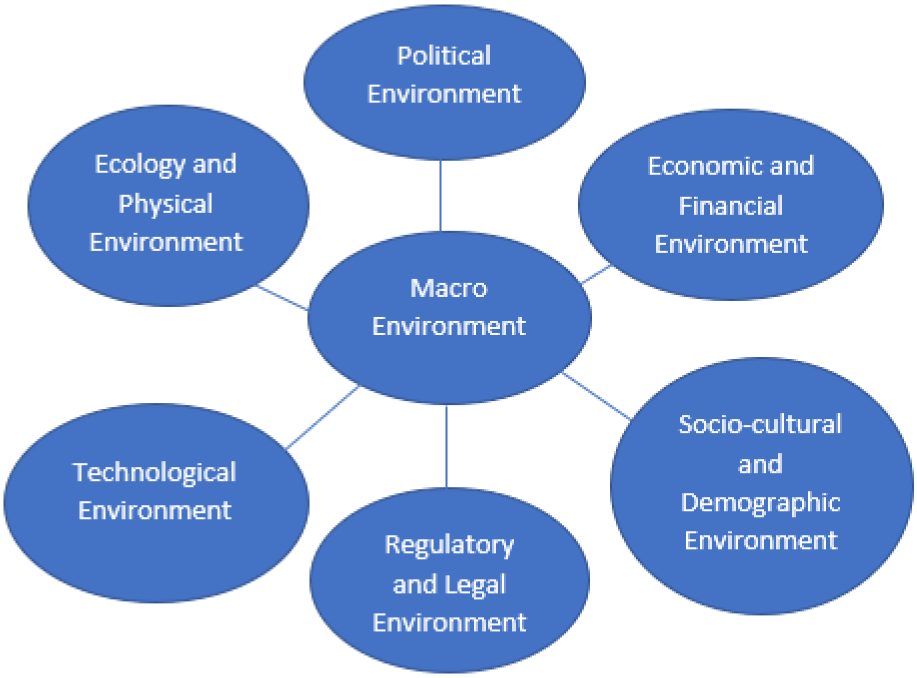
2.4.1 What Prevents FI?

What causes FE (as discussed in Section 2.2.3) is also a barrier to FI. FI and FE, therefore, are the two sides of the same coin. Hence, what causes FE prevents FI and vice versa. The literature on Tanzania and FI groups the barriers to formal financial services into three levels, namely: macro, meso, and micro (TNFCI, 2014).

2.4.1.1 Macro Level

TNFCI (2014) mentions two critical barriers of access to financial services as an unsupportive macro environment and an inefficient legal and regulatory framework. Firstly, digital financial markets require a stable and enabling macroeconomic environment to operate efficiently (Porteous, 2006). A macro environment is the totality of the different spheres of socioeconomic and political factors, as illustrated in Diagram 2.4.

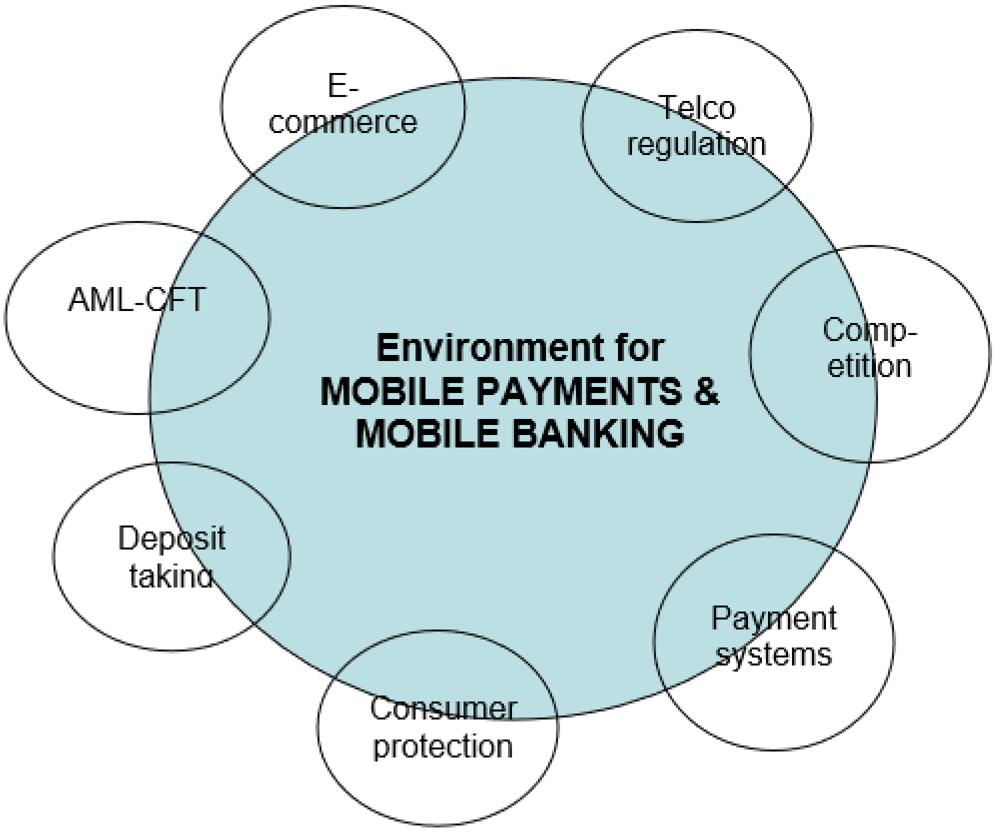
Diagram 2.4 Macro Environment



Before liberalisation policies were implemented in Tanzania, and under the socialist political environment, the macro-environment was not friendly for financial investments and innovations (Mbowe, 2010; Collier and Gunning, 1991). After liberalisation, the macro environment enhanced innovations (such as MM) due to deregulation and liberalisation of the economic sectors. This is demonstrated through the conducted interviews and the next chapters of this dissertation. Through the Converged Licensing Framework (CLF) and financial reforms as depicted in Chapter 3 Sections 3.7.2 and 3.7.3 (also see: Mfungahema, 2014; Mwalongo and Hussein, n.d.), MM emerged. Even this literature fails to link the CFL with the arrival of MM directly. My interviews with the key respondents linked the CLF with MM as demonstrated in Chapter 5. The CLF established the rules cutting across the different macro environments that allowed technologies such as MM to reach financially-unreached people and provide them with the financial services of their choice, as it is discussed in this dissertation.

Secondly, the legal and regulatory framework must ensure fast and efficient enforcement of laws, regulations, and contracts. As Diagram 2.4 illustrates, when there are overlapping macro domains, and all are equally important for the success of economic and financial activities, the state needs to remove any macro barriers to allow the smooth operation of the macro environment. Diagram 2.5 depicts the presence of the key enablers of mobile-payment (m-payment) and mobile-banking (m-banking) that require regulatory domains to allow the smooth operation of the financial system, and the creation of an enabling environment for m-payments and m-banking for FI. Lack of these regulatory domains and enabling m-payments, and the m-banking environment constitutes barriers to FI. According to Porteous (2006), m-payments and other digital financial services involve up to five different regulators, namely: the central bank, payment regulator, anti-money laundering authority, Telco regulator, and competition regulator. Diagram 2.5 considers these five domains.

Diagram 2.5 Overlapping Domains



Source: Porteous (2006:28).

The first issue presented in Diagram 2.5 is the issue of e-commerce legitimacy. For e-commerce policymakers, there were issues regarding e-signatures. The legal system did not recognise the e-signatures. These issues posed challenges to both businesses and individuals, as both electronic payees and payers, risked repudiation. Tanzania resolved this issue by issuing the 2015 ‘Electronic Transactions Act” (ETA) and the 2015 Cybercrimes Act, which recognised electronic money, electronic evidence, electronic data and signatures (URT, 2015a; URT, 2015b). Moreover, the central bank was preoccupied with several issues including consumer protection, the stability of the financial system and payment systems, the difference between payments and deposits, laws and regulations for e-money issuance, anti-money laundering issues as well as the use of agents to provide financial services. The establishment of the following laws and regulations resolved these issues: the 2006 Anti-Money Laundering Act and the 2019 Anti-Money Laundering (Electronic Fund Transfer and Cash Transaction Reporting) Regulations, which sought to combat money laundering and financial terrorism (URT, 2006a; URT, 2019). Furthermore, the National Payment Systems Act (NPSA) and its regulations (licensing and electronic money regulations) were enacted to take care of the issues of the NPSs in 2015 (URT,2015a; URT,2015b; URT, 2015c; URT, 2015d, URT, 2015e). In addition, the central bank worked with the Fair Competition Commission (established by the 2003 Fair Competition Act) and the Tanzania Communications Regulatory Authority (TCRA) (established by the 2003 Tanzania Communications Regulatory Authority Act (TCRAA)) to ensure fair competition for banks and the MNOs (also see: URT, 2003a; URT, 2003b). Being hot issues, regulators are always concerned with the boundaries of cooperation around payments infrastructure. They are also concerned with the risks of anti-competitive behaviours. They understand that payment systems are complex 'ecosystems'. Tanzania tried to resolve these issues by establishing interoperability of MM services, which fosters competition and cooperation within the MM industry, see Chapters 5 and 8. The National Switch project to bring together the banks and the MNOs is underway (see Chapter 8).

For the telecommunications sector, both the TCRA and BOT worried about the role of m-payments in providing financial services and how their licensing requirements and solvency would be affected. While the TCRA could limit the MNOs license from becoming directly involved in m-payment and e-money issuance, the CLF was already in place and therefore provided support for technology use for mobile payments. The TCRA and BOT had to work together to regulate the MNOs. Lack of these co-operations, laws, and regulations in the past, slowed down and acted as a barrier to FI at the macro level. The current regulatory frameworks allow fair competition and a level playing ground for all players in the financial sector. There may also be issues with 'know-your-customer' (KYC) requirements, high security for bank branches, lack of Digital Financial Service (DFS) and distribution channels, collateral requirements, acceptance of discriminatory laws, and lack of explicit consumer protection regulations which also factor in delaying the development and growth of inclusive financial services and MM. Moreover, in most cases, innovations outpaced regulations. There was a challenge on how regulations should meet new innovative needs. See Chapters 3 and 5.

2.4.1.2 Meso Level

TNCFI (2014) mentions three issues at the meso level as the barriers to FI. These are: information asymmetry for FSPs, financial incapability of customers, and lack of appropriate market infrastructure. Firstly, information asymmetry is an issue as it challenges the design and implementation of inclusive financial products and services. It also challenges efforts to manage risks, especially when dealing with low-income people, who are regarded as risky by the FSPs. Without information and credit history, it was hard for the FSPs to determine who was a more or less risky client (also see: Fan and Zhang, 2017; Wagura and Shavulimo, 2017; Dobbie and Skiba, 2013; Hörne, 2008; Izquierdo and Izquierdo, 2017; Gerhard, 2012). Secondly, there is the issue of financial illiteracy, which affects a customer's access and usage of formal financial services. Financial illiteracy encourages predatory lending behavior from some FSPs (TNCFI, 2016; Braunstein and Welch, 2002). Thirdly, lack of proper infrastructure to deliver formal financial services to poor and low-income people affects the delivery of financial services in remote areas (Ravi, 2019: 6,8; Allen et al., 2012). The traditional bricks-and-mortar branches that the banks used to reach remote and rural populations did not do much for FI. Distance from these branches was an issue. Digital financial services and MM were therefore developed to resolve these issues, as demonstrated in Chapter 5. Other pieces of literature see the supply-side barriers to FI at this level (AFI, 2016a), including the risk-aversion of banks and inappropriate delivery systems.

2.4.1.3 Micro Level

TNFCI (2014) also mentions the unmet demand or the supply-side barriers, and the lack of suitable products to address the needs of customers as key issues at the micro-level. Firstly, the unmet demand is caused by either lack of appropriate products and services or lack of access to formal financial services for the poor and financially-unreached people. Poor infrastructure could also be an issue impacting lack of access as inappropriate infrastructure does not handle the delivery of formal financial services well. There was a need for the FSPs to develop and launch products and services that encouraged people from all backgrounds to access formal financial services.

Except for TNCFI (2014), other pieces of literature do not group these barriers into three levels, namely, macro, meso and micro but provide explanations by citing the factors causing these barriers, namely: demand-side, supply-side, societal, legal and regulatory factors (AFI, 2016a).

2.4.2 The Importance of FI

FI is said to be very important for economic growth (Demirguc-Kunt and Maksimovic, 1998; Rajan and Zingales, 1988; Beck et al., 2000; Levine, 2005). Over the last decade, FI, has made its way into the centre stage of development policy (Cull et al., 2014; AFI, 2013a), and as part of the inclusive neoliberal agenda (also see: Kalpana, 2015; Gabor and Brooks, 2017). Policymakers tend to believe that a good financial sector is one that supports and encourages FI. This is because well-functioning financial systems offer key services such as: savings, credits, payment, and risk management products to people with a range of needs. These services can easily be made available to all if countries promote digital technologies such as MM.

According to Demirguc-Kunt et al. (2013), inclusive financial systems provide access to financial services at low costs and that their use should also benefit the poor and other disadvantaged groups. In other words, Claessens (2005) and Rojas-Suarez (2010) claim that a sound financial system is one that is also inclusive. On the contrary, FE occurs when financial services are expensive, unavailable, or when the poor cannot afford them.

According to the GPFI (2014:3), more than 2 billion adults, about half the total adult population in the world, are financially excluded. According to Demirguc-Kunt et al. (2015), about 2.5 billion people are financially excluded. As it regards the financially included, about 89% of adults living in high-income countries report having an account at a formal financial institution. Only about 41% of adults living in developing countries report having an account at a formal financial institution. “Overall, 23% of adults in Africa have an account at a formal financial institution” (Triki and Faye, 2013: 44).

But why is FI important? There are several reasons to explain why the world should pay special attention to FI. Firstly, as mentioned earlier, FI is still essential for economic growth (Demirguc-Kunt and Maksimovic, 1998; Rajan and Zingales, 1988; Beck et al., 2000; Levine, 2005) and it is a concern for policymakers (Melnik and Shy, 2015:190). Therefore, FE contributes to slower economic growth and persistent income inequality. In other words, and according to Aduda and Kalunda (2012: 101), “financial inclusion is a step toward inclusive development”. Without FI, some groups in the population will be disadvantaged. For instance, according to Devlin (2005), women and the poor are likely to be the most disadvantaged groups.

Secondly, as it regards to income inequality, the current trend is the one that favours income equality between men and women. While 46% of men have a formal account, only 37% of women do in developing countries (Demirguc-Kunt at al., 2015). This means that there is a persistent gender gap of 6% to 9% across income groups within developing economies. In this regard, FI is only one of the tools, if wisely used, will help countries to close the income gap between men and women. This again is one of the reasons why FI is important and why countries should research ways to help them build inclusive financial systems. Moreover, broad access to financial services would not only reduce the financial gap between men and women, but it would also benefit the poor. The availability of the financial services and capital would not only allow the poor to have access to business opportunities, but would also allow them to invest in them. As a result, their investments would generate positive welfare effects.

Thirdly, the economy grows when people save to increase physical capital, and when people spend to accelerate consumption and investment. According to Collins et al. (2009), FI in this regard, has many direct benefits to poor households that are using loans or savings to accelerate consumption, absorb shock or invest in durable goods, school fees, and home investments. Beck et al. (2009) argue that the poor could also manage risks by accessing other financial products such as insurance, and that FI could result in women's economic empowerment. Moreover, they argue that economies with more advanced financial intermediation tend to grow faster and reduce income inequality. Aduda and Kalunda (2012) echo these views when they claim that FI is a necessary condition for financial deepening, which helps to address the underlying issue of growth with equity. Therefore, FI is mainly concerned with poverty eradication.

Fourthly, by studying FI, we also understand what FE is. And by knowing what FE is and how we can build inclusive financial systems to reverse financial exclusiveness, we will be able as researchers to help states make effective FI policies. If there is the discourse of inclusive neoliberalism, then FI should support the inclusive neoliberal agenda as detailed in chapter 1. Kempson and Whyley (1999) list a range of six barriers to FI that enhance FE as discussed in Section 2.2.1. If countries remove these barriers, they will be in a better position to build inclusive financial systems for all. Research that helps to study these barriers proposes different ways to enhance FI, helps countries to design policies that empower the poor and the disadvantaged.

2.4.3 Systematic Indicators

According to the OECD (2008) and the World Bank (2012b), systematic indicators of the use of different financial services had lacked for most economies. New indicators continue to emerge. These indicators can be used to measure the degree of success of FI. According to Cnaan et al. (2012:187), there are two approaches to measuring FI or FE. Firstly, to calculate bank accounts (or bank branches) per population (in terms of adults or households). The issue with this approach is that it ignores those who own multiple accounts. It also does not take into account accessibility to other financial services. Furthermore, it does not take into account the issues of FE.

The second approach is through surveying those who live in a specific area. The survey takes into account people's experiences and perceptions. Researchers use this approach to examine accessibility to a wide range of financial services, including the depth of FI. This research uses the Global Findex, FinScope Surveys, InterMedia surveys, etc., as demonstrated in Chapter 4. The issue with this approach is that it is costly. Allen et al. (2014: 632) suggest measuring FI by taking into account the following: Firstly, the percentage of adults that have an account at a formal institution; Secondly, the percentage of adults that have or had a loan at a formal financial institution. According to Allen et al. (2014: 632), access to loans remains a significant obstacle to FI. Thirdly, the percentage of adults using mobile telephones to send money, receive payment, and to pay bills can be used to measure FI.

2.5 Exclusion Debates, FE and Neoliberalism

Five significant theories explain poverty and exclusion in the neoliberal era (Davis and Sanchez-Martinez, 2015). According to Davis and Sanchez-Martinez (2015), the classical perspective claims that individuals and laissez-faire policies cause poverty and exclusion (also see Section 2.5.1). The neoclassical perspective provides explanations for poverty and exclusion that are beyond an individual's control, such as market failures (Davis and Sanchez-Martinez, 2015). Also see Section 2.5.2. Furthermore, the Keynesian and neoliberal schools view poverty and exclusion as voluntary and as a result of unemployment (Davis and Sanchez-Martinez, 2015). The Marxist school regards poverty and exclusion as caused by class and group discrimination. In addition, social inclusion and social capital theories explain economic and social precursors of exclusion and poverty (Davis and Sanchez-Martinez, 2015). The debates rarely link FE with MM services. Hence, my research is imperative as it seeks to engage classical and neoclassical perspectives with MM. A medley of theories explain exclusion; this dissertation has chosen the classical and neoclassical views. The two views were selected for the reasons explained below.

Firstly, the neoclassical perspective considers FE as the result of consumer choice and rationality or mistaken government policy (Tamanisha, 2018). As it regards the consumers, they may opt out of mainstream markets because the benefits are lower than the economic costs. Hence, some would revert to informal and fringe financial services. As far as the government is concerned, the motive for exclusion in accordance with this perspective is that some government policies create market failures which exclude specific segments of society. The same perspective rejects instance of discrimination or other instances which may adversely impact on consumer choices. Thus, the perspective explains issues of FE that can be linked to neoliberal issues.

Secondly, the classicists agree that human beings are rational individuals, just as the neoclassicists assert. However, they differ with the neoclassicists as they believe that human behaviour faces important limitations to the neoclassical perspectives of perfect rationality. By using the human rationality assumption, these theorists uncover the consumer side of the FE equation (also see: Tamanisha, 2018). According to Buckland (2013:73-73), as quoted in Tamanisha (2018): "the behavioural patterns of the poor may be neither perfectly calculating nor especially deviant … (because) in poverty the margins of error are narrow". This view "relaxes the notion of rationality as presented by the economic theorists" (Tamanisha, 2018). I expand on further the classical perspective below.

2.5.1 The Classical Perspective

Classical perspectives explain FE from the angle of value and distribution. For the value and distribution discussion, see Robinson (1962). The value of financial services depends on the costs of accessing financial services as well as the costs of delivering those services. Beyond certain charges, some people cannot access financial services. Hence, they become financially excluded. The high costs of attaining financial services are viewed adversely as a source of economic inefficiency as they generate incentives that exclude the poor individuals from the financial systems. The classical view justifies state intervention whenever poor people need to be financially included. Hence, later in Chapter 3, the role of classical theories in supporting re-regulation of financial and MM services is explained.

There are tensions between classical values and technology (Hurwitz and Manne, 2018). Likewise, MM is technology. It is understood that classical perspectives have aided the spread of technology. This complementarity is due to the classical values, which embrace liberty-enhancing private ordering. It is also argued that technological advancement supports both liberty-enhancing and private-ordering activities (Hurwitz and Manne, 2018). Technology and innovations, therefore, facilitate private transactions to support individual liberty. Without technology, some people cannot breakdown the cultural barriers to FE.

Furthermore, technological advancements create tensions with classical values when they embrace classical values as it has been explained in Chapter 3. Also, see Hurwitz and Manne (2018). While technology can enhance liberty, it may undermine legal rules and institutions that create efficient and just private ordering of interactions in a liberal society. This explains the re-regulation of technology and innovations supported by the neoclassical values as it has been detailed in Chapter 3. At times, technology and innovations, even liberty-enhancing technology can exclude a segment of the population as well as the private ordering founded upon dysfunctional institutions. To resolve exclusion issue, classical values create a system through which transactions benefit those involved in those transactions. As Chapter 3 illustrates, classical values facilitate Pareto efficiency while neoclassical values facilitate the attainment of Kaldor-Hicks efficiency (Dobbs, 1981; Iancu and Trichakis, 2014; DeMartino, 2015; Stringham, 2001). For a classicist, transactions should benefit all parties; if one party benefits more than the other party, or excludes the other party, the classicists address these issues rather than using Kaldor-Hicks efficiency which violates one’s utility causing exclusion.

According to the classicists, technology is the means we use to do things, increasing the benefits, and lowering the costs (Hurwitz and Manne, 2018). Technology, therefore, is a crucial input into liberty; it defines the boundary of an individual and expands the scope of those boundaries as it enhances liberty. Hence, the classicists are concerned with protecting the liberty of the individual as well as institutional ability to support private ordering. Thus, exclusion in any forms is what the classicists oppose. What lacks in the classical literature is how the classical views link MM, FE, and FI to neoliberalism. Hence, I intend to explain how the classicists’ views can be used to explain FE, FI, and MM, as illustrated in Chapters 3, 4, 5, 6, and 7.

2.5.2 The Neoclassical Perspective

The neoclassical perspective asserts that human beings make rational decisions to maximise profit and utility (Cook, 2016; Harvey, 2010; Ross, 2005: 66-57). Banarjee and Duflo (2012) question this assertion as they provide examples to justify that human beings sometimes make decisions contrary to their rationality. They argue that the poor have fewer choices and less resources to trade-off for the best decisions. They also claim that the poor are also financially illiterate and lack appropriate information for them to make rational decisions. Information asymmetry reduces their chances of making economic and financially-rational decisions. Finally, they also assert that there are behavioural constraints such as bias against the poor, which make them disengage with certain choices. Such behaviour works against them. All these factors are what constituted market failures in the form of information asymmetries and income inequality between different segments of society. All this plays a significant role in excluding the poor from mainstream financial systems.

Neoclassicists differ from the classicists. They believe that firms should maximise profit and that individuals should also maximise their utility through rationality (also see: Zafirovski, 2008). They argue that free markets optimise resources, and therefore, they reject government intervention. They also say that with the right policies, markets work and that the best governments create conducive and stable macroeconomic environments. Unfortunately, market failures also occur in the process, and some forms of exclusion also emerge with market failures.

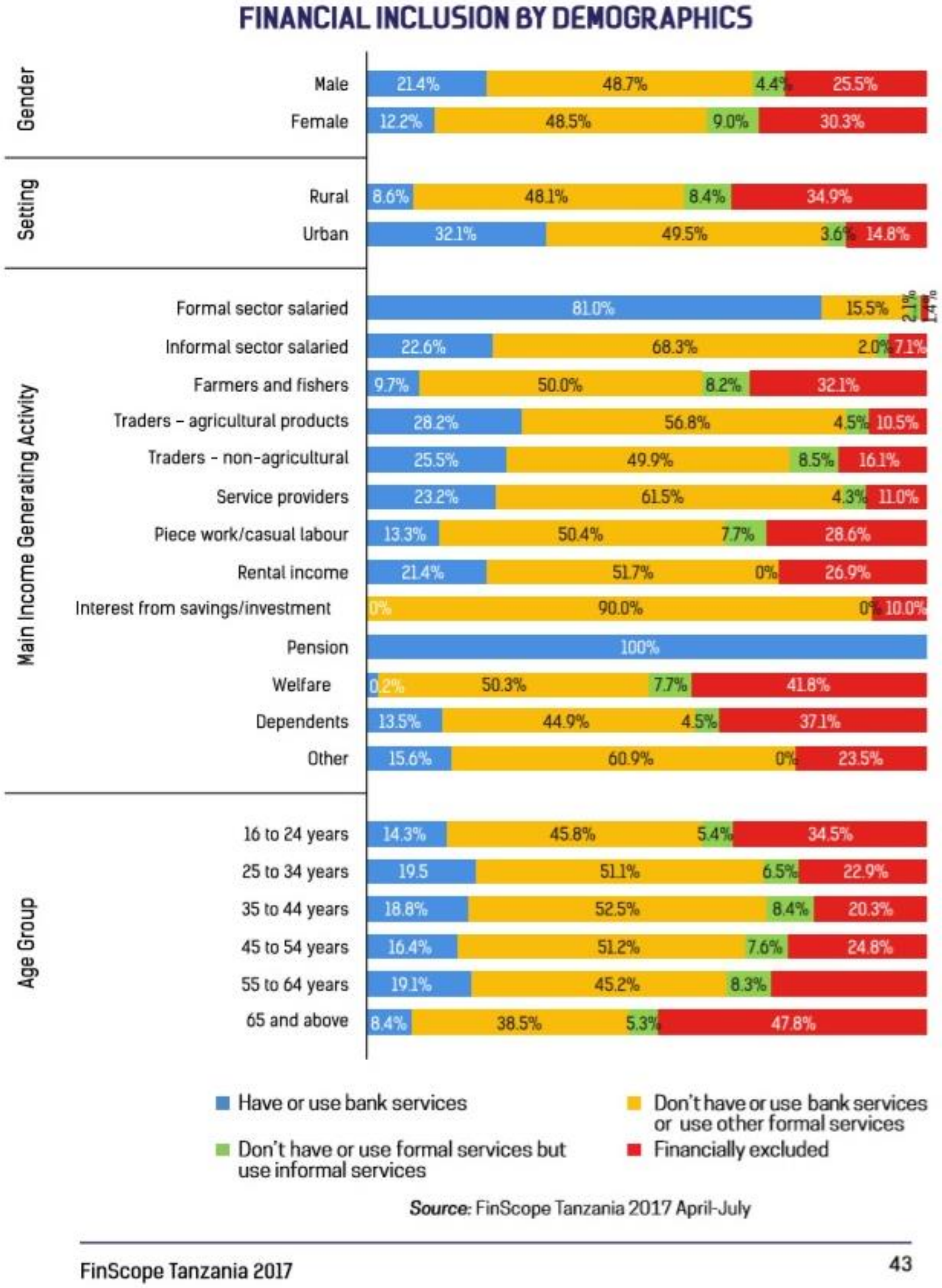
Furthermore, the neoclassical theory supports innovation and technology and places the significance of the role of demand in triggering innovative activity at the centre of the debate. It discusses the timing and location of innovation (also see: Schmookler, 1962; and Ruttan, 1997). An alternative theory stresses resulting price factors that support innovation, and which economise exorbitant prices (Hicks, 1939), and by doing so, the total costs are reduced (Salter, 1960; Ahmed, 1966; Binswanger and Ruttan, 1978). Neoclassical theory of technology emphasises research and development to facilitate technological change, as long as that technological change increases economic growth and promotes profit-maximisation. Neoclassical perspective does not only support technology and innovation, but it also supports the models of diffusing these technologies. Some of these models cause many forms of exclusion. For instance, innovations such as microfinance services ended up being extremely stressful and caused some suicides in countries such as India (Ashta et al., 2011). Nevertheless, neoclassical perspectives tend to support models of diffusing technology that are fairly easy, smooth, and more or less costless. Neoclassical economic aspects disturb or rearrange the very institutions that were created by Keynesian or classical political economies which causes exclusion. Hence, the tension between classical and neoclassical perspectives is real. Thus, this dissertation uses them as complementary theories, as it needs both theories to support the roll-back (deregulatory/liberalisation) and roll-out (re-regulatory) neoliberalisation processes that helped the growth of MM. This is my contribution to the literature in this area.

2.6 The Context of Tanzania's FE and FI

2.6.1 Issues of FE and FI in Tanzania

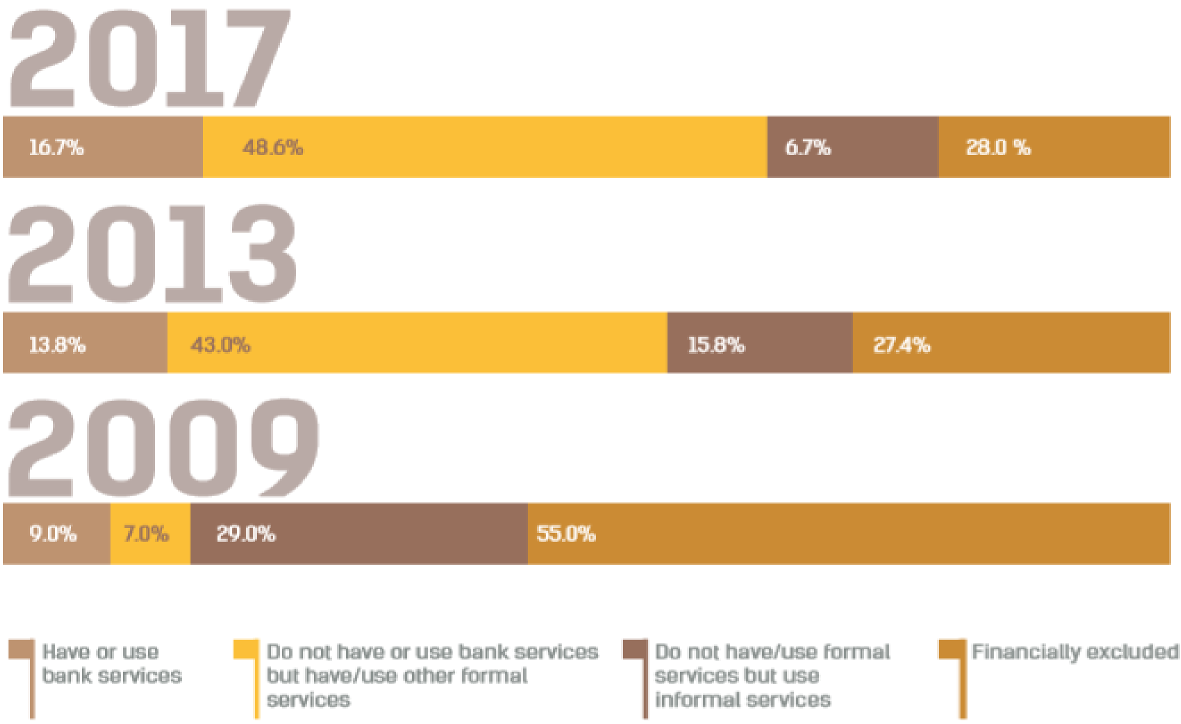
Tanzania has FE issues (Finscope, 2006, FinScope, 2009, FinScope, 2013a, and FinScope, 2018). Neoliberal and neoclassical policies are partly to blame for this type of exclusion. FE rates for Tanzania in 2006 were 54% of the adult population (of the remaining 46% of the adult population: 9% used bank services, 35% used informal financial services and 2% used semi-formal financial services (FinScope, 2006)). The FE rate in 2009 was 56% of the adult population (of the remaining 44% of the adult population, 12.4% used bank services, 4.3% used semi-formal financial services, and 27.3% used informal services) (FinScope, 2009). The FE rate in 2013 was at 26.8% of the adult population (of the remaining 73.2% of the adult population, 13.9% used bank services, 43.5% used non-bank formal services, and 15.8% used informal services only) (FinScope, 2013a). FE rate for 2017 was 28% of the adult population (of the remaining 72% of the adult population, 16.7% used bank services, 48.6% did not use bank services but used other formal financial services, and 6.7% used informal financial services) (FinScope, 2018). Prior to 2006, it was difficult to find FE statistics in Tanzania. The reason was that the FE literature was not well developed, and very few countries conducted surveys before the 1990s to study FE (Prabhakar, 2018:39; Leyshon and Thrift, 1995). For instance, two critical surveys initially identified FE issues in Tanzania: the 2003 World Bank Survey and the 2006 FinScope survey (World Bank, 2003; FinScope, 2006). Also, see Access Strand 2.1.

Access Strand 2.1: FI by Demographics



Given the current post-Washington Consensus neoliberal policies in Tanzania, the following adult populations are more likely to be excluded: women (who raise children and engage in household activities that do not generate enough income); adults living in rural areas (who mostly depend on small farming activities); adults with low levels of education (who cannot easily find high income jobs); youth aged between 16 and 24 (who are either at school or in higher learning institutions); and the older population above 65 years of age (who are retired and have limited sources of income). The FI by demographics strand above shows this. Access Strand 2.2 depicts the FI picture from 2009.

Access Strand 2.2: Tanzania's FI Picture



Source: FinScope (2018).

In 2008, by using the financial sector and monitoring policy, the issues of FI caught the attention of policymakers in Tanzania. FI emerged because of: higher levels of financially-excluded people as demonstrated in Access Strand 2.2, high-interest rates for banks and loans, poor infrastructure in rural areas, as well as, financial institutions concentration in urban areas that left rural areas without, or with very few, financial institutions. For the first time, the FinScope Survey was conducted in Tanzania in 2006 and revealed that only about 9% of Tanzania's entire adult population were financially included (FinScope, 2006). The government developed some interest in changing the higher levels of FE. FI was not a government policy, but there was a need to respond to these higher levels of FE.

What were the barriers to FI? Firstly, different financial sector stakeholders had different financial interests, as they implemented neoclassical profit maximisation and neoliberal policies and strategies. These policies were the key objective of their service realities. The policies were exclusive. There was, therefore, the need for government intervention to help make inclusive financial policies and strategies. Likewise, barriers to FI developed because of bad financial sector policies as well as because of the supply-side and demand-side barriers. For instance, ATMs did not have enough money; and strategies such as the microfinance policy were outdated. Moreover, there were issues with banking sector supervision, which were rectified later by the 2006 Banking and Financial Institutions Act (BFIA) (also see: URT, 2006b). Likewise, the high cost of obtaining loans, as well as the dependence on seasonal farming for low-income farmers, who made most of the population, was an issue.

Tanzania did not have a FI policy. It still does not have such a policy. The main reason for this is that Tanzania regards FI as an outcome and not as an end in itself. Tanzania, therefore, uses different strategies and policies to arrive at that outcome. As the government intends to increase levels of FI in Tanzania, policymakers perceive this process as meeting a target and that they need to use various policy instruments, strategies, and leviers to reach the FI target they have set for the country. They claim that just as it is for poverty, they do not have a poverty policy and that they allow different economic policies cutting across sectors to help them eradicate poverty, and achieve their poverty reduction goals:

> "What is the meaning of the financial inclusion policy? If the policy was to help reach this outcome by doing a, b, c, d, this is just setting a target. And you use various policy levers to achieve your target. It is like poverty. We do not have a poverty policy. No! It is an outcome. You use various strategies, investments, policies, in order to get there … You still have to set targets, set a plan of action because you measure an outcome. The issue is, is financial inclusion an outcome or an action? I take it to be an outcome" (Former Governor).

These are the reasons why Tanzania does not have a FI policy and opted instead to develop the NFIF to help increase the rate of FI (TNFCI, 2014). Increasingly, neoliberal strategies of governance support 'Public-Private Partnership Initiatives' (PPPIs) in the creation of national policies and strategies (Fiszbein and Lowden, 1999; Miraftab, 2004; USAID, 2002; DFID, 1999). National policies and strategies created through the NFIF involved a 'consultative process' with the participation of both the public and the private sector (TNCFI, 2014; TNCFI, 2016; TNCFI, 2018). A National FI Policy (NFIP) would be a government's policy imposed on the private sector. Hence, strategies and policies through the NFIF, result in commitments and agreements from both the state and the private sector. This makes national FI policies and strategies more effective (AFI, 2011). Within the policy realm, barriers included the outdated microfinance policy in 2008, lack of a legal and regulatory framework to help guide the national payment systems, an issue which resolved only in 2015 when the NPSA and regulations were enacted (see Chapters 5, 6 and 7). Tanzania also lacked cyber and electronic transaction laws and regulations. These issues were also resolved in 2015 (see Chapters 5, 6 and 7). The NFIF became operational in 2014 (TNCFI, 2014). The CLF in telecommunications came into play in 2005 (Mfungahema, 2014; Mwalongo and Hussein, n.d.). Interoperability and agency banking began to function between 2010 and 2017 (see: Parkes, 2014). Before the NFIF became operational, feasibility studies were conducted (FinScope, 2006; FinScope 2013a; World Bank, 2003). The studies found that: (i) FI/FE was an issue; (ii) 'uzembe'/'nonchalance' (irresponsible attitude/behaviour of some public and private institutions) was sometimes an issue; (iii) it required government intervention; (iv) it required a national framework as a solution (which could provide directions in terms of how FI agenda should move forward). Once the feasibility studies were conducted, it was established that there was a need for: (i) policymaking in different sectors; (ii) calling every stakeholder and engaging them in discussions for policies, strategies, plans, guidelines, etc. The emphasis was also on issues concerning the grassroots, regional efforts, and economic blocks. The Tanzanians thought that the NFIF was more appropriate to advance the FI agenda in the country.

The NFIF consists of: stakeholder mapping both internally and externally. 'Internally' means tasks and duties within the Ministry of Finance (MoF), and 'externally" means tasks and responsibilities of other ministries and government institutions, development donors, special groups, regulators, and the private sector (TNCFI, 2014, TNCFI, 2018). The NFIF is not a policy. However, it consists of different policies and strategies from various policymakers and stakeholders. Hence, it does not have enforceability. It is more of a guide. The policy process is a long one. It has to come from the Ministry. Then, it must go to the cabinet of ministers, which represents the entire government and where the President of the Republic chairs the meeting. If it is approved, it goes to the parliament to be legally authorised. From there, and if approved, it is legally binding and the relevant minister signs it. The minister must advertise it in a government gazette. Once approved in the gazette, it becomes a policy with legal enforcement. So far, Tanzania has had two NFIFs, which did not go through the approval processes to become policies. For more on NFIF and MM see Chapters 5 and 8.

Currently, about 28% of the adult population is financially excluded, according to FinScope (2018). In some regions, the inclusion rates vary from 3% to 7%. What FinScope (2018) fails to say is that if government employees were removed, the inclusion rates would probably go down to 10% - according to a Respondent from the MoF. Credit and savings are still low. The challenge remains regarding how to increase FI rates using technologies. MM inclusion rates have so far been high. The provision of online credit services has also started (Izaguirre et al., 2018; Kaffenberger et al., 2018). The existing literature in this section does not mention the tension that existed between the MNOs and banks. The banks questioned the involvement of the MNOs. They wondered why the MNOs could use digital financial services to help eradicate FE, while the banks, for instance, could do the same. South Africa is an excellent example of banks' resistance to MM at its initial stage as the banks opposed the MNOs entry to offer financial services (also see: King and Graham, 2015; Robb, 2015; Mbele, 2016). In Tanzania, the MNOs did not decide on providing financial services on their own. Digital platforms also influenced their decisions, as the platforms made it easier for the MNOs to offer financial services. These platforms act as ledger books which simplify the process of recording financial transactions. Before MM services, the agents sold 'vouchers'. Voucher trading enhanced money transfers.

The NFIF was one of the platforms used to thwart tensions between the MNOs and the banks. The banks were made to understand that the MNOs do not offer banking services. They created electronic money backed up with cash from the trust accounts. Electronic money services that the MNOs provided were no longer in terms of vouchers, but in terms of e-money, for instance, e-wallet. Hence, one of the critical outcomes of the discussions within the NFIF was the establishment of the NPSA in 2015. The NPSA allowed the MNOs to use the NPS as well as to register as financial institutions and become directly regulated by the BOT for their financial tasks while the TCRA regulated the communication aspects of MM. Since then, MM has been key to increasing FI. From the beginning, the regulatory payment system was an issue. With no robust legal and regulatory framework in place, the roles of the regulators were confusing. There were not clear demarcations to show where their powers and responsibilities ended.

Although there was goodwill from the government to include poor and financially-excluded people, some challenges existed, including: (i) insufficient budget in the MoF; (ii) financial illiteracy in the majority of low-income and financially-excluded people. There were also demand-side issues at the grassroots level regarding collaterals, land ownership, and preference to use the informal financial service due to inappropriate financial products and services for financially-excluded and underserved people.

2.6.2 The Neoliberal Exclusion Era

Due to the financial system failure in the 1980s, Tanzania implemented neoliberal reforms in the late 1980s and mid-1990s. The ujamaa political economy led to an economic crisis of the 1980s. The government responded by establishing the following programmes: (i) The National

Economic Survival Programme in 1981/1982; (ii) The Structural Adjustment Programme 1982-1985; The Economic Recovery Programme between 1986-1989 with a focus on stabilisation and liberalisation of the financial sector; (iii) adjustment with a human face 1989-1992 (World Bank, 1991: i-iv). Between the mid-1980s and early 1990s, there were demands for development policies that fitted well with poverty reduction issues. This led to the creation of the poverty reduction strategy between 1996 and 1997 as well as the designation of the Poverty Reduction Strategy Paper (PRSP) around 1999 and 2000 (IMF, 2000; Wangwe, 2009a; Wangwe, 2009b). The PRSP was used as a comprehensive development framework that oversaw the implementation of poverty reduction policies. It was the PRSP that called for the ownership of the development project to allow participation of different development stakeholders in economic and development reforms (Robb, 2000). It also highlighted the social dimensions of poverty. As neoliberal policies were implemented, the PRSP tried to put back the development agenda at a time when the neoliberal agenda emphasised economic "*austerity measures*" (also see: Elkins et al., 2015) and further increased rates of FE due to redundancy of employees, deprivation of land in favour of large scale investors, and the provision of financial services to less risky customers (also see: Bryceson et al., 2000; Sassen, 2014; Navarro, 1998; Sassen, 2010).

As for the financial sector, two crucial surveys paved the way to Tanzania's financial reforms. The first was the survey conducted by the Nyirabu Commission in 1988 which identified the following issues: (i) lack of competitive banking sector; (ii) lack of freedom of entry for both domestic and foreign institutions; (iii) lack of private financial institutions and a conducive environment for them to operate freely; (iv) issue of non-performing loans and bad governance (Ndalichako, 2014:47-48, World Bank 1995:2; African Development Fund, 2000:1; Nyagetera and Tarimo, 1997:73). The second survey was a World Bank financial sector assessment for Tanzania in 2003 which helped implement financial sector reforms and opened discussions on Tanzania's payment system (World Bank, 2003). The payment system later became key to MM development; see Chapter 8. Lots of literature do not mention this. My contribution to this field has been to identify this issue and to include it in my Ph.D. analysis; see Chapters 5 and 8. Moreover, the two above-mentioned documents did not emphasise access to financial services. I identified this issue as a research gap. The problems of distance, scale, affordability, and risk management for financially-excluded people persisted and were later identified by FinScope surveys (FinScope, 2006; FinScope 2009). The two documents did not resolve FE issues. The

FinScope survey conducted in 2006 estimated that only 9% of Tanzania's adult population had access to formal financial services.

2.7 The Changing Banking Sector

To better understand the changes in the banking sector, and how the state sought to increase access to financial services, I tried to follow the financial system at least from the British colonial era to the present. During the British colonial period, at least the "big three" banks ('National and Grindlays', 'Standard', and 'Barclays') held about 67% of the deposit assets share in the banking sector. This was a colonial capitalist economy. The financial institutions at that time did not have intentions to build inclusive financial systems or to provide inclusive financial services (Lwiza and Nwanko, 2002; and Caselli, 1975:75). Table 2.1 below represents how the financial system looked three years before independence. There were no native African banks. Cooperatives were an instrument used to reach out to the indigenous African people. Most of the native Africans had access to financial services through the cooperatives.

Table 2.1: Pre-independence Tanganyika's Banking Sector Structure as of 1958

Name	Year of Entry	Type of Bank
National and Grindlays		Foreign Private Commercial Bank
Standard		Foreign Private Commercial Bank
Barclays		Foreign Private Commercial Bank
Nederlandsche Handel-Maaschappii	1951	Foreign Public Bank
Bank of India	1953	Foreign Public Bank
Bank of Baroda	1953	Foreign Public Bank
Habib Bank	1956	Foreign Public Limited Bank
Ottoman Bank	1958	An international joint venture bank owned by the Ottoman government, British interests, and the Banques de Paris et des Pays-Bas of France

Source: Table compiled by the author from (Caselli, 1975:84).

2.7.1 The Banking Sector Overview

By 1961, the year of Tanzania's independence, the peasant economy accounted for over 90% of the national population and 40% of the Gross Domestic Product (GDP) (Ndanshau, 1996). The methods of production were quite mundane, depending on family labour and by using hand hoes. Production was mostly small-scale subsistence farming. Lack of capital in peasant agriculture affected most of Tanzania's population who could not get financial services due to lack of income through agricultural activities. The cooperatives were closer to the grassroots and therefore, better served the challenges affecting rural finance (Ndanshau, 1996).

> "A feature of special interest is credit channelled through cooperative societies for a large number of small farmers in small amounts, a system of dynamic credit … This will enable small farmers to

> purchase fertilisers, insecticides, seeds, and the various small tools necessary for this trade' (Nairne, 1965: 69).

According to Binhammer (1975) and Chant (1967), FI and providing credit to the peasants through cooperative schemes had the following issues: Firstly, the reluctance of the foreign banks to fund the cooperatives due to the risks associated with small-scale farming. Secondly, high-interest rates, among other things, restricted their lending to cooperatives and agricultural estates.

Similarly, the same cooperatives supported Tanzania's socialist economy between 1966 and 1985:

> "In a socialist Tanzania then, our agricultural organisation would be predominantly that of cooperative living and working for the good of all. This means that most of our farming would be done by groups of people who live as a community and work as a community. They would live together in a village, they would farm together, market together, and undertake the provision of local services and small local requirements as a community" (Nyerere, 1968:351).

As the government tried to change the colonial capitalist political economy and the structure of the financial system, it nationalised the foreign-owned banks to help provide development financing for the people of Tanganyika, which later became Tanzania (BOT, 2011; BOT, 2016a, BOT, 2016b). By 1988 the time when the financial sector needed reforms, the Diamond Jubilee Investment Trust was the only private financial institution operating in Tanzania in 1988 (Mbowe, 2010:2). There was a need for denationalisation of the financial institutions through reforms. The government shifted its vision from 'ujamaa' to 'neoliberal' reforms. The neoliberal political economy it adopted sought the liberalisation of the financial sector, just as it did with the telecommunications sector. While Table 2.2 illustrates the pre-reform financial sector in 1988, Table 2.3 depicts the post-reform financial sector structure in 2008 during the advent of MM.

Table 2.2: Pre-reform Financial Sector Structure as of 1988

Type of Financial Institution	Details
Commercial Banks	• The National Bank of Commerce (NBC) • Cooperative and Rural Development Bank (CRDB) • People's Bank of Zanzibar
Development Banks	• Tanzania Development Finance Limited (TDFL) • Tanzania Investment Bank (TIB) • Tanzania Housing Bank (THB)
Hire Purchase Company	KARADHA
Post Office Savings Bank	Tanzania Post Savings Bank (TPSB)
Insurance Companies	• National Insurance Corporation (NIC) • Zanzibar Insurance Corporation (ZIC)
Social Security Funds	• Parastatal Pensions Fund (PPF) • National Pensions Fund (NPF)
Private Financial Intermediary	Diamond Jubilee Investment Trust

Source: (Mbowe, 2010:2).

Table 2.3: Post-reform Financial Sector Structure at the End of 2008

	Institution	Total	Authorisation
1.	Commercial Banks	25	Received money on current subject to withdrawal by check
2.	Regional Unit Banks	5	Licensed to operate as regional units banks' and may receive money on current account subject to withdrawal by cheque
3.	Financial Institutions	3	Authorised to engage in banking business not involving the receipt of money current account subject to withdrawal by cheque
4.	Bureau de Change	157	Entrusted with the task of changing money over the counter.

Source: Bank of Tanzania, Banking Supervision and Directorate as quoted in Mbowe (2010:19).

2.7.2 The Liberalisation and Privatisation of the Financial Sector

Liberalisation helped financial sector development. Literature suggests that financial sector development stimulates economic growth and reduces poverty (Demirguc-Kunt and Levine, 2009; Greenwood and Jovanivic, 1990; Haber, 2007; Durusu-Ciftci et al., 2017). According to Demirguc-Kunt and Levine (2009), financial development reduces poverty and income inequality by broadening access for the poor to financial services. It also reduces risks and raises investment and productivity that generates higher income through the growth of Small and Medium Sized Entreprises (SMEs) by providing them with access to finance. SMEs are labour-intensive. They create more jobs than larger firms, and as a result, they contribute significantly to economic development in developing countries. Moreover, financial development requires comprehensive financial policies and regulatory frameworks that facilitate FI, entry of new financial services, and innovation such as MM as discussed in Chapter 5. According to Beju and Ciupac-Ulici (2012), during the neoliberal financial reforms, financial deregulation consisted of the: liberalisation of interest rates; repeal of credit control; competition from new institutions such as MNOs, which was suitable for FI; abolition of capital controls; removal of barriers on the capital flows; privatisation of state-owned financial institutions; and launching of the capital markets securities (also see Table 2.4).

Table 2.4: Liberalisation and Privatisation of Tanzania's Financial Sector

Reform	Action	Institution/Sector Affected	Time	Aim
Legal and Regulatory Framework	Banking and Financial Institutions (BAFI) Act passed	Financial Sector	1991	Allow for competition in the delivery of financial services
Non –performing loans	Loans and Advances Realization Trust (LART) formed	National Bank of Commerce (NBC) and Cooperatives and Rural Development Bank (CRDB)	1991	Assume and subsequently realize non-performing loans of NBC and CRDB
			1992 and 1993	Bonds issued to NBC and CRDB in place of non-performing loans
Restructuring and Recapitalization	Closed	Tanzania Housing Bank (THB)	1995	Close business due to large losses
	Restructured and privatized	CRDB	1996	Make it business viable
	NBC splint into NBC (1997) and National Microfinance Bank (NMB)	NBC	1997	Improve Efficiency
	Recapitalization	NBC and NMB	1997	Improve Efficiency
External Trade and Payments	Foreign Exchange Act Passed	Foreign Exchange Market	1992	Liberalize exchange rate determination
	IFEM passed	Foreign Exchange Market	1993	To get market-determined exchange rate
Money and Capital Market	T-bill market formed and interest completely liberalized	Money Market	1993	Obtain market-determined interest rates
	Capital Market and Securities Act Passed	Capital Market	1994	Mobilize and allocate savings for short, medium and long-term investments
	Interbank money market	Monet market	1998	
	Dar es Salaam Stock Exchange (DSE)	Capital Market	1998	
Monetary Policy	BOT Act passed	Monetary Authority	1995	Attain primary mission of price stability
Fiscal Policy	Cash budgeting	Fiscal policy	1996	Instil discipline in fiscal operations
Insurance	Insurance Act passed	Insurance Market	1996	Liberalize the insurance Market

Source: Mbowe (2010:5)

Moreover, the liberalisation of financial services became an element of many development strategies, as it fostered not only innovation such as MM but also technology transfer from mobile companies to allow mobile banking. Hence, the liberalisation process during the neoliberal era enhanced transparency and predictability of financial services, which was an important aspect of FI.

By 2008 and as shown in Table 2.5, there were over 30 banks in Tanzania. Even then access to FI for the poor remained low (see Access Strand 2.8).

Access Strand 2.3: FI in 2009

The structure of the banking sector between 2012 and 2016 is illustrated in Table 2.5. By 2016, the number of banks had doubled compared to 2008.

Table 2.5: Distribution of Banking Institutions' Branch Network

Categories of Banking Institution	2012	2013	2014	2015	2016
Commercial Banks	32	34	34	36	38
Development Financial Institutions	-	-	-	2	2
Microfinance Banks	1	2	3	3	4
Community Banks	12	12	12	12	12
Financial Institutions[1]	4	4	4	3	3
Total	**49**	**52**	**53**	**56**	**59**

Source: BOT (2016c:1).

I have briefly looked at the financial system during the British colonial era and soon after independence, then from 1966 to 1988, then from 1988 to 2008, and beyond 2008. I realise that the financial system serves the basic functionality of the system with the government at any point in time. The government is never separated from it. It may reduce its interventions, but it is still interested in maintaining financial stability in the country. Hence, before 1966, the whole commercial system was externally oriented (shaped by a changing colonial capitalist political system), and it meant in essence, one paid a lot more attention to working with the major marketing agencies, and companies that collected primary commodities for export. There were also a few major supplying entities of imports for use in rural areas. I found that even if that system had MM, it would have worked better than without MM. There are reasons for this, and what MM has come to solve is the moderation of the four factors of FE, namely: distance, scale, affordability, and risk management (Chapter 6). MM is a technical solution to FE issues in some cases. I conceptualise MM as a means to an end. It is not by itself regarded as an end. It is a platform. MM always serves the country's economic system.

> “It is also true that when the government nationalised the banking sector in 1966, it was a lot more about an issue of who owns the system. The nationalisation decision did not focus on how the state gets services to where they were needed. Otherwise, the government could have invested more in microfinance institutions. However, the cooperatives were used as instruments to help reach the rural and urban populations, should they require financial services. Of course, the cooperatives built their own ranks in there, and whoever was in charge thereof those ranks virtually bankrupted the cooperatives as a system” (Former Governor).

Hence, the cooperative was an opportunity the government took to try to provide financing to farmers and other financially-excluded people. URT (1967); Binhammer (1975); Chant (1967); Westergaard (1973); Ndanshau (1996:78,82,84) would agree with these findings. I agree with their arguments that the state took over ownership of the big changing banks, so that they could align to this new operational framework, which in essence was built around cooperatives and villages. However, I also argue that the fundamental constraints of distance, affordability, scale, and risk remained (see Section 2.9 for further clarification). This was an issue that the changing political economy of the banking sector never resolved prior to the arrival of MM. This issue continued even in a more liberalised state under neoliberal and neoclassical policies.

2.8 The Global Emergence of the FI Agenda

As mentioned earlier, the neoliberal political economy created financial inequalities and the need for FI (Stiglitz, 2002; Duménil and Lévy, 2004; Duménil and Lévy, 2011). This section demonstrates that FI became a global agenda and what could be part of the inclusive neoliberal agenda. The agenda, therefore, involves global politics with the G-8 and G-20 countries also supporting it (Garrett, 2010). The emerging political processes and inclusive financial policies, as well as the relationship between supranational and national institutions help in the setting of FI policies and agendas (AFI, 2015:2; GPFI, 2011a:2-4; de Sousa, 2015:1). The governance of the FI agenda between global actors and state, governments and citizens, and state and non-state actors created policies beyond the traditional boundaries of the state (World Bank, 2013). Neoliberalism tends to overcome traditional barriers of the state (Jonathan et al., 2016). Moreover, higher levels of FE influenced the neoliberal FI agenda.

With 2.5 billion financially-excluded people (Demirguc-Kunt et al., 2015:13; Mehrotra and Yetman, 2015:84-85), the issue received global attention for the following reasons: (i) neoliberal policies had excluded the majority of the poor from accessing formal financial services, as a result, there was a need to make neoliberal policies more inclusive; (ii) policymakers thought the FI issue was a key development objective; (iii) the global financial crisis excluded more people from gaining access to formal financial services; (iv) there was a need for responsible delivery of formal financial services; (v) developing countries such as Tanzania and Kenya sought innovative ways of increasing FI, and MM technology emerged (see: Duménil and Lévy, 2011; Craig and Porter, 2007; Porter and Craig, 2004; Ostry et al., 2016; Chiba, 2009). In 2008, as well as, in 2009, FI became a world priority (Prochaska, 2014). It became apparent that the neoliberal agenda and its political economy excluded more people by creating a big gap between the 'haves' and the 'have-nots.' Diagrams 2.6 and 2.7 show the financial characteristics of financially-excluded and financially-included people. See further explanations in Section 2.2.

Diagram 2.6: What is a Financially-Excluded Person Lacking?

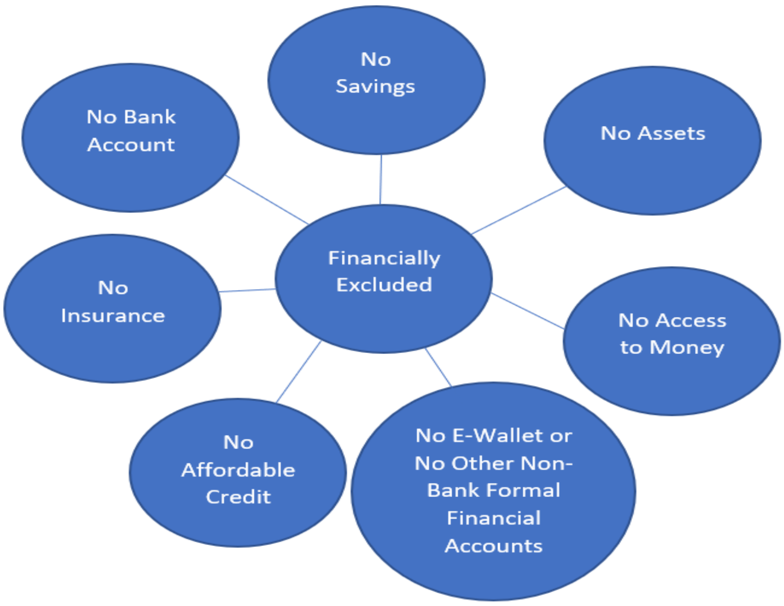
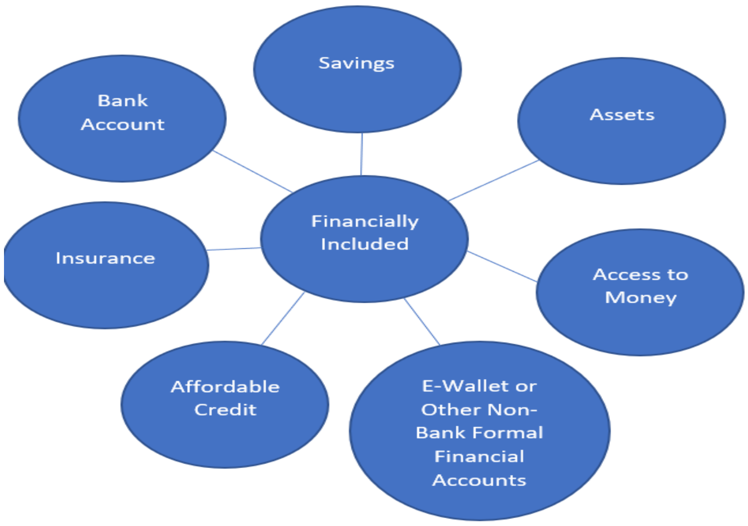


Diagram 2.7: What Does a Financially-Included Person Have?



As demonstrated in Diagrams 2.6 and 2.7, there are consequences for a financially-excluded or financially-included person. What the two diagrams illustrate is that FI refers to a situation where financial services are available to all those needing them. Given the fact that more people in 2008 resembled the person described in Diagram 2.6, the 2009 G-20 Summit in Pittsburgh declared FI as their agenda and committed to supporting FI. This was the third G-20 meeting that discussed financial markets and the world economy. The two other meetings took place in 2008, namely: (i) the G-20 ministerial level summit that welcomed financial ministers and central bank governors; (ii) the G-20 Heads of Government Summit. While the G-20 Ministerial Level Summit in San Paolo prepared the agenda for the G20 Heads of Government Summit that took place in November in Washington DC, the G-20 Heads of Government Summit discussed financial markets, the world markets, and the world economy. The summit succeeded in terms of helping the G-20 leaders reach an agreement on how to cooperate in key areas to strengthen economic growth. This was in light of the 2008 financial crisis, and the G-20 Heads of Government's agreement laid a foundation for reforms to avoid the same crises in the future. The commitment to FI did not occur during this summit (see: AFI, 2015:1-2; GPFI, 2011a:10; Timmermann and Gmehling, 2017; Timmermann, 2017; Culpeper, 2012; GPFI, n.d.).

It was during the G-20 Heads of Government Summit in 2009 in Pittsburgh that the G-20 Heads of Government committed themselves to improving access to financial services for the poor. As mentioned earlier, the G-20 Pittsburgh Summit was the third meeting of the G-20 discussions on financial markets and the world economy. According to GPFI (n.d.:2), the G-20 commitment to FI included the launching of the G-20 FI Experts Group (FIEG) in an attempt to improve models of financing small and medium-sized enterprises as well as to identify lessons learned on innovative approaches to providing financial services. The FIEG would also promote regulatory and policy approaches and would elaborate standards on financial access, financial literacy, and consumer protection issues (see: AFI, 2015:1-2; GPFI, 2011a:10; Timmermann and Gmehling, 2017; Timmermann, 2017; Culpeper, 2012; GPFI, n.d.).

The G-20 Pittsburgh Summit's commitments were reinforced when the Heads of Government met again in Toronto in 2010 between 26th and 28th June. They discussed the global financial system and the world economy. The summit's agenda included: (i) the evaluation of financial reform progress; (ii) how to develop sustainable stimulus measures; (iii) debating global banking; (iv) promoting open markets. According to GPFI (n.d.:2), the G-20 Toronto Summit reiterated the G-20 Heads of Government's commitment to improve access to financial services for the poor and called on the private sector to put forward its best proposal on how they can work with public entities to enhance the goals set for FI. The G-20 Heads of Government also endorsed a set of "principles for innovative financial inclusion" which "formed the basis of a concrete and pragmatic action plan for improving access to financial services amongst the poor" (Rosenberg, 2010). Later that year, they also created the Global Partnership for Financial Inclusion (GPFI) to implement their approved plan of action. To achieve the action plan, the GPFI works with other seven partners such as the CGAP, the Alliance for Financial Inclusion (AFI), the Better than Cash Alliance, the International Finance Corporation (IFC), the International Fund for Agricultural Development (IFAD), the Organisation for Economic Cooperation and Development (OECD), and the World Bank (see: AFI, 2015:1-2; GPFI, 2011a:10; Timmermann and Gmehling, 2017; Timmermann, 2017; Culpeper, 2012; GPFI, n.d.).

The AFI assisted with the announcement and the adoption of the Maya Declaration principles in 2011. The Maya Declaration is a statement calling for the development of FI policy. The regulatory bodies, mainly the central banks, met at the 'Global Policy Forum' held in Mexico in 2011, and sought to: (i) create the right environment for FI; (ii) implement the correct frameworks; (iii) ensure customer protection measures; (iv) use data to track and inform FI efforts (AFI, 2015). Tanzania was and still is one of the participating members, and more than 100 countries had adopted and implemented the Maya Declaration principles by the end of 2013. Tanzania, for instance, by 2014 had: (i) created the right environment for FI; (ii) created its first national FI framework (NFIF); (iii) ensured the National Fair Competition Commission (FCC) works with other key FI stakeholders to protect financial service customers; (iv) worked with the Financial Sector Deepening Trust (FSDT) to conduct surveys for data collection which helped it to track FI progress. Hence, Tanzania, through the AFI, works with a network of financial regulatory bodies at a global level to align its FI plan of action. Moreover, the World Bank has also been of much help in advancing the FI agenda both at global and national levels.

As demonstrated above, the G-20 initiatives and commitment to FI have received support from all over the world as different countries have collaborated with the G-20 countries to enhance and build inclusive financial systems. Some states have developed their 'national policy actions' towards FI. Likewise, a few countries have designed and executed NFIFs or National Financial Inclusion Strategies (NFISs) which set the stage for the FI vision based on concrete improvements the countries would like to see in the lives of all citizens using financial services

(TNCFI, 2014). These contexts and pieces of literature do not explain thoroughly the neoliberal policies, the growth of MM, and how the two facilitated FI.

2.9 FE Issues and MM

This section responds to FE issues I raised from the literature presented in this chapter. In this section, I seek to justify my conviction that linking MM and FE is relevant. The early effects were again that there was an open economy and that the doors were open to private ownership of banks. The government partly retained some participation, but indeed, the doors were open to the private sector. A whole range of new banks emerged, and some nationalised banks were privatised, by 2006, only 9% of the adult population was financially included in Tanzania (FinScope, 2006). Even when the government changed instruments from the cooperatives to community banks and microfinance, FE remained an issue. According to Beck et al. (2011:97) and Napier (2011), only 1% of the rural population saves with MFIs in rural areas, while 7% of the rural population fits this category. They argued this in 2011. Hence, neither the shift to state ownership and a cooperative system nor the liberalisation stage, succeeded in breaking these constraints. The above-mentioned instruments struggled to moderate the financial constraints caused by distance/access, scale, affordability, and risk management. Some other important factors that cause FE in Tanzania, that are relevant to the discussions of this dissertation are: 'financial literacy' and 'culture'. Moreover, to the best of my knowledge, none of the peer-reviewed literature for Tanzania and FE discusses these issues jointly in relation to MM. Chapter 6 discusses these issues.

2.9.1 Lack of Access to Formal Financial Services

> "The reasons for challenges in access were obvious: "distance", "space" and "scale". No bank or a financial institution could open a branch where only five customers lived" (Former Governor).

According to TNCFI (2014), the level of formal financial access in the rural areas was 8.5% compared to 23% in the urban areas, and the excluded rural population was 60% compared to 45% in urban areas. The most significant constraint to FI or the main factor behind FE was, therefore, access. Banks, or Financial Institutions (FIs), could not provide services if they could not reach the people they wanted to serve. MM came as a new technology that helped reach the various segments of people at low costs. I also argue that access was an issue because the cost of opening a branch in rural areas could never be absorbed by the small number of people that formed single remote villages. The FIs always think in terms of maximising profit, which is a '*neoclassical view*'. With MM, the economies of scale have made it possible to maximise profit by reaching more financially-marginalised people. Chapter 6 explains this. In the Tanzanian context, it meant that if the FSPs only used the traditional system, there was no way they could go beyond where most of the branches now are (in a district, headquarters or small towns upwards). Hence, that was challenge number one. The first NFIF gave more emphasis on access and financial literacy (TNCFI, 2014).

2.9.2 Financial Illiteracy

According to TNCFI (2016:2), Tanzania has low levels of education among adults. Of the adult population, 76% completed primary education, while only 1.3% have a college or university education. 83.8% were capable of reading and writing in Swahili, while only 19.4% were capable of reading and writing in English. Most Tanzanians fall under the primary education bracket, and the majority of whom are financially excluded. Hence, there is a need for financial education to include the majority of the adult population financially. According to TNCFI (2016), financial illiteracy facilitates FE as people do not know the benefits of financial services, and therefore, do not receive formal financial services. Financial education, therefore, will help them to select the services they need and make informed financial decisions. Moreover, most of the adult population lives in rural areas where physical barriers to FI exist.

2.9.3 Physical Barrier or Distance

FinScope and InterMedia surveys conducted between 2006 and 2013 illustrated distance from financial access points as a barrier to FI. Proximity to financial services increased in 2017 as the population living five kilometres closer to financial services reached over 80% (FinScope 2018:61) as compared to only 30% in 2012 (TNCFI, 2014:5). According to the following surveys: InterMedia, 2014b; InterMedia, 2017; FinScope, 2006; FinScope 2013a; FinScope, 2018; TNCFI, 2014; TNCFI, 2018; TNCFI, 2017b; distance from financial institutions remains an issue to some of the adult population. Likewise, the affordability of financial services remained an issue since the ‘colonial capitalist’ era. During these eras, the costs of transactions remained high. Loans and credit were offered with high-interest rates, which constituted the affordability issue (Collier and Ganning, 1991; Ndanshau, 1996; Caselli, 1975; Chant, 1967).

2.9.4 Issues with Financial Service Affordability

Banking services were unaffordable to some segments of the population. This deterred FI to some people because they were unable to afford financial services through the mainstream banking sector. According to a Former Governor:

“I was interested I asked to visit the villages to have a couple of sessions with people, just to know why they don’t opt actually to put their money in a bank account instead of keeping it in their phones. Do you know the answer that I got? He said when you put money in a bank account, every end of the month, even when you never used your account, you would find a reduced balance. Because you know about the ledger costs, etc. Eh, but when you put money in e-wallets, that was what they said, even before profit sharing, your money is intact. Eh, and that is a big difference. Now I am sure if you ask them again, and on top of that I also still earn some profits on this mobile money side. So that was definitely a clear expression of why, eh, you know the clienteles were actually happy with the system as it was”.

Hence, before the introduction of technology/MM services, the cost of service was so high that the ‘*would-be-users*’ of the formal financial system were not ready to absorb the exorbitant cost of services. Hence, one thing for sure that opened the door and moderated this issue was technology/MM services. It made sure that a bank or FSPs could reach as many people as possible, without investing so much in branch networks, or other systems that served everybody where they were physically located. Technology, and in this case, MM, made the cost of transfers and the cost of transactions to go down.

“Before technology, the cost was about 10 cents to a dollar, about 10%. After the introduction of mobile money, it went down to 1 cent to a dollar. That is one percent” (Former Governor).

Thus, this is affordable! I could link ‘access’ to ‘affordability’. Issues of access and affordability of financial services determine who can access and who cannot have access to formal financial services. These were the two main targets that were being resolved by the introduction of technology and MM. Managing risks was also what MM tried to do. The banks regarded the poor as ‘high-risk clients’ and the rich as ‘low-risk clients’. The bank discriminated against the poor. MM tried to change this. Chapter 6 discusses these issues extensively.

2.9.5 Risk Management Issues

Banks regarded low-income people as a risk. The banks’ KYC requirements were strict, and most low-income people could not meet them. Hence, they could not access financial services through the banking sector.

“You know the usual system would take many days and uncertainties to make transfers. This [mobile money] was almost instantaneous, eh and virtually risk-free because there is virtually no timeline between sending and you getting confirmation that it is here. Immediately you push the button, the other guy after a few seconds gets feedback that I received it. You know that hugely releases risks. So, it is convenient, it is secure, and it is affordable. And those were the three main features that certainly were behind if you want the big push to get from exclusion to that degree of inclusion that you find today" (Former Governor).

Chapter 6 discusses these risk issues. They are introduced here to help me focus later on what MM moderates. Also, unrelated to risk management is the cultural factor.

2.9.6 Cultural Issues

Culture plays a vital role in excluding some people. In some cases, the head of the family was the one to deal with financial issues.

> "Some women are not allowed to keep the money. The woman is told this. She engages in farming, this is a very important factor, she engages in farming, and she is told, your husband will keep your money" (Director BOT).

In other cases, some people thought the banks were too clean and too fancy for them to even come close to a branch. They thought the banks were not for low-income people.

> "Because you know there is, there was a story, but it is true that some customers, much as I don't know if you normally get across those kinds of funny pictures, they normally tease them like these are Nyakyusa people, that you go to the bank, and that they leave their sandals outside. And then they get inside" (Senior TBA).

For this reason, I argue that there is a perception that bank branches are set to the highest standards and that they are too clean for the local low-income people. From this section, I argue that any policies, neoliberal or non-neoliberal, either cause FE or FI. These policies and reforms rarely shape other factors such as 'culture'. However, neoliberal policies and reforms do shape factors such as 'affordability', 'distance', 'risk management' and 'financial illiteracy'.

Thus, it was important to go back into the fundamentals of what helped to break the constraints, so that one could be able to understand: (i) the neoliberal reforms and policies, and how these reforms and policies have changed the banking sector; (ii) the economic and political views used, as well as the approaches and instruments used by policymakers. I thought my analysis of FE and MM could be told, but alongside my analysis, I found out that the emergence of MM occurred to resolve technical constraints that needed solutions. In fact, without solutions to the constraints of distance, risk management, affordability, and scale it would be challenging to reach the financially excluded people. Understandably, neoliberal policies helped to bring about these changes, as discussed in the next chapters, but technical solutions were needed, and

MM provided those solutions to the financial sector (see Chapter 6). Hence, the neoliberal roll-back and roll-out policies supported the efforts to reach FI through MM services. See Chapters 5 and 8.

2.10 Conclusion

The chapter analysed FE and FI literature to depict the past and current contexts of FE and FI in Tanzania and across the world. It demonstrated what we know about FE, FI, neoliberalism, and MM. It considered whether there were research works that were closely related to my research. It clearly stated that research on FE and FI rarely combined neoliberal policies, and how they helped MM services moderate the factors of FE and facilitate FI. My intent is to demonstrate that my research tries to bridge this gap.

The literature also indicated that neoclassical views, as part of the neoliberal agenda, emphasised profit and utility maximisation, which played a role in excluding disadvantaged individuals. Other literature also mentioned the classical views, which tried to correct the neoliberal and neoclassical market failures (Hurwitz and Manne, 2018; Robinson, 1962).

The literature also suggests that the neoclassical views favoured technological advancement to lower costs, maximise profit, and to run services and businesses efficiently (Schmookler, 1962; Ruttan, 1997). These views discouraged the government's intervening role in the economy. The role of classical theory in curbing exclusion, facilitating technological development and innovations (such as MM) to enhance both the liberty of the individual, and their privacy in their economic activities, is also presented in the literature (Hurwitz and Manne, 2018).

I delineated the issue of banking and FE in Tanzania. I also explained the factors of FE, such as: lack of access to formal financial services, financially illiteracy, physical barrier and distance, the unaffordability of financial services, and risk management issues. I also argued that MM came to moderate these factors of FE and to facilitate FI. The literature discussed builds a wide range of FE and FI scenarios but fails to consider MM and its relation to the discussion of FE, FI and neoliberal policies. I also mentioned that this was where my research is vital; it brings into this discussion; what was forgotten by other researchers.

Chapter 3: Theoretical Framework

3.1 Chapter Overview

This chapter presents the theoretical framework that forms the basis for conceptualising the role of neoliberalism in facilitating the growth of MM, and the role of MM in moderating FE as well as in promoting FI. Firstly, the chapter discusses what we know about the theories or theoretical frameworks that are used to study MM, neoliberalism, and the issues of FI and FE. Secondly, the chapter identifies the theoretical gap that exists in this research area. Thirdly, the chapter describes how this research addresses those gaps, and fourthly, the chapter explains the theoretical framework chosen to underpin this study and how it works. Fifthly, it explains other key concepts.

From the literature the chapter finds that there are different theories, theoretical and conceptual frameworks underpinning the studies of MM, neoliberalism, and issues of FE and FI (Kim et al., 2018; Dahlberg et al., 2008; Duncombe and Boateng, 2009; Diniz et al., 2011; Cahill et al., 2012; Peck et al., 2012; Lwoga and Sangeda, 2019). There is a big gap between the issues of MM and FE in terms of the existing research theoretical frameworks. Theoretical frameworks tend to embrace more MM and FI issues. However, most of the researchers studying the problems of exclusion and poverty rely mostly on the following schools of thought: classical, neoclassical, Keynesian, neoliberal, Marxist and radical views, social exclusion and social capital (Davis and Sanchez-Martinez, 2015). The systematic reviews conducted so far to study MM, FI and development classify the areas of research into three main clusters: delivery of mobile financial services, environmental factors supporting mobile financial services, and the impact of mobile financial services (Kim et al., 2018). The main issues emerging from the three clustered areas of research include: agent network, interoperability, intention, perception, usage pattern, regulation, sociocultural factors, demographic, impacts on FI and economic development (also see: Kim et al., 2018; Dahlberg et al., 2008; Duncombe and Boateng, 2009; Diniz et al., 2011; Lwoga and Sangeda, 2019; Zaremohzzabieh et al., 2014; Thapa and Saebo, 2014; Mbuyisa and Leonard, 2017; Duncombe, 2016). My research indicates that current research on the theme of MM, FI and FE, and neoliberalism or development is still in the nascent stage. Kim et al. (2018) concur with these views. Duncombe and Boateng (2009:1250) claim:

> "… overall, there is a noticeable lack of in-depth qualitative case studies that could provide a basis for theorising".

My research uses in-depth unstructured interviews to resolve this research gap and to provide a basis for theorising. They also claim that studies on mobile payment need more than one theory:

> "M-finance research related to the design and adoption has been fairly well conceptualised, drawing more strongly on approaches borrowed from innovation research. Conversely, needs and impact research is more conceptual, and consequently appears not to be following a well-defined and thought out research trajectory … one reason for this may be that the complexity of influencing factors makes it challenging for practitioners and researchers to conceptualise needs and assess financial impact within a single model-based approach" (Duncombe and Boateng, 2009: 1252).

I came across these difficulties and decided to conceptualise my research using classical and neoclassical perspectives around the 'RCA' as explained later in this chapter.

The chapter consists of seven sections. Section 3.2 discusses the current state of research in MM, FI and FE, and neoliberalism. It identifies the various theoretical and conceptual frameworks to determine the research gap in theoretical frameworks. Section 3.3 discusses the different schools and perspectives of neoliberalism, and it selects the 'RCA' to underpin this research. Section 3.4 explains the theoretical framework chosen for this research. Section 3.5 provides further insights on classical and neoclassical perspectives. Section 3.6 delineates how the 'RCA' fits into the proposed theoretical framework. Section 3.7 discusses the issues of neoliberalism and technological innovations, while Section 3.8 concludes the chapter's discussions.

3.2 The Current State of Research in MM, FI and FE, and Neoliberalism

MM devices have become an essential mean of promoting FI (Kanobe et al., 2017). Its mobility, always-on availability, and personalised features make the delivery of mobile-based financial services accessible (Evans and Pirchio, 2014). There are few systematic research articles that examine the theoretical and conceptual frameworks used to study MM and other related ICTs for FI and development (Kim et al., 2018; Dahlberg et al., 2008; Duncombe and Boateng, 2009; Diniz et al., 2011; Lwoga and Sangeda,2019; Zaremohzzabien et al., 2014; Thapa and Saebo, 2014; Mbuyisa and Leonard, 2015; Duncombe, 2016).

From studying the systematic literature reviews examining the different research works on MM and FI as well as other ICT related issues, I discovered that a significant number of research works had used mixed research and quantitative approaches. There is also a growing number of MM and ICT for development research using qualitative methods for data collection and analysis (Lwoga and Sangeda, 2019; Duncombe and Boateng, 2009; Kim et al., 2018).

According to Duncombe and Boateng (2009), no single theory provided a 'valuable initial understanding' for analysing Mobile Financial Services (MFSs). Many theories and approaches have also been used to study MM and its related issues (Kim et al., 2018; Dahlberg et al., 2008). Research approaches, including theoretical and conceptual frameworks, are grouped to fit into the categorisation of issues addressed through the various models and approaches used (Duncombe and Boateng, 2009). These conceptual and theoretically-based approaches include: (i) theoretically-based approaches which test and apply a specific theory; (ii) framework-based approaches, which use a framework for analysis derived from 'a body of theoretical work'; (iii) model-based approaches which employ models without 'reference to a deeper body of knowledge'; (iv) concept-based approaches, which employ defined concepts not theoretically grounded; (v) category-based approaches, which prescribe a set of factors to carry out analysis (Duncombe and Boateng, 2009).

Regarding MM and other MFSs, the conceptual frameworks seem to be conceptualised around innovation. Some other frameworks assess the financial impact of MM and other digital financial services. Some other related theories tend to deepen the understanding of how financially-excluded people gain access and use of formal financial services. The contexts for these studies differ from one research to the next, and from one country to another. For instance, Peruta (2018) uses a macroeconomic approach through cluster analysis to conceptualise patterns of adoption of MM in emerging and developing countries.

According to Duncombe (2011), conceptual approaches are significant in looking at the process that links the use of ICTs to measures of outputs, outcomes or impacts (also see: Lwoga and Sangeda, 2019). These conceptual and theoretical frameworks use different theories to study MM. There are also individual studies that chose the use of theories or models only. Lwoga and Sangeda (2019) categorise these theories as 'explanatory' and 'predictive'. Explanatory theories are those focusing on social capital, socioeconomic issues, network analysis, technology adoption, and development. Examples of explanatory theories used to study MM, and FI include: contingency and systems theory (Dahlberg et al., 2008); diffusion of innovations theory (Munyoki et al., 2015); theory of change (Aro-Gordon, 2017; Betete et al., 2018); etc. Predictive theories, on the other hand, tend to focus on microeconomic analysis. These may include the issues of supply and demand, issues with poor and financially-excluded people, financial deepening, connectivity, and economic growth (see: Lwoga and Sangeda, 2019; Duncombe and Boateng, 2009).

From the findings of the systematic reviews mentioned in this chapter, as well as from my other literature reviews presented in Chapter 2, certainly, the existing theoretical and conceptual frameworks delve into neoliberalism, MM, and its role in FI and FE separately. Hence, my proposed theoretical framework, as presented in Chapter 1, and as presented in this chapter, tries to bridge this gap by providing a framework capable of explaining all of these issues together. The next section describes the different schools and theoretical perspectives of neoliberalism to help build the theoretical framework underpinning this study.

3.3 The Different Schools and Perspectives of Neoliberalism

There are different theoretical perspectives, also used as methodological perspectives, that facilitate the discussions, and analyses of neoliberalism. They differ in their epistemological and ontological views that define neoliberal policies, reforms, and how markets are constructed. The theoretical perspectives express the views of the following schools of thought: 'historical institutionalists', 'regulation theorists', 'Foucauldians', 'Marxists', 'Polanyi-inspired scholars' and the 'experts on the history of neoliberal ideas'. These perspectives:

> "provide useful foundations for further progress in understanding and challenging neoliberal ideologies and practices" (Edwards et al., 2012:1).

Different theoretical perspectives see neoliberalism as a process that facilitates the construction of markets through social, economic, and political means.

> "This is a common ground, that as far as we are aware, has not previously been demonstrated so comprehensively" (Edwards et al., 2012:2).

The perspectives also explain why studies of neoliberalism differ or deviate from each other. They also delineate the different ways of contributing to the neoliberal debates as well as the social construction of markets. Firstly, neoliberalism is a socially-constructed reality, and for this reason, its effects are demonstrated differently in different realities. Secondly:

> "by combining this diversity with a theoretical and methodological plurality, a sophisticated and multi-layered picture of neoliberalism emerges" (Edwards et al., 2012:2).

3.3.1 The RCA

Of the above-mentioned schools of thought, this research employs the 'regulatory capitalism' tradition, a perspective from the 'regulation theorists' (see: Edwards et al., 2012:5; Braithwaite, 2008; Levi-Faur, 2005). This approach fits well with neoliberal policies of regulation, deregulation, liberalisation, and privatisation. These policies are key in explaining the growth of MM, and its role in moderating the factors of FE as well as in enhancing FI. The RCA can also be explained by using the classical and neoclassical views of regulation and deregulation (also see: Majone, 1992; Majone, 1997; Self, 2000; Booth, 1997). The 'regulatory' approach examines the significant transformations brought about by neoliberal policies. Inclusive neoliberal policies are part of these transformations. The approach also recognises the role of the government and regulatory bodies in the market economy and at times contrasts neoliberal concepts of 'small government' and 'free-markets'. It does not state that 'small governments' and 'free-markets' are bad, but it states that the reality of neoliberal reform has, at times, deviated from 'small governments' and 'free-markets'. Both classical and neoclassical perspectives to regulation agree with these views. Thus, neoliberal policies, in some cases, have not been:

> "associated with a decline in state power, rather than state regulators have been reconfigured … This has led some to view neoliberalism as a 'misnomer', as captured in Braithwaite (2008:4) description of the 'neoliberal fairy tale'" (Edwards et al., 2012:5).

The theorists in this tradition and their areas of expertise include: the capture theory (Stigler, 1971), regulatory capitalism (Braithwaite, 2008), the regulatory state (Majone, 1997), the regulation of entry (Djankov, 2002); tollbooth theory (Djankov, 2002); the regulatory society (Braithewaite, 2003); the post regulatory state (Scott, 2004); the domestic politics of banking regulation (Rosenbluth and Schaap, 1993); the public interest theory of regulation (Hantke-Domas, 2003); deregulation revolution (Vogel, 1996).

3.3.1.1 RCA and Neoliberalism

Neoliberalism is a dominant ideology of global capitalism, and with it comes the RCA (also see Flew, 2014). Regulation is increasingly perceived as a significant part of governance (Braithwaite, 2008). Levi-Faur et al. (2005) claim that this large part of governance includes the expansion of the scope, arena, instruments, and depth of regulation. The government continues to regulate, and in some cases, it shares with or delegates regulatory responsibilities to private institutions or networks (Bevir and Rhodes 2003; Rhodes, 1997). Regulatory capitalism, therefore, is seen as a networked order spreading the scope and depth of regulation (Busch et al., 2005; Way, 2005). Neoliberalism provided capitalism with new agility and dynamics, that raise concerns on the efficiency of the markets and the design of the institutions that govern our nations and the world in general (Levy-Faur, 2006; Blyth, 2002; Kalyvas, 1994). In this sense, the state collaborates with national and international actors to create governance structures that assume regulatory or leadership responsibilities to help increase the efficiency of the markets.

> "Yet neoliberalism did not appear on its own, and it hardly reflects all or even the most important aspects of change. It takes two to tango … the new capitalist order is mediated by regulation in general and the rise of the regulatory state … and regulatory society in particular … Indeed, the notions of neoliberalism on the one hand, and the regulatory state/society on the other are major contenders for the best label to capture. The nature of change. Both portray major aspects of change, and we aim to make the most of both by suggesting the notion of regulatory capitalism as a phrase that conveys their essence and something more. Change is best epitomised by the coevolution of neoliberal and regulatory hybrids of governance regimes, where controls are achieved by the supreme command of the two regulators: the market and the state. While neoliberal systems of control are manifested in the marketisation of social and economic life, regulation supplies the means to promote, sustain, and control marketisation" (Levi-Faur, 2006:497).

Neoliberalism, therefore, is aimed at the deregulating and shrinking of the public sphere. Paradoxically, the world has witnessed more regulation (Levi-Faur, 2009; Ayers and Braithwaite, 1992; Ruhl and Salzman, 2003). Regulation has resulted in new forms of governance where the state and non-state actors perform regulation. This new order is known as the RCA where the state meets the regulatory society (Levi-Faur, 2009) or uses the PPPIs to coordinate how the markets work. The NFIF is an example of these PPPIs where the different regulators meet to coordinate inclusive financial activities as well as to set the regulatory standards that facilitate these activities, including the deployment of MM to help achieve FI.

3.3.1.2 Linking the RCA, Neoliberalism and the Issues of FE and FI in GPE

According to Balaam and Veseth (2001), the financial structure is one of the key dimensions of the global political economy. It is perhaps the:

> "most abstract set of linkages between and among nations".

The financial structure also determines the pattern of money flows between and among nations, and can also help us to understand a specific country's financial structures and the issues emerging from them. Hence, the financial structure sets the boundaries or limits of who has access to money or formal financial services, and how and on what terms. Financial structure, therefore, is:

> "really a description of how certain resources are allocated and distributed between and among nations" (Balaam and Veseth, 2001).

Thus, researching financial structures and services help to understand the issues of FE and FI. This research uses MM services and the response of the banking sector to MM as part of studying Tanzania's financial structure.

Neoliberalism encourages regulatory capitalism through the PPPIs. These PPPIs are decision-making bodies or frameworks. It is important to know who is included and who is excluded from these decision-making bodies. As Mooslechner et al. (2006:xxii) suggest:

> "finance is considered the exclusive terrain of experts, pointing to widespread exclusion through expertise are common, as expertise knowledge represents a normative framework".

The inclusion of the MNOs in the NFIFs, which is a PPPI, allows the MNOs to voice MM and financially-excluded people's concerns. The regulators are part of the PPPI and get the opportunity to listen to the concerns of the different FI stakeholders. In return these arrangements ease any regulatory issues or tensions.

The PPPIs and their political-economic arrangements remain in touch with their roots in classical political economy (Underhill, 2006:16, 17, 18, and 20).

> "Adam Smith observed that there was an ongoing tension between the private interests and the needs of the wider community - a tension between the pursuit of self-interest and the public good" (Underhill, 2006:17).

Through classical political economy's concern with history:

> "that over time, there is a systematic but not always linear relationship between the changing ways in which societies organise production and exchange on the one hand, and emerging patterns of governance on the other" (Underhill, 2006:18).

This explains the emergence of the RCA over time. What the new PPPIs do is reducing the costs of operating the markets. Markets cannot thrive without the reduction of transaction costs, which governance structures such as the PPPIs provide (Underhill, 2006:20).

> "The central role played by finance in political and economic systems, the secrecy in which many financial decisions are made, the arcane character of the technical language that those in finance speak, and the close connection between power and wealth have all contributed to an enduring

> popular concern with the relationship between finance on the one hand and the problem of inclusion and exclusion on the other" (Porter, 2006).

Finally, it is worth noting that the RCA differs from 'the political thought' approach which studies and:

> "traces the lineage of political ideas by observing their genealogy and evolution and the various branches and derivation that emerge" (Edwards et al., 2012:3).

3.3.2 The Political Thought Approach

The political thought approach uses two schools, namely: 'ordoliberal' and 'paleoliberal' (also see: Friedrich, 1955; Peacock and Willgerodt, 1989; Mirowski and Plehwe, 2009; Ptak, 2009; Massimiliano, 2010; Emmett (2012)). The 'ordoliberal' school rejects the idea that effective and fair markets are naturally occurring and would emerge spontaneously, it also reckons free market failures and how they facilitated the rise of fascism in Germany (Megay, 1970; Edwards et al., 2012:4; Friedrich, 1955:512). The 'paleoliberal' school opposes the 'ordoliberal' approach and supports free markets as "natural phenomena that appear spontaneously" (Edwards et al., 2012:4). The 'paleoliberals' argue that state intervention disturbs the markets and that markets do business better than the state (Hayek, ([1933]/1975; Hayek, 1949; Friedman, 1951; Van Horn and Mirowski, 2009). The idea was that the minimal role of the state would help markets operate freely and efficiently. The above two approaches wouldn't work better for my research as the growth of MM or the transition from FE to FI depended heavily on the regulatory role of the BOT and the TCRA. During the era of neoliberal reforms in the 1990s, Tanzania's neoliberal experience was founded on the 'Washington Consensus' template. The template embraced more ideas from the 'paleoliberal' and not from 'ordoliberal' perspectives. My research, therefore, determined that the 'regulatory' approach could explain better the growing role of MM in moderating FE than the two above-mentioned schools would.

3.3.3 The Polanyian Approach

An alternative to the 'RCA' is the 'Polanyian approach' which criticises the doctrine of 'laissez-faire', and the belief that the economy is separate from society and politics. The Polanyian approach sees economic processes as embedded in both 'economic and non-economic' institutions (Edwards et al., 2012:4; Polanyi, 1957:250; Campbell and Pedersen, 2001; Prasad, 2006; Mudge, 2008). It criticises neoliberalism for the:

> "fallacy of free markets that it overlooks (or deliberately silences) the role of institutions in patterning the distribution of economic resources" (Edwards et al., 2012:4).

It analyses the embeddedness issues (Edwards et al., 2012; Barber, 1995; Block, 2003; Gemici, 2008; Polanyi, 2001; Ruggie, 1982). According to Polanyi (1957), markets are institutional structures, and thus, they are institutional constructions. Therefore, they tend to disembed themselves from their institutional context (also see: Gemici, 2008; Levien and Paret, 2012). Hence, to re-embed them again re-regulation seems to be an option:

> "Undoubtedly, our age will be credited with having seen the end of the self-regulating market" (Polanyi, 2001[1944:148]).

Although this research borrows some ideas from Polanyi on re-regulation of the markets, the embeddedness issues are not the focus of my research. For this reason, this approach was not selected as the main theoretical perspective for the analysis of this research.

3.3.4 Varieties of Capitalism Approach

Furthermore, another alternative approach to analysing neoliberal policies is the 'varieties of capitalism' approach. The 'varieties of capitalism' approach uses comparative and empirical analysis to study the institutional basis of economic relations (Edwards et al., 2012; Hall and Solskice, 2001; Coates, 2005; Hanké, 2009). The approach challenges the assertion that 'there is no alternative to capitalism' (TINA) (Edwards et al., 2012:4), the famous phrase from Margaret Thatcher, who thought that historical facts created a neoliberal state. This approach claims that there are different types of capitalism and that they operate differently depending on where they are applied. 'Stakeholder capitalism' is a version of a coordinated market economy where different stakeholders receive different benefits of the capitalist economy, and this model of capitalism is used mostly in German and in Scandinavian countries (Wolfgang and Yamamura 2005). Contrarily, 'shareholder capitalism' is a version of the liberalised market economy where profit maximisation and the interests of the shareholders come first (Vogel, 2019; Freeman et al. 2011). This model of capitalism is mostly applied in the United States, the UK, and most western English-speaking countries (Dore, 2000; Freeman et al. 2011). Since the aim of this research was not to study the different types of capitalism, the 'varieties of capitalism' approach to neoliberal policies was abandoned as the main approach.

3.3.5 The Foucauldian Approach

Likewise, the Foucaldian governmentality approach was not appropriate for this research as it seeks to study governmentality concerns (Focault, 2008) such as the "modalities, rationalities, mechanisms, and techniques" (Edwards et al., 2012:5) that seek to illustrate state control over different citizens. Focus is on the mechanisms used to control citizens and make them behave properly (Edwards et al., 2012; Focault, 2008; Miller and Rose, 1990; Rose, 1999; Barry et al., 1996; Dean, 1999; Hindess, 1996). In this regard, the Foucaldians either study the "forms of control that operate by punishing people" or those forms of power that reckon "people's beliefs, preferences and desires to be shaped for themselves" (Edwards et al., 2012:5). These views resemble the RCA views that the government applies so much:

> "power and control over society as ever before, and that neoliberal reforms are not about liberating people from the state, but rather institute a different way of organising and regulating people" (Edwards et al., 2012:5).

According to Konings (2012:60), Foucaldian governmentality perspectives assume "the proliferation of governance mechanisms in social life has meant an attenuation of the centrality of the formal state, but this tends to produce the image of neoliberal capitalism as a movement of 'disembedding'". As the governmentality issue was not at the core of my research issues, this approach was not selected as the main approach to studying the issues of this research.

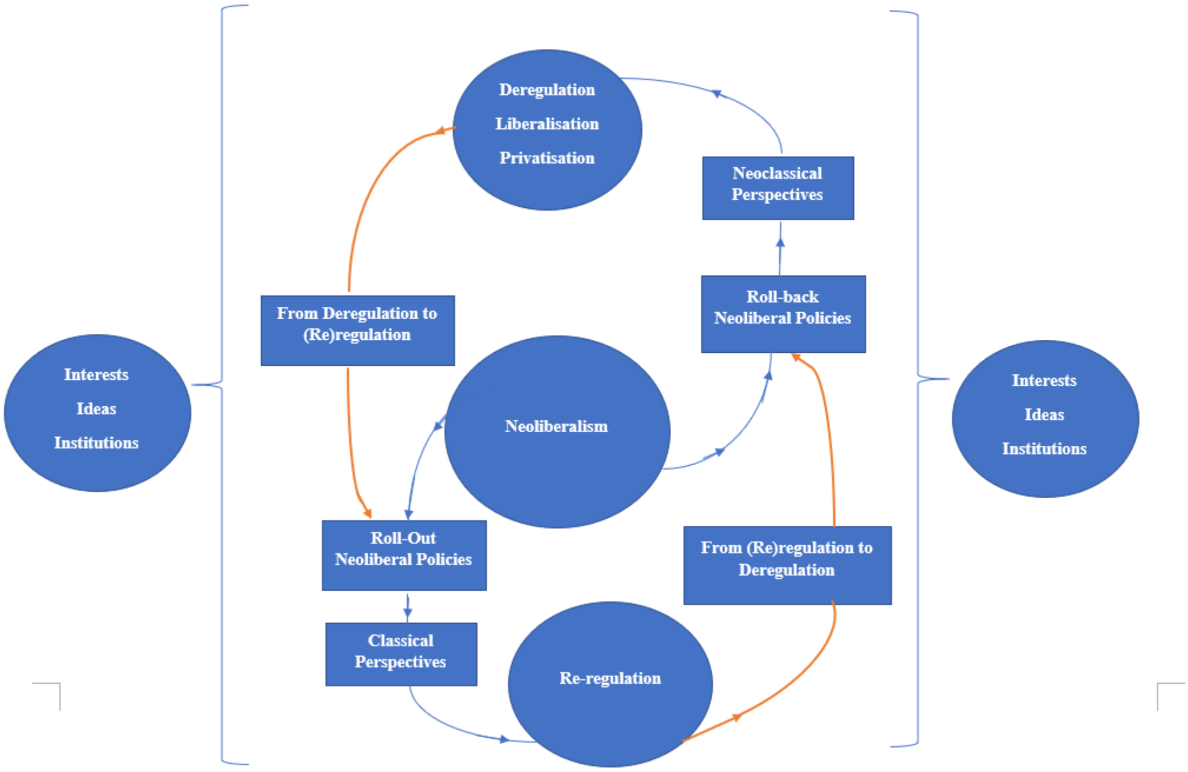
3.3.6 The Marxist Approach

Additionally, the Marxist approach could not be the main methodological perspective as the research design focused on FE, FI, the growth of MM, and the response of the banking sector and not on class conflicts or communism. Some Marxists could inform us on how neoliberalism created classes and some forms of exclusion (Duménil and Lévy, 2011). The Marxist approach studies class struggle and social exclusion issues (also see: Dahrendorf, 1959). The Marxist approach to studying neoliberal policies emphasises class relations and how neoliberal practices transform societies (Edwards et al., 2012; Duménil and Lévy, 2011; Harvey, 2005; Duménil and Lévy, 2004). In other words, the Marxist approach is about studying the restructuring of relationships of class power within societies (Edwards et al., 2012:6). According to Birch (2016:111), this approach instils a 'market ethic' across society. There was not much to gain from this approach in terms of studying MM, and how it moderates the factors of FE, as the users of MM services come from different social classes, both the rich and the poor.

3.4 The Theoretical Framework

Chapter 1 (Section 1.4) briefly introduced the proposed theoretical framework. Diagram 3.1 summarises the theoretical framework. See Chapter 1 to review the explanations for Diagram 3.1. This section seeks to expand on what has been said in Chapter 1 about Diagram 3.1. The theoretical framework helps to answer the research questions, in the next chapters, by providing explanations for the development of MM through neoliberal roll-back (deregulatory) and roll-out (re-regulatory) policies. It also facilitates the explanations for MM and its role in moderating FE and promoting FI through classical and neoclassical views (also see Chapters 2, 4 and 5). In this regard, the two views are complementary. While the neoclassical view advocates the maximisation of profit and utility for firms and individuals, it also assumes that these firms and individuals are rational and make choices rationally, and therefore state intervention should be limited, as individuals make consistent choices or preferred alternatives from what is available to them. The perspective assumes that individuals and firms are the best judges of their own actions (Ogus and Veljanovski, 1984). Thus, deregulation allows firms and individuals to make independent choices. As we will see later in Chapter 5, deregulation was key to the emergency of MM. Classical perspective, on the other hand, does not contend that all individuals are rational. From the classicist perspective, some regulations are needed to correct any market failures. FE is one of those market failures. The classicist would advocate the removal of any forms of exclusion. To prevent technological advancement without regulations, the classicists would support some forms of regulations to minimise market failures caused by innovations and technologies such as MM.

Diagram 3.1 Theoretical Framework



The neoclassical and classical perspectives explain better rolling out and rolling back neoliberalisation (see Section 3.6, Chapter 1, Section 1.4, for the details of Diagram 3.1) with regard to deregulation and re-regulation. Deregulation also includes liberalisation and privatisation of some of the economic and financial sectors. All these concepts support the constructivism of neoliberal markets. The ontological assumptions of neoliberal debates support the assertion that markets are socially constructed, and that 'neoliberalism is an all-pervasive, and constantly evolving epistemology' centred on promoting and constructing markets (Cahill et al., 2012; Birch, 2016; Swarts, 2013). These market constructions and the capitalist realities they cherish create market success or failure, which forces the government to regulate or deregulate certain aspects of the market and capitalism. It is also concluded that the epistemological assumptions of the roll-back and roll-out neoliberal perspectives are consistent with the assumptions of Scott's (2006) political economy of capitalism (see Section 3.6.5.) as well as with the neoclassical and classical perspectives (Blyth, 2013; Swarts, 2013). All these above-mentioned theoretical perspectives support the constructivist paradigm of society, innovations, and markets. They can explain the different neoliberal policies during the roll-out and roll-back phases, and their role in the growth of MM as explained in the next chapters.

3.5 Classical and Neoclassical Perspectives: Further explanations

From the theoretical framework, and as depicted in Diagram 3.1, it is evident that neoliberalism is a coherent worldwide project causing political-economic transformation through rolling back and rolling out neoliberal policies. These are political-economic issues for various reasons. Firstly, neoliberalism opposed the Keynesian-welfarist and national development regulatory arrangements, and became a global project during the post-1970s period and has spread throughout the world ever since (Duménil and Lévy, 2001; Crotty, 2003). From deregulation, privatisation, and liberalisation to stricter regulation than it was during the Keynesian era, neoliberalism provides possibilities for economic and financial solutions to global markets (Brand and Sekler, 2009), which reinforces the role of neoliberalism in political-economic discussions. Whether it is a rolling out or rolling back neoliberalism, it is done to enhance either public or private interests through deregulation or re-regulation. Secondly, rolling back and rolling out neoliberalisation can result in FE or FI. There is literature to support that rolling back neoliberalisation caused a lot of people to lose their jobs, and the disparity between the rich and the poor increased (Duménil and Lévy, 2011). Thus, this fostered exclusion. Contrarily, rolling out neoliberalisation corrected some of the rolling back adverse outcomes. There is evidence that rolling out neoliberalism facilitates the provision of formal financial services for financially-excluded people (Claessens and Rojas-Suarez, 2016). The G-8 and G-20 realised this and supported FI, as discussed in Chapter 2. Thirdly, during the rolling back phase, the neoclassical theory was vital to forcing the reduction of government interventions as it sought to create competitive markets where both firms and individuals strived to maximise profits and utility through rational means for their survival (also see: Tadaro and Smith, 2002; and Shakow and Irwin, 2002). The result was increased exclusion during the rolling back phase (also see; Sassen, 2014; King and Rebelo, 1990; and Christiaens, 2019a). The classical views helped rolling out policies by supporting state intervention through re-regulation to defend those excluded economically and financially, as described earlier in this chapter and in Chapter 2.

Neoclassical perspective provided a comprehensive logic, if not a limited account of how the markets worked under any conditions. The view suggested that prices, wages, and rents were all determined by the market conditions of demand and supply. Without government intervention, the neoclassical position claims that individuals are rational creatures who coordinate their market and economic activities rationally. Both individuals and firms maximise the utility of their actions to the point that no further profit from their actions will be generated. According to the theory, this helps to control the markets more efficiently. This created the concept of 'marginalism' in defence of 'rational' market decisions (Self, 2000:7). Furthermore, the neoclassical position considers micro and macro approaches. It assumes that if markets were to operate efficiently at appropriate price levels:

> "a general equilibrium would be reached, where all available resources would be fully utilised" (Self, 2000:7).

In most cases this general equilibrium never arrived; more people continued to be excluded in economic and financial terms. Why was the neoclassical view not a silver bullet solution?

According to Self (2000:7-8):

> "The original neoclassical thinkers carried over into their theories the philosophical baggage of the utilitarians. Just as these viewed 'mankind' as under governance of two sovereign masters, pain and pressure … so did the economists assume that consumers would constantly strive to maximise their expected 'utility': a shadowy concept supposed to underlie their preferences but unable itself to be measured. 'Utility' really explained nothing, unless one could swallow the idea that market price somehow measured the pleasure that an individual received – or expected to receive …".

In the financial sector, for instance, the costs to access financial services were high (GDP, 2009; The Economist, 2015a; AusAid, 2010:13). The poor could not access formal financial services. Thus, they could not maximise their unexpected financial service utility. The number of financially-excluded people exceeded the number of financially-included people. All this raised the question of market failures. The neoclassical perspective had its share as the cause of some market failures (see Chapter 2, Section 2.5.2). For instance, first and foremost, the assumption of perfect competition and information were controversial. Some theorists argued that perfect competition and markets did not exist (Sraffa, 1926; Kirzner, 1987; Stamate and Musetescu, 2011). Monopolies, oligopolies, or price cartels, as well as different products and services, did not share the same market details. The level of competitiveness differed from one market to another. This might have affected how individuals and firms make rational market decisions. The neoclassical assumptions about rationality and motivation were empirically inaccurate. The assumptions that market actors were rationally driven to maximise utility seemed to be equally inadequate (also see: Soukoup et al., 2015; Zafirowski, 2008; Hinden, 1977; Hodgson, 1998; Hodgson, 2012). In some cases, individuals did not plan their transactions rationally as assumed by economists. They were sometimes ignorant or uninformed, erratic or indifferent. Sometimes their situations conflicted with the pursuit for maximum economic gain.

Likewise, the concept of general equilibrium is also controversial. Reaching a general equilibrium would be hard in ever increasingly changing markets. As market factors change, they also alter the equilibrium. Theorists argue that it takes time for the markets to reach their full equilibrium given increasing technological changes, and that:

> "an equilibrium point holds only for a given set of consumers' tastes and available technology. As tastes and technology change (and the drive of actual capitalist systems is towards rapid change), so the positions of market equilibrium alter. Hence, the theory of equilibrium is consistent with continuous instability rather than the spontaneous harmonisation of all resources, which it seems to imply" (Self, 2000:9).

All these issues provided a chance for the classical theorists to fire back. As the liberalisation of markets was assisted by deregulation, and in some cases such liberalisation did not bring the expected economic outcomes depending on a variety of factors, it followed that neoclassical theory was not a silver bullet solution. Liberalisation and deregulation policies posed specific market and economic risks. The classical theorists were spotlighted again, criticising these trends. It took the classical theorists to understand deregulation and its relationship to financial regulation and economic laws or antitrust (Majone, 1992). As neoclassical theorists agree, the classical theorists also see that institutions aim to achieve their economic objectives. To achieve these objectives, the competition should be favourable in terms of: Firstly, setting prices close to incremental costs to allow purchasing and production decisions that minimise economic waste. Secondly, achieving efficient production processes could help institutions meet their financial objectives. Thirdly, innovation to improve production processes helps institutions achieve their economic goals (Majone, 1992). Classical theorists understand the constructivist nature of the markets and seek to understand the hidden issues of the markets (Bell, 1981:77).

According to Majone (1992:20-21):

> "From a classical perspective, these economic benefits, perhaps like happiness and reputation, are best secured when one does not aim at them directly. Decentralised individual decisions made in a workably competitive marketplace or more likely to prove economically efficient, to bring about efficient production processes, and to encourage desirable innovation than are the centralised, bureaucratic decisions of the economic regulator. The classical theory emphasises the many systemic institutional features of the regulatory system that prevent them from ever coming close to replicating the effects of well-functioning competitive markets. The classicists nonetheless find reasons for regulating".

According to the classicists, regulation or re-regulation becomes unavoidable in some cases. The classicists and neoclassicists help us explain rolling out and rolling back neoliberalisation, and their roles in allowing deregulation, re-regulation, and the survival of innovations such as MM. While market failures, a lousy economy, increasing inequalities, and so forth provided salient reasons for re-regulation to prevent dysfunctional markets or to correct 'market defects', regulation was used as a weapon of last resort to reverse economic and financial failures. Classicists, for instance, provided examples of natural monopolies where economies of scale were too large to permit a single firm to monopolise the entire market through production at the lowest costs. Also, the classicists expressed concerns about market information asymmetry or exorbitant rents that might have necessitated direct governmental intervention. According to Majone (1992:21), the classicist seeks to protect the consumer from unfair market practices, and he depends on laws and regulations to do so and to preserve competitive markets. Regulation, in this case, is regarded as 'a weapon of last resort' (Majone, 1992:21). Hence, the classicists offer a credible theoretical perspective to help explain the reasons used to help reach financially-excluded people. The research uses those explanations and links them with the advent of MM technology through deregulation and re-regulation policies of both the banking and telecommunication sectors. The rationale for these policies is curbing market failures, exclusion of all sorts, and the necessity to re-regulate some sectoral services to correct market failures as well as to eradicate any forms of exclusion.

3.6 How Does the 'RCA' Fit in the Theoretical Framework?

Neoliberalism operates under finance-led capitalism (Soederberg, 2013). The RCA helps the research to unveil the emergence or enhancement of the neoliberal policies of deregulation, regulation, liberalisation, and privatisation. The approach can do so because neoliberalism has two faces. Firstly, the 'roll-back face', which is the face showing 'the destructive and deregulatory moment', and secondly, the 'roll-out face', also referred to as the 'creative and regulatory moment' (Peck et al., 2012: 24; Peck and Tickell, 2002; Peck, 2010). According to Peck et al., 2012:22-23):

> "Roll-back processes tend to be predominant with the initial onset of neoliberalisation … projects are typically focused on dismantling alien institutions, disorganising contending centre of power, deregulating zones of bureaucratic control, disciplining potentially unruly (collective) subjects. Often prosecuted in the name of deregulation, devolution, and even democratisation, this offensive is typically associated with attacks on labour union, planning agencies, entitlement systems, and public bureaucracies, by way of the now-familiar repertoire of funding cuts, organisational downsizing, market testing, and privatisation. However, this first front in the free-market counter-

> revolution tends quite quickly to encounter predictable limits – neoliberalism's own object lessons in market failure".

According to Peck et al. (2012:23-24):

> "Roll-out neoliberalisation is both a creative and reactive process, reflecting both tactical and strategic responses to the limitations, failures, and unmanaged externalities of preceding experiments in deregulatory roll-back. Examples of such roll out-roll back dialectics in particular policy fields have included: labour-market flexibility and deregulation policies, coupled with welfare setbacks, leading to the downstream imperative to develop 'in work' support systems for the working poor; privatisation … private monopoly abuses … overreach in trade liberalisation, or financial deregulation, in cases of market economic dislocation, any market failure, being followed by exceptions-to-the-rule 'deals' and re-regulatory 'corrections'".

In some cases, neoliberalism produced undesired outcomes, which were destructive to some institutions, practices, and identities. It continued to feature in the political-economic moment for more than three decades. To explain the persistence of neoliberalisation, its failures, successes and role in transforming societies, some theorists use a '*historical analysis*' of neoliberalisation capable of explaining the reasons for roll-back neoliberalism through which institutions, and policies of the post-war welfare state were rolled back (Birch, 2016; Campbell and Pedersen, 2001). Neoliberalism has always generated controversial results. According to Peck and Tickell (2002) and Lockie and Higgins (2007:3), this paved the way for the development of roll-out neoliberalism from the early 1990s. According to Graefe (2005:3), the roll-out phase:

> "rejuvenated neoliberalism in more socially interventionist and ameliorative forms, in order to regulate, discipline and contain 'those marginalised or disposed by the neoliberalisation of the 1980s".

According to Rogerson et al. (n.d.:11), roll-out neoliberalism placed "the importance of social aspects" in the neoliberalisation processes. The RCA embraces the social aspects and help create different forms of governance such as the NFIFs, which depend on classical and neoclassical points of view. According to Birch (2016:112):

> "there is now a general agreement amongst (academic) critics that neoliberalism does not entail erosion or hollowing out of the state, primarily because the state is necessary to institute, maintain and enforce the market".

The rolling back of the state creates the need for new forms of governance needing the rolling out of the state through other means. Moreover, the rolling back is accompanied by depoliticisation, which is key to the rolling out of new regulations to support the neoliberal agenda (Foster and Byrne, 2014). Hence, public and private actors form partnerships to govern and regulate financial and economic activities referred to as the 'RCA'.

3.6.1 Roll-Back and Roll-Out Neoliberalism and their Importance in Regulation/Deregulation

According to Peck and Tickell (2002), the roll-back moment was the deregulatory phase of neoliberalism while the roll-out phase was the re-regulatory phase of neoliberalism (see Table 3.1). Benner et al. (2010:13) refers to these phases as "from the uneven development of neoliberalisation" (to refer to the deregulatory roll-back phase) to "the neoliberalisation of regulatory uneven development" (to refer to the roll-out uneven re-regulatory development) (see Table 3.1).

Table 3.1: Roll-Back and Roll-Out Neoliberalisation

	Roll-Back Neoliberalisation *"... the Destructive and Deregulatory Moment"*	**Roll-Out Neoliberalisation** *"... the Creative and Re-regulatory Moment"*
Mode of Interaction Market Regulation	State Withdrawal 'Deregulation'	Governance Experimental Re-regulation
Front Line	Economic Policy	Social and Penal Policy
Taxation	Selective Givebacks	Systemic Regression
Financial Regulation	Liberalisation	Standards and Codes
Development Ethos Public Expenditure	Structural Adjustment Cuts	Social Capital First Responsibility
Monetary Policy Ideological Programme	'Cold Bath Monetarism' Explicitly Programmatic	Prudence Institutionally Embedded
Change Agents Political Style	Vanguardist Politicians Ideological Conviction	Technopolis Pragmatic Learning
Labour Market Regime	Mass Unemployment	Full employability
Employment Relations	Deunionisation	Flexibility
Social Policy	Retrenchment	Workfare

Source: Peck et al. (2012:24).

Several neoliberal theorists reported the 'rolling back' of the state (Kelsey, 1993) as the state withdrew from social and economic spheres. The roll-back phase was a project that started in the 1930s and 1940s as an opposition to the Keynesian political-economic order and a return of the economic liberalism of the 19th century to fit into 20th-century institutions (Brenner et al. 2010; Friedman, 1951; Hayek, 1949). Different types of liberalisms helped neoliberalism to consolidate itself.

> "Neoliberalism built on the dispersed ideational resources found in the situated liberalisms of Austrian economics, German ordoliberalism, Manchesterism, and Chicago-Style Counter-

> Keynesian. Neoliberalism was thus effectively born in an already transnationally networked, intellectually hybrid, and uneven developed ideological form" (Benner et al., 2010: 211 citing Peck, 2008).

Due to this joint base that neoliberalism had in different forms of liberalism, and also the inefficiencies of Keynesian economic policies, the roll-back policies of the 1970s, 1980s, and 1990s gained global momentum in shaping institutions and markets. As shown in Table 3.1, the state withdrew from markets or at least reduced its influence, and cut public expenditure, which affected social policy and welfare. Deregulation of economic and financial markets took place. The financial sectors were liberalised and public institutions were privatised, which recorded mass unemployment, as more people lost their jobs, and as companies sought to raise their profits. Job losses were also one of the critical causes of social and financial exclusion. Economies in bad shape adopted structural adjustment programmes. All this reflected:

> "the particularities of the conjunctural crises in which there were no clear-cut resolutions" (Benner et al., 2010:213).

In general, the roll-back deregulatory phase caused more economic and financial issues than expected. This is where the contribution of this research comes in. More and more pieces of literature criticise the roll-back phase of neoliberalism because of the crises it created. Contrarily, this research argues that there were also good things that roll-back neoliberalism did, such as the facilitation of the development of fintech technologies, and the development of MM as discussed in this dissertation. Moreover, the previous neoliberal failures helped create the inclusive neoliberal agenda, as discussed in Chapter 2. Neoliberal theorists have recently argued that:

> "new forms of state activity are being rolled-out under neoliberalism" (Dodson, 2006:225).

The roll-out regulatory phase sought to respond to the challenges created during the roll-back deregulatory period. FE and income inequalities were some of these challenges. With the state trying to reduce its influence in the markets, new forms of governance allowed the state participation in the markets as the re-regulation phase gained momentum. The new 2015 regulations in Tanzania's financial sector and in MM services were part of the re-regulation experimentation (see: URT, 2015a; URT, 2015b; URT, 2015c; URT, 2015d). Regulatory experiments were vital as they were used to help regulatory bodies learn from their past mistakes. Tanzania's new MM regulations followed a "test, monitor and regulate" approach, which allowed policymakers to test new financial services before introducing strict regulations (see Chapter 5). According to Benner (2010:18):

> "Regulatory experiments within contemporary capitalism necessarily emerge within unevenly developed institutional landscapes that have always been shaped and reshaped by a wave-like succession of market disciplinary reforms. The collision between newly emergent regulatory strategies – whether market disciplinary or otherwise and such inherited geo-institutional landscapes is likely to further differentiate patterns of regulatory uneven development at all spatial scales and across places and territories".

Hence, regulation is essential because it is one of the key features in the development of any market system. Regulation refers to the management of complex systems according to a set of rules and trends. The following reasons can be used to call for regulations: Firstly, inefficiencies in the markets leading to market failures; secondly, the state's desire to help specific groups of people access certain types of markets; thirdly, regulation may be used to eliminate or create opportunities for particular markets and businesses; and fourthly, regulation may be used to create a fair playing ground for everybody in the markets. Thus, the development of any market depends on the nature of regulation and its legal framework. Booth (1997) refers to three critical approaches to regulation from the lenses of political economy that shape regulation, namely the: (i) market socialist approach; (ii) public versus private interest approach; (iii) neoclassical approach. There is also a fourth approach, known as the classical approach (Majone, 1992:21).

3.6.2 Political Economy of Regulation

Firstly, the socialist market approach applies where productive resources are owned by the state (Le Grand and Estrin, 1989; De Jasay, 1990).

> "It was believed that complete regulation and state ownership of the sector was desirable, because of the central planning board would have a much wider knowledge of conditions, consumer preferences, and costs in the economic system as a whole than any private entrepreneur would have under capitalism. This particular argument, therefore, recognized the market for its information processing role and maintained that the central planning board could perform that role not just as a regulation, but in controlling every aspect of the market" (Booth, 1997:677).

The results were that the socialist market approach created a monopoly of state enterprises. The economy was the inward-oriented or closed economy. As a result, investments were crowded out in most socialist economies. Corruption increased, and the financial sector was inefficient. Economic growth also stagnated (also see: Mbowe, 2010; Coulson, 1982; Coulson, 2014;

Collier and Gunning, 1991). Tanzania was a socialist economy for over 25 years and suffered most from these economic symptoms. There was a need for reforms for the above-mentioned market failures. The first step was to deregulate and remove the state from the markets. The next step was to embark on neoliberal reforms. Roll-back neoliberalisation was the more appealing option at that time. Hence, countries deregulated their economic and financial sectors, allowing more rooms for liberalisation and privatisation of economic and financial activities. As previously mentioned in Chapter 2, deregulation paved the way to the CLF, which made the advent of MM possible. During the neoliberal reform era, the implemented reforms supported deregulation and sought to minimise or make regulations more cost-effective. For instance, the liberalisation and expansion of financial markets promoted by neoliberal institutions were not only key to the restoration of the upper class in the financial sector but also allowed innovations, including technological innovations, in the financial sector (Neubauer, 2011; Harvey, 2005:145). This made it easier to coordinate global financial markets and eased the provision of services from one place to another place with speed and efficiency (also see, Neubauer, 2011; McGuian, 1999:386).

Secondly, the public versus private interest is another approach to regulation. According to Hantke-Domas (2003:165):

> "the public interest theory explains in general terms that the regulation seeks the protection and benefit of the public at large" (Hantke-Domas, 2003:165).

The other, the Chicago theory, also known as the private interest theory:

> "suggests that regulation does not protect the public at large, but only the interests of groups".

In this regard, if FI is a public interest, the government will protect it. FE has for a long time been in the interests of the banking sector, as banks did not desire to serve risky and financially-excluded populations. The PPPI was established to resolve these issues as it is depicted in Chapter 2. The next section discusses the two-remaining political-economic approaches to regulation, namely: classical and neoclassical approaches.

3.6.3 Classical and Neoclassical Approaches to Regulation

Both neoclassical and classical schools of thought argue against the socialist market approach, claiming that the markets are in a better position than governments to process relevant information and to determine the costs of production of goods and services. This is a neoliberal stance, and mostly leaning towards the 'rolling back' and 'rolling out' policies, as well as to classical and neoclassical views. The neoclassical school, for instance, argues that the:

> " .. consumers are seen to react to prices and product quality, and to organise their consumption patterns in a way which is efficient, given their budget constraints and the prices they face … suppliers react to relative costs to find the most efficient way of producing a product the process by which this maximises economic welfare … many of the justifications for regulatory intervention arise because the conditions under which competition is said to lead to the optimisation of economic welfare do not, necessarily hold in practice" (Booth, 1997:678).

Furthermore, the classical approach provides a possible framework to analyse markets and regulations. It views the market as realistic. The Austrian school of thought also supports it. It differs from the neoclassical approach in the sense that it supports different philosophical disciplines. Hence, it provides a more concrete understanding of the market than the neoclassical approach, and it includes the economics of law and the degree to which it uses various frameworks to impinge on markets (Booth, 1997:676). The Austrian school provides this alternative for the justification of a free market regulation as it sees:

> "the market, primarily, as an institution for communicating and using the information being naturally dispersed ... The free market is efficient because the participants in the market only need to know information relating to prices and costs, which is relevant to their own decisions … It is not possible for the government to centralise the information regarding costs and benefits of a particular course of action, and use that information to direct productive resources and determine prices, because the costs and benefits of a particular action are known only to those who undertake that action … Whilst the Austrian approach might suggest that detailed regulation and central planning would undermine the market, regulation which enforces the prediction of information may be compatible with the Austrian view" (Booth, 1997:678).

The classical approach seeks to manage organisations and markets more efficiently. The classicists agree that it is essential to limit government intervention and that it is important to keep free markets free of potential barriers to their efficient operation. The classicists also consider regulation as their perspectives agree on supporting the fact that the Long-Run Aggregate Supply (LRAS) is inelastic, and that the real GDP is determined by supply-side factors – the level of investment, the level of capital, the productivity of labour, etc. The classicists also suggest that in the long-term, an increase in aggregate demand (faster than growth in LRAS) will cause economic issues such as inflation and will not increase the real GDP. Hence, some mechanisms to correct this issue, such as regulation, become imperative in some cases.

The advent of MM, as well as Tanzania's current regulation of MM is an example of deregulation and re-regulation policies of the telecommunications and financial sectors, as well as the practicality of neoclassical and classical approaches to regulation. These two approaches complement each other and are used as the fundamental theories for this study. Conducive regulatory and legal frameworks have been put in place to further MM advancement and FI. Before these frameworks, deregulation and liberalisation of the telecommunications sector allowed the introduction of the CLF, which permitted innovation to spread across different economic sectors. This involved the flexibility of the regulators who dealt with many and very varied market players. When the markets mature, and many players join them, the regulators must weigh the public against private interests to protect the wider society as well. This also falls under the umbrella of the RCA as described in Sections 3.3.1 and 3.6.

3.6.4 What do We Learn from These Political Economic Approaches to Regulation?

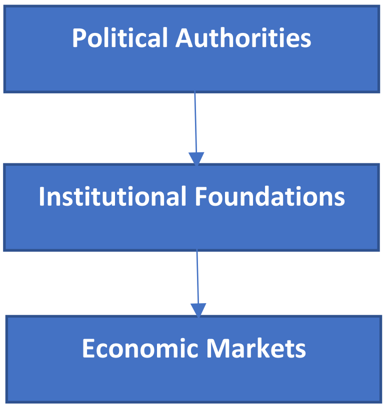
The 'RCA' is an umbrella of all these approaches to regulation except for the socialist market approach. All these regulatory approaches, as viewed from the above-mentioned political-economic lenses, illustrate their compatibility or incompatibility with neoliberalism. While the neoclassical and the classical approaches embrace the neoliberal concept, the socialist approach does not. There are also some limitations to these approaches. For instance, the neoclassical approach to market regulation is regarded as incomplete as it fails to explain the behaviour of the regulator. This could be explained by the 'capture' and 'tollbooth' theories (Djankov et al. 2002). The 'capture' theory explains how various stakeholders, including politicians, capture the regulator to get some favours from him (Stigler, 1971). Furthermore, the 'tollbooth' theory asserts that not everybody is equally affected by the same regulations (also see: Rajan and Zingales, 1998; Kroszner and Strahan, 2000; Raddatz, 2006; Braun and Larrain, 2005). These perspectives may be used to explain the role of policies affecting financial market developments and their distributive consequences. It is also argued that it is through the various stakeholders that regulation creates and extracts rents/favours from the regulated industry (also see: De Soto, 1990).

The classical approach, on the other hand, interlinks law and economics in such a way that legal structures can undermine or support free competition. The Austrian school believes in legal and regulatory frameworks as a condition for the proper functioning of the market. Legal and regulatory frameworks were vital to implementing MM and inclusive financial services, as illustrated in Chapters 2, 5, and 8. Those legal and regulatory frameworks were compatible with innovations. Think about an innovative market and how incompatible legal and regulatory frameworks could have stifled innovations and MM services. In the case of Tanzania, MM innovations led the market. The regulations came later. In this case, the regulation did not drive innovation, and this is credited for successful MM development in Tanzania, as shown in Chapter 5. According to Booth (1997:695), "by the nature of innovation, it will not be possible, once an activity is directed by regulation", to predict the development of the innovations. In most cases, regulation if wrongly implemented deters the fast growth of innovation.

3.6.5 Breaking Down the RCA into Government Roles and Modes of Intervention

Neoliberalism fosters capitalist policies and markets. Capitalist economies operate on a three-level system. See Diagram 3.2.

Diagram 3.2: Capitalism as a Three-Level System



Source: Scott (2006).

The market occupies the first level, where the competition takes place; the institutional foundations that underpin those markets occupy the second level; the political authority that administers the system holds the third level (Scott, 2006). Some forces help shape capitalism, neoliberal systems, and policies. They are referred to as: 'invisible' and 'visible' hands. The invisible hand is the one that coordinates the supply and demand mechanisms of economic and financial markets. The visible hand is the one that the state uses to organise the modernisation of market frameworks by changing circumstances (see Table 3.2). To this end, the state has two distinct roles, namely: the administration and provision of the institutional structures and infrastructure, as well as the administration of laws and regulations including the mobilisation of political power to bring about modernisation of those structures and infrastructure (Scott, 2006). In Tanzania, the government implemented these roles by creating conducive and legal frameworks that allowed the implementation of FI and MM growth, as demonstrated in Chapters 2, 5, 7, 8. Hence:

> "for a capitalist system to evolve in an effective developmental sense through time, it must have two hands and not one: an invisible hand that is implicit in the pricing mechanism and a visible hand that is explicitly managed by government through a legislature or a bureaucracy" (Scott, 2006).

Despite the reduced role of government in the neoliberal era, two forms of state intervention have persisted: 'direct' and 'indirect' with the government assuming the role of an administrator and an entrepreneur.

Table 3.2: Government Roles and Modes of Intervention

Roles	Modes of Intervention	
	Direct	**Indirect**
Administrative	Operate State-Owned Enterprises	• Enforce Laws and Regulations • Maintain Infrastructure
Entrepreneurial	Take Property (Buy/see/grow State-Owned Enterprises)	• Pass New Loans • Issue New Regulations • Build New Infrastructure

Source: Scott (2006:3).

The direct involvement of the government occurs when markets coordinate themselves without the need for plans and orders from the government. At times, new markets form without regulations or the existence of appropriate infrastructure which forces the government to act and provide the needed support and regulations. The advent of MM in Tanzania demonstrated this pattern (see Chapter 5). Furthermore, the government intervenes directly to safeguard public interests. Indirect interventions occur when the government uses the complicated system of governance to specify the responsibilities of the various actors in the markets for the safety and serviceability of the products and services, as well as when it sets the conditions under which they are produced and distributed (Scott, 2006). This may also lead to the designation of a strategy with the involvement of the government and various stakeholders (Scott, 2006: 4-5). The NFIF is an example of this in Tanzania. See Chapters 2, 5, and 7.

The government also takes the administrative role to ensure that the existing capitalist and financial systems work effectively. The government also takes an entrepreneurial role as it mobilises 'power' to achieve legislative authorisation to make changes, whether in laws, regulations or the provision of public goods such as infrastructure (Scott, 2006: 2-3). The 2015 NPSA and its regulations to increase efficiency in both banking and MM services is an example of this in Tanzania. See Chapters 2, 5, and 7.

3.7 Neoliberalism and Technological Innovations

Technological innovations advance the neoliberal agenda and transform economies (Neubauer, 2011). Neoliberalism weakens or relaxes national sovereignty over trade, encourages capital flows, and defines the lines between fiscal and monetary policies to enhance free trade. Technology also favours free markets and trade. McManus (2018) argues that new technologies in the neoliberal era have created new identities. What technology and neoliberalism do is to create a 'global citizen'. Global citizenship connects individuals globally through technology. It lets them access and enjoy services that they would not ordinarily be able to enjoy in non-neoliberal environments or through less developed technologies (Neubauer, 2011).

Schumpeter and Solow recognise the use of technology in wealth creation, redistribution, and economic development (Solow, 1956; Acemoglu, 2009). Firstly, Schumpeter demonstrated how the capitalist system is affected by market innovations through his 'creative destruction process' (Scherer, 1986). According to Carayanis (2013), Schumpeter describes how new market reflects the "process of industrial mutation that constantly revolutionises the economic structure from within, incessantly destroying the old one, by creating a new one". Secondly, the Solow model is a technological process that explains long-run economic growth through capital accumulation, labour growth, and productivity (Holtz-Eakin, 1992). According to McManus (2018), the impact of technological transformations in a neoliberal state is massive. Technologies have aligned with neoliberal ideology bringing transformations with positive and negative implications. There is also the role of technology in legitimating contemporary forms of capitalism (Fisher, 2010; Clair, 2016). Digital technologies are also a mechanism for the dissemination of market logics and services through neoliberal forces that foster: (i) 'entrepreneurship' where neoliberal governments encourage entrepreneurism among their citizens (Amable, 2011; Botanski and Chipello, 2005; Brown. 2015; Clair, 2016; Dardot and Laval, 2014; Wacquant, 2010); (ii) 'market-faith' which is the tendency of making consumers have faith in products and services provided by the various markets (Clair, 2016; Campbell and Pedersen, 2001; Cerny, 2010; Clarke, 2004; Comaroff and Comaroff, 2000; Giroux, 2004; Mirowski, 2013); (iii) 'profit-maximisation' the view that products and services should be placed in markets and their prices should maximise the economic profit that the seller receives and that neoliberalism opens up new field of capital accumulation in areas that were considered as off-limits to the equation of profitability (Clair, 2016; Chomsky, 1999; Harvey, 2005; Harvey, 2007); (iv*)* 'efficiency' a way of providing quality, speedy and cost-effective products and services and as a tool for helping neoliberal governments to distribute social benefits in a cost-effective manner as well as a way to implement 'best practices' of the government (Clair, 2016; Clarke, 2004; Gere, 2002; Jessop, 2002); (v) '*individualism*' where individual interests and values are preferred over those of the community as neoliberalism adopts the ethos of individual responsibility. The individuals become responsible for their own survival (Clair, 2016).

3.7.1 Regulation and Technology

Technological changes or innovations affect law and regulatory governance. Innovations and technology are legally disruptive and transformative; legal and regulatory frameworks, as well as the institutions, are always challenged by new technologies and innovations. This is demonstrated by, for instance, the latest issues emerging in contract laws and their applications to e-commerce (Hutton, 2015; Brownsword et al., 2016; Brownsword and Yeung, 2008). Technological disruptions extend beyond the legal order to regulatory order. New technologies have tendencies to disrupt the existing regulatory frameworks, and by doing so, they also undermine the regulatory legitimacy, which triggers calls for some regulatory reforms (Brownsword et al., 2016; Brownsword and Yeung, 2008). There is a broad agreement in the literature that law and regulation are challenged by new technologies (Brownsword, 2008). Therefore, neoliberal roll-back and roll-out principles should apply accordingly to limit some of these challenges.

According to Mandel (2016), the key issue for the regulation of technology concerns 'how' and 'when' regulations should be adopted as technological innovations evolve. There is also the issue of "technology neutrality" and the slow pacing of law and regulation which is compared to the 'tortoise' as opposed to the rapid pacing of innovation compared to the 'hare' (Moses, 2016). Technology neutrality is one of the key principles of regulatory frameworks for electronic communications (Maxwell and Bourreau, 2014). In Europe, the principle was first introduced in 2009 (OECD, 2011). In Tanzania, it was introduced in 2005. Technology neutrality means three things:

> "Meaning 1: technology neutrality means that technical standards designed to limit negative externalities (eg., radio interference, pollution, and safety) should describe the result to be achieved, but should leave companies free to adopt whatever technology is most appropriate to achieve the result" (Maxwell and Bourreau, 2014:19).

> "Meaning 2: technology neutrality means that the same regulatory principles should apply regardless of the technology used. Regulations should not be drafted in technological silos" (Maxwell and Bourreau, 2014:19).

> "Meaning 3: technology neutrality means that regulators should refrain from using regulations as a means to push the market toward a particular structure that the regulators consider optimal. In a highly dynamic market, regulators should not try to pick technological winners" (Maxwell and Bourreau, 2014:19).

> "In practice, Meaning 1 and Meaning 3 can overlap. A regulator may impose a given technological solution both as a means to limit harmful externalities, such as radio interferences (Meaning 1), and a means of structuring the market in a certain way (Meaning 3)" (Maxwell and Bourreau, 2014:19).

From the three meanings of technology neutrality, what comes from Meaning 1 is that the regulator does not only limit interference in performance standards, which are the standards describing the expected output, but also the structure of the market (Meaning 3). She/he needs to define the scope of regulation and to adapt to new technologies without issues with jurisdictional boundaries (Meaning 2). Meaning 2 assures that the regulators establish the rules that are 'technology neutral' to allow the convergence between the electronic communications networks and services. The regulators, therefore, cannot impose a particular technology on mobile operators (Maxwell and Bourreau, 2014; Kannecke and Körber, 2008). This principle took it to the spectrum licenses, and the principle of 'service neutrality' was established. Spectrum licenses allowed the licensed businesses not to be restricted in the services they offered. This was key in allowing telecommunications companies in Tanzania to provide financial services. MM was a result of these spectrum licenses.

The central debates also centre on how to 'regulate technology' (Brownsword and Yeung, 2008) and on how existing legal and regulatory frameworks need to change in responding to the rapid technological changes (Moses, 2016). Some believe in the 'neutrality of technology' and others believe in 'non-neutrality of technology" (Maxwell and Bourreau, 2014; Shallis, 1984; Ellul, 1990; Pursell, 1994; Postman, 1979). Shallis (1984) asserts that agreeing with the proposition that technology is neutral is accepting the technological imperative. Some technologists would argue that technology is neutral. Those who question the 'neutrality of technology' say that the use of technology influences behaviours and that whether technology has excellent or adverse effects, all depends on how it is used. To this end, technology is neither good, bad, nor neutral. (Ellul, 1990, Postman, 1993; Pursell, 1994).

3.7.2 Technological and Service Neutrality and their Applications in Tanzania

According to Materu-Behitsa and Diyamett (2010:1):

> "The Communication Act of 1993 paved the way for the liberalisation of the telecommunication sector, while the National Telecommunication Policy (NTP) of 1997 provided the framework for further reforms and private-sector engagement in the sector. A milestone in telecom liberalisation was achieved by the establishment of the Telecommunications Regulatory Authority (TCRA) in 2003, as an independent agency for the regulating and licensing of postal, broadcast and communication industries. The TCRA is mandated to promote competition and economic efficiency, protect consumer interests, grant licenses and enforce license conditions, regulate tariffs, and monitor performance".

Before the neoliberal roll-back and liberalisation phase, thus deregulation, of the telecommunications sector, the Tanzania Telecommunications Company Limited (TTCL) monopolised the sector. It was also responsible for the regulation of all telecommunications activity. The broader liberalisation of the economic policies in Tanzania, allowed the establishment of the 1993 Tanzania Communication Act (TCA), which speeded up the government's move to liberalise the telecommunications sector. The 1997 NTP triggered further reforms in the sector (Adam, 2005; Nogahella, 2006).

In 2005, Tanzania introduced the CLF through the TCRA, which facilitated the regulation of licensed communications operators, their technologies and services. It also supports the development of converged services (Nkoma, 2010; Mwalongo and Hussein, n.d.; Mfungahema, 2014). The CLF was designed to embrace technology and service neutrality to help the regulators impose no particular technology on mobile operators and other communications technologies. According to Materu-Behitsa and Diyamett (2010), the CLF was used as a pivotal strategy to implement the full liberalisation policy of the telecommunications sector. Through the CLF regulatory flexibility has been possible in addressing market and technological development (Gunze, 2014). The CLF also allows efficient utilisation of network resources and supports market entry of small-scale operators (Nkoma, 2010). Two principles guide the CLF: technological neutrality and service neutrality. Technological neutrality allows licensed firms to employ any technology they want for communication services. The technology neutrality principle is also flexible for the adoption of new technologies. According to Mfungahema (2006:18), with technology neutrality:

> “a licensee retains the ability to choose the technology and equipment to be used to provide the licensed service. The spirit is to have the best not to turn Tanzania a damping place”.

Moreover, service neutrality is the other principle of the CLF, which allows licensed firms to provide different types of services in any sector. It also allows communication operators to embark on the provision of various services. The TCRA, therefore, has the power and mandate to issue licenses according to the 1993 TCA and the 2003 TCRAA. The CLF is guided by the 2005 Tanzania Communications Licensing Regulations, which name the types of licenses issued in Tanzania. The CLF groups the licenses into four main categories, namely: ‘Network Facility License’ (NFL), ‘Network Service License’ (NSL), ‘Application Service License’ (ASL), and ‘Content Service License’ (CSL).

> “Under the NFL category, a licensee is authorised to install, own, control and provide access to electronic communications facilities, such as fixed links, radio communication transmitters, satellite stations, submarine cable, fibre/copper cable, towers, switches, etc., to other licensed operators on a commercial basis. The NSL category allows a licensee to operate and maintain public electronic communication networks with various technologies (like CDMA, GSM, WCDMS, WLL, ADSL) that involve intelligent network platform signalling control, traffic distribution, switching translation and quality of services control. Examples of network services include mobile services, fixed-line services, bandwidth services, and broadcasting distribution services” (Materu-Behitsa and Diyamett, 2010:7).

Moreover, the ASL also:

> covers the provision of electronic communications services to end-users. Access to these services can be through the establishment of private facilities and networks, or through procurement and reselling of services from licensed facilities or/and network service providers, e.g., Internet Service Providers, Virtual Mobile providers, Payphone Services, or Fixed/Mobile Services. The CSL covers the provision of content services such as satellite broadcasting, broadcasting terrestrial free-to-air TV, terrestrial radio broadcasting, subscription TV, and other broadcasting services” (Materu-Behitsa and Diyamett, 2010:7).

3.7.3 The Essence of the CLF and the Regulatory Environment

According to Mfungahema (2006), the CLF defines the: (i) market structure; (ii) level of competition; (iii) pace of infrastructure expansion; (iv) affordability and range of services available to consumers. It is also used as a tool to exercise control over many variables to pursue policy objectives. According to Materu-Behitsa and Diyamett (2010:6):

> “The main challenge in the regulatory environment is building capacity to maintain a proactive legal framework that can keep the pace with the rapidly changing telecommunication technology and e-business environment. The areas that need attention include data access rights, privacy protection, computer frauds and crimes, security, and privacy of e-transactions, the establishment of rules of governing e-transactions, delivery of e-opportunities to the wider population. TCRA has been instrumental in the development of the electronic and postal communications bill, which has provisions for these”.

As stated earlier, Tanzania’s telecommunications regulatory environment is founded on the CLF, which allows various competitors to enter and leave the telecommunications market easily (also see: van Gorp and Maitland, 2009; Boshe, 2013; and Moshiro, n.d.). The easy entry requirements have boosted competition and have aided the growth and success of mobile telephones and MM services. The Ministry for Communications, Science, and Technology oversees the functions of the telecommunications sector through the help and function of an independent TCRA mandated to restructure and liberalise the telecommunications sector to foster competition and to create conducive conditions for the private sector to operate in the sector.

The TCRAA clearly states the functions of the Ministry and regulatory bodies such as the TCRA and the FCC (URT, 2003b). The FCC was established by the 2008 Fair Competition Act (FCA) 8 to promote and protect both businesses and consumers from unfair and predatory market abuses. The FCC also intervenes to ensure fair competition among various competitors in the market. It also prevents price-fixing, and market monopoly. Furthermore, it regulates the market as well as ensuring stability. The TCRAA provides the FCC with the mandate to deal with all competition issues. Hence, the FCC co-exists with other regulatory frameworks across the different sectors.

One of the regulatory issues that arose from the telecommunications sector was the lack of legal provisions and regulations for electronic money transactions and electronic transactions in government business, which the Bank of Tanzania only provided from 2015. This is one of the examples of rolling-out the government, and thus, re-regulation.

3.7.4 The National Payment System (NPS), its Provisions and Regulations

Besides the CLF, the NPS is also key to the growth and success of MM services in Tanzania. According to Bossone and Cirasino (2001), the payment system is a facility that guarantees the circulation of money. It involves payment instruments, banking, and money transfer procedures and inter-bank fund transfers. According to Masoy (2017), the key payment systems users include the central bank as the regulator and monetary authority in Tanzania, financial institutions and banks, and all those who manage, own or use the payment systems such as the infrastructure providers such as telecommunications company, payment system end-users such as firms and individuals, payment system providers such as swift or card operators, regulatory authorities such as the TCRA and TRA. Other stakeholders of the payments systems include: the international monetary authorities such as the World Bank and the International Monetary Fund (IMF) and regional authorities such as the East African Community (EAC) and the South African Development Commission (SADC).

In Tanzania, the payment system is regulated by using pieces of legislation and regulations: Firstly, the 2015 NPS Act (NPSA). Secondly, the 2015 licensing regulations also known as the 2015 Payment Systems Licensing and Approval Regulations (PSLARs). Thirdly, the 2015 Electronic Money Regulations, also known as the 2015 Payment System Electronic Money Regulations (PSEMRs). The NPSA and the two pieces of regulations provide the legal and regulatory framework for payment systems in Tanzania. See Chapters 2, 5, and 7 for more NPS details.

3.8 Conclusion

In this chapter, I started by identifying key existing literature on the conceptual and theoretical approaches to studying MM and other related ICT for development, FE, and FI issues. By doing so, I identified the gaps and proposed my theoretical framework as a bridge. I also discussed the different theoretical perspectives on neoliberalism. I selected the ‘RCA’ as appropriate for this research. Classical and neoclassical views guide the approach of this research to investigate neoliberal rolling back and rolling out policies. I also explained the key concepts and issues of the theoretical framework and how they applied to my key research issues to help answer the main research questions. Most conceptual and theoretical frameworks do not bring together the puzzle of neoliberalism and MM growth for FI through classical and neoclassical views. The theoretical framework for this research brings these concepts together. By doing so, it distinguishes itself from the previous conceptual and theoretical frameworks.

The theoretical framework can provide an understanding of neoliberalism and its role in the growth of MM via rolling back and rolling out policies. Under the rolling back and rolling out neoliberal eras, the ‘RCA’ helps to unveil how neoliberal policies of deregulation (including liberalisation and privatisation) and regulation emerged (also see: Edwards et al., 2012; Lockie and Higgins, 2007; Graefe, 2006; Self, 2000; Majone, 1992; Majone, 1997). Markets are constructed. Neoliberalisation supports the assertion that markets are socially constructed (Birch, 2016; Swarts, 2013; Mirowski and Phlehwe, 2009; Van Horn and Mirowski, 2009; Davies, 2010; Mirowski, 2013). The classical and neoclassical views under the umbrella of the RCA are key to explaining the need for re-regulation or deregulation that occurred while constructing the markets during the neoliberal era (Majone, 1992; Majone, 1997). Through the neoclassical and classical theories, it became easier to explain whether regulation or deregulation was implemented to safeguard public or private interests. Through re-regulation and deregulation, the advent of MM became possible through the CLF. Being technologically neutral, the CLF as mentioned earlier, favoured innovations and new technologies such as MM. Neoliberalism itself uses technology to advance itself. Likewise, the NPSA and its regulations in the banking sectors were also facilitated through the re-regulation of the NPS activities. Also, there is literature that backs the role of neoliberal, classical and neoclassical views on technological advancement (Comin and Hobijn, 2004; Butter and Hofkes, 2006; Leistert, 2013; Hurwitz and Manne, 2018; Ricardo and Jimenez, 2019; Sredojević, 2016). Also see Chapters 2, 5,6, 7 and 8.

In concluding, I summarise how the theoretical framework facilitates the responses to the main research questions. Firstly, 'how did neoliberalism facilitate the growth of MM in Tanzania?' The neoclassical and classical views explain the deregulation and re-regulation processes that aided the growth of MM in Chapter 5. Secondly, 'how did MM moderate the factors of FE in Tanzania?' The classical and neoclassical views help the research to explain the logic that facilitated the moderation of some factors of FE in Chapter 6. Thirdly, 'what was the response of the banking sector to increasing levels of FI through MM in Tanzania?' In Chapter 7, I analyse the response from the global standard-setting bodies, and the neoliberal response that guided the formulation of the PPPI through NFIF. I also explain the various reactions in the banking sector.

Chapter 4 Research Methodology

4.1 Chapter Overview

The purpose of this chapter is to: Firstly, describe the current state of research methodologies used to study MM, FE and FI on the one hand, and neoliberalism on the other; Secondly, to identify and state any methodological gaps; Thirdly, state how the methodology I have selected adds value to the above-mentioned research area; Fourthly, identify possible methodological approaches for future research; and, Fifthly, explain the methodology used by this research for data collection and data analysis. The chapter consists of 12 sections. Section 4.2 delineates the current state of research methods used in MM and ICTD research. Section 4.3 identifies the methodological issues of studying MM services. Section 4.4 describes the research questions and design, including the methodological perspectives used in studying neoliberalism. Section 4.5 presents the regulatory issues and the proposed research methods. Section 4.6 outlines the research settings, sampling and interviews. Section 4.7 explicates the protocol used for data collection. Section 4.8 spells out data collection methods and use of qualitative data. Section 4.9 demonstrates how data was processed and analysed. Section 4.10 addresses validity and reliability issues in this research. Section 4.11 clarifies how no ethical issues marred the conduct of this research. Section 4.12 concludes and summarises the findings and discussions of the chapter.

4.2 The Current State of Research Methods Used in MM and ICT for Development (ICTD) Research

Several systematic reviews have been conducted to detail the research methods employed to study mobile financial services and ICTD (Kim et al, 2018; Lwoga and Sangeda, 2019; Duncombe and Boateng, 2009; Dahlberg et al., 2008; Diniz et al., 2012; Zaremohzzabieh et al., 2014; Thapa and Saebo, 2014; Mbuyisa and Leonard, 2015; Duncombe 2016). ICTD also include MM. According to Duncombe and Boateng (2009), research on m-finance consists of two categories: (i) mobile financial services, including consumer preferences and behaviour; and (ii) the technological potential of mobile phones. They continue to argue that on the human side, mobile financial services are analysed in terms of: (i) the ability to access credit; (ii) the ability to deliver credit; (iii) the means and motivation for savings; and (iv) means to facilitate cash transfers and payments. These categorisations help identify the barriers to FI caused by economic, social and cultural factors. Moreover, the second categorisation under technological terms helps researchers to understand the functionality of technology, including the technical capabilities of mobile devices and MM technology in promoting FI. According to Duncombe and Boateng (2009), such capabilities among other issues, are not limited to the ability to: (i) store, convert, and transfer monetary value; (ii) enable transactions and payments; (iii) recognise the functionality of the SIM card; and (iv) processing power and user interface. Also, systematic reviews by Dahlberg et al. (2008), Duncombe and Boateng (2009), and Kim et al. (2018) reveal that designing mobile financial service research takes into consideration various parameters, not limited to financial, economic, social, cultural, and technological factors. When studying mobile financial services and FI issues, researchers also try to categorise the different levels of analysis, namely: micro, meso, and macro (Duncombe and Boateng, 2009; TNCFI, 2014). While the micro-level focuses more on users and owners of financial services, the meso-level emphasises the intermediaries who deliver those financial services. At the macro-level, the focus is on the role of institutions providing or determining infrastructure, policies, legal and regulatory frameworks.

Findings from both the peer-reviewed and non-peer reviewed studies reveal that data for mobile financial services come from either primary or secondary sources (Dahlberg et al., 2008; Duncombe and Boateng, 2009; Kim et al., 2018; Sharma and Kansal, 2012). Some research works include neither primary nor secondary sources. Overall, the systematic reviews identify the following data issues: Firstly, primary data tend to be more representative due to representative sampling. However, it has limitations in enhancing theoretical understanding. Secondly, qualitative studies investigate individual cases and hardly make universal generalisations. They also contribute to theory as they provide in-depth data regarding mobile financial services. In some instances, studies on mobile financial services use mixed methods. Sometimes, studies using the mixed-methods approach tend to be quite descriptive (also see: Duncombe and Boateng, 2009; Kim et al., 2018). Section 4.8.1 briefly discusses my research methods and how they relate to this literature.

4.3 Methodological Issues in Studying Mobile Financial Services

In some cases, research works on MM tend to be descriptive with no precise research methods or approach to methodology. According to Duncombe and Boateng (2009), this happens because the study of mobile financial services is relatively new, and in some cases, it lacks methods of inquiry. At times, experienced practitioners provide information that is hard to test methodologically, which is usual for studying new phenomena. The current research seeks to bridge this gap by employing in-depth unstructured research interviews, which are the excellent methods for studying new issues. The interviews allow respondents to reveal unknown information relating to the studied topics (see Section 4.8 and its sub-sections to understand the rationale for my research methods and how they relate to this methodological literature). It also uses secondary official sources to check the validity of the collected data from those in-depth unstructured interviews. Duncombe and Boateng (2009:1252) reaffirm:

> "the most apparent gap in the use of methods was lack of in-depth qualitative studies analysing primary data, in contrast to the loosely positivist mixed-method approaches, which tend to dominate the area of study".

Lwoga and Sangeda (2019:10) agree with these views in their systematic review for ICTD:

> "the reviews revealed that the qualitative approach was the predominant method deployed in the preliminary ICTD research. However, the findings from the assessed reviews showed that there was limited use of in-depth qualitative studies in the reviewed primary studies. It is therefore important to conduct extensive qualitative studies … to gain more insight into the local context. Further studies need to provide detailed statements on the research approach and conduct long-term studies to demonstrate the desired development outcomes, especially for the rural communities".

Duncombe and Boateng (2009), therefore, argue that the lack of in-depth qualitative data explains the lack of proper conceptualisation of mobile financial service studies. Kim et al. (2018:10) also reaffirm these assertions:

> "the choice of research methods in the extant research shows a limited variety and depth".

They also call for more quantitative research methods to gather empirical evidence to boost credibility and generalisability of the research findings. Moreover, Lwoga and Sangeda (2019:10) identify the future research methods to be used:

> "the reviews indicated that there is an inadequate application of participatory methods or action research, or experimental research designs, which are essential in understanding the concept in which ICTs are deployed and the interplay of social, organisational, cultural, political and economic factors".

Duncombe (2016) also agrees with the lack of participatory research methods. These above-mentioned research works on mobile financial services and ICTD also fail to identify appropriate research methods to jointly study the issues of MM, FI and FE, and neoliberalism. This research attempts to bridge this gap with its proposed methodological perspectives and methods as detailed in the next sections of this chapter. The next section presents the research questions and design to start with, and then the subsequent sections delve into the essential research methods for data collection and analysis.

4.4 Research Questions and Research Design

4.4.1 Research Questions

The research answers the following research questions: (i) "How did neoliberalism facilitate the growth of MM in Tanzania? (ii) "How did MM moderate the factors of FE in Tanzania?" (iii) "What was the response of the banking sector to increasing levels of FI through MM in Tanzania?"

As Chapter 3 delineates, one needs to understand the roll-back and roll-out neoliberalisation policies to perceive the role of neoliberalism in facilitating the growth of MM. As specified in Chapter 3, roll-back and roll-out phases of neoliberalism are the deregulatory and re-regulatory periods respectively. The deregulatory phase includes liberalisation and privatisation of the economic and financial sectors. To illustrate the growth of MM, I use the classical and neoclassical approaches to regulation, which are complementary and useful, as they reinforce the 'regulatory capitalism' perspectives as illustrated in Chapter 3. Classicists and neoclassicists provide relevant views that explain the roll-back and roll-out neoliberalisation policies. Through those views and those presented by the RCA, I can link neoliberal policies and MM growth for FI, as explained in Chapter 3.

The mechanism by which MM moderates the factors of FE substantiates its growth and survival. It is through the moderation of the factors of FE that MM grows and becomes one of the essential tools used to fight FE. In the same way, it provides access to formal financial services for financially-excluded people. Hence, research question 2: "how did MM moderate the factors of FE in Tanzania?" The answers to this question corroborate the answers from the first main research question. Moreover, regulation and deregulation of the telecommunications and banking sectors reinforced innovations such as MM which bolstered the levels of FI in Tanzania (Di Castri, 2013a; Di Castri and Gidvani, 2014). Hence, non-bank actors use NPSs to increase levels of FI (AFI, 2017a; AFI, 2017b; Bank of Ghana, 2017; Lumpkins and Joyce, 2015). In political economy, the new entrants increase competition and are not always welcome. To this end, research question 3: "what was the response of the banking sector to increasing levels of FI through MM?", substantiates the re-regulatory and deregulatory discussions to help understand the growth of MM.

4.4.2 Research Design

The study applies a constructivist design as it perceives neoliberalism as a constructive project seeking to create free markets. Neoliberal market constructivism seeks to enhance the efficiency of free markets (Harrison, 2010). A traditional neoliberal view seeks a disciplined state with a predictable legal and regulatory framework that creates and guarantees the functioning of free markets. This constructivist view of neoliberalism has been protected and informed by the Washington Consensus and post-Washington Consensus policies. Hence, neoliberal views place importance on government failures and on the premise that free markets are more efficient with less government interference and that monopoly is free-market friendly. Hence, the neoliberal policies founded on the Washington Consensus template guided the market reforms of the 1980s and 1990s intending to create free and efficient markets. Whatever failures or successes neoliberalism generated, the previous Washington Consensus policies were replaced or enhanced by the augmented Washington Consensus policies, also referred to as the 'post-Washington Consensus'. These two sets of policies created the neoliberal constructivist agenda.

By applying the constructivist design, the research applies insights from both constructive and interpretive traditions to explain neoliberalism and its implications on MM growth and its role in fostering FI, and in moderating FE. The design supports neoliberal views that markets are constructed by government policies and through roll-back and roll-out policies in a neoliberal state (Edward et al., 2012; Harrison, 2010; Klimina, 2011). Political economy at large is concerned with how political forces shape the economy and economic outcomes. Using roll-back and roll-out policies, political forces such as the government and institutions have shaped the economy and economic outcomes such as the levels of FE and FI by allowing the new institutions such as the MNOs to enter the financial sector to provide financial services. Re-regulation and deregulation became key to the survival of these new entrants (Di Castri, 2013a; Di Castri and Gidvani, 2014; URT, 2015a; URT, 2015b; URT, 2015c; Mfungahema, 2006; Mfungahema, 2014).

According to DFID (2009a) and Mcloughlin (2014), there are three levels of political-economic analysis. Firstly, the macro-level or country analysis consists of the top political and economic institutions and actors on the one hand, and their decision-making processes. Secondly, sectoral level analysis explores in more depth the forces influencing policy formation, execution, and outcomes within a sector or sectors. Thirdly, problem-driven analysis investigates possible solutions for existing issues where the actors and their interests, ideas, and institutions are examined to understand policy issues. Out of the three political-economic levels of analysis, this research chose sectoral level analysis where the financial and telecommunications sectors are studied to delineate their roles in allowing MM to take on the provision of formal financial services which enhanced its growth.

In political economy, different methodological and theoretical perspectives facilitate the discussions, and analyses of neoliberalism. They differ in their epistemological and ontological views that define neoliberal policies, reforms, and how the markets are constructed. Also, see Chapter 3 for further details. These methodological and theoretical perspectives include: 'historical institutionalists', 'regulation theorists', 'Foucauldians', 'Marxists', 'Polanyi-inspired scholars', and 'experts on the history of ideas'. These perspectives:

> "provide useful foundations for further progress in understanding and challenging neoliberal ideologies and practices" (Edwards et al., 2012:1).

These methodological and theoretical perspectives support the views on market constructivism and see neoliberalism as a process facilitating the construction of markets through social, economic, and political means. The above-mentioned methodological and theoretical perspectives facilitate the study of neoliberal issues and policies as they explain why neoliberal studies differ and deviate from each other, as is illustrated in Chapter 3.

They provide different possibilities for researchers to contribute to the neoliberal debates as well as to the discussion on the social construction of markets. Neoliberalism itself is a socially constructed reality drawing on the various interpretation of it. Its effects are demonstrated differently in different realities; according to Edwards et al. (2012:1):

> "by combining this diversity with a theoretical and methodological plurality, a sophisticated and multi-layered picture of neoliberalism emerges".

Of the above-mentioned theoretical perspectives, Chapter 3 mentions that this study uses the 'regulatory capitalism' tradition (Edwards et al., 2012:5; Braithwaite, 2008; and Levi-Faur, 2005). The RCA fits well in both the constructivist and interpretivist traditions. Regulation or re-regulation is also about market constructivism. Regulations destroy or construct markets. For instance, the MM market depends on how it is regulated for its survival. Therefore, the RCA thoroughly explains the neoliberal policies of regulation, deregulation, liberalisation, and privatisation. These are the key policies capable of explaining the growth of MM and its role in moderating the factors of FE as well as in enhancing FI. The neoclassical and classical complementary approaches to regulation, which are part of the 'regulatory capitalism' tradition – are used to underpin the theoretical and methodological perspectives of this study. Through neoclassical and classical approaches, it is easier to understand the reality of neoliberal reforms and how it could deviate from 'small governments' and 'free markets' (Self, 2000; Majone, 1992; Booth, 1997).

Hence, the ontological position of this research is in terms of how neoliberalism helped the construction of economic and market realities. In this case, the growth of MM and its role in transforming high levels of FE into increasing levels of FI was facilitated by the deregulatory, re-regulatory, and legal frameworks that allowed the creation of the MM market. The epistemological position is that research tries to explore the MM growth and the transition from high levels of FE to the increasing levels of FI through re-regulation and deregulation of the telecommunications and financial sectors. Klimina (2011) and Harrison (2010) discuss neoliberal market constructivism in detail. These ontological and epistemological positions are in line with those expressed in Chapter 3, Section 3.4. Moreover, Chapter 1, Section 1.3 describes the aims of this research. To achieve these aims, ontological and epistemological positions mentioned above were used to help the design of this research, as described in this chapter. Furthermore, they helped me to select the tools of investigation and to collect the required data as described in Section 4.8. The analysis of data as described in Section 4.9, and data Chapters 5, 6 and 7 also considered these epistemological and ontological points of view.

4.5 Regulatory Issues and the Proposed Research Methods

The research is using the constructivist paradigm and the interpretive tradition seeks to investigate the construction of market realities and how those realities are interpreted or understood. It looks at the creation and success of MM through roll-out (re-regulation) and roll-back (deregulation) neoliberal policies. There are also 'inclusive neoliberalisation policies' (Klak et al., 2011; Revenga and Dooley, 2019; Golooba-Mutebi and Hickey, 2010; also see Chapter 1) to speed up the growth of MM. Literature suggests that the success or failure of regulation and deregulation in constructing markets can be assessed essentially in four ways: (i) the creation of any successful market takes into consideration economic efficiency in terms of allocating economic and market resources; (ii) elimination of any forms of market failures; (iii) elimination of any forms of non-market failures; and (iv) government policies on fairness, justice and wealth distribution (Veljanovski, 2010).

As far as economic efficiency is concerned, regulators seek to achieve one of the following efficiencies: 'Pareto' (Saglam, 2016; Korinek and Kreamer, 2013), 'Kaldor-Hicks' (Stringham, 2001; Munger, 2014; Kaldor, 1939; Hicks, 1939), or 'dynamic' (Poudineh et al., 2014; Distaso, et al. 2008; Borreau and Dogan, 2001; Viscusi, et al., 1995) if they were to allocate resources in the markets. 'Pareto efficiency' is achieved when no-one becomes worse off because of somebody's economic gain when the government allocates the market resources. One achieves Kaldor-Hicks efficiency through wealth maximisation, where those gaining wealth must compensate those not gaining wealth (also see: Ellerman, 2013). Likewise, one achieves 'dynamic efficiency' through innovations where various services are produced through any of the following: 'product innovation', 'process innovation', as well as through the supply and demand created by those innovations, which facilitate the maximisation of wealth (also see: Poudineh et al., 2014; Distaso, et al. 2008; Borreau and Dogan, 2001; Viscusi, et al., 1995). Innovation is commercially successful exploitation of ideas (Nooteboom and Stam, 2008). For a new market such as the MM market, regulators must select one or more of these principles to help them regulate the new industry.

As far as market failure is concerned, markets fail in theory and practice because of the following key issues: market power, externalities, public goods, and imperfect information (Veljanovski, 2010). The survival of a new entrant to the market depends on his market power and the degree of fair competition in the market. This is termed 'market selection hypothesis' (Alchian, 1950; Friedman, 1953; Sandroni, 2000; Leoni, n.d.). The new entrant also survives if externalities do not impose high costs of operation and significant losses (Renski, 2015; Tavassolli and Jienwatcharamongkhol, 2016). Moreover, the public good, such as a conducive regulatory environment and legal framework provides opportunities for fair competition to all (Veljanovski, 2010:5). Asymmetric information also results in inefficient market outcomes and choices causing 'adverse selection' issues where one party cannot make a proper selection between two or more services due to lack of information on those services (also see: Mattesini, 1993; Spencer, 2000). Asymmetric information also causes 'moral hazard' issues whereby risky market behaviours cannot be monitored or priced appropriately (also see: Collin-Dufresne and Fos, 2013; Adamati et al., 1994). For new markets such as the MM market, information asymmetry hampers the progress and growth of such markets. It is therefore in the interest of the regulators, and the sector to have the market resolve asymmetric information issues as:

> "regulators are unlikely to be perfectly informed, and regulation is unlikely to be costlessly implemented" (Brocas et al., 2006:62).

Moreover, there are non-market failures that affect the success of new markets (Veljanovski, 2010; 6-7). Non-market failures consist of the hierarchical or administrative methods of market coordination as well as the production of goods and services in those markets which interfere with market transactions (see Coase, 1937; Williamson, 1985). Some market actors prefer the use of the principal-agent model to cut down some of the market costs. Regulation also plays a vital part in determining the principal-agent relations as well as transaction market costs. Hence, the government's role in market coordination is also key to allowing the growth of any new markets or services.

Markets and regulation generate winners and losers (Thatcher, 2004; Weare and Smolensky, 2000). As a result, there are always views about the acceptability or fairness of market and regulatory outcomes. Given the complex nature of the markets, re-regulatory and deregulatory policies, it was decided that in-depth unstructured interviews be used to unveil some hidden data because of their flexibility in allowing interviewees to talk about a wide range of important issues. Documentary review, or secondary data sources, and focus groups were the other main data collection methods employed. A detailed account of these methods is given in Sections 4.8.1, 4.8.2, and 4.8.3, respectively. The reason for the in-depth unstructured interviews was to deliberately let the interviewees unveil data so that they would discuss the issues they deem important, as the researcher did not follow a specific pattern of prepared questions. Whatever was considered important during the interview that covered the researched topic was given full attention.

Diagram 4.1 below illustrates the research methodology and design of this study. Sections after this illustration (Sections 4.6, 4.7, 4.8, and 4.9), contain further explanations of the applications of the data collection methods which were used during the data collection stages of this research.

Diagram 4.1: An Illustration of Research Methods and Design

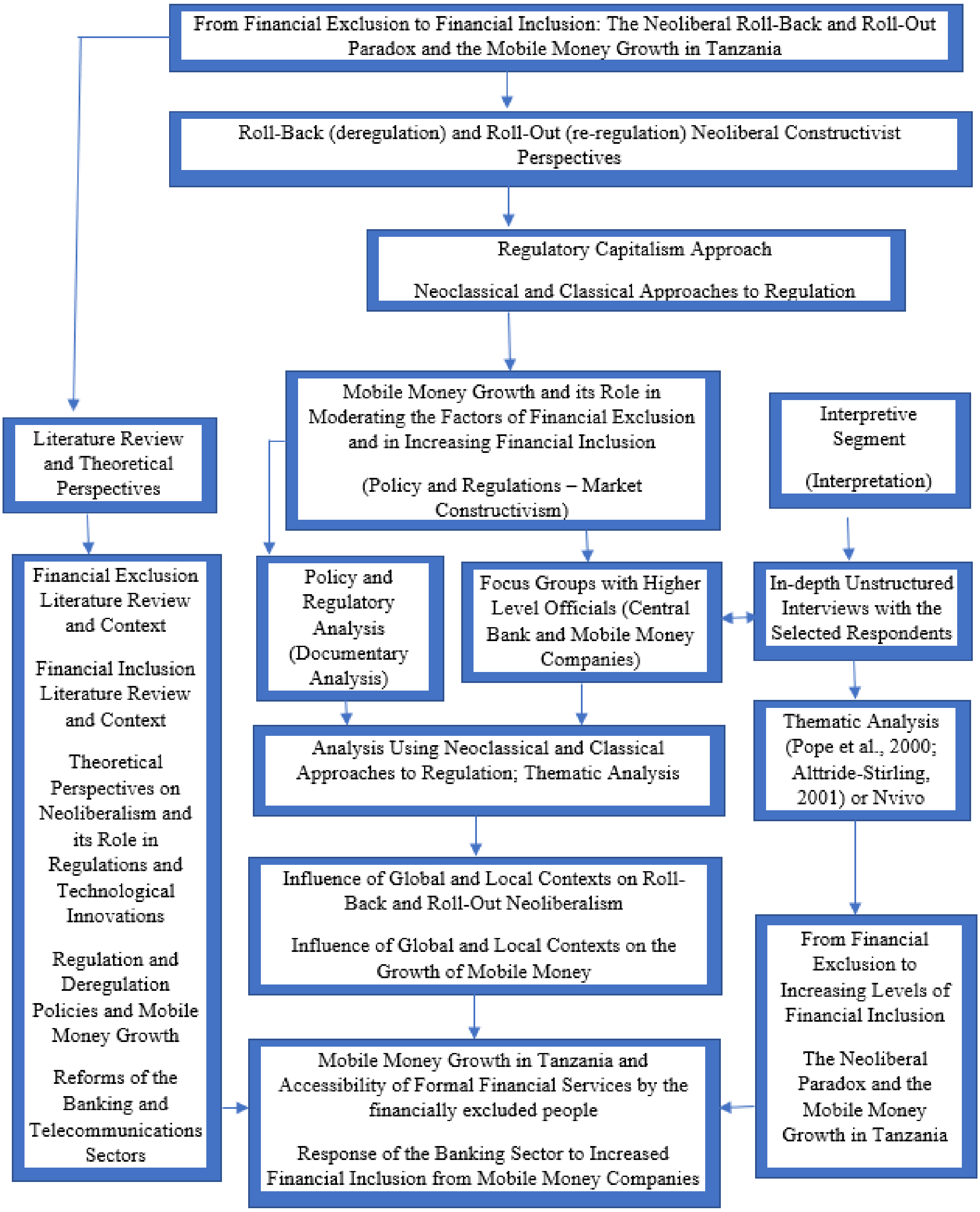


Diagram 4.2 illustrates the plan I had for data collection. Further details in Sections 4.6, 4.7, and 4.8. For details on the selected methods please see Section 4.8.

Diagram 4.2: A Plan for the Main Data Collection

Data Collection Phase, Method and Date	Relevant Research Activities	Explanations
Documentary Review (From 15th November 2017 – 30th March 2018)	Reviewing the relevant official documents: the National Financial Inclusion Framework (NFIF), FinScope Surveys, InterMedia Surveys, Global Findex, GSMA Reports, the 2017 Supply-Side Report, the 2017 Self-Evaluation Report of the NFIF.	These are the key documents with credible statistics on mobile money and banking services in Tanzania. They also detail the transition from high levels of financial exclusion to increasing levels of financial inclusion.
Interviews (From 1st February 2018 – 24th April 2018)	84 interviews with relevant respondents were conducted. 64 respondents were senior or high-level officials from the relevant institutions. 20 additional respondents were low-income people and some of them were unbanked.	Letters, emails or phone calls were made to get the respondents. About 98% of the institutions I contacted agreed to an interview. Only 2% stated that they were not taking interviews at that time. I interviewed policymakers, regulators, mobile money companies, banks, digital financial platforms, financial switches, insurance companies, relevant civil societies, relevant ministries, relevant senior professionals, and about 20 relevant low-income citizens using mobile money services.
Focus Groups (From 8th April to 22nd April 2018)	Three focus group sessions were organised for three different institutions. One group of the regulators had five members in their focus group. Another group of policymakers had three members in the focus group. One of the MNOs provided their three members of staff in a different focus group session. This was a good way of gathering relevant data from some of the regulators, policymakers and the MNOs.	Responding to my interview requests, three institutions opted to have focus group sessions instead of one-to-one interviews. They claimed that regulatory and policy issues require all relevant senior officials to be present as they deal with different policy and regulatory issues.
Preliminary Analysis (From 1st June – November 2018)	Writing interview transcripts. Data Analysis	Every interview was transcribed. Then using the thematic method of data analysis, I analysed the data.

4.6 Setting and Sampling

4.6.1 Setting

I conducted this research in Dar es Salaam. Dar es Salaam is Tanzania's financial centre. Most of the respondents lived or did their businesses there. The research project also recruited a research assistant who coordinated the interviews, venues, and facilitated correspondence with the various institutions in both Swahili and English languages. It took about three months to complete the fieldwork.

4.6.2 Sampling Techniques

The research used both ‘purposive’ and ‘snowball’ sampling techniques. Patton (2001) asserts that ‘purposive’ sampling reaches out to relevant respondents who have relevant information for the study. These are regulators and policymakers from various government and private sector institutions who get involved in banking and MM sector businesses. ‘Purposive sampling’ allowed me to reach other relevant respondents who were affected by neoliberal policies and FE issues as well as those who used formal financial services. Bryman (2008) and Cohen et al. (2011) also support purposive sampling, they believe it is useful for targeting relevant informants who have proper knowledge of the researched issues. Of the eighty-four respondents, sixty-four were elites (senior officials). Patton (1990) and Sandelowski (1993) argue that all types of sampling in qualitative research may be encompassed under the broad term of purposive sampling. The choice of purposive sampling for this study is appropriate.

As far as snowball sampling is concerned, the research used the selected informants to identify other key informants who had a great deal of knowledge or information about the researched issues of MM, banking, FE, and FI. This chain of contacts was key to identifying the critical cases. A few key informants were identified through the recommendation of other informants (on snowballing, also see: Patton, 1990; Heckathorn, 2015; Biernacki and Waldorf, 1981; Webster and Watson; 2002). According to Lynch (n.d.), the researcher should:

> “continue to develop the sample until he reaches ‘saturation’ in the data”.

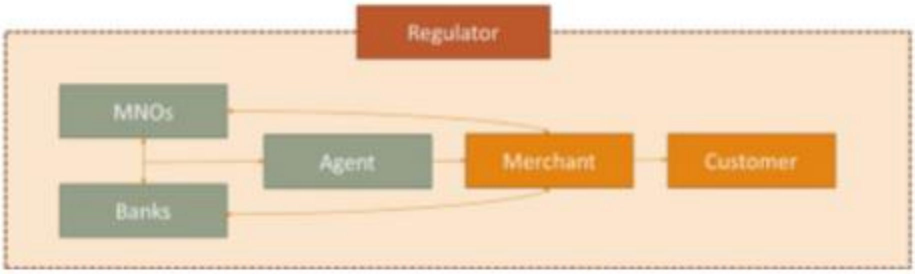
At the eighty-fourth interview, the repetitive arguments from the eighty-fourth respondent and those of earlier respondents suggested that I had reached ‘saturation’ point.

For qualitative research, the sample size can be between one to twenty-five informants for a study to be credible. I continued to the eighty-fourth interview because I wanted to have as much data as I could from relevant professionals and other relevant selected interviewees. Cresswell (1998) also suggests that a good sample must have between five and twenty-five respondents as this is a good sample that can be used to tap into relevant individual’s perspectives and experiences. Bertaux (1981) recommends fifteen respondents as an acceptable required number for qualitative interviews. The bigger the sample, the better. Hence, I opted for a more significant sample of eighty-four respondents.

4.6.3 The Informants and the Rationale for their Selection

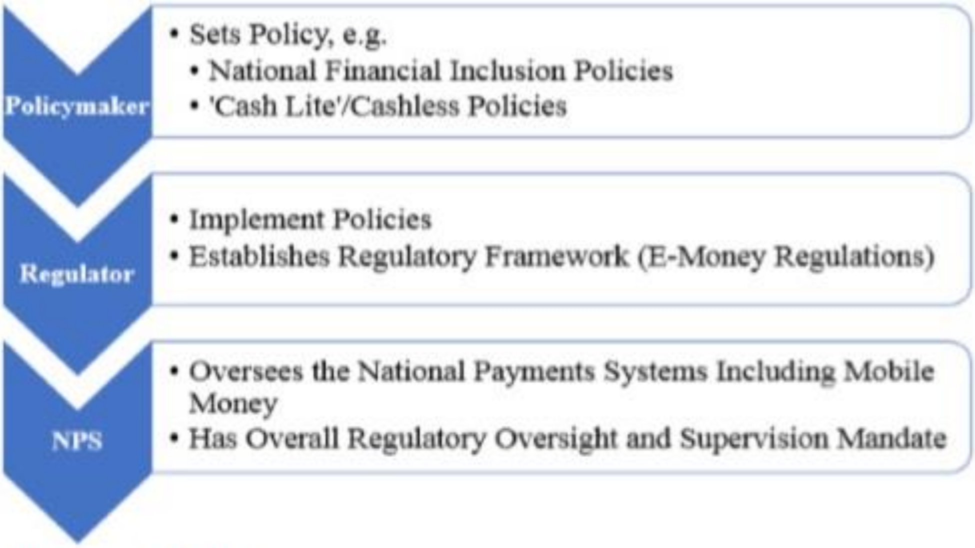
According to GSMA (2016a), financial policy as it had been perceived in the MM world involved the following three principle actors amongst many others: policymakers, regulators, and NPS experts. Also, see Diagram 4.3 and Diagram 4.4 below for further details.

Diagram 4.3 Ecosystem of Mobile Financial Services



Source: Kim et al. (2018)

Diagram 4.4: Financial Sector Policy and Regulatory Frameworks



Source: GSMA (2016b).

Therefore, the first three elite groups I interviewed were the: (i) two senior policymakers who were part of the NFIF who came from the Ministry of Finance, and the Financial Intelligence Unit of the Ministry of Finance; (ii) nine senior officials from the five regulatory bodies, the BOT, TCRA, TIRA, TRA, FCC; and (iii) three senior officials overseeing the NPS at the Directorate of Oversight and National Payment Systems. While the 'policymakers' set policies, the regulators implement policies and establish regulatory frameworks. Also, the experts from the NPSs Unit have overall regulatory oversight and mandate covering payment systems. All these three groups of people were, in one way or another, involved in neoliberal reforms, banking, and MM policies. Their expertise and experience made them suitable informants for this research.

Other informants came from the institutions, as mentioned in Appendix 4.1. They included: (i) ten senior officials from nine different banks that provided formal financial services; (ii) ten senior respondents from the six MNOs that provided MM services; (iii) five senior respondents from four digital platforms and switches who facilitated FI through digital financial services. They also provided the infrastructure through which MM and banking transfers and payments occurred; (iv) five senior officials from the insurance companies and one senior insurance broker who provided insurance services including micro-insurance services with MM companies; (v) two senior officials from banking and insurance associations that advocated for banking and insurance interests; (vi) two senior officials from the FSDT, which conducts the FinScope surveys; (vii) two senior political scientists from the University of Dar-es- Salaam who helped to intellectually validate the relevance of my findings; (viii) seven relevant senior professionals in the area, including the former governor of the BOT/Former Chair of the National Financial Inclusion Council, an interoperability expert, an IT platform expert with MM platform knowledge, a crucial relevant author who wrote a book on financial sector development in Tanzania; (ix) twenty low-income people from all walks of life who provided their understanding of the current rising FI levels.

4.6.4 Reasons Behind the Use of 11 Elite Interviews

I considered the leading players who understood the complex neoliberal issues and their impact on mobile money and the transformation from high levels of financial exclusion to increasing levels of financial inclusion in Tanzania. As stated in Section 4.6.3, these players came from the policymaking and regulatory bodies, and the experts running the NPS. Other players came from the mobile money ecosystem, and they included banks, MNOs, digital platforms, interoperability experts, and the aggregators and switches. The 11 'elite' respondents came from these bodies and institutions. They were in a position to understand the research issues. They could also talk with authority as they were involved in policymaking processes. They were also involved in the execution and implementation of national financial inclusion strategies (see Appendices 4.9 and 4.10). They provided the best answers to support the key emerged issues (see Chapters 2, 5, 6, 7).

4.6.4.1 The Former BOT Governor

The Former Governor got involved in the policymaking processes of the 1980s and 1990s, which contributed to the implementation of the neoliberal reforms in Tanzania. He also worked with the World Bank as a 'Lead Economist' in Africa and could understand both the national and international neoliberal agenda of reforms. He was also directly involved in the Mkapa and Kikwete administrations in implementing various financial sector reforms. He was the governor who coordinated the introduction of financial inclusion initiatives and strategies in Tanzania as he chaired the NFIC. He allowed as a governor the introduction of MM initiatives and the inclusion of the MNOs in the NPS (Ndulu, 2013; IMF, 2017; Carlyle, 2014). He was also a chair of the AFI (AFI-Global, 2016). Serving in all these capacities, he understood financial exclusion and financial inclusion in Tanzania, and the issues of the financial sector, including the MNOs. As a key policymaker in Tanzania aiming to resolve some of these issues, and based on the design of this research as explained in Chapter 1 and this chapter, he was the right respondent for this research. The details he provided were crucial for almost every chapter of this dissertation.

4.6.4.2 The Executive Banking Sector Official

In 1995, under the 'Societies Ordinance' (Cap. 337 of 1954), which sought to serve banks and non-bank financial institutions, the TBA was established (RITA, n.d.; Best-Dialogue, 2019). It provides a collective voice for these institutions and helps to safeguard their common interests. Thus, it coordinates various operations and activities and brings about their harmonisation in the banking sector. It works closely with the BOT and participates in the NFIC and the other national committees, given the mandate to implement the NFIF (also see: PaymentAfrika, 2015; TNCFI, 2014; TNCFI, 2018). It was involved in the negotiations with the MNOs when the banks tried to object to the entry of the MNOs in the NPS. It is still involved in the talks involving the banks, MNOs, and other financial inclusion stakeholders. Its influence has been essential in helping me understand not only the response of the banking sector in Chapter 8, but also to perceive other financial inclusion and MNO issues, as well as other political-economic problems in the banking sector. By considering the data I collected from the TBA respondent, I answered the three main research questions, as demonstrated in this dissertation.

4.6.4.3 Senior Telecom Sector Official

The Senior Telecom Sector Official came from the TCRA. While the TCRA regulates MM's communications aspects, it is also actively engaging in fostering financial inclusion and CLF in Tanzania. The CLF was crucial to the advent of MM and was also vital in liberalising the communications sector (also see: Mhella, 2019; Materu-Bahitsa and Diyamett, 2010; Mfungahema, 2006; van Gorp and Maitland, 2009; Boshe, 2013; and Moshiro, n.d.). The CLF turned out to be a strategy used to regulate the communications sector. Mobile phone companies involved in application services were able to offer mobile financial services through the CLF. The TCRA also attends meetings in every committee, as stipulated in the NFIF. It also ensures regulatory collaborations to enhance digital financial inclusion services in Tanzania. Digital financial inclusion provides access to and use of formal financial services by financially-excluded individuals (also see: United Nations, 2016; CGAP, 2015). According to Nkya (n.d.), the TCRA enhances collaboration and increases dialogue between financial services and telecommunications regulators, including clarifying their respective roles and responsibilities in the DFS area. It also deals with the critical regulatory and policy issues that prevent the progress of liberalised DFS, and an interoperable DFS system. It also seeks solutions where other financial service regulators and Telco regulators overlap. The TCRA also supports innovative and inclusive policies to catalyse financial inclusion (also see: van Gorp and Maitland, 2009). It also manages and issues the MM numbering resources, SIM registration, DFS, and e-commerce infrastructure (also see: Makame et al., 2014; TCRA, 2014; di Castri and Gidvani, 2014). It also works closely with the national and international standards-setting bodies to address issues regarding MM technologies. In executing these functions, the TCRA was and still is in the position to inform the critical issues investigated by this research. Thus, a respondent with relevant knowledge from the TCRA was selected.

4.6.4.4 Financial Sector Official

The Financial Sector Official came from the FSDT. The FSDT contributes to studying the financial behaviour of the Tanzanians by conducting a nationally representative survey known as the FinScope survey. According to FSDT (n.d.):

> "FSDT works with regulators to address different market constraints to create an enabling environment for mobile financial services and agency banking in Tanzania. Further, in partnerships with financial institutions and mobile network operators, FSDT works to increase cash-outlets in Tanzania to improve the proximity of financial services to where people live and transact. To ensure that the financial services offered to meet the needs of individuals and enterprises, FSDT works with financial services providers through research and product development to better serve the rural unbanked."

The FSDT also sits on committees of the NFIF. It supports mobile money innovations and other market interventions in the financial sector by enhancing partnerships with financial sector stakeholders. It concentrates its works on the following theme areas: agricultural and rural finance, SME finance, digital finance, and insurance (also see: FSDT, 2017; FSDT, 2016; FSDT,2020). The FSDT also works with the MNOs to enhance digital financial inclusion. In all these capacities, the FSDT is one of the key players supporting MM development in Tanzania and has surveys and knowledge that significantly informed this study. Hence, selecting a respondent from the FSDT was not an option but a necessity for the research. The Financial Sector Official I interviewed was involved firsthand in FinScope surveys (also see: FinScope, 2006; FinScope, 2009; FinScope, 2013a; FinScope, 2013b; and FinScope, 2018). During the data analysis, it became apparent that the respondent had relevant knowledge and responded to the questions regarding the critical research issues. After the first interview with the financial sector official, I had a follow-up interview with the Executive Banking Sector Official.

4.6.4.5 The Executive Financial Sector Official

The Executive Financial Sector Official has been involved in policymaking processes and policy execution and implementation at different national levels. He sits in the NFIC and works with the regulators, including the BOT, TCRA, FCC, and other financial stakeholders, to ensure improved capacity and sustainability in Tanzania's financial sector to meet the needs of low-income and financially-excluded people. The respondent himself has been involved in pro-poor financial initiatives and has invaluable knowledge of banking and finance, the political economy of financial inclusion and mobile money, innovation policy, insurance, rural finance, and informal financial services. His knowledge of the political economy of financial inclusion and mobile money has informed some aspects of the researched issues, as demonstrated in Chapter 5.

4.6.4.6 Senior TBA Respondent

The respondent from the MoF had the responsibility to formulate, develop, and monitor the implementation of financial sector development policies, including FI and MM policies. The MoF itself is the high-level financial policymaking body in Tanzania. It advises the government on financial policy issues and reforms to help the government support its economic and social objectives (also see: MoF, 2020a; MoF, 2008; MoF, n.d.; MoF, n.d.a). The MoF also develops regulatory policies for Tanzania's financial sector representing the government both nationally and internationally. The MoF also supports the enhancement of the optimal use of ICT and digital technologies for financial applications (MoF, 2020b; MoF, 2020c). It also brings together public and private institutions to support FI and MM activities in Tanzania (also see: MoF, 2019; MoF, 2008). It also seeks to enhance financial inclusion by: firstly, bringing financial services close to financially-excluded individuals; secondly, supporting and strengthening the financial systems and infrastructure used to deliver financial services; thirdly, supporting educational systems offering financial education to increase financial literacy. The MoF also builds a friendly and conducive environment for FI by supporting digital innovations such as MM and mobile banking (also see: MoF, 2016; Binala, n.d.; Wavuti, 2014). Through the MoF's auspices, the government and the financial stakeholders have been able to reach financially-unreached individuals in rural areas through MM and other financial channels and innovations. The Senior TBA Respondent was one of the principal economists in the MoF who dealt with FI policy issues, including MM strategic issues. The respondent had extensive knowledge of these issues and could help explain the financial sector reforms in Tanzania, including the advent of MM, as demonstrated in Chapters 5 and 6.

4.6.4.7 Senior BOT Official

The Senior Official BOT worked for the BOT. The BOT is an authority dealing with NPS issues as it oversees the NPS's operations (also see: Msinjili, 2019; BIS, n.d; TanzaniaInvest, 2019). Since 2008, the BOT has actively promoted NFISs and became a leading member of the AFI. It also helped create the NFIF, which sought to reduce the number of financially-excluded individuals. It supported MM even before the regulations to keep it were not adequately established. The BOT also allowed MM innovations to formulate the legal and regulatory framework (di Castri and Gidvani, 2014). The BOT, therefore, is in a position to inform researchers about MM and its involvement in the financial system.

The Senior BOT Official had experience in the oversight and policy of the NPS in the Directorate of NPS. The respondent was principal in detailing and informing this research on the following issues: (i) payment systems and national financial strategies including financial laws and regulations; and (ii) the transaction volumes involving the MNOs and mobile financial services as each of those transactions passed through the NPS, and the oversight and policy department was aware of the transactional volumes. The respondent also detailed the evolution of MM in Tanzania and the various mobile financial service payments adopted by the financial market. The Senior BOT Official was instrumental in providing the publications that helped me use diagrams 7.2, 7.3, and 7.4 in Section 7.6.

4.6.4.8 Senior Interoperability Expert

WS Technology Consulting provides solutions to technical issues using cost-effective means. It also provides:

> "tailored technology consulting, project management, software development, information technology security and risk management services to the professional marketplace, which requires the very highest standards of services" (WS Technology Consulting, n.d.).

The Senior Interoperability Expert came from WS Technology Consulting and dealt with the issues of technology and payments, mobile money interoperability being one of them. The respondent had a long experience in information technology and payments at national and international levels and got involved in various interoperability projects in Tanzania and elsewhere. The respondent had experience with BOT operations and digital financial technologies used in Tanzania. The respondent was vital in forming this research on the issues of interoperability. Chapters 5 and 6 detail interoperability and its benefits as well as how the rolling-out neoliberalisation made interoperability successful in Tanzania.

4.6.4.9 Senior Banking Official

The Senior Banking Official came from FINCA Microfinance Bank. FINCA works with low-income people and seeks to help them access financial services through digital technologies and other traditional banking channels (Cowans, 2011; Fox, 2017; Gozman et al., 2018). By doing so, it facilitates mobile saving and loans (also see: FINCA, 2020; FINCA et al.,2017). FINCA has invested in Digital Financial Automation (DFA), which enables its endeavours to reach financially-excluded individuals (also see: FINCA, 2019; Mhina, 2020; OECD, 2018). The FINCA experience demonstrates that technology increases the efficiency of providing easy access to financial services (UNCDF, 2019). Since 2017, FINCA has delivered financial services to low-income and financially-marginalised individuals in Tanzania. Its 'HaloYako' mobile financial service, in partnership with Halotel, has helped provide financial services to financially-excluded individuals. Now, low-income people can apply and receive loans in less than two days. MM's digital platform has facilitated the availability of this service. It enables financially-excluded people to transfer as little as 100 Tanzanian shillings to an account at no cost. Indeed, this digitalisation has helped those in rural areas to be included in financial services (also see: AFI, 2018; ADB, 2016; GSMA, 2014b).

I chose the Senior Banking Official from FINCA as he helped to explain how a bank collaborates with an MNO to deliver financial services to the poor, as FINCA does this through 'HaloYako' in partnership with Halotel (FINCA, 2017). The respondent had good experience and knowledge of technological changes in the banking sector, ranging from digital channels and digital financial services to current issues on the banking sector's transformation and business risks. The respondent was part of the team that helped FINCA to embrace digital financial technology in Tanzania.

4.6.4.10 The Senior Switch Officer

The Senior Switch Officer came from Umoja Switch. In Tanzania, Umoja Switch is currently used by 27 banks as a shared platform through which banks reach their customers, even through mobile phones. Established in 2006 by 6 banks, Umoja Switch provides a wide range of services, including: bank-to-wallet (from a bank account to MPesa, TigoPesa or AirtelMoney); wallet-to-bank (From MPesa, TigoPesa or AirtelMoney to bank accounts); inter-bank transfer; intra-bank transfer; pre-paid airtime; payments for some bills. Umoja Switch, as a platform, provides financial service users with the assurance of getting financial services and transacting on time using a wide range of FSPs (also see: Mbilinyi, 2018).

The Senior Switch Officer was knowledgeable about digital financial services, including digital financial infrastructure, and could explain how switches work and how they facilitate FI. A switch is an interconnection of ATMs, which has been extended in some cases to connect with MM wallets for financial customers residing anywhere in the country. These services are now linked to certain mobile financial services. Chapters 7 and 8 briefly mention Umoja Switch.

4.6.4.11 The CEO Aggregator

The CEO Aggregator came from Selcom. Selcom was formed in 2011 and is a platform that seeks to digitise payments by providing solutions to facilitate easy and safe payments integration. It started as a prepaid airtime distributor. Over time it grew, and today it offers digitised bill payment solutions. Selcom has also been referred to as an aggregator in the MM ecosystem (also see: Winiecki, 2017; Arabehety et al., 2016:4; Mas and Elliot, 2014). It assists MM users to perform a wide range of transactions. For instance, Selcom works with

AirtelMoney to provide a virtual Mastercard, enabling AirtelMoney users to pay for services and goods. Selcom also has an agency-banking service known as 'Qwikserv', which offers fast access touchpoints for essential banking services including deposits, withdrawals, balance enquiry, mini-statement, funds transfer and instant account opening (also see: TechMetro, 2020; Pavithra, 2020; Wasonga, 2020). In summary, Selcom seeks to promote FI in Tanzania through the digitisation of payments working with MNOs.

The 'CEO Aggregator' has extensive knowledge of the telecommunications and banking sectors. He works with Selcom to enable merchants to receive digital payments, and offers easy, convenient, and secure payment solutions. The respondent has also been involved in various projects with banks and MNOs to facilitate Tanzania's digital transformation to advance FI. In short, the respondent was engaged first-hand in helping reach financially-excluded individuals through quick and convenient payment options on their mobile devices.

I have also used some extracts from eight low-income respondents in Chapter 6 to substantiate some of their views and support the research findings.

4.7 Instrumentation

The protocol for data collection involved getting ethical clearance from the Geography School's Ethics Committee. A letter from the university introducing me to the informants, and the institutions was written and sent to the key respondents or their institutions prior to the interview sessions (See Appendix 4.2). Other informants or institutions required the researcher to get clearance from the relevant ministries or authorities. Being an American citizen, I applied and received a research visa for Tanzania, which allowed me to conduct my research there. To facilitate the process of data collection in a new environment, I employed a research assistant who helped me to have access to different buildings. It was challenging to access some of the premises without a Tanzanian national ID. He had a Tanzanian voter's ID so the gatekeepers could allow me to enter the buildings with him. He also assisted with the coordination of these interviews (see Appendix 4.1 for more details on the interviews).

4.8 The Main Data Collection Methods

Interviews are in-depth conversations between the researcher and the respondents that help the researcher to collect data and relevant research information. For this research, I used the following three data collection methods: (i) in-depth unstructured interviews; (ii) focus groups; and (iii) documentary review.

4.8.1 In-depth Unstructured Interviews

I preferred the use of in-depth unstructured interviews over other interviews because of the reasons provided in Sections 4.2 and 4.3. The systematic reviews recommend the use of in-depth qualitative research. As Duncombe and Boateng (2009), Lwoga and Sangeda (2019), and Kim et al. (2019) claim, there is a lack of in-depth conceptualisation of mobile finance service studies. MM studies are new, and a lack of in-depth knowledge and data for theorising is an issue that requires in-depth qualitative investigations. I wanted to bridge this methodological gap by conducting an in-depth unstructured interview. Unlike other interviews, in-depth unstructured interviews do not set questions to be asked in advance to probe the understanding of an issue that has not yet been fully understood or thoroughly studied (Kombo and Tromp, 2009: 92-93). They use open-ended questions as they are exploratory and interpretive means of investigation (Bryman, 2008). They let the respondents reveal as much information as they can. This helps the interviewer to explore more on the new emerging issues. I prepared a few questions before the elite interviews (see Appendix 4.3). I also let other unprepared questions follow as the issues and evidence unveiled. As MM services, FE, and FI issues are new and evolving; I had to use a method that would provide me with a lot of the unknown data and information. The in-depth unstructured interviews could help me achieve this goal easier than any other types of interviews (also see: Douglas, 1985; Fontana and Frey, 1994; Bernard, 1988).

I interviewed eighty-four respondents, sixty-four of them were the elites working as senior officials. I presented my written requests and then followed up with them or their institutions. I also interviewed twenty low-income respondents from all walks of life (see Section 8.10). See Appendix 4.1 to view the names of the institutions or the categories of the respondents.

4.8.2 Focus Groups

The BOT and Vodacom M-Pesa preferred the use of mini-focus groups of three to five people. A focus group was a small group of people asked about their opinions, perceptions, beliefs, and attitudes towards MM, FI, and the response of the banking sector. It was a form of qualitative research with open-ended questions. Both the BOT and Vodacom M-Pesa selected the members of the focus groups carefully for effective responses. They asked beforehand what I wanted to know. The chosen members knew my topic of inquiry. They preferred a leading respondent who facilitated the sessions. I asked questions when I needed more details. During this process, I recorded the sessions. The discussions in the focus groups helped me to obtain data and insights that would be less accessible without the interaction found in a group setting.

When the participants replied to the questions by narrating their experiences, this stimulated the memories of the other participants and reminded them of their experiences and they were motivated to come forward with their opinions and evidence. They used or shared a common language to describe similar experiences. Although Rushkoff (2005) argues that focus group members may not express their views and may choose to support specific data and hide other pieces of evidence, this issue was resolved by other respondents who participated in my in-depth unstructured interviews. The findings from these focus groups did not differ from the conclusions of the other interviews. They discussed policy issues, regulatory and legal frameworks, FI, FE, MM, and banking services. There were two focus groups at the BOT from the following departments: the Real Sector and Microfinance Department that deals with FI (five members in the focus group) and the Directorate of Oversight and Policy for the NPSs (three members in the focus group). Vodacom M-Pesa consisted of three members in their focus group session.

The 'in-depth unstructured interviews' and focus group sessions provided data relating to the: (i) issues of FI and FE; (ii) neoliberalism; (iii) changing banking sector; (iv) regulatory and legal framework issues; (v) interpretation of the problems researched from the informants' perspectives. The findings of the interviews reconstruct important events that have helped change the dynamics of FE and that have promoted FI, the transformation of the banking sector and its politics, as well as the growth of MM. In addition, the secondary sources of data helped: (i) build the context of the transformation and change; (ii) strengthen the neoliberal argument as one of the factors that promoted the advent of MM; (ii) strengthen the findings of the primary sources of data (see Appendix 4.4 for the criteria for assessing the quality of the secondary documents).

At the macro-level (supply-side), data on the outcomes of the macro environment, and the impact of the regulatory framework affecting inclusive financial services was collected through interviews or the secondary sources. In order to understand the transformation and politics of the banking sector, as well as the declining levels of FE and increasing levels of FI, the effectiveness of the macro environment and its outcomes in terms of alleviating FE, needed to be analysed. Several interview questions were asked to help understand the changes at the macro and sectoral levels. Given that this research used in-depth unstructured interviewing methods, it did not require pre-prepared interview questions (see Appendix 4.3).

4.8.3 Use of Official Secondary Data Sources

Statistics and data on 'FI' and 'FE' can be derived from demand-side data surveys or supply-side data surveys. The demand-side data surveys gather data on users of financial services, including MM data, from individuals, households, or firms. The data help researchers and institutions to understand customers' financial needs both met and unmet. The data also delineate the barriers that customers face when they want to use formal financial services and products. Moreover, those surveys include customer's demographic and socio-economic details such as age, income, gender, occupation, domicile, etc. These demand-side data surveys also help researchers and institutions to make country comparisons depending on surveys' outcomes in different countries. These surveys are not limited to Bank of Tanzania documents, Global Findex, Enterprise Surveys, Consumer Protection, Financial Capability Surveys, Living Standards Measurement Study, FinScope, MECOVI, Financial Diaries (GPFI, 2011b; also see Appendix 4.5 for further details). I used FinScope surveys, InterMedia surveys, Global Findex Data and the GSMA data to build the contexts for FE, FI, the growth of MM and issues with banking services. For details on these surveys and documents, see Sections 4.8.3.1.1, 4.8.3.1.2, 4.8.3.1.3, and 4.8.3.1.4.

Likewise, the supply-side data surveys on FI provide data on formal financial institutions. The data itself are either what these institutions report to the regulators, or their responses during the surveys. The data include geographic demand and supply of financial services which could also consider the points of access such as branches, etc. The pricing of services and products is part of the data, as well as the penetration and usage of services and products. Supply-side data surveys include IMF Financial Access Survey (FAS), Global Payment Systems Survey (GPSS), Global Remittance Prices, MIX, BankScope, FinStats, IMF-International Financial Statistics (IFS), IMF Financial Soundness Indicators (FSI) (GPFI, 2011b), see Appendix 4.6. For the relevance of the Tanzanian situation, I used the following documents: the 2017 Self-Evaluation Report of the National Financial Inclusion Framework, the 2014 National Financial Inclusion Framework, the 2018 National Financial Inclusion Framework, the 2017 Supply-Side Report. For details on these documents, see Sections 4.8.3.2.1, 4.8.3.2.2, 4.8.3.2.3, and 4.8.3.2.4.

I demonstrate that MM facilitated the growth of FI by using data from the FinScope and InterMedia survey data. The FSDT conducts FinScope surveys which engage a wide range of stakeholders who created a 'Stakeholder Task Force' to provide demand-side data.

Furthermore, InterMedia conducts Financial Inclusion Insights (FII) to facilitate MM service development in countries such as Tanzania, Kenya, etc. The Bill and Melinda Gates Foundation sponsors the InterMedia surveys. Moreover, the FSDT also has recently conducted a new supply-side study, which provides data on the state of the financial sector to access whether the needs of the market are met or otherwise. My research depends heavily on the data supplied by these surveys. The Tanzania National Council for Financial Inclusion (TNCFI) also provides information on FI data through its key publications: the 2014 first NFIF, the 2018 second NFIF, and the 2017 Assessment for the NFIF.

As far as the regulation and legal frameworks are concerned, the following documents are useful in explaining the growth of MM and FI in both the telecommunication and banking sectors. From the banking sector: the 1991 BFIA; the 2006 BFIA; the 2015 NPSA (see Chapter 3, Section 3.7.4 and Chapter 5); the 2015 NPSEMRs (see Chapter 3, Section 3.7.4 and Chapter 5); the 2015 NPSLARs (see Chapter 3, Section 3.7.4 and Chapter 5); the 2015 ETA; the 2017 Finance Act. From the telecommunications sector: the 1993 TCA; the 2003 National Information and Communications Technology Policies (NICTP); the 2003 National Postal Policy (NPP); the 2006 Universal Communications Service Access Act (UCSAA); the 2010 Electronic and Postal Communications Act (EPCA); the 2003 TCRAA; the 2015 Cyber Crimes Act; the 1993 Tanzania Broadcasting Services Act. From other sectors: the 2003 FCA; the 2006 Anti-Money Laundering Act (AMLA). These documents were key to the liberalisation, deregulation, and re-regulation of the financial and telecommunications sectors. They were also key to the efforts to support FI and the growth of MM. The most relevant ones being: the 2006 BFIA; the 2003 TCRAA; the 2006 UCSAA; the 2003 NICTP; the 2015 NPSA; the 2015 NPSEMRs and the 2015 NPSLARs. I had to go through all these documents to be able to analyse MM growth, deregulation and re-regulation policies, FI, and all other related studied issues. See Appendix 4.7 for further details.

4.8.3.1 The Relevance of the Used National Surveys and Documents

I used the interviews and these documents to cross-check the facts and the findings. In this way, I ensured the accuracy and reliability of the collected data.

4.8.3.1.1 FinScope Surveys

The FinScope surveys were the first national consumer perception surveys with the first survey conducted in 2006. The other surveys released their reports in 2009, 2013 and 2018.They investigated how people manage their finances. The FinScope surveys run every three years.

They include formal and informal financial data. They record the attitudes and behaviours of different individuals. They are credible, robust and use scientific methods of qualitative and quantitative methods. The samples are nationally representative with the following number of respondents: 4,950 in 2006, 7,680 in 2009, 7,987 in 2013, and 9,459 in 2017. In 2017 Tanzania's population was estimated to be over fifty million with less than twenty-eight million about 54% of the population, was the age of sixteen which is the minimum adult age included in FI surveys. The FinScope surveys provide hard facts or a baseline; they unveil the scope of the FI challenge and demonstrate areas where the government can help, and where the financial sector can invest.

4.8.3.1.2 InterMedia Surveys

InterMedia surveys run yearly. They provide new updates within a twelve-month cycle. The surveys use questionnaires and interviews to collect data. These surveys and their published reports receive support from the Bill and Melinda Gates Foundations. The average number of interviewed respondents per year is 3,000. The questionnaire asks several questions with sections on MM, mobile phones, banks, and non-bank institutions. Each section explores access, awareness, and use of financial services and mobile phones. In collaboration with the national bureaus of statistics and local research partners, InterMedia collects accurate data with representative samples. Intermedia updates its reports regularly. It includes the methodology used for each update in the relevant report. The advantages of using InterMedia data is that it provides timely results yearly as opposed to the FinScope results which come out once every three years. Regardless, FinScope and InterMedia surveys do not vary much, which gives assurance regarding the FinScope statistics as well.

4.8.3.1.3 Global Findex

The global findex is the World Bank's global FI database that provides over 850 country-level indicators of FI. According to Demirguc-Kunt et al. (2018), the global findex uses different variables and key demographic characteristics such as gender, age, education, income, employment status, and rural evidence. The global findex provides data from over 140 countries. It uses both qualitative and quantitative methods of data collection.

4.8.3.1.4 GSMA

The GSMA presents the interests of mobile operators worldwide. It uses its 'GSMA Intelligence' database to provide useful data on mobile phones and other mobile services such as MM. It is the "definitive source of global mobile operator data, analysis, and forecasts, and publisher of authoritative industry report and research" (GSMA, 2020a). The GSMA collects data from mobile operators worldwide. It is the most reliable source of data for the mobile industry. It engages with regulators, financial institutions, mobile operators, vendors, and different stakeholders in the field of mobile phones. Data from the GSMA are frequently cited in academic papers and in the industry itself. The GSMA data are useful to inform my research on the current and past patterns of mobile phones and MM services not only for Tanzania but also elsewhere else. The GSMA also provides information on MM deployment in developing countries and around the world.

4.8.3.2 Key Policy Documents for Financial Inclusion

4.8.3.2.1 The 2017 'Self-Evaluation' Report of the National Financial Inclusion Framework

The 2017 'Self-Evaluation' Report of the National Financial Inclusion Framework outlines the achievements and failures of the first NFIF. It is useful in delineating how the various FI stakeholders, including MNOs and banks, achieved their FI targets. The report used primary and secondary data sources. Closed-ended and open-ended questions were used to collect the primary data through questionnaires sent to respondents from the sixty leading members of the NFIF coordination committees. The questionnaire was designed to capture details on the design of the first NFIF, its implementation process, its outcomes, and further recommendations for future planning. To ensure the accuracy of the data, six members of the coordination committees tested the data. SPSS and Excel programmes were used to analyse the data (TNCFI, 2017a:20-21).

4.8.3.2.2 The 2014 National Financial Inclusion Framework

The first NFIF was the guide used for building an inclusive financial system in Tanzania. It set out a strategic plan with an initial implementation period of three years from 2014-2016 (TNCFI, 2014). It delineated the current financial services and the barriers to FI, which key stakeholders had to overcome. It also provided the definition of FI for Tanzania, and it mentioned the core enablers and priority areas, including the guiding principles, roles, and responsibilities of key stakeholders (TNCFI, 2014). It also defined the coordination structure for the framework, which included monitoring and evaluation processes.

4.8.3.2.3 The 2018 National Financial Inclusion Framework

The second NFIF builds on the first NFIF. While the first NFIF focuses on the provision of access to financial services, the second NFIF emphasises the usage of financial services. The first NFIF increased access to financial services for various segments of the population from 58% in 2013 to 65% in 2017. It also reduced reliance on informal financial services from 16% to 7% between 2013 and 2017 (TNCFI, 2018). Its preparation followed the outcomes of the first NFIF and the recommendations from the 2017 self-assessment report for the first NFIF which I have mentioned in section 4.8.3.2.1.

4.8.3.2.4 The 2017 Supply-Side Report

The 2017 supply-side survey provides data on formal and informal financial services in the Tanzanian financial market. It complements the FinScope demand-side surveys which addressed the demand for financial services from individuals and firms. With a clear picture of both the demand-side and the supply-side of financial services, it helps this research to analyse the financial sector and inclusive financial efforts in a more precise manner. The supply-side survey also reached the financial institutions with mid- and senior staff members who knew about financial service and product developments being the main respondents. The survey chose more than one respondent from each institution. It also chose face-to-face interviews guided by a structured questionnaire. The reported findings came from 157 different financial institutions. This was a good representative sample for Tanzania (TNCFI, 2017b).

4.8.4 Use Qualitative Data in the Subsequent Chapters

4.8.4.1 The 11 Elites and How I Used their Data in the Subsequent Chapters

I will first examine how I utilise data from the 11 selected elites and then how I have used the rest of the qualitative data. For further details on how I used the interviews to develop my thinking, see Appendix 4.8.

The 11 elites' quotations were selected to support some assertions made by this research. I provided the reasons for the selection of the respondents in Sections 4.6.3 and 4.6.4. In any research, not every respondent provides the details sought, and if they do, not every detail will be used (also see: Krathwohl, 2005; Howitt and Cramer, 2014). In this dissertation, I used the most relevant information, which narrowed the selection of the interviews and quotations. The selection of the most pertinent evidence or quotations came from emerging trends and themes and aligned with the original research objectives (see Sections 1.3 and 4.9). Moreover, I went through the available literature to support the emerging research themes, and some respondents provided useful information that filled in the gaps of this literature. I, therefore, used their evidence to write the chapters and support some of the assertions. Like other respondents, I asked the 11 selected respondents about policy issues, MM, FI, FE, and the response of the banking sector to increasing FI caused by MM (see Chapters 5, 6, and 7).

From their responses, it emerged that neoliberalism was the political economy that facilitated MM's advent and growth in Tanzania. It also emerged that MM facilitated the transformation from FE to FI in Tanzania. To implement the liberalisation of the telecommunications sector, Tanzania created the CLF and used it as a tool to enhance the liberalisation and deregulation of the telecommunications sector. The 'Senior Telecom Sector Official' talked about these issues (also see Section 5.4.2). The CLF also facilitated the advent of MM (for literature on the CLF also see: Nkoma, 2010; Mwalongo and Hussein, n.d.; Mfungahema, 2014; Materu-Behitsa and Diyamett, 2010; Gunze, 2014). The NPS was also essential to the growth and survival of MM. The 'Former BOT Governor' discussed the NPS issues (also see Section 5.4.4; 7.5; 7.6; URT, 2015c; URT, 2015d; URT, 2015a; URT, 2015b). Changes in the NPS facilitated FI through MM. The new Acts in both telecommunications and the financial sector provided the legal and regulatory framework used to enhance MM and FI in Tanzania. It also emerged that the lack of strict regulations during the advent of MM and reregulation when MM grew was crucial in sustaining MM services and FI. It also appeared that MM moderated some factors of FE, and the banks responded to the increasing levels of FI caused by MM. Senior TBA Respondent provided information on the banking sector's response to increasing FI levels through MM (also see Section 2.9.6). Likewise, Financial Sector Official elaborated on the essential FinScope surveys on FI/FE and MM/banks conducted by the FSDT in Tanzania (also see Sections 5.4.3, 5.4.6, and 5.5). Furthermore, the Executive Banking Sector Official provided informed details on the critical aspects of regulations, the NPS, MM, banks and FI/FE (also see Sections 5.5, 7.8.2, 7.8.3). In addition, the Executive Financial Sector Official provided crucial details on the MoF and its policies, financial reforms, FE, FI, and the key challenges facing the financial sector on the whole (also see Section 5.5). Moreover, the Senior BOT Official helped the researcher understand FI, FE, the NFIF and its processes, and the advent of MM, neoclassical matters, and the contemporary MM issues (also see Section 6.4.1). Also, the Senior Interoperability Expert discussed MM interoperability issues and linked them to FI and FI challenges (also see Sections 6.4.2.1 and 6.4.2.1.1). In addition to what has been said, the 'Senior Banking Official' explained MM and banking issues and how they are related to FI, FE, neoliberalisation processes and reforms (also see Section 7.7.4). Additionally, the Senior Switch Officer detailed the MM ecosystem and the banking switches connecting various financial platforms and how FIs work together while sharing payment systems and platforms (also see Section 7.8.2). Lastly, the CEO Aggregator detailed intermediaries' solutions facilitating payments between MNOs on the one hand, and banks and other FIs on the other (also see Section 7.84).

The 11 respondents provided the best explanations of all these issues that filled in the literature and theoretical gaps. Thus, I selected them to support the assertions made by the findings of this research. From them and the other respondents, I gathered informative and useful data that created a better understanding of the neoliberal political economy that enabled the advent and growth of MM, and how MM aided the transformation from FE to FI, as well as the response of the banking sector to the increasing level of FI through MM.

To summarise, the discovery of the key themes that turned into empirical chapters was another aspect that helped me select the use of the eleven elite interviews (I have also used some extracts from eight low-income respondents in Chapter 6 to substantiate some of their views and support the research findings). During the interviews, I learned new issues and knowledge, and I kept on inquiring to know more about these discoveries and findings. The understanding of these new findings helped me build possible theories and perspectives. After reading the transcripts of all the interviews and based on the emerging themes, I knew who had the most relevant details and with whom I could use NVivo to find the most suitable quotations and interviews. As I identified the literature gaps, I used the new information from the interviews to fill in those gaps or provide further examples and details to explain some of the issues. For details on how I developed my thinking and used other interviews, see Appendix 4.8.

4.8.4.2 How Did I Utilise Other Secondary Qualitative Data in My Thinking/Findings?

In Chapter 3, I examined existing literature on the conceptual and theoretical approaches to studying MM and other related ICT for development, FE, and FI issues. By doing so, I identified the gaps and proposed my theoretical framework as a bridge. I also discussed the different theoretical perspectives on neoliberalism using the data from the literature search in Chapter 3. Thereafter, I explained how classical and neoclassical views guide the approach of this research not only in Chapter 3 but also in other subsequent chapters. Moreover, I explained the key concepts and issues of the theoretical framework and how they applied to my crucial research issues to answer the main research questions using the qualitative data I obtained from literature and interviews. Both Chapters 2 and 3 provide essential literature that defines and introduces vital data and knowledge to support the arguments, findings and theoretical perspectives supporting the thesis.

Section 4.8.3 discussed essential secondary data sources that helped provide key data needed to strengthen and critically analyse the arguments presented in this dissertation. These sources included: (i) FinScope Survey Reports (FinScope, 2006; FinScope, 2009; FinScope, 2013a; FinScope 2013b; and FinScope 2018); (ii) Intermedia Survey Reports (InterMedia, 2014a; InterMedia, 2014b; InterMedia, 2016; InterMedia, 2017; InterMedia, 2018); (iii) Data from the Global Findex Reports; (iv) GSMA Reports and Data (GSMA, 2020a; 2020b; GSMA, 2016a; GSMA, 2016b; GSMA, 2017a; GSMA, 2017b; GSMA, 2019). I also relied on data from key policy documents on FI, including: (i) the 2017 'Self-Evaluation' Report of the NFIF; (ii) the 2014 NFIF Document; (iii) the 2018 NFIF Document; and (iv) the 2017 FI Supply-Side Report. The qualitative data obtained from these documents were nationally representative and credible. Throughout the dissertation, the data allowed the researcher to analyse the transformation from FE to FI in Tanzania. The data has been used to establish the rate of FI in Tanzania and depict the global situation. The data also helped the research to demonstrate and tell the story regarding the development of MM in Tanzania and its other related neoliberal issues in subsequent chapters and sections of the dissertation.

I have also used data from other government sources (also see Appendix 4.7). Such data from: URT, 2003a; URT, 2003b; URT, 2006a; URT, 2006b; URT, 2014; URT, 2015a; URT, 2015b; URT, 2015c; URT, 2015d; URT, 2019); also provided essential information on the legal and regulatory space and framework that has been used in Tanzania to support FI and MM issues. In Chapter 5, where I discussed the development of MM in Tanzania, such data was critical in demonstrating the importance of the different stages of these developments in Tanzania.

The literature provided in Chapter 6 provided data that helped demonstrate the role of MM in moderating financial exclusion in Tanzania. For instance, the literature on interoperability, including explanations on the Moore's and Metcalfe's theories in Section 6.4.2.1, demonstrates this (see Oxford, 2019; Yoo, 2015; The Economist, 2015b; Metcalfe, 2013). There is also a body of literature in Section 6.4 that supports the qualitative findings.

In Chapter 7, the data obtained from CPSS documents was used to explain NPS issues and helped to showcase the response of the banking sector on increasing FI caused by MM (see Sections 7.4 and 7.5). I also used BOT documents to explain the banking sector's issues in Tanzania and its response to the increasing use of MM.

The qualitative data from the literature I presented helped explain the role of neoliberalism in facilitating FI and MM development. From Chapter 2 to Chapter 8, the literature's data supported arguments on inclusive neoliberalism, FI, FE, and MM issues. The data has been used to help answer the research questions as demonstrated in the empirical chapters and throughout the dissertation. Cohen et al. (2011) define a documentary review as a process that involves examining the text to obtain relevant data and context to support the research's assertions. I used the documentary and literature reviews in this research to get relevant data to support both the contextual and empirical chapters. Knowledge and data of the documents and literature reviews helped and provided data that helped investigate the emerging themes and issues presented in each of the empirical chapters.

4.8.4.3 How Did Other Respondents (Other Than the 11 Selected Elites) Inform the Findings?

There are three main types of unstructured interviews, namely: oral history, creative interview, and post-modern interview (also see: Fontana and Prokos, 2007; Leavy, 2020). While oral history unstructured interviews collect historical details about the investigated issues, post-modern unstructured interviews seek to gather more diverse evidence about the problems researched. Moreover, creative unstructured interviews are more flexible and do not depend much on traditional interviewing rules. I utilised the creative unstructured in-depth interviews to gather meaningful patterns, themes, and stories that helped inform my research. As detailed in Sections 4.8 and 4.9, I also utilised ‘thematic’ and ‘content’ analyses to help answer the research questions and to fulfil the research objectives.

I evaluated the data from the remaining 73 respondents. I considered including data that had been repeated by several respondents. I also included the findings that surprised me which were verified by several respondents or supported by literature (see Sections 5.2.1, 5.4, 6.2, 7.3, and 7.8). Moreover, qualitative data that reminded me of a theory, concept, or perspective that could support my research findings were also incorporated into my analysis. At times, the respondent(s) emphasised that the discussed issues were important. I evaluated those issues and decided to use them to tell my Ph.D. story. If the respondent explicitly stated that it was important, I sought further verification, or if it was previously published in peer-reviewed reports or articles, I included it in the analysis. In some instances, some issues were included for some other valid reasons that made them relevant. During my data collection, I used periodic analysis which allowed me to investigate issues as they emerged or sought further clarification to understand them. For the selection of relevant secondary data, see sections 4.8.3, 4.8.3.1, 4.8.3.2, and 4.9. I also used relevant data supporting the respondents' assertions and the chosen theoretical framework. Also, see the literature in Chapters 1, 2, and 3 that defined, introduced, and explained the key research and theoretical concepts and arguments. In each empirical chapter (Chapters 5, 6, and 7), relevant literature to support the key research arguments and findings has also been used to answer the research questions.

The respondents I interviewed were FI and MM stakeholders with knowledge of the investigated issues. The respondents ranged from the professional elite to low-income and formally financially-excluded people. In Chapter 6, I also used extracts from the interview scripts of the eight low-income and previously financially-excluded respondents to demonstrate how MM moderated some factors of FE. These eight respondents were different from the eleven elite respondents I have used throughout the dissertation.

In Section 6.4.1, I discussed the lack of access to formal financial services to financially excluded people. Respondents Said, Gaston, Mama, Seki and Karin provided their views which demonstrated how MM provided access to formal financial services. Their views helped to strengthen the evidence obtained from macro-data and other elite sources. Engaging with low-income and previously financially-excluded individuals provided an understanding of how MM moderated lack of access to formal financial services.

In Section 6.4.2, I discussed the high costs that hindered the poor from accessing formal financial services. Respondents Mbwana and Said from the low-income and previously financially-excluded individuals briefly asserted the high-cost issues and how they affected the poor individuals access to formal financial services. They shared what had changed since they had started using MM services.

In Section 6.4.2, the interoperability issues were discussed. A low-income MM agent Noorah briefly provided a picture of what interoperability is from a low-income individual's eyes. In Section 6.4.2.1.1, I discussed exclusivity and non-exclusivity reasons for interoperability. MM agents Abuu and Noorah confirmed the non-exclusivity interoperability solutions which demonstrated their benefits to MM clients. Respondent Mbwana in Section 6.4.3 briefly introduced some risks faced by financially-excluded and low-income people.

The use of these eight interviews in Chapter 6 helped the inclusion of low-income and previously financially-excluded people in the analysis of MM to demonstrate the moderation of some factors of FE by MM.

4.9 Data Processing and Analysis

The data analysis uses the 'thematic analysis' as illustrated by Pope et al. (2000) and Attride-Stirling (2001). 'Thematic analysis' was developed by Braun and Clarke (2006) to analyse data collected through qualitative interviews. It identifies themes within the data (Braun and Clarke, 2006). According to Boyatzis (1998), it uses a coding process to develop themes from raw data by encoding them. The interpretation of the emerging codes and themes is usually done by comparing the frequency of the themes and how those themes relate to each other (Guest and MacQueen, 2012). A theme is a pattern of similar responses from data that helps to answer the research questions. According to Smith and Firth (2011), generating themes for data is a common feature of qualitative methods and also a widely used analytical method. Other analytical methods of qualitative analysis include: 'socio-linguistic methods' that explore the meaning and use of language in terms of 'discourse and conversational analysis' as well as the grounded theory which focuses on theory development. Neither of the two latter approaches fits with the design of this research. I decided to use the thematic analysis approach to analyse the data.

4.9.1 Thematic Analysis

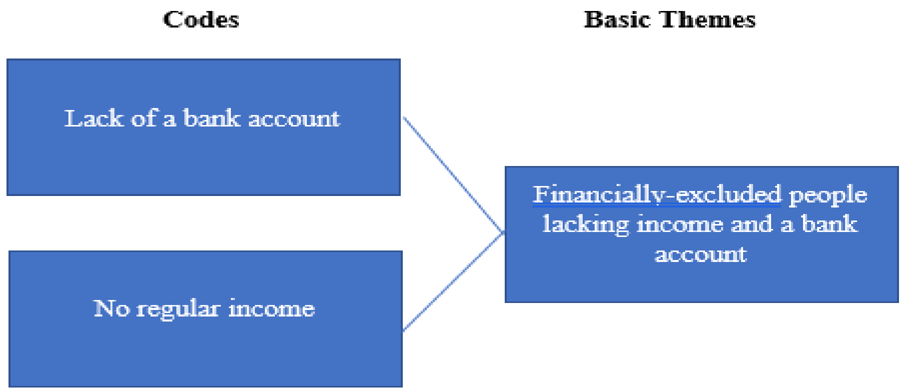
The interviews and focus group sessions were recorded using a Dictaphone. They were also transcribed to help the process of data analysis. The data analysis paid attention to the contexts, consistency, and contradictions of views, frequency, and intensity of the comments, their specificity as well as emerging themes and trends. The thematic approach used 'thematic network analysis'.

Firstly, I considered my theoretical and methodological perspectives, which allowed me to process and reduce data (also see: Pope et al., 2000). By doing so, the research examined the findings to see if they concurred with or reflected in the theoretical framework and whether they were able to either answer the research questions or fulfil the research aims, and objectives. This is a good process of finding the required data for analysing neoliberal and other policy issues. The approach allowed me to focus on the relevant answers that helped me to answer the research questions. I, therefore, discarded the irrelevant answers.

Secondly, a 'thematic network analysis' was used (also see: Attride-Stirling, 2001). This approach brought an 'exploratory' perspective into the research. With this approach, all data was processed and allowed for new details to emerge, which helped to include the unexpected findings within the interpretive process.

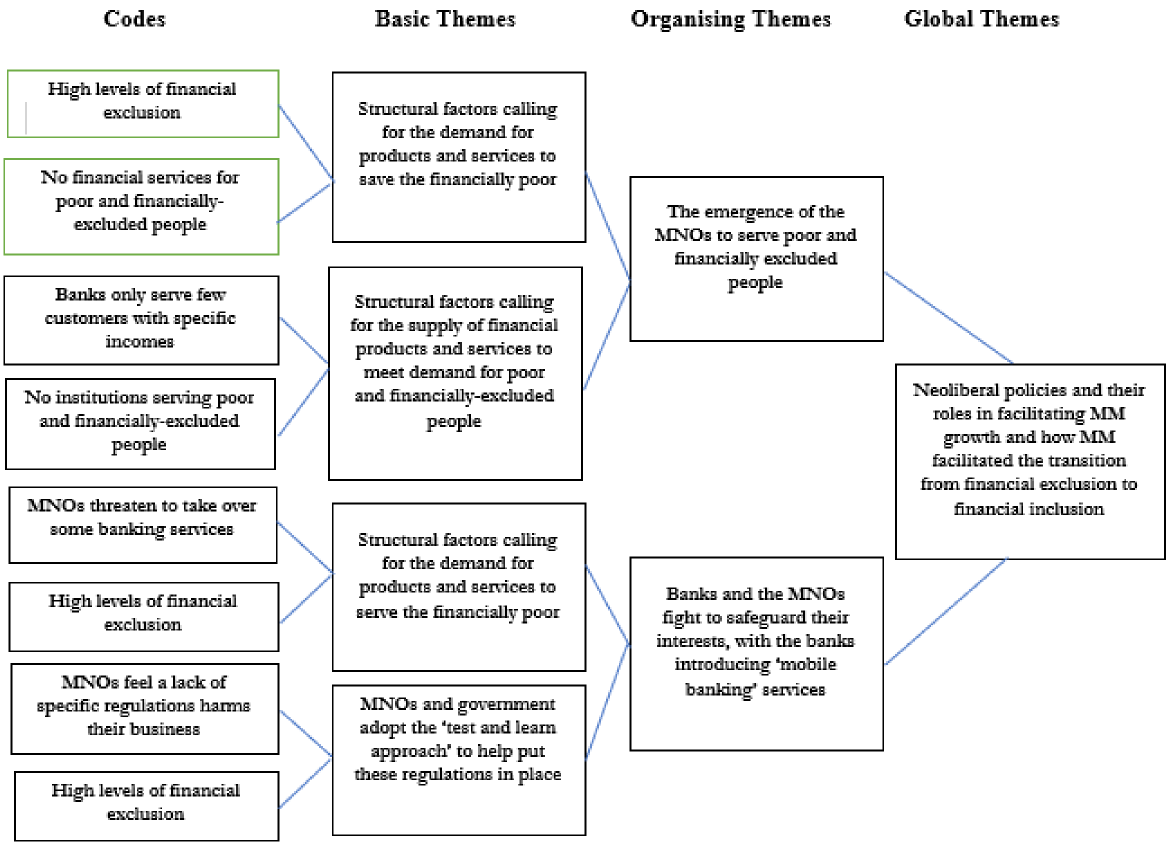
By using a mix of the two approaches, I followed these steps: I first transcribed each interview. Then, I summarised what I wanted from those interviews which would aid the analysis. Next, I reduced the key themes and identified a few relevant themes that were able to answer the main research questions. The data reduction was made through the process of coding the data. By coding, the research refers to the use of a 'word' or a 'short phrase' that labels well the gist of the data (e.g., quotation). This was the first move towards data reduction and interpretation. I did some coding manually, and that was referred to as the 'table method' where you put different labels on the table for the emerging themes from the transcripts. I continued coding that way. This helped me to identify similar codes for merging. Following the above first step, coding helped me to develop a 'coding framework', which was an inductive 'thematic network approach'. There is no rule as to how many codes the research should have. Similar codes were clustered together into themes. A new piece of paper was taken, and the 'basic theme' was written on it. Then, I placed it near the cluster of codes. For instance, if I had the following codes, namely: 'lack of a bank account' and 'no regular income' which appeared in the interview transcripts with financially-marginalised people, they were clustered together as 'financially-excluded people lacking income and a bank account'. Below, in Diagram 4.5, is an example of this coding process:

Diagram 4.5: The Process of Turning Codes into Basic Theme



This process produced more codes and themes as depicted in Diagram 4.6. Diagram 4.6 illustrates the organisation of the codes and themes (there were more codes and themes not included in Diagram 4.6). I ended up extracting the three main themes. Each theme became a data chapter. Chapters 5, 6, and 7 represent these themes, namely: (i) neoliberalism and MM growth; (ii) MM and moderation of FE; and (iii) FI, MM, and the banking sector's response.

Diagram 4.6: Codes, Basic Themes, Organising Themes, and Global Themes



To ensure that I got the most out of the eighty four interviews, I also used the NVivo software to do the coding. After the completion of this process, I identified eleven elites and used their interviews and quotations to write this dissertation while considering the views from the other seventy-three respondents (I have also used some extracts from eight low-income respondents in Chapter 6 to substantiate some of their views and support the research findings). See Appendices 4.9 and 4.10. To process the data through thematic analysis, Braun and Clarke (2006) recommend the six-step approach I followed. The first step required that I familiarised myself with the data. I did this while transcribing the scripts. The second step was to produce initial codes by identifying the texts with the themes I wanted to use. The third step was the further identification of any recurring themes of interest. The fourth step was reviewing all the identified themes and examining their links with their codes. The fifth step was to define and label the main themes. The sixth step was writing a report using the data from the themes to allow further data interpretation.

The use of NVivo made coding and analysis easier. With the NVivo software, the creation of the initial codes was easier. This facilitated the creation of nodes containing phrases of interest. From the codes, I created the themes, also referred to as the ‘parent codes”. A theme consists of several ‘child nodes’. Child nodes facilitate the process of extracting data from the transcripts during report writing. I was able to create several nodes with a direct link to my research questions. When the final codes and themes were confirmed, I initiated a discussion of findings and conclusions. This step interpreted the results. It was easier to conclude using this process. As I drew conclusions, I considered the explanatory patterns or relationships that adequately addressed the research questions. The following questions guided the interpretations of the findings:

- Are the data collected and the research methods addressing the research questions?
- What about the contradictions or the new findings, do they interact? Do they concur or differ?
- Can data from various sources be triangulated? The various sources can be interviewees, external sources of information such as the secondary sources, and the different methods.
- If there were some limitations to the study, what were they, and how did they affect the findings of the research?
- Is there a need for a follow-up or further research based on the research findings?

This brought me to the next step of the data analysis, which was the effects of the study limitations. While the research drew conclusions, and made recommendations as an integral part of the Ph.D. research, it was essential to acknowledge the limitations of the collected data. As this was qualitative research, the findings were applicable in Tanzania only, and they should not be generalised in other countries. The findings could be used to provide examples of how and why there were certain patterns or specific neoliberal policy contexts that aided the growth of MM, which in turn helped the transition from the high level of FE to increasing levels of FI. The conclusions were drawn by using the available data and not by using personal views or opinions. The research could only make conclusions on the researched issues for which it had supporting evidence.

Finally, the research findings were to be reported. Chapters 5 through 8 report the research findings with Chapter 5 answering the first research question. The first question was: ‘how does neoliberalism facilitate the growth of MM in Tanzania? From the findings, neoliberal reforms were vital to introducing the political economy that allowed the advent of MM, which in the long run, led to increasing levels of FI. The other chapters of the dissertation were designed to reflect this reality, as well as to answer the other research questions.

4.9.2 Data Analysis for Focus Groups

According to Harding (2013), some authors argue that data from a focus group can be analysed in the same way as any other data from the interview sessions. Other authors suggest that as focus groups include interaction between members, distinctive forms of analysis need to be used (Harding, 2013). Data analysis can be at the individual or group levels. The data analysis for focus groups was for group level, where I used the transcripts to evaluate the emerging themes and answers. In the transcript, the respondents were assigned names to distinguish their comments for citation purposes. Appendices 4.11, 4.12, 4.13, and 4.14 contain extracts from a few selected interviews at macro, meso, and micro levels to provide evidence of these interviews and respondents.

4.9.3 How Was Secondary Data Analysed?

Diagram 4.7: Interactive Model of Qualitative Content Analysis Approach

Source: Sansa (2010:31) citing Miles and Huberman’s (1994b:12).

As illustrated in Diagram 4.7, the process consists of three interconnected processes of data analysis. The first process consists of getting relevant data from what has been collected, as well as, from the organisation of data into specific themes and patterns of data. The second process involves the displaying of data, which includes “organisation, compression, and assembling of information" in a meaningful way. The third process consists of drawing conclusions and verifications in the forms of research arguments and their validity. This can be done by revisiting the theories and verifying the data's relevance (also see: Sansa (2010:31) citing Miles and Hubermas (1994b:10-12) and Holliday (2007:89-90). Sections 4.8.3 through 4.8.3.2.4 detail the key secondary data sources.

4.10 Validity and Reliability

As this is qualitative research, the findings will not be used to make conclusions about a wider global population. However, the findings can be used to analyse and understand Tanzania's specific situation, including the patterns of, or specific contexts of FI, FE, MM growth, and how they have been affected by neoliberal policies. The findings set a foundation for similar studies to be conducted elsewhere, but the findings cannot be generalised to include those countries. The conclusions of the dissertation were drawn using the available data and not by using the researcher's personal views and opinions. The research only made conclusions on the researched issues based on the supporting evidence it had gathered. For qualitative research, validity is related to the accuracy and truthfulness of scientific findings (also see: Le Comple and Goetz, 1982:32; Ruane, 2005).

Furthermore, reliability deals with the 'consistency', 'stability' and 'repeatability' of the research findings as well as the researcher's ability to collect, process and interpret the findings in an accurate manner (also see: Seltiz et al., 1976: 182). Reliability was achieved after using the same research methods to yield the same, or comparable results, over repeated periods. At the eighty-fourth interview, the data saturation point had been reached.

4.11 Ethical Considerations

The informants were asked to be part of the research. They voluntarily agreed to take part in the research. Nobody forced them to participate against their will. I made them aware of their right to remain anonymous. Hence, their proper names do not appear anywhere in the dissertation. Other names have been used to mask their identities. The information they provided remains confidential. It will not be shared with any third parties without their consent. Only the principal researcher, the research assistant, and the two university supervisors could know their identities for verification purposes. The safety of every interviewee was the priority of this research. Any sensitive information that could cost the respondent's job was not reported to the respondent's supervisors. Recorded data was safely stored on a hard drive, secured and protected. Furthermore, the research did not pose any risks to any respondent.

4.12 Summary and Conclusion

The chapter sought to: Firstly, describe the current state of research methodologies used to study MM, FE, and FI on the one hand, and neoliberalism on the other. Secondly, it identified the existing methodological gaps. Thirdly, it stated how my selected methodology contributes in closing those gaps and adds value to this research topic. Fourthly, it identified possible methodological approaches for future research. Fifthly, it explained the methodology used by this research and how the data was analysed.

As specified earlier in this chapter, research on MM lacked in-depth analysis. This was an issue for all new research areas of any discipline. The research has used in-depth unstructured interviews to help close this gap and obtain in-depth data, which was key to reaching the theoretical views and perspectives, as demonstrated in Chapter 3, and as applied throughout this dissertation to help answer the key research questions. Furthermore, the chapter identified lacking methodological issues needed for future research. It concludes that in-depth qualitative research is still useful for future MM and neoliberal research. It also agrees with Lwoga and Sangeda (2019), and with Duncombe (2016) that there is inadequate use of participatory methods or action research, or experimental designs. If used, these methods and design could help advance MM research in the future.

The next chapter presents the analysis and findings of MM development in Tanzania.

CHAPTER 5: The Development of Mobile Money and the Politics of Financial Inclusion in Tanzania[1]

5.1 Chapter Overview

This chapter analyses the development and growth of MM in Tanzania and the policies, regulations, and legal frameworks that enhanced it. It answers the following research question: "How did neoliberalism facilitate the growth of MM in Tanzania?" By doing so, it fulfils research objective number 1, which is "to explore the advent and successful growth of MM in Tanzania with the view to determine how it happened". It is the role of political economy to create a conducive environment for emerging industries, such as MM, by specifying the roles and responsibilities of the key actors in various sectors, and in this regard the role of MNOs and other financial service providers in boosting FI. The political economy is expected to create effective legal and regulatory frameworks to facilitate the effective functioning of the banking and financial sectors. I intend to illuminate the conditions that facilitated the advent and growth of MM as well as its usage in boosting FI. Previous studies on MM rarely acknowledge the role of neoliberalism to catalyse its growth and development, as well as the role of neoliberalism in supporting FI (Dahlberg et al., 2008; Duncombe and Boateng, 2009; Diniz et al., 2012; Kim et al., 2018). This chapter tries to bridge this research gap.

MM has played a significant part in reaching financially-unreached and excluded people, overtaking banking and other financial services in Tanzania (FinScope, 2006; FinScope, 2013a; FinScope, 2009; FinScope, 2018). There is no doubt that MM emerged at a time when FE was a major issue. See Chapter 2, and this chapter. The banks opposed the advent of MM in the beginning. They thought that the MNOs had entered the money business. Besides, the banks were in a better position to do money business better than any other institutions (see Chapter 7 for further details). For this reason, it is crucial to understand the development of MM, neoliberal policies, regulatory and legal frameworks that allowed it to succeed. This is in the view of the 'RCA', using the classical and neoclassical views as detailed in Chapters 1, 2, 3 and 4.

[1] The International Social Sciences Review, a peer-reviewed journal, has published this chapter as an article. See: Mhella, D. J. (2019).'The Development of Mobile Money and the Politics of Financial Inclusion in Tanzania', *The International Social Sciences Review, 1*: 25-42. https://doi.org/10.37467/gka-socialrev.v1.2088 Moreover, I presented this chapter at the 8th International Congress on Technology, Science and Society in Lisbon, Portugal on the 9th January 2019.

The chapter has eight sections. Section 5.2 provides MM background by defining the term and by demonstrating the patterns of MM growth over time across different geographical regions and in Tanzania. It also shows the trajectory from ‘money transfer’ to ‘mobile finance’ to explain how MM services developed and evolutionised. Moreover, it mentions the main findings of this chapter. Section 5.3 introduces selected literature and relevant theoretical assumptions that facilitate to answer research question number 1 and that help the research to demonstrate the growth of MM in Tanzania. Section 5.4 presents the qualitative findings and their interpretation. It also analyses liberalisation/deregulation policies that supported the evolution of MM, which included the CLF, ‘test, monitor and regulate’ approach, NPS regulations, other regulations, interoperable issues, and the deployment of MM services. Section 5.5 examines national FI processes and the politics involved, with further details provided in Chapters 7 and 8 (Section 8.11). It briefly details the role of key actors in the business of FI in which the MNOs are also key players. It also introduces the concepts of ‘PPPI’ and ‘NFIF’. Section 5.6 briefly analyses the challenges and limitations that have emerged against the growth and development of MM with key issues being access, uptake, and usage of MM services. Section 5.7 identifies the surprising findings that came out of this chapter. Section 5.8 presents the conclusions of the chapter by summarising the findings and asserting how the chapter answers research question 1 and how it meets research objective number 1.

5.2 Background

5.2.1 What are the Main Findings in this Chapter?

Most findings in this chapter apply to Tanzania. It was the roll-back neoliberal policies of deregulation (liberalisation) that facilitated the advent of MM through the creation of the CLF. The CLF allowed the telecommunications sector to use technology to add on services offered outside of the telecommunications sector, such as MM. This was key to the emergence of MM. Likewise, the roll-out (re-regulation) neoliberal policies enhanced the growth of MM through the NPS regulations that defined and accepted e-money as part of the NPS. The NPSA and its regulations resolved the compliance issues and legally recognised e-signatures. The regulations dictated who got involved in the NPS. Likewise, deregulation and liberalisation allowed MM to operate, during its initial stages, without stricter regulations. Hence, Tanzania used the ‘test, monitor, and regulate’ approach, which allowed the regulators to test MM, and learn from its functions and outcomes, which informed the process of regulating it before the regulations were in place. Following the successful establishment of MM regulations, the interoperability of MM services became easier, and Tanzania was the first country to have full MM interoperable services. Through neoliberal and regulated capitalist perspectives, NFIF emerged where state and non-state actors formed the NFIF to implement inclusive financial efforts through the NFIF. All these things were vital in allowing the advent and growth of MM as discussed in this chapter.

5.2.2 MM Background Information

In 2008, Tanzania allowed the advent of MM. According to UNCTAD (2012), MM is:

> "money stored using a 'Subscriber Identity Model' (SIM) card in a mobile phone as an identifier as opposed to an account in conventional banking".

The Alliance for Financial Inclusion (AFI) also defines MM as:

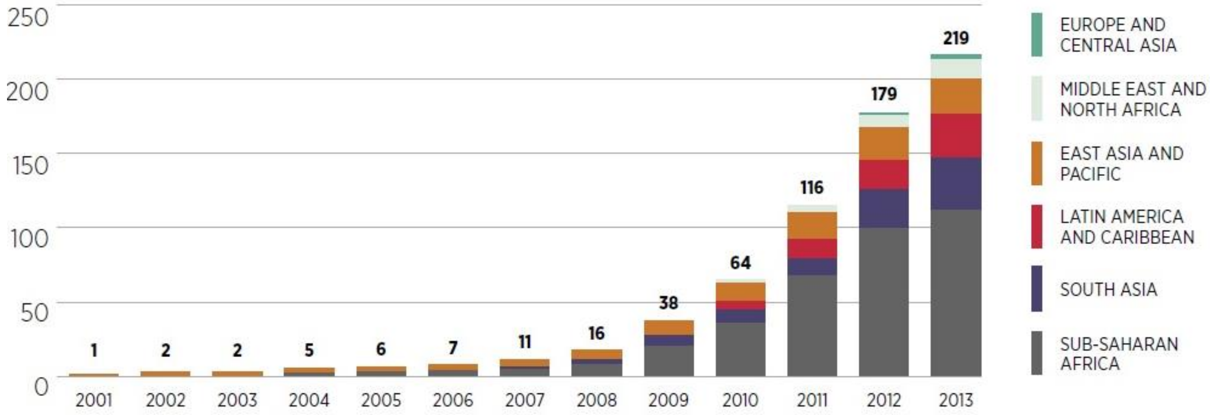
> "a mobile-based transactional service that can be transferred electronically using mobile networks. A MM issuer may, depending on local law and the business model, be an MNO which is a MM Operator, or a third party such as a bank. MM is often used synonymously with 'mobile financial services'" (AFI, 2012:3).

Hence, MM should not be confused with 'mobile banking' which is the:

> "use of a mobile phone to access banking services and execute financial transactions. Mobile banking covers both transactional and non-transactional services, such as viewing financial information on a bank customer's mobile phone" (AFI, 2012:3).

MM is, therefore, a technology that links people to access formal financial services (Pope et al. 2011; Kizza, 2013; Chauhan, 2015; Gichuku and Mulu-Mutuku, 2018). It is also an innovation that has been used to transform the delivery of financial services not only in Tanzania, but also around the world in general. See my definition in Chapter 1. Graph 5.1 below tracks the history of active MM services across the globe.

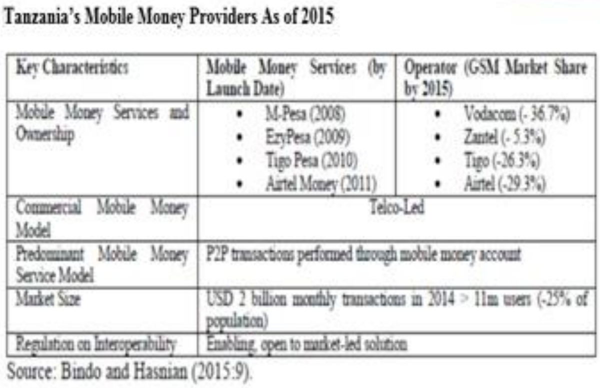
Graph 5.1: Number of Live MM Services for the Unbanked by Region (2001-2013 Year End)



Source: GSMA (2013:9).

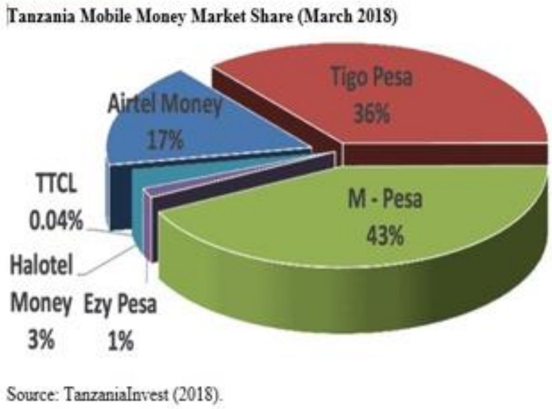
Graph 5.1 illustrates that MM has proliferated rapidly from one service in 2001 to about 219 services in 2013 worldwide. There is a significant increase in every region, as Graph 5.1 shows. Sub-Saharan Africa leads in terms of having more MM services. South Asia and Latin America follow. The Middle East and North Africa as a region lags behind, while Europe and Central Asia have stunted growth of MM services. In the case of Tanzania, the first MM service was M-Pesa in 2008. EzyPesa entered the market in 2009. TigoPesa followed in 2010. Airtel Money launched in 2011. TTCL and HaloPesa inaugurated in 2017 and smartphone was inaugurated in 2018. In total and in 2018, Tanzania had seven MNOs offering MM services. Hence, Tanzania's MM industry has developed over time. In 2015 there were four MM service providers, as shown in Diagram 5.1 below. Vodacom M-Pesa had the most significant market share of 37%. Airtel Money and Tigo Pesa had almost the same market shares, with EzyPesa owning only 5% of the market share. As this is a changing, vibrant and competent industry, in 2018 the market shares changed significantly with Vodacom M-Pesa owning 43% of the market share, TigoPesa approaching Vodacom M-Pesa with 36%, and Airtel Money falling to 17%. HaloPesa, a new entrant, was overtaking EzyPesa, and the TTCL (also a new entrant) gaining shares in the market. This trend shows that this is a highly competitive market.

Diagram 5.1: Tanzania's MM Market Structure


Tanzania's Mobile Money Providers As of 2015

Key Characteristics	Mobile Money Services (by Launch Date)	Operator (GSM Market Share by 2015)
Mobile Money Services and Ownership	• M-Pesa (2008) • EzyPesa (2009) • Tigo Pesa (2010) • Airtel Money (2011)	• Vodacom (- 36.7%) • Zantel (- 5.3%) • Tigo (-26.3%) • Airtel (-29.3%)
Commercial Mobile Money Model	Telco-Led	
Predominant Mobile Money Service Model	P2P transactions performed through mobile money account	
Market Size	USD 2 billion monthly transactions in 2014 > 11m users (-25% of population)	
Regulation on Interoperability	Enabling, open to market-led solution	

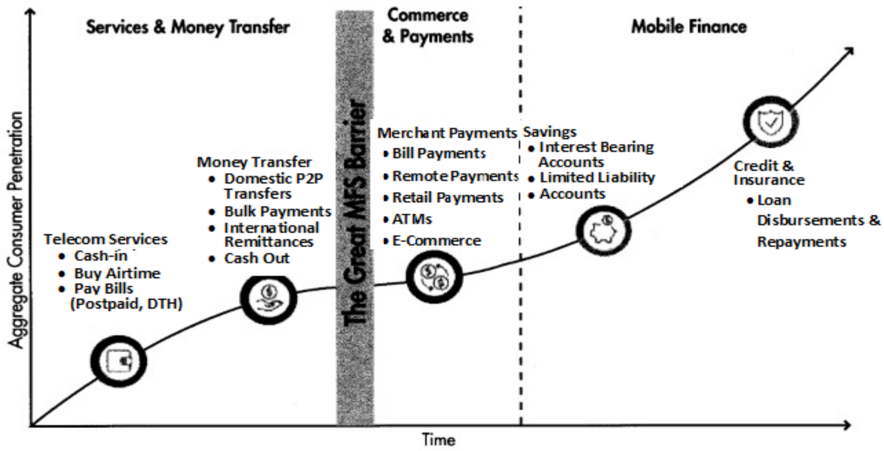
Source: Bindo and Hasnian (2015:9).



Source: TanzaniaInvest (2018).

There are about four main MM models across the world known as: 'bank-led', 'Telco-led', 'peer-to-peer', and 'partnership' models (Toma, 2012; Bossuyt and Hove, 2007; and AFI, 2012:3-4). If it is a bank-led model, then MM is managed by banks and regulated by the central bank, and the MNOs are the pipes. If it is MNO-led, the MNOs are in charge, and they have a trust account managed by a bank. Hence, the money stays with the bank and not with the MNOs. The peer-to-peer model acts independently from the MNOs or banks to provide mobile payment. There is the fourth model which involves partnership with a third-party MM operator who leads MM deployments. Both the banks and MNOs play a secondary role in this case. According to Bindo and Hasnian (2015:9), Tanzania adopted the 'MNO-led', also known as, the 'Telco-led' model. The development of MM in Tanzania has therefore gone through the following three phases known as: services and money transfer, commerce and payments, and mobile finance. Graph 5.2 shows these three phases.

Graph 5.2: The Journey to Fully Digital Financial Service



Source: Ho (2018).

The first phase of service provision and money transfer allowed the MNOs to provide telecom services such as 'cash-in', 'buy airtime', and 'pay bills'. They also provide money transfer services such as 'domestic P2P transfers', 'bulk payments', 'international remittances', and 'cash-in services.' The second phase of 'commerce and payments' was hard for the MNOs to arrive at as the banks objected to the operations of the MNOs (see Chapter 7). The great Mobile Financial Service (MFS) barrier was what they were referring to, in terms of the MNOs interfering with the money business, as the banks thought they were the only ones to operate in that area. It was not only in Tanzania that this had occurred, but also in other countries. Through the understanding of what MM could bring to the poor, the MNOs were allowed by central banks and governments to cross the barrier. As they entered the 'commerce and payments stage', they started to provide the 'merchant payments' such as 'bill payments', remote payments, retail payments, etc. Today MM has entered the 'mobile finance stage' where it allows the customers to save, or what could be referred to as 'micro-savings'. It also provides microcredits. But what has allowed this to happen? In this chapter, I argue that there were four things that enabled the development of MM through these three stages, namely: the liberalisation of the Tanzanian economy through reforms (referred to as the roll-back or deregulatory phase in the theoretical framework in Chapter 3), CLF, the test, monitor and regulate approach (referred to as the roll-out or reregulatory phase in the theoretical framework in Chapter 3), interoperability, national FI politics and the 2015 NPSA (also see Chapters 2, 3 and 4 for further details). Before looking into all these issues, I will present a selected literature review and theoretical assumptions to build up the rationale for further analysis.

5.3 Literature Review and Theoretical Assumptions

5.3.1 Literature Review

In developing countries, poor infrastructure and low-income levels trigger expensive financial services, which are unprofitable (Mothobi, and Gryzybowski, 2017; Rocha et al., 2011). The traditional financial services face these above-mentioned challenges. MM, on the other hand, ignited a FI transformation for millions of the unbanked poor by using mobile networks (Jack and Suri, 2011; Demirguc-Kunt et al., 2015). Many rural poor households have been transformed by the MM revolution which not only allowed them to get access to basic financial services through MM transfers and savings, but also made them enjoy the communication aspect of mobile devices (Bongomin et al., 2018:363). The main purpose of MM is fostering FI for financially-excluded people (Peruta, 2018:155). These are the benefits that make developing nations allow the development of MM services (also see Chapter 8, Section 8.11).

As far as FI is concerned, there is no universally agreed definition (TNCFI, 2014:13; Aduda and Kalunda, 2012:100; Tabaro, 2011:6) as previously discussed in Chapter 2. Countries define FI according to their realities, but all definitions focus on the provision of formal financial services to all at a reasonable price (AFI, 2017a, World Bank, 2014a). The Bank of Tanzania defines FI as the “regular use of financial services, through payment infrastructures to manage cash flows and mitigate shocks, which are delivered by formal providers through a range of appropriate services with dignity and fairness” (TNCFI, 2018). About 2.5 billion people worldwide do not have access to formal financial services (World Bank, 2014a:1). In 2009, 56% of the Tanzanian population was financially excluded (FinScope, 2009). Thanks to MM and other innovations in 2017, the number of financially-excluded people reduced to 26.8% (FinScope, 2018). MM has been highly regarded for its role in fighting banking exclusion (Maurer, 2011), and for its role in offering a solution to at least two main problems, namely: the price of banking (McKay and Pickens, 2010; Mbiti and Weil, 2016; Donavan, 2012; Arestoff and Venet, 2013) and the proximity to banking infrastructures (Morawczynski and Pickens, 2009; Jack and Suri, 2011).

5.3.2 How Do the Findings as Described in Section 5.2.1 Relate to Previous Studies?

Not much on the CLF and MM has been investigated in Tanzania. Some literature exists (see Chapters 1 through 4). However, more must be done to understand how the CLF aided the advent of MM in Tanzania and elsewhere. This literature is rare and is still developing. The existing research suggests the neutrality of technologies (see Chapter 4), but more must be written on how the CLF helped additional financial services to be added to the providers of services in the telecommunications sector.

Related literature includes Madise (2019) who analyses the development of MM in Malawi, and he links this development to suitable regulatory arrangements and FI. Nyaaba et al. (2018) investigate the political economy of MM interoperability and transactions in Ghana, while Jack and Suri (2011) analyse the economics of M-Pesa in Kenya. GSMA (2019) analyses state of the industry report on MM and how MM transforms access to financial services around the world. The literature on the liberalisation of the telecommunications and financial sectors does not inform much on MM (see: Prochaska, 2014; Adomi, 2011; also see literature on Chapters 2, 3, and 4). UNCTAD (2012) analyses MM features of East Africa Community countries, including MM service deployments, regulations and policy, where the legal and regulatory issues relevant to MM have been discussed. Dolan (2009) stages the maturation of the MM industry, emphasizing the various actors, level of regulation, number of users, models of payments, and characteristics of interoperability. Literature linking classical and neoclassical perspectives and technology, as well as the literature on MM has been provided in Chapters 1, 2,3, and 4. My findings relate to the above literature works as they bring the issues of roll-out and roll-back neoliberalisation into the analysis of MM as delineated in this chapter. I do not only aim at discussing the usefulness of MM, but also, delineating the theoretical assumptions for its growth.

5.3.3 Theoretical Assumptions

The theoretical underpinnings of this chapter are founded on the three assumptions, illustrated in Diagram 5.2 below, and as supported by the classical and neoclassical views.

Diagram 5.2: Key Theoretical Assumptions for MM Growth in Tanzania

Source: Author

The first assumption is that the 'test, monitor, and regulate' approach aided the development of MM (Haider, 2013; Di Castri and Gidvani, 2014). This is a classical perspective with the view that the markets are not perfect, and that the regulator needs to study them before placing rigid regulations, if he/she wants to achieve the best market efficiency. At the time of MM inception in 2008, the BOT did not know how to regulate MM innovation.

There is literature on financial liberalisation, financial deepening, and technology, which is also key to explaining the role of technology in enhancing FI. Ang (2010), Romer (1990), Grossman and Helpman (1991), Aghion and Howitt (1992) provided a seminal contribution to the literature on economic growth. They argue that new ideas encourage the process of technological change, which improves the technology of production and service delivery. According to Ang (2010), the liberalisation of the various sectors of the economy boosts the generation of new ideas, which deepens the technological industry. Thus, one expects a positive relationship between finance and innovative services.

Financial liberalisation can be measured by several types of policy changes in the financial sector (Ang, 2010). Abiad et al. (2010) and Ang (2010) measure financial liberalisation by looking at the following policies: credit controls and reserve requirements; interest rate restraints, entry barriers in the banking sector, prudential regulation and supervision, privatisation in the financial sector, restrictions on international capital flows, and securities market policy. According to Ang (2010):

> "the findings suggest that technological deepening in the financial sector rather than changes in the financial policy environment favour a more liberalised regime. In the case of developing countries, only financial development is found to be effective in reducing financial constraints and thereby in facilitating innovative production".

Hence, liberalisation and technology also play a key role in causing or reducing FE as demonstrated in Chapter 2 and as it will be demonstrated later in this chapter. The BOT liberalised the financial sector and allowed MM services without placing strict regulations on it (Haider, 2013; Di Castri and Gidvani, 2014). By doing so, it allowed regulations to follow innovations. Innovations move faster than regulations (also see: Moses, 2016). The BOT was of the view that it would be a mistake to place regulations first and after that, allow MM innovations. This way of regulating innovations could stifle the development of MM, which would also create undesired effects. According to Di Castri and Gidvani (2014) and Haider (2013), the BOT learned how MM operated. It tested MM operations and guidelines before it placed the strict regulations. These are the normal stages that the classicists use before placing regulations in any industry (see Chapters 1, 3, and 4). The results were promising as MM services took off and succeeded in Tanzania. Elsewhere, where innovations followed regulations, meaning where regulations were first put in place before MM services were allowed, MM growth struggled in those countries (also see: UNCTAD, 2012; Oyebode, 2014; Llewellyn-Jones, 2016). Hence, the 'test, monitor, and regulate' approach was behind the successful growth of MM in Tanzania (also see Section 5.4.3).

The second assumption, as presented in Diagram 5.2, is that proper legal and regulatory frameworks facilitated the development of MM in Tanzania and elsewhere (USAID, 2013:12; Di Castri and Gidvani, 2014; Ondiege, 2015; Maina, 2018: 15-16). The different Acts as they will be described in Sections 5.4.2, 5.4.3, and 5.4.4 provided the legal space and framework for MM operations in Tanzania. The Acts came with regulatory frameworks or provisions and provided all-encompassing laws and rules for licensing, compliance, enforcement, and matters of liability and breach of the law (marking the roll-out or the regulatory phase). The BOT and the TCRA could use the regulatory framework(s), which granted them the power to permit or refuse the prescribed licenses and approvals. They also had the mandate to regulate, supervise, investigate, and oversee operations of MM services in Tanzania. A useful legal and regulatory framework was a necessity for the development of MM in Tanzania as it will be discussed later in Sections 5.4.2, 5.4.3, and 5.4.4.

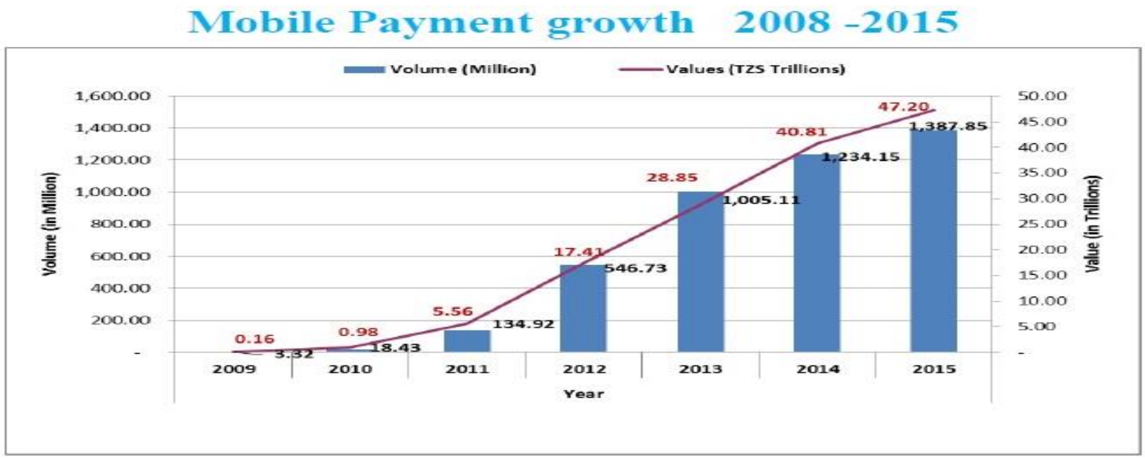
The third assumption, as depicted in Diagram 5.2, is that a conducive environment and the politics of FI helped to create partnerships between the MNOs and other stakeholders in achieving the desired FI goals (TNCFI, 2014; Ondiege, 2015; TNCFI, 2017a; TNCFI, 2018; Komba 2016). Also, see Section 5.5. Tanzania's NFIF recognised the role of MM in transforming the landscape of financial services over the past 10 years. The BOT, for example, embraced FI as a public policy objective. Moreover, the NFIF also reckoned four enablers of FI through which policy priority areas were set to enhance FI (TNCFI, 2014). The priority policy areas included: (i) increasing the proximity of financial access points to where people live and transact; (ii) enabling robust payment platforms; (iii) supporting robust electronic information infrastructure for individual and business profiles, credit history and collateral establishment for effective Know-Your-Customer (KYC) processes; (iv) ensuring that customers are informed and protected (TNCFI, 2014). All these policy priority areas not only supported FI, but also created a conducive environment for MM and for the politics of FI which were key to supporting MM operations as discussed later in this Chapter.

According to Davis and Walsh (2017), neoclassical views on financialisation in the neoliberal era focus on transactions and the best conditions of those transactions, as well as, the affordability of transaction costs. This is in line with the profit-maximisation emphasis of neoclassical perspectives. The ability of MM in reducing the costs of accessing financial services and the increased number of MM users made MM services efficient and affordable. According to Alexandre et al. (2010), MM reduces FE as it addresses the gap between banks and the financially excluded as many banks do not find it profitable to make banking infrastructure and financial services available in poor communities. This is due to the banks incurring high transaction costs for small transaction values when engaging with low volumes of transactions.

5.3.4 Conceptualisation of MM Development – Key Statistics and Findings

I will start by revisiting various statistics from credible institutions and documents. This helps me to establish and explain MM development trends in Tanzania over time.

Graph 5.3 Evolution of MM in Tanzania – Mobile Payment Growth 2008-2015



Source: BOT (2017).

Graph 5.3 shows how mobile payments grew over time. These statistics do not include mobile banking payments because mobile banking payments are not MM payments. Trillions of shillings or billions of US dollars pass through MM every year. According to GSMA (2017b:6), about 52% of the GDP passes through MM services in Tanzania as quoted in the Bank of Tanzania sources.

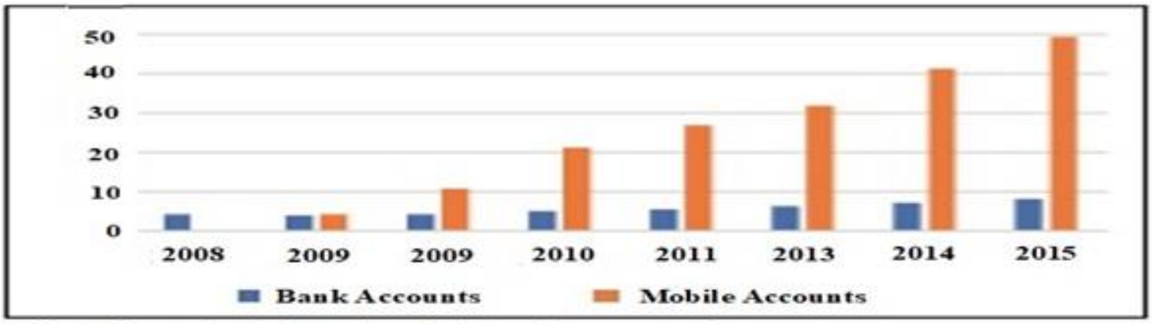
Table 5.1: Mobile Services Statistics

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Registered Accounts	112,000	4,192,683	10,663,623	21,184,810	26,871,176	31,830,289	41,380,791	49,356,465	71,245,336
Registered Active Users					7,872,749	11,016,657	13,856,667	19,793,087	17,025,685
Registered Agents	2,757	14,469	29,095	83,795	97,613	153,369	238,461	267,047	371,132
Trust Accounts Balance (TZS billion)	-	7.11	30.34	96.06	192.42	293.52	450.95	561.2	665.7 billion

Source: BOT (2017).

From Table 5.1**,** the number of registered accounts reached 71million in 2016. Active users were 17 million, and registered MM agents reached 371,132. The trust account balance also grew, reaching 665.7 billion shillings. Again, this shows how MM services kept on expanding. From Graph 5.4 below, if the penetration of bank and MM accounts between 2008 and 2015 were compared, you would notice that the penetration of MM accounts was higher than that of bank accounts.

Graph 5.4: Account Penetration, 2008-2015 (Millions of Accounts)

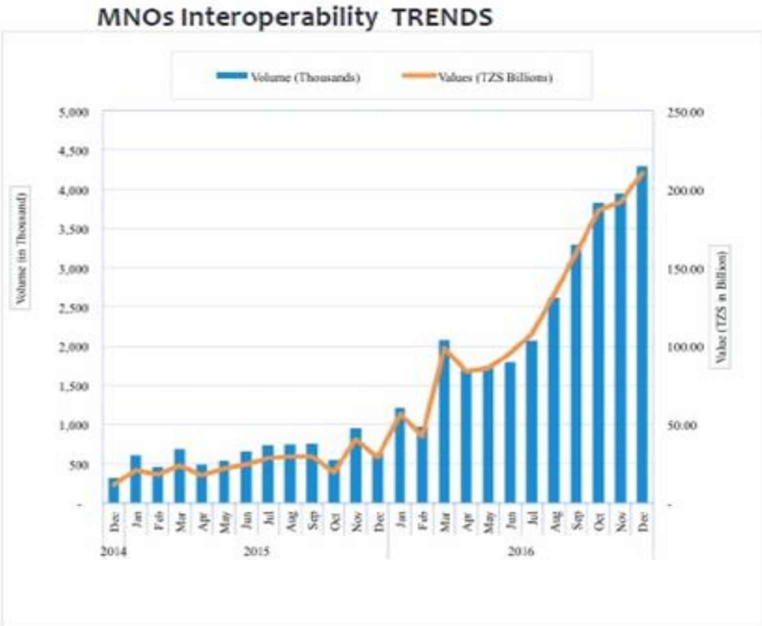


Note: Figures include retail and wholesale accounts. One individual/firm may have multiple accounts.

Source: Bank of Tanzania (2016).

To improve MM, the MNOs agreed to have interoperable systems through which customers of any MNOs could receive services from a different MNO. TigoPesa customers could obtain services from Vodacom M-Pesa and so forth (Gilman, 2016; IFC, 2015; Musa et al., 2014). Interoperability not only created non-exclusivity of services at the provider level, but also at the agent level (Komba, 2016; Masamila, 2014:56). The benefits were clear as the volume of transactions increased, as depicted in Graph 5.5. The first interoperable MM services in Tanzania started in 2014.

Graph 5.5: Interoperable Trends of the MNOs

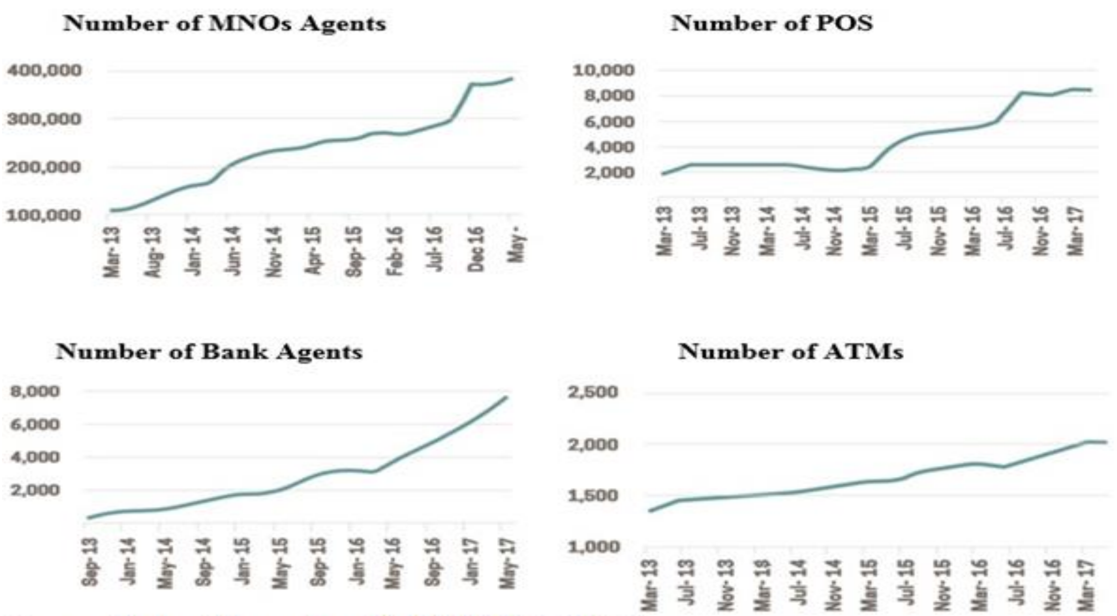


Interoperability among MNOs (TigoPesa, AirtelMoney, EzyPesa and Vodacom) recorded an upward trend.

Source: BOT (2017).

It is unthinkable to analyse the development of MM services without mentioning the MNO agents. Interoperability at the MNO agent level facilitated the delivery of financial services through MM. Graph 5.6 below shows how MNO agents increased significantly as compared to other channels of financial service delivery between 2013 and 2017.

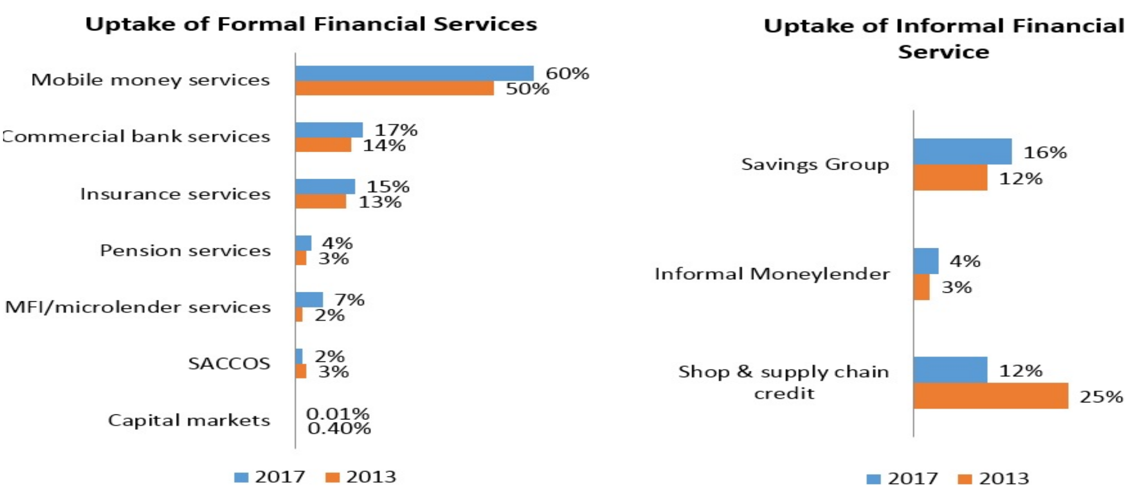
Graph 5.6: MM Agents and Other Access Channels



Source: Bank of Tanzania and TNCFI (2017a: 26-27).

Uptake Strand 5.1 below shows that the uptake of MM services between 2013 and 2017 was far higher than the uptake of any other financial services, which consolidated the survival of MM in the financial sector.

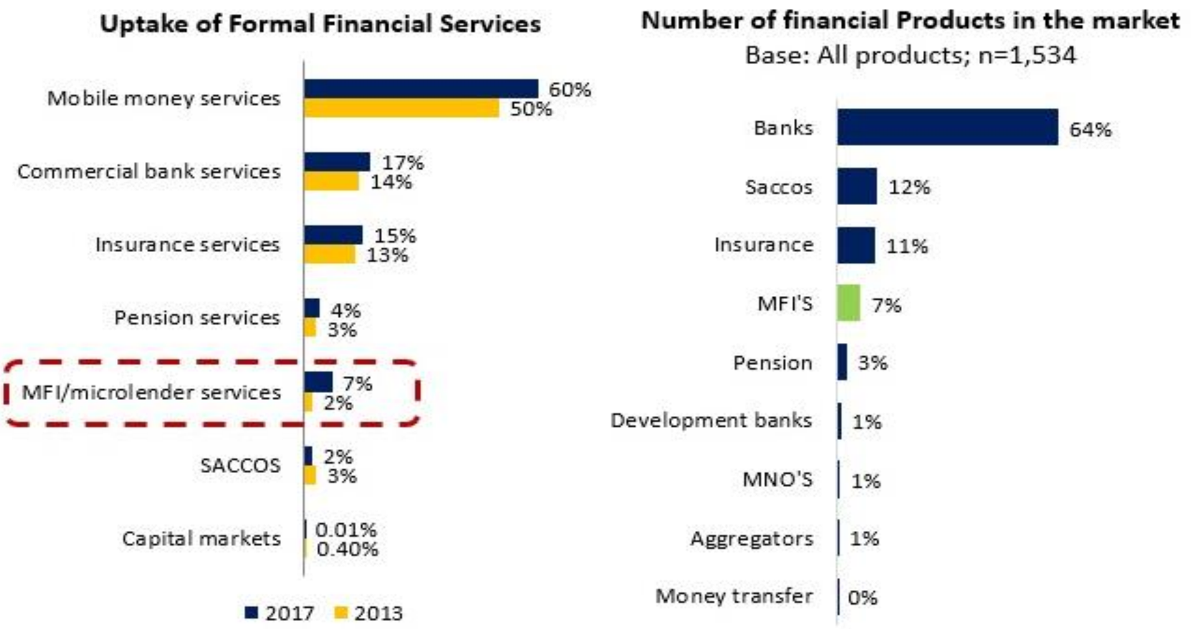
Strand 5.1: Uptake of Formal Financial Services



Source: FinScope (2018).

Uptake Strand 5.2 adds the share of financial products in the market. It is fascinating that the banks have 64% of the financial products and only 17% of the uptake of formal financial services. MM has only 1% of the financial products share in the market and 60% of the uptake of formal financial services. This trend means that the adult population uses more MM than banking services in Tanzania.

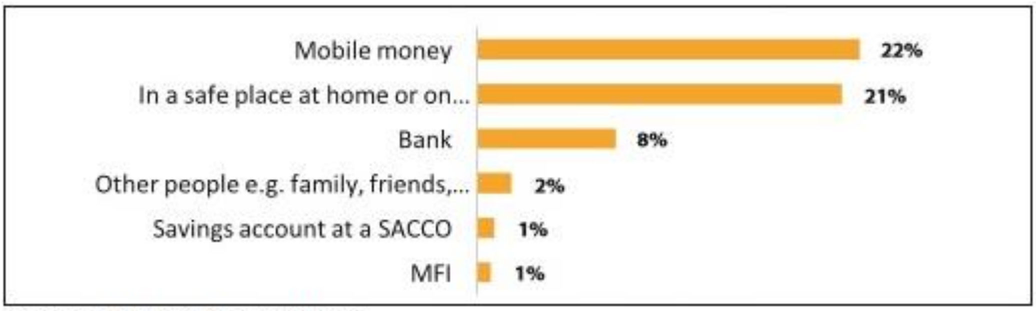
Strand 5.2: Uptake of Formal Financial Services



Source: FinScope (2018).

Strand 5.3 shows the saving channels. About 22% of the Tanzanian adult population saved through MM services in 2015, and only about 8% did the same with banks.

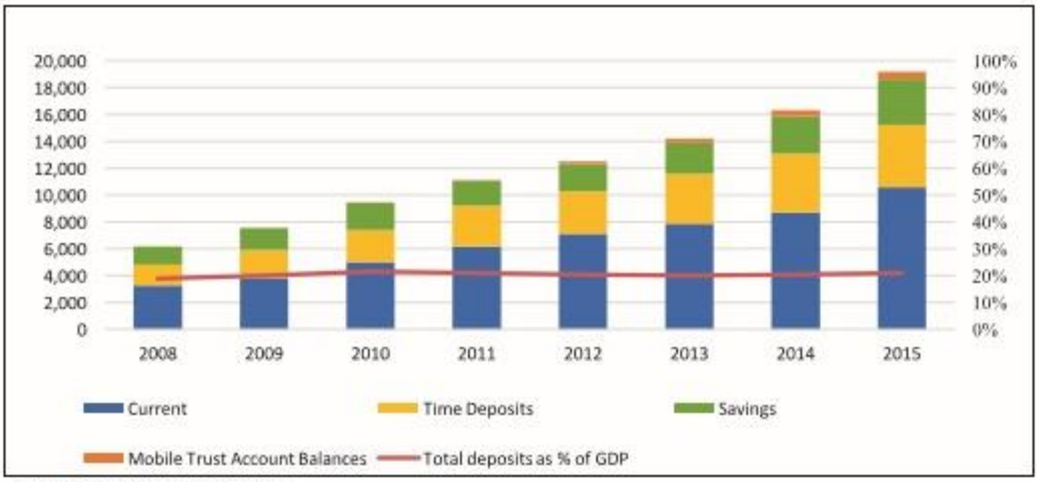
Strand 5.3: Saving Channel (% of Adults)



Source: InterMedia (2016:20).

Graph 5.7 below shows that MM trust accounts have grown continuously over time. Trust accounts are the accounts that MM providers are required to open with a bank as a requirement for them to operate MM services. The money deposited in trust accounts acts as collateral or an advance for MM services. With money in the trust accounts, the banks release money when a mobile account owner requests it. Likewise, when a MM account holder deposits money in his e-wallet, that money does not stay with the banks but goes straight to the trust account. It is worthwhile to remember that while the banks are deposit-taking institutions, MNOs are not. Hence, any deposits and savings go to their trust accounts in banks.

Graph 5.7: Bank Deposits and MM Trust Account Balances (TZS Billion and % GDP)



Source: Bank of Tanzania, 2016.

I have included all of these statistics in this analysis to show the growth of MM with concrete statistics and examples. The subsequent sections will provide the narrative part of what caused the development of MM in Tanzania and what politics and policies of FI enhanced this development.

5.4 Qualitative Findings and Their Explanations

5.4.1 Liberalisation

From the findings, it is crucial to understand what happened with the telecommunications and banking sectors before and after the liberalisation policies (during the roll-back and roll-out phases of neoliberalisation). It is also important to know how the liberalised policies shaped the 'NPS' and the politics of FI. All of this involves the role of the government and non-governmental actors, as well as the neoclassical perspective, which limits government intervention in markets to allow liberalisation and deregulation, through the 'RCA' as explained in Chapters 1 and 3. I will start by clarifying the role of the government. One needs to understand that the financial system serves the state and the people. It is not separated from the government. And therefore, it is not separated from politics. According to Stiglitz (2000:27-39), the primary role of the government is to provide a legal framework within which all economic transactions occur. From the private sector's interests, these transactions should generate profits. The neoclassical perspective supports the profit-maximisation of financial transactions. According to Stiglitz (2000), payments that transfer money from one individual to another, but not in return for the provision of goods and services, are called transfer payments. A significant percentage of MM transactions fall under transfer payments. You will see later how the government has provided the legal and conducive environments for facilitating MM growth. According to Di Castri (2013a) and Di Castri and Gidvani (2014), the government also regulates the sector and makes policy decisions. It also sets: the licensing requirements, transparency and disclosure rules, market conduct rules, rules on the privacy of data, national strategies, rules on credit registry, etc. The roles of the banking and non-banking institutions are to: establish their industry code of conduct, create their internal recourse mechanisms, conduct self-assessments, train their staff, set their strategies for financial inclusion, as well as the provision of financial education or literacy. Moreover, the liberalisation of the financial sector was also key to allowing MM operations. According to Campbell and Stein (1991) and Mbowe (2010), Tanzania was not a mixed-economy before the liberalisation of its financial sector. This left the banking sector struggling and brought the economy to its knees (see Chapter 2). Moreover, the liberalisation of the economy (that is to say, the rolling back neoliberalisation) allowed the introduction of new and better products, increased customer choices, resulted in a growth in demand for financial and telecommunications services, increased investments and coverage for both financial and non-financial institutions (also see: World Bank, 2005; IMF, 2007; Goyal and Sarkar, 2014; and Beju and Giupac-Ulici, 2012). Liberalisation also increased the number of services that the telecommunications sector could offer, this included short messaging services (SMS), multimedia messaging services (MMS), and the possibility for operators to upgrade their networks to enable the delivery of new and more advanced services to customers. All this became possible because of the roll-back neoliberal policies as described in Chapters 1, 3, and 4. It also allowed the telecommunications sector to adapt the CLF.

5.4.2 The CLF

The CLF and its implementation are some of the changes that occurred when Tanzania liberalised its economy. The telecommunications sector was affected by these changes, which later helped the advent of MM. The Tanzanian communications sector is governed by: the 1997

Telecommunications Policy, the 2003 ICT Policy, the 2003 Information Broadcasting Policy, and the 2003 Postal Policy (TanzaniaInvest, 2020). Telecommunications in Tanzania are regulated by the TCRA, which is a body set up by the 2003 TCRAA. In 2015, the government of Tanzania enacted the Cybercrimes Act and the ETA. The TCRA expects that these two latter Acts will improve the confidence of financial institutions in ICT as they address e-services and cyber defence. The TCRA cited banks as the prime beneficiaries of the Acts as their activities are highly dependent on ICT (TanzaniaInvest, 2020). Furthermore, various sector legislations have shaped telecommunications services. These included: the Tanzania Communications Act No. 18/1993; the TCRA No. 12/2003 which introduced the CLF, complemented by 14 regulations; the 2015 ETA; the 2015 Cybercrimes Act; the Universal Communications Service Access Act No. 12/2006; the 2010 Electronic and Postal Communications Act. All of these Acts were the results of the politics of the telecommunications sector in Tanzania.

> "The best thing that the TCRA did a while ago was creating what was referred to as the 'Converged Licensing Framework' … That Framework I am talking about 2006 or 2007. The issuance of the license to every service, as technology has changed over time. We issued converged licenses since 2006. They said they provided a license that was technologically and service neutral. What did all this mean? … They are free to do any innovation based on the licensing framework. As I said earlier, it is converged and that we do not regulate the technology. We do not regulate the service …. Hence, mobile money was like an addition to the services offered by the operators" (Senior Telecom Sector Official).

Service deregulation was the triumph of the roll-back neoliberal policies. The CLF was key to implementing the service liberalisation policy across the different economic sectors. The TCRA introduced it on February 23rd, 2005. Likewise, it was technologically and service neutral, as well as it accommodated locals with minimum investments. According to TanzaniaInvest (2020):

> "the CLF ensures regulatory flexibility, addressing market and technology developments, as well as efficient utilisation of network resources and encouraged the market entry of small-scale operators. The CLF of Tanzania establishes four categories of licenses as follows: Network Facilities Providers (NF), Network Service Providers (NS), Application Service Providers (AS), and Content Service Providers (CS) … The licensing regime provides separate licenses for infrastructure and services. Previous regime services, including internet provision, were licensed individually".

According to Mfungahema (2006) and Mfungahema (2014), the CLF was a neoliberal roll-back initiative as it allowed private telecommunications providers to enter Tanzania's market, creating innovative opportunities. For instance, it allowed content service providers who did not own transmission facilities (network facilities) to deliver broadcasting services using licensed network facility operators (Mfungahema, 2014; Mfungahema 2006; TanzaniaInvest, 2020). Through the CLF, MM innovations were introduced in the telecommunication sector, and across other sectors of the economy.

The four authorisation categories in the CLF are further divided into four geographic market segments: international, national, regional, and district market segments (Mfungahema, 2014; Mfungahema 2006). Hence, the operator could choose where they wanted to operate. The regulation of the markets took into consideration these new neoliberal realities.

5.4.3 Test, Monitor, and Regulate

> "You know, the central bank is an authority. It has authority over the National Payments System. The MNOs and the other non-financial institutions get involved in the payment system side. They are not on the banking side. We were open to this. The banks objected in the very beginning. They said the MNOs were entering the money business. And that they were in the National Payments System. And that they did not have strict supervision and the requirements. They thought the requirements and supervision favoured the MNOs and not the banks. In which case, the banks thought this created the conditions for the unfair competition. And as they heard it from elsewhere that they could use the bank-led model to run mobile money, the big difference was whether one proceeded with innovation or not, and the willingness to take the risk to let innovation lead while you monitor and then appropriately manage the risks. The system was called 'test, monitor, and regulate.' This was the concept" (Former BOT Governor).

Tanzania did not have an 'Electronic Commerce Act' when it launched MM services. It adopted the 'test, monitor, and regulate' approach which allowed the MNOs to launch and scale services depending on the guidance of the BOT 'letters of no objection'(LNOs) (also see: Di Castri and Gidvani, 2014). In 2007, the BOT issued the 'Electronic Payment Schemes Guidelines (EPSG) which gave the MNOs the right to offer payment services through mobile transfer. Although the EPSG allowed the MNOs to offer payment services through MM, they covered risks for banks and other financial institutions, leaving out the role of MNOs. Hence, the MNOs were required to partner with banks to receive the 'LNOs', which allowed the BOT to guarantee that the customer's money is safe in the banking system, backed with a 100% liquidity prerequisite.

Due to the lack of MM regulatory framework and laws at its inception in 2008, which occurred because of the neoliberal deregulation policies, the MNOs were forced to collaborate with the licensed banks and financial institutions for the BOT to release the LNOs which allowed the MNOs to deliver MM services (Di Castri and Gidvani, 2014). Due to the 'test, monitor and regulate' approach, Tanzania created and established regulatory and MM policies, which guided the development of MM services.

> "I think the interesting part is that the central bank does not regulate the actual MNO. What is regulated by the central bank is the e-money transfer. And that regulation is the same for the banks as it is for mobile money providers. What they differ is that they fall in the different tiers of providers. And in the way, they meet the different requirements, which I consider to be fair because they take into consideration the risk also which it carries, because if you are a bank, you transfer large amounts of money. You give out larger credit, things like that. So, that is why, by default, you will be in another tier than somebody who is just transferring small amounts of money. So, I don't think they favour anyone in particular" (Financial Sector Official).

The work of creating and establishing appropriate regulatory and MM policies is still ongoing and is a result of the neoliberal roll-out policies (see Chapter 3). There are still many gaps in the regulatory frameworks. Also, there are MM policies that still need to be introduced as the NPS transforms itself.

5.4.4 The NPS

The MM sector emerged due to the establishment and enactment of relevant legislation and regulations. The political economy of the financial sector is also shaped by the evolving legal and regulatory frameworks. The MNOs are not financial institutions but use the NPS:

> "Any payment mechanism that is in the country is grounded. It falls under the BOT mandate. Whether you pay through the bank, whether through the Western Union, through TigoPesa, M-Pesa, whether through the EMS, whether it is through the bus, anything involving the payments is under the BOT supervision" (Former BOT Governor).

It is clear to envisage pieces of legislation if the non-financial institutions use the payment system supervised by the BOT. There are four main pieces of legislation and six pieces of secondary legislation, that came during the neoliberal roll-out phase, that have allowed MM to operate in the financial sector. The four essential legislations are: Firstly, the 2006 BOT Act replaced the 1995 and 1965 Acts. It not only created the BOT, but also defined its principal functions. The BOT established a few guidelines that helped the development of MM services such as: the NPSs Guidelines for Retail Payments, Rules and Regulations for Retail Payments, and the Guidelines Introducing Electronic Payments, e.g., Mobile Payments Regulations (MPR). According to Parkes (2014), the 2012 MPRs established a licensing regime for non-banks, including the MNOs. It allowed them to provide services such as: account-to-account transfers, person-to-person fund transfers, business-to-business fund transfers, cash-in, and cash-out services. Secondly, the 2006 BFIA provided the legal framework for undertaking licensed banking operations within Tanzania. Thirdly, the 2007 Electronic Payment Schemes Guidelines allowed the advent of MM. Finally, the 2015 NPSA defined who could use the NPS. A payment system in Tanzania is a facility that ensures the circulation of money. The payment system includes payment instruments, banking and money transfer payment procedures, and interbank payment transfers. The payment system in Tanzania is regulated by: 'the 2015 Payment System (Electronic Money) Regulations'; and 'the 2015 Payment System Licensing and Approval Regulations' (the Licensing Regulations). The 2015 NPSA provided a legal framework for payment systems in Tanzania and included laws to oversee licensing, compliance, enforcement, and matters of liability for breach of the law. It also permitted institutions other than banks and financial institutions, such as the MNOs, to operate payment systems in Tanzania.

The six pieces of secondary legislation are: Firstly, the 2006 Finance Act which empowered the government not only to make changes in the tax regime, but also to amend different financial and tax laws. Secondly, the 2002 Prevention of Terrorism Act created the Financial Intelligence Unit (FIU) in the Ministry of Finance and Economic Affairs responsible for this unit's functions. Moreover, UNCTAD (2012) mentions other regulations that have the potential to influence the functioning of MM services, such as: Firstly the 2006 Tanzania Evidence Act CAP 6, which specified the use of electronic documents as evidence in Tanzania's courts. Secondly, the 2003 FCA fostered competition in different sectors and protected customers. To reinforce this Act, the FCC and the Fair Competition Tribunal (FCT) were authorised to administer the laws and provide the judicial forum to hear appeals respectively.

As the neoliberal reforms were implemented, legislation and laws were introduced in the sector. They play a key role in making FI policy decisions and strategies which affect the development of MM. For instance, each of these Acts creates an institution which participates in the NFIF where the TCRA also engages in policy discussions. As MM providers needed to work with banks and other financial institutions, the BOT initially signed a Memorandum of Understanding (MoU) with the TCRA to regulate the financial aspects of MM, while the TCRA regulated the communications aspects of MM. The BOT did not have strict regulations for MM services as it did not know what would happen later with MM, as well as, neoliberal reforms limited its regulatory role. It relied on the 'test, monitor, and regulate' approach. The banks were the deposit takers while the MNOs remained the non-deposit takers providing financial services. MM, as such, was defined as a platform or tool that could be used to aid the provision of financial services. MM providers were required to open trust accounts with banks (Di Castri and Gidvani, 2014). Their monies were deposited in those accounts. So, MM providers use NPSs to provide their services. With these new realities in 2015, the NPSA was introduced, and with it the electronic money regulations and licensing regulations were introduced. In this way, MM providers were required to create a separate legal entity, separate from the mother company for regulatory purposes as required by the BOT. To provide MM services, the MNOs were no longer required to obtain a 'letter of no objection' from the BOT to operate but were required to apply for a license to use the NPSs. Hence, to operate MM services, the MNOs are required to comply with the following: the 2015 NPS Act, the 2015 Electronic Money Regulations, and the 2015 Licensing regulations (URT, 2015c; URT, 2015d; URT, 2015a; URT, 2015b). Diagram 5.3 below shows what I mean by the NPSs. There are two payment systems in Tanzania, one is the 'Large Value Payment Systems' (LVPSs), and the other one is the Retail Payment Systems (RPSs). MM services fall under Retail Payment Systems. As you will see, the new emerging services in the Retail Payment Systems are mobile banking, MM, and agent banking.

Diagram 5.3: The NPS

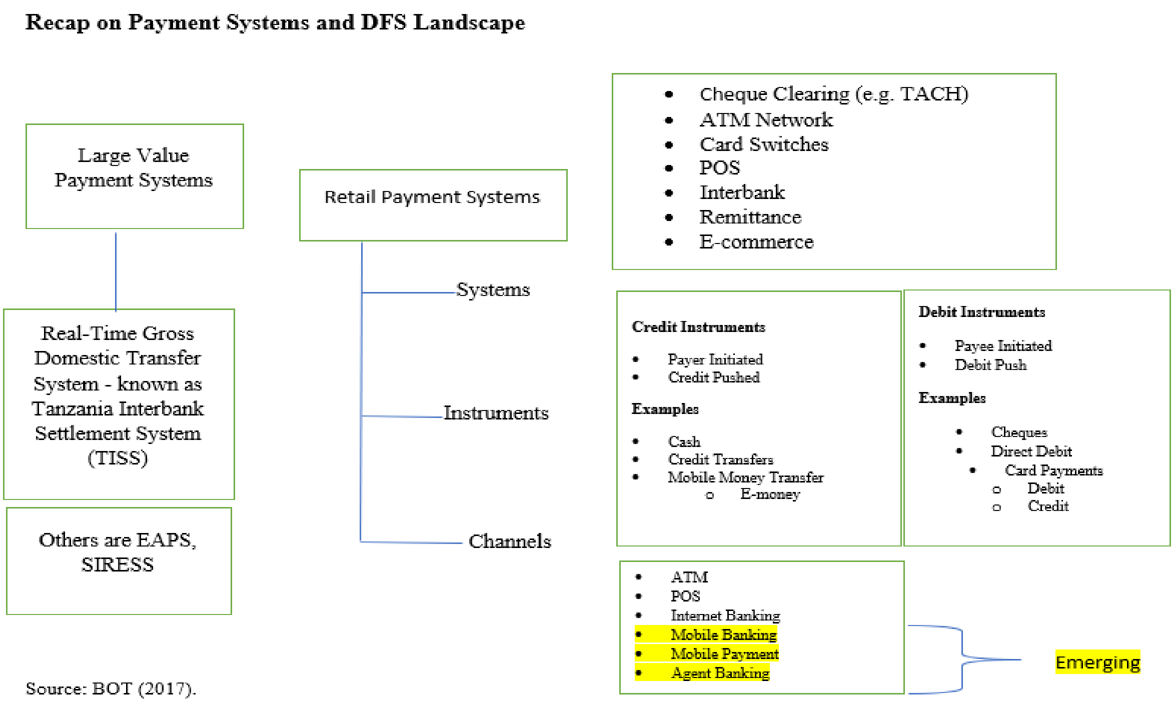
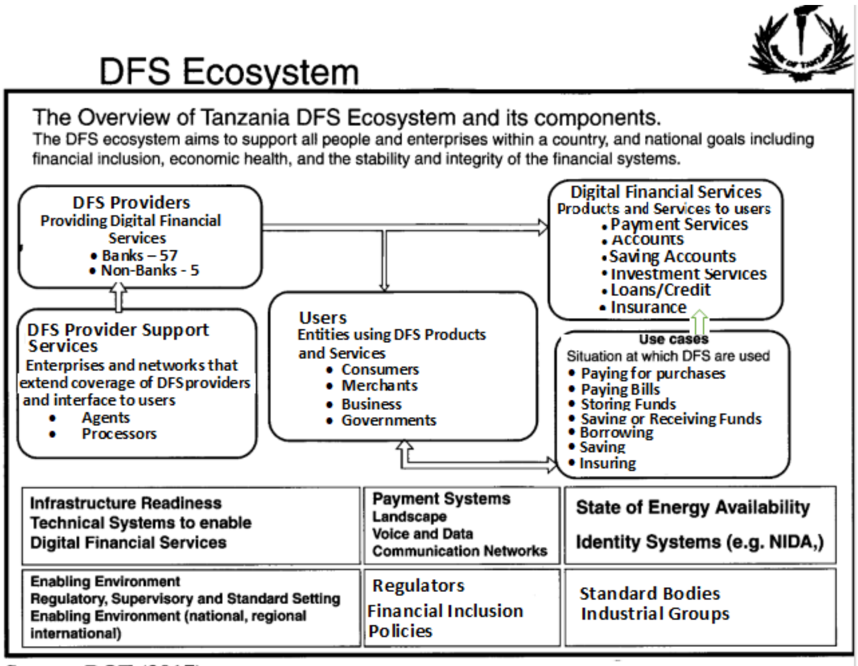


Diagram 5.4 depicts the DFS ecosystem. This is a very complicated ecosystem as shown here. As of 2016, fifty seven banks were operating in Tanzania, and five MNOs were offering MM services. In 2018, seven MNOs operated in Tanzania. Thus, this is still a growing sector. I have decided to use this diagram to illustrate how complicated the digital financial ecosystem where MM services operate is. As complicated as the DFS ecosystem is, there is a need for interoperable systems.

Diagram 5.4: DFS Ecosystem



Source: BOT (2017)

5.4.5 Interoperability

> "Since its inception, the 'Converged Licensing Framework' took care of a lot of issues. The BOT needed to change as they had reviewed the National Payments System. They issued another Act that recognised digital financial transaction services and mobile money issues. They enacted electronically associated regulations which identified electronic transactions, including the issues regarding interoperability" (Senior Telecom Sector Official).

The neoclassical perspective aiming at generating efficient outcomes, especially with Solow's and Schumpeterian views, would encourage interoperability because it could help increase economies of scale and economies of scope. Interoperability runs services across different types of networks and sectors, for instance, from telecom to banking. Meanwhile, economies of scope fuel innovation and opportunities across sectors, for instance, fintech.

Interoperability can be defined as ‘money moving between mobile financial services accounts of different MNOs, and between mobile accounts and bank accounts’ (Musa et al., 2014). Interoperability, therefore, provides greater benefits to the MM service markets. It also allows the operators to offer more flexible payment options which can increase the overall number of transactions and velocity of money in the ecosystem. It also provides the regulators with an opportunity to draw more cash into the formal financial system. It also provides more accessible and flexible services as well as it allows for an opportunity to advance further FI (also see: Musa et al., 2014).

According to Di Castri (2013a), interoperability also has the following benefits: first, it makes commercial sense for providers, and it creates value for customers. Second, it helps to share the regulatory risks. Third, it lowers the cost of financial services, and by doing so, it increases customer choices. Fourth, it increases competition and breaks dominant positions, which may help remove the need for individuals to own and manage multiple SIM cards. Interoperability also has its challenges. Its implementation can be technical and sophisticated and can “distract the operator from focusing on the basics of the service, such as building the distribution network and educating customers” (Di Castri, 2013a). Its compliance may increase costs, making the businesses more challenging for providers (Di Castri, 2013a).

From the above-mentioned benefits and challenges, MNOs, banks, and policymakers work together to enhance interoperability. This should be easier because neoliberal policies facilitate the formation of partnerships for economic benefits. They should also agree on what type of interoperability suits them after assessing the benefits, costs, and risks. Moreover, putting regulations in place allows the markets to implement systems and solutions capable of being interoperable, which will deploy market-led interoperable solutions (Di Castri and Gidvani, 2014).

Kulkarni (2015) asserts that the CGAP has defined three levels of interoperability that need to be addressed for a developing country like Tanzania: (i) ‘platform-level interconnection’: this occurs when MM platforms are interconnected in such a way that one customer with an account with one MNO may be able to send and receive money to or from another customer owning an account with a different MNO; (ii) ‘agency-level exclusivity’: this occurs when a customer of one MNO is restricted from using an agent from another MNO to cash in or cash out services related to that customer’s account. Hence, ‘agency interoperability’ can be achieved even though ‘agency exclusivity’ is an issue, as long as the platforms are interconnected. A good example is the 'interoperable ATM networks'; (iii) 'customer-level interoperability': involves two interoperability scenarios for this end. While the first one has to do with the customer's ability to access his/her account through any phone using a SIM card on the same network, the second scenario has to do with the customer's ability to access multiple accounts on one SIM (also see: Masamila, 2014).

Soon after the Maya Declaration in 2011, which called for the achievement of FI, the TCRA and BOT began to draft mobile payments regulations. The BOT also collaborated with financial, telecommunications, as well as competition regulatory bodies to create a framework to enhance competition and to encourage interoperability in the MM sector. In 2014, the 'government of Tanzania' launched the 'NFIF' committing the government to address the challenges facing strategies to enhance FI. Interoperability of the networks was also a concern that was to be addressed while implementing the 'NFIF' (also see: URT, 2014). As the implementation of the 'NFIF' progressed, the need for full MM platform level interoperability became even more apparent if the 'e-float liquidity management' challenges were to be resolved. In Tanzania and in East Africa, 'e-float' is basically money kept in an account, and a customer can use his/her mobile phone to have access to that money in order to make payments or transfer money, etc.; the customer may add to it or exchange for cash, by visiting an agent.

In 2014, an interoperability agreement between the BOT, two banks, and all four MNOs was reached as it laid the foundation for different levels of interoperability. Tigo led the remaining MNOs into an agreement as the MNOs became aware of the challenges facing the MM sector, which included: (i) the direct competition for market share in a stalling market; (ii) the slow-pace of the 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, and while Vodacom supported the structure, it did not sign up (see: Jones-Evans, Bourreau and Valletti, 2015). 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 MM market with full interoperability for MM peer-to-peer (P2P) transfers (Kabendera, 2015). Furthermore, in 2015 'the 2015 NPSA' and 'the 2015 Electronic Money Regulations' were reinforced to set up the rules of the game. The interoperability of MM markets became even more critical. Besides the interoperability of MM, factors aiding the deployment of MM services are also worth mentioning in Section 5.4.6.

5.4.6 The Deployment of MM Services

Apart from the findings discussed in the previous sections, it is worth mentioning that in general, MM deployment in Tanzania and East Africa, was also determined by the following factors (also see UNCTAD, 2012):

Firstly, the access channels, were used as different platforms and applied different methods to deliver MM services:

> "The issue is that we oversee communications related resources. For instance, the numbering, for example, for you to send a M-Pesa message, you need a USSD short code … Until today, when the operator emerges, he comes to us, and we give him the numbering resources, which is a short code. He has to declare what he wants to do with that code. So, he needs to have a business plan. At the moment, there are few and we want to make sure that everyone getting the numbering resources has a business. Otherwise, he can receive those resources and do nothing. So, we ask everybody to tell us about their business, and if we find it very impressive, we give them the numbering resources" (Senior Telecom Sector Official).

A number of access channels used included but were not limited to: (i) SMS commands using a short code; (ii) Unstructured Supplementary Service Data (USSD) which initiated sessions between the mobile phone and the server, and which performed a series of steps to accomplish transactions (M-Pesa and EzyPesa used this platform as well); (iii) Subscriber Identity Model Toolkit (STK) which was an approach supported by most platforms. The STK facilitated the breakdown of transactions into a series of logical steps which helped manage transactions. The presence of these channels helped the deployment of MM and the smooth functioning of the different platforms of MM services.

Security factors also facilitated the deployment of MM. For instance, from a security perspective, if different platforms were used and the data was sent via USSD and received via SMS without being encrypted, that transaction risked being intercepted. Hence, well-stored data on the phone helped protect both customer details and account value. MM was safe because SIMs were registered. It was easy to track down where the payment started and where the payments ended. Theft incidents had been rarely reported.

Finally, how an MNO was networked, in terms of agents, branches, people, and ATMs, made the deployment of its services easier. According to a Financial Sector Official:

> "… Mobile Money was the key factor in bringing services closer to the people. They were able to reach out to a massive amount of people because they were piggybacking on kiosks. They didn't

have to establish bricks-and-mortar structures. So, without investing a single cent in infrastructure, the only infrastructure they had put was the 'minara'/ 'towers'. They didn't have to build the infrastructure as the banks did. No, they didn't. They just did it by making the agent their business. That was how they were able to roll out across the country. They contribute significantly being within the 5 km or 1 km within a financial service point. It is driven by mobile money. Without mobile money we wouldn't be where we are now".

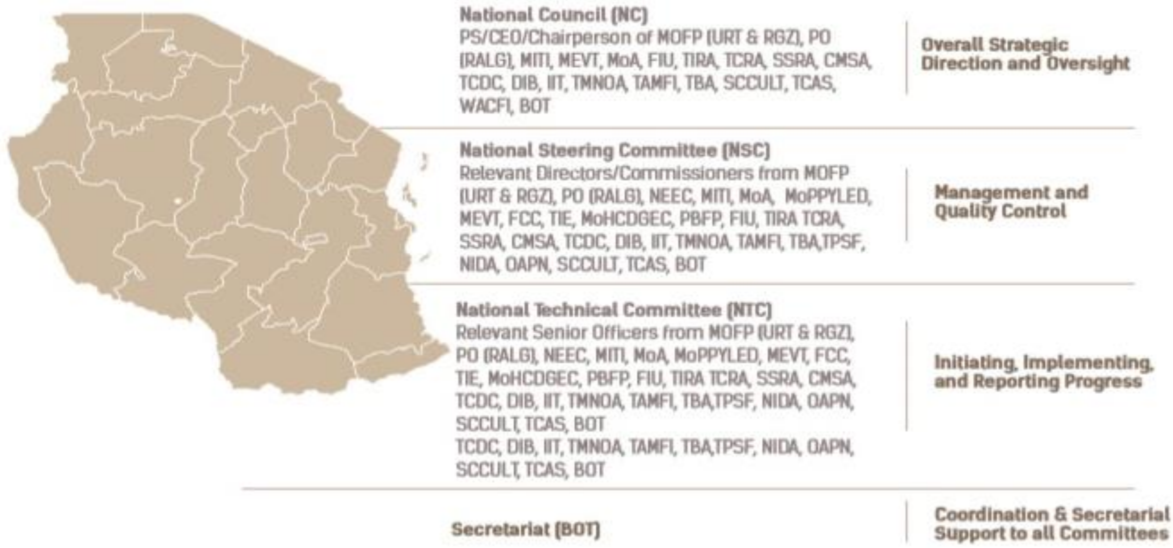
The networks provided interfaces through cash-in and cash-out functions. There were a lot of changing technologies and business models as the MNOs, and other stakeholders strived to manage MM services. This made service deployment an important aspect of supporting the smooth functioning of the MM sector. The deployment alone was not enough. Policies and regulations were also needed. This had much to do with the politics of FI in Tanzania, as well as how neoliberal reforms tended to be inclusive (as described in Chapter 1, Section 1.5).

5.5 National Financial Inclusion Politics

"So, the financial system serves the basic, eh, functionality of the system with the government at any point in time. It is never separated from it" (Former BOT Governor).

This claim explains the link between the financial system and the government, which brings in the politics of FI. Diagram 5.5 illustrates the different players in the 'NFIF' and their roles. As the above statement indicated, the government is well represented in the framework.

Diagram 5.5: Actors and Committees Implementing the NFIF



Source: TNCFI (2018).

When MM started in 2008, the banks objected. They thought MM providers were interfering with banking services, as they engaged in the money business.

> "The banks did not directly agree that the MNOs start mobile money services … it was somehow the BOT agenda to support innovation. They wanted to promote innovation within the financial sector. That was the key agenda behind the establishment of mobile money. That was the reason why the BOT offered them the operating licenses without having their regulations in place" (Executive Banking Sector Official).

At that time such disputes could be settled by the BOT and the TCRA. As Tanzania did not have a single FI policy, the NFIF was instead established. The framework defined FI and set the vision and targets to be met by financial and non-financial institutions. It also sets the different strategies to achieve FI nationwide. It is also a platform where disputes are settled, and new decisions are made through a 'consultative process'. It is a PPPI (see Chapter 8). It is a governance structure supported by neoliberalism and the RCA (see Chapter 3, Sections 3.3.1.2 and 3.6). When the markets operate freely, and the government is restricted to intervene, any significant changes in the economic sector require a consultative process, with the key stakeholders responding to the process of discussing with the government, how the latter should respond to any change in the free markets. This one-way neoliberalism has been used to balance the powers of the institutions and the government. I am mentioning the NFIF because it helped to bring MM services closer to key financial providers and it helped both the MNOs and banks to forge partnerships to allow the survival of MM. MM providers participate through TAMNOA, which is the 'Tanzania MM Operators Association'. The banks participate through the TBA (Tanzania Bankers Association). Both TAMNOA and the TBA participate in every level of the NFIF, as shown in Diagram 5.5 above. By doing so, they both protect their interests. This is where the politics of FI occur (see Chapters 8), and the decision from the committees, as illustrated in Diagram 5.5 affect financial and non-financial institutions.

When it comes to MM and the politics of FI, one has to understand what MM does with the everyday lives of poor people:

> "For me, one of the key things, why mobile money is key for driving financial inclusion is that mobile money has the best need of people. Within the Tanzanian society, we know that the family is a core source of credit. It is a core source of support. We have over a quarter of the women's population who are the dependents. They receive money from somebody. If my uncle somewhere needs money, I am the one who is going to send it to him. So, what mobile money did was it provided an easy and a quick, and somehow a cheap way of addressing the need for sending money. It was simple. It was using something that everybody has already: 'a phone'. Today, 68% have a

phone, and 93% have access to mobile phones. If I do not have a phone, I go to my friend who has a phone" (Financial Sector Official).

The politics of FI becomes the issue of how to incorporate MM services into the NFIF. The NFIF provides national strategies to achieve national FI goals, and the MNOs play an essential part in attaining the national FI goals. The National Financial Inclusion Council (NC) is a policymaking body that sets national financial strategies and policies. The process of policymaking has always been political. However, in the case of Tanzania, this process is a PPPI, and it involves both the public and private sectors. The BOT, TCRA, and MoF are among a few institutions that represent the government, and the TAMNOA and TBA are among the institutions that represent the MNOs, banks, and the private sector. The politics of FI are depicted in the NFIF with the different committees playing their role as assigned to them. The processes of policymaking, strategy formulation and implementation affect the financial sector (MM services and strategies are also included in the process). Policymakers design national strategies and policies such as the NPSA and its regulations, whereby parliament gets involved in the passing of those Acts. All Acts, as mentioned earlier in this chapter, went through the National Assembly, which is a political body. Debates took place in the National Assembly before the Acts were confirmed and officialised by all members of parliament. All the above-mentioned Acts could be regarded as the political tools that allowed the reforms in both the telecommunications and banking sectors, and set forth the legal frameworks for the operations of the respective sectors. Those reforms and legal frameworks permitted the liberalisation of individual sectors, which in turn enabled new financial and non-financial institutions to use the national payments system. Thanks to the Acts and legal frameworks that were in place, MM could use the NPS.

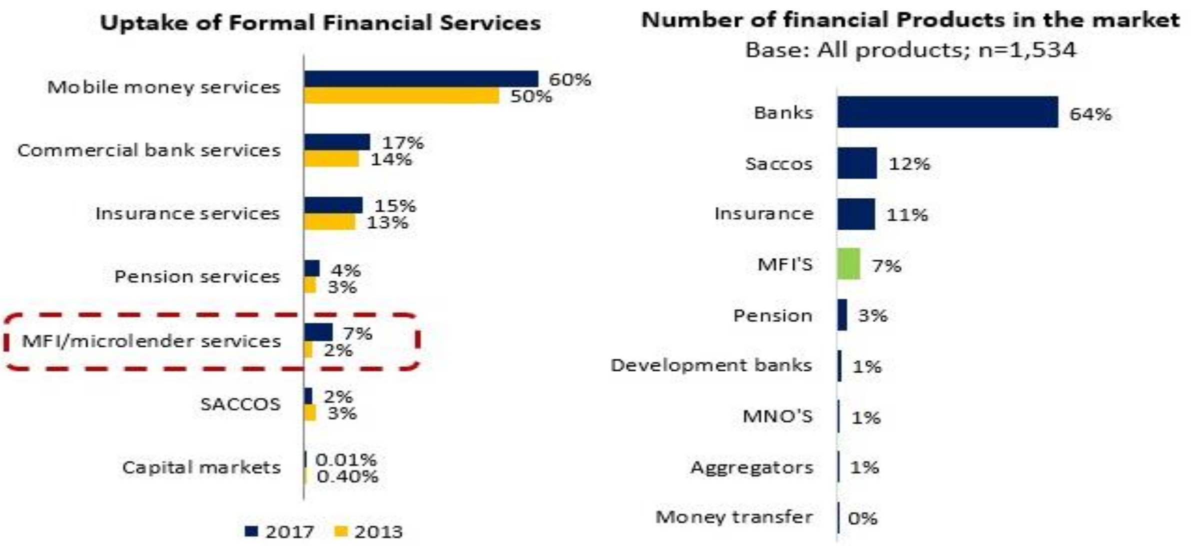
Moreover, policymakers were the state bureaucrats in charge of the financial sectors, or any other officials acting on behalf of the state or financial institutions. The role of the NC was to facilitate the smooth running of the financial sector by assessing and understanding the sectoral challenges. The politics of the NC involved knowing the right timing for the introduction of appropriate policies. The NC was expected to be in a position to identify any regulatory risks associated with policies and strategies. By doing so, it helped to enhance a healthy and competitive environment for the entire sector.

National FI politics were friendly to MM. MM had increased FI rates and helped to reach financially-excluded people. The politics of FI favoured MM services as an innovation in the financial sector.

“The politics of financial inclusion allowed innovation. It has to be innovation in the market, and everyone should drive innovation. Not only by the financial service providers, but also the regulators. The regulators should encourage new movers and should try to assist with accommodating innovation, not to try to guarantee financial stability. Last but not least, they should also be flexible, so there should be flexibility from the financial provider side, especially the big players to also accommodate innovation, but also there should be flexibility from the regulator side to allow products entering the market may be in a controlled environment before they are launched to a wider environment” (Executive Financial Sector Official).

Statistics illustrate how MM boosted FI over time. Strand 5.4 demonstrates that MM had a higher uptake of formal financial services despite having one of the lowest numbers of financial products in the market.

Strand 5.4: Demand for and Supply of Financial Services



Source: FSDT (2017).

From the ‘test, monitor and regulate’ approach mentioned in Section 5.4.3, Tanzania hesitated to charge taxes from MM users. This is another rolling back neoliberal example. Neoliberalism encourages deregulation, privatisation, and lowering of taxes to boost innovation and economic growth. According to Fuchs et al. (2016), MM taxation had been a policy issue. Given the significant low use of bank products by the adult population in Tanzania, MM and its use became of greater importance in providing access to formal financial services. Imposing higher taxes would harm progress in the provision of inclusive financial policies. MM was yet to be widely used to meet broader payment needs. Incorporated in the fees that the MNOs charged for money transfers was the commission they paid their agents. While MNOs did not charge fees to their customers for the cash going into their MM wallets, the fees did apply for mobile wallet transfers (paid by the sender) and for cash-outs (paid by the receiver) (also see: Fuchs et al. 2016).

The 2013 Finance Act introduced taxation specific to mobile transfers in Tanzania. Tanzania also introduced excise tax in the same year. It applied to the principal transferred – a 'Tobin' or 'turnover style tax'. The taxes were a fixed percentage of the principal. In 2014, excise tax applied to the fees paid by customers to their MM operators for money transfers (Fuchs et al. 2016).

Discussions between the MoF and the BOT resulted in the introduction of the 'turnover tax', which was established to generate government revenues. As the tax was introduced, a wide range of people affected by the new tax opposed it, even though very little revenue was collected from it. Furthermore, the TBA protested the imposition of the tax, which led the government to reconsider its position. So far, three Finance Acts were introduced in the following years: 2013, 2014 and 2015 (also see: Fuchs et al., 2016).

Following the opposition to taxes, in 2013, the 2013 Finance Act introduced a 0.15% turnover tax on the amount transferred. Once more, strong objections from stakeholders in early 2014, forced the Tanzanian government not to enforce the turnover tax introduced by the 2013 'Finance Act', and with cabinet's approval, no excise duty was levied in the 2013/14 tax year. Things changed in late 2014. In the 2014 Finance Act, a 10% excise duty was introduced on charges payable for services provided by banks and MNOs. This was a significant amendment because initially, MNOs applied the excise tax to their transfer fees alone. They did not apply the tax to their larger cash-out fees. According to these amendments, excise duty was introduced and was to be applied to both the MNOs' transfer and cash-out fees (also see: Fuchs et al., 2016).

As should be noted at this stage, taxation on MM was (and still remains) a very delicate policy. Its delicacy was (and still is) in terms of the proposition that taxation could impact negatively on the development of the MM sector. From this perspective, it is easier to understand why the banks complained as the MNOs operated without or with low taxes. The introduction of the excise tax on all MNO fee incomes related to MM transfers could be contributing toward a levelling of the playing field (also see: Fuchs et al., 2016; GSMA, 2015b:16-17; UNCTAD, 2012:32).

Whether taxation introduced a fair playing field is subject to debate. MNOs also pay VAT on the fees they charge for their services, while banks are as yet exempted from VAT. Tanzania faces intense pressures to increase tax revenue collection. This pressure to improve tax revenues, especially for a service for which demand is relatively inelastic, could explain why excise taxes on money transfers were introduced with a rather narrow focus on revenue generation (Fuchs et al., 2016). Furthermore, GSMA (2015b) and GSMA (2017b) suggest that taxes on operators can reduce growth and investment in the mobile sector.

The government taxation policy on MM is one of the examples of policies that have emerged to support the advent of MM and economic growth in general. However, mobile taxes in Tanzania remain inefficient and inequitable. In 2017, President John Pombe Magufuli raised tax concerns and forced mobile companies to be registered in the Dar es Salaam Stock Exchange (DSE) market.

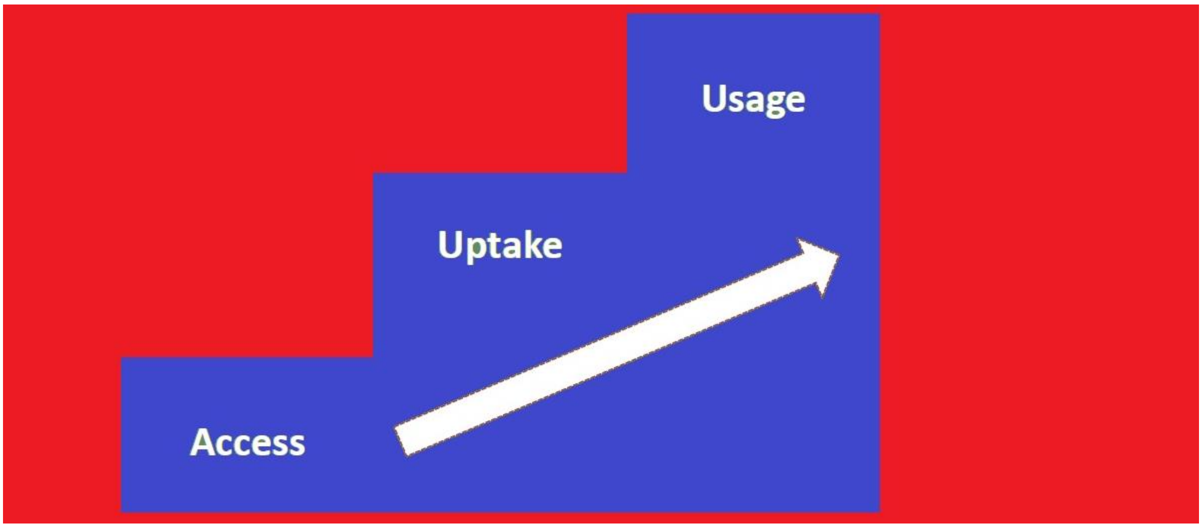
The President's move came after claims that the telecommunications companies were reluctant to be listed in the DSE. This directive, which may become part of taxation policy, ordered the revocation of licenses for mobile phone companies which were reluctant to list on the DSE. The TCRA had the mandate to act tough against the 'stubborn' mobile companies. The directive was issued under the premises that all mobile phone firms should float shares in the DSE market. The 'Electronic Revenue Collection System' (e-RCS) was launched in 2017. The Tanzania Revenue Authority' (TRA) and the 'Zanzibar Revenue Board' (ZRB) operated the e-RCS. The new system was designed to track and directly collect excise duty and Value Added Tax (VAT) on all electronic transactions by MNOs, telecommunication companies, and financial institutions, which would enhance efficiency in the collection of government revenues (also see; Mwakyusa, 2017). The directive sets up an environment for future new policies to emerge.

5.6 Challenges and Limitations

There are also challenges resulting from policy gaps between the use of MM technology and economic development in Tanzania (Hawaiju, 2013). For instance, though not severely impaired, a broader population of Tanzanian adult users lacks financial capabilities. The 'National Financial Education Framework' (NFEF) was introduced in 2016, and will run through 2020 with its main focus on improving the level of financial capability of the Tanzanian population (TNCFI, 2016). To prevent them from lagging behind they must be informed about the various benefits and opportunities of MM and mobile banking. Policies to address these issues are needed, and it may be right to suggest that what has been analysed in this chapter, was just the beginning of the MM sector. More policies, Acts, legal and regulatory frameworks will be introduced in the future. This chapter has been written as a brief introduction to MM sector development in Tanzania focusing on important selected legal, and regulatory Acts and agreements, as well as neoliberal policies of liberalisation, deregulation, and re-regulation which shape the political economy of MM and banking sectors.

On the technical side, Diagram 5.6 summarises what would be the desired growth of MM services. MM has to increase the access, uptake, and usage of formal financial services. In Tanzania, MM has increased access to formal financial services on the part of the financially excluded (see Strand 5.4 in Section 5.5). Its uptake of formal financial services is higher than that of the banks. MM in Tanzania has 71,245,336 registered accounts as of 2016. However, only 17,025,685 registered users were active (see Table 5.1 in Section 5.3.4). The challenges facing the development of MM services include how to solicit customers to use their MM accounts. This is the challenge. Is MM a service of diminishing returns? At what point will it start to show diminishing returns, and therefore, retrogression? This is another challenge.

Diagram 5.6: MM Access, Uptake, and Usage



Source: Multiple Sources

The findings presented in this chapter are valid for Tanzania. Some other countries may resemble the Tanzanian situation; however, I advise that researchers should conduct similar studies for those countries to comment on the situations specific to those countries.

5.7 Was There Anything Surprising that Came Out of the Findings in this Chapter?

There is a surprising finding that much literature that covers technology also discusses the digital divide issue in a neoliberal and globalised information economy (also see: Van Dijk and

Hacker, 2003; Warschauer, 2004; Stevenson, 2009; Al-Jaghoub and Westrup, 2009; Ragnedda and Muschert, 2013). According to Wilson (2004) many studies analysed the widening gap between the rich and poor in developing economies. The digital divide was in the sense that technology divides different segments of the population nationally and internationally, creating a 'national digital divide' and 'international digital divide'. Parts of communities with machines and technology advance economically. The poor communities lack technology and struggle to develop. On the contrary, MM as demonstrated in this chapter, provides more access to financial services for the poor, bridging digital divide issues. MM has been a tool to unite the poor and the rich through financial services. This is one big surprise from this research that somehow MM bridges the digital divide gap (also see: Kizza, 2013; Southwood, 2013). See the presented statistics in this chapter. Moreover, Tyce (2019) argues that researchers think that neoliberal and statist accounts fail to explain the emergence of MM. That neoliberalism facilitated the development of MM and therefore played a crucial role in helping MM to promote FI is also a surprise. This is demonstrated in this dissertation. I also discovered that more needs to be done on the political-economic literature on MM.

5.8 Conclusion

To conclude, MM development succeeded in Tanzania because of a number of factors. Neoliberal roll-out and roll-back policies supported liberalisation, deregulation, privatisation, and re-regulation of economic sectors and services. This chapter demonstrated how roll-back and roll-out neoliberalisation enabled the growth of MM and provided critical examples of the CLF, the NPS and its regulations, as well as the continuous process of creating conducive legal and regulatory frameworks, which were all key to the political economy of MM, as well as to its development and growth. These processes were part of the neoclassical and classical views of neoliberal policies.

Additionally, neoliberalism theorises the need for a limited government intervention to promote economic development and innovations through liberalisation, deregulation, privatisation, and lowering of taxes. Neoliberals argue that government intervention prevents economic development and technological advancement as they restrict the freedom of dynamic individuals and firms who drive innovation and development forwards (Ives, 2015, Wikan, 2015). These arguments also concur with the classical and neoclassical perspectives of liberty for individuals and firms. MM development is compelling evidence to show how limited government worked to allow MM innovations in Tanzania as demonstrated in this chapter. In this case, the neoliberal argument is clear that limited government did not act as an obstacle to free-market capitalism; it allowed capitalism to support the smooth advent of MM. This is through the 'RCA' where the government backs off when it needs to do so, allowing other actors to help drive new and existing industries in the economy. The government also promoted a business-friendly environment that encouraged the MNOs to invest in innovations, which facilitated their role in boosting FI in Tanzania. Technologies did not emerge exogenously of the neoliberal transition, however technological innovations were a commitment by neoliberals to facilitate business transactions and to spread their ideological doctrine globally (Harvey, 2005: 3-4).

Finally, some see FI benefits and MM as a new delivery channel, its potential to reach financially unreached and excluded people, and its potential to reduce the costs of financial services, are all game changers. Moreover, in the Tanzania context MM services are safer than some other financial services. They can scale beyond any single financial institution's footprint. The MNOs perceived MM's ability to increase customer loyalty, and they have used it to reach as many customers as possible. Supported by conducive legal frameworks and politics as illustrated in this chapter, MM services developed and grew in Tanzania. To conclude, I have argued in this chapter that the liberalisation of the Tanzanian economy aided the development of MM through reforms, the CLF, the 'test, monitor and regulate' approach, interoperability, the national FI politics, NFIF, and the 2015 NPS Act. This was how MM started and developed in Tanzania, which answers research question number 1 and fulfils research objective number 1 as detailed in Chapter 1.

Chapter 6: The Role of Mobile Money in Moderating Financial Exclusion: A Tanzanian Experience[2]

6.1 Chapter Overview

After the initial rolling back of the state as depicted in Chapter 5, which gave rise to MM and enhanced its growth, this chapter discusses how MM moderated some factors of FE, and how the neoliberal rolling out brought back the state through the BOT to facilitate the interoperability of MM services. Before the advent of MM, the banking sector in most developing countries excluded specific segments of the population. The excluded communities were deemed as a risk to the banking sector. The banking sector did not work with cash-strapped and financially-disenfranchised people. FE persisted to unsurprisingly higher levels. Those excluded did not have: bank accounts, savings in financial institutions, access to credit, loans, and insurance services (see Chapter 2). The advent of MM moderated the very factors of FE that the banks failed to moderate. This Chapter seeks to answer research question number 2: 'How did MM moderate some factors of FE that other financial institutions failed to moderate in Tanzania?' By doing so, the chapter fulfils research objective number 2, which studies the levels of FE and FI in Tanzania to understand the seriousness of these issues, and how they relate to MM and neoliberalism. The chapter also fulfils research objective number 3, which assesses the role of MM in moderating some factors of FE. But why are the issues of MM and moderation of the factors of FE considered as political-economic issues? First, FE is a global issue as depicted in Chapter 2. Second, it is part of the global political economy because it involves MM technology to moderate the factors of FE to increase rates of FI in Tanzania and elsewhere. Thus, more financially-excluded people get access to formal financial services and become financially included. Likewise, MNOs enter NPS, and regulators recognise their role, as MNOs collaborate or compete with other FSPs.

MM changed how the banking sector operated (Aron, 2018; USAID, 2010). The banks have always been there, and they have provided formal financial services. However, high levels of FE have remained in Tanzania (FinScope, 2006; FinScope, 2009; FinScope, 2013a; FinScope, 2013b). This issue also caught the attention of many innovators who sought to resolve it. As a result, MM technology was introduced to increase FI. The MNOs entered the financial

[2] The International Social Sciences Review, a peer-reviewed journal, has published this chapter: Mhella, D. J. (2020). 'The Role of Mobile Money in Moderating Financial Exclusion: A Tanzanian Experience. *The International Social Sciences Review', 2*: 1 - 24. https://doi.org/10.37467/gka-socialrev.v2.2287
Moreover, I presented this chapter at the 7th International Congress on Social Sciences in Paris, France on the 17th of July 2019. Thus, some sections of the chapter appear online.

ecosystem and had since then provided MM services. The scope of the chapter is twofold. Firstly, it introduces MM and its role in supporting FE and FI. Secondly, it illustrates how MM moderates the factors of FE in Tanzania. By demonstrating how MM has moderated FE in Tanzania, I also show how the MNOs change the provision of formal financial services. By doing so, I argue that they facilitate the moderation of some factors of FE. Most studies conducted show increasing levels of FI through MM (GSMA, 2016a; GSMA, 2017a). However, how MM moderates the factors of FE (in aiding the transformation of the banking sector) has very few studies conducted in Tanzania (InterMedia, 2014a). There is a gap, and this chapter tries to address it.

The chapter, therefore, consists of seven sections. Section 6.2 explains the findings briefly. In Section 6.3, I intend to provide a brief history and MM context at both global and national levels that facilitate the understanding of the key statistics and achievements, as shown in Chapter 5. In this section, the institutions supporting MM and FI at the global level will be analysed. Issues of MM penetration, its ecosystem, and how it develops, as well as the patterns of registered and active users, will be examined. Moreover, Tanzania's context of MM will be investigated, with discussions involving: (i) the uptake of formal financial services and the uptake of informal financial services; (ii) how Tanzanians keep their savings, including their sources of borrowing; (iii) financial services usage; (iv) mobile banking and MM growth; (v) trends in electronic payments. All these issues are discussed to create a picture that demonstrates the role of MM in FI with concrete evidence.

Section 6.4 details theoretical assumptions and qualitative findings to explain how MM moderates the factors of FE. In this section the following issues will be discussed: (i) lack of access to formal financial services; (ii) high costs of financial services, which involves interoperability issues; (iii) lack of wide-scale adoption of new innovative services to serve the poor; (iv) the risk of providing formal financial services to financially-excluded people, in other words the risk management issues. All these issues will be discussed to explain MM and its role in moderating the factors of FE. Section 6.5 reflects on the limitations of using aggregate level/macro data to study FE/FI. Section 6.6 discusses the likelihood of being excluded from using MM services, the costs of using mobile phones, and the benefits received by financially-excluded individuals derived from using phones and MM. Finally, Section 6.7 concludes the chapter by presenting a summary of the findings.

6.2 The Findings

6.2.1 What are the Main Findings in this Chapter?

MM moderates the factors of FE. Moderation here means that it removes or weakens the barriers to FI. The statistics and data presented in this chapter demonstrate the moderation of FE factors through increased FI (see the graphs and tables provided). The issues were distance, scale, and scope. MM came to resolve these issues by the moderation of the lack of access to formal financial services for the financially excluded; increasing proximity to financial services by making distance no longer the primary issue; making the delivery and access to formal financial services more affordable; reducing or managing the risks of using and delivering formal financial services. Due to MM's ability to moderate some of the factors of FE, financial services for financially-excluded individuals have experienced a transformation over the last decade (also see: David-West et al., 2018). Moreover, interoperability expands MM services and lowers the costs of delivering financial services, making it easier for low-income and financially-excluded people to afford them. Interoperability is an example of a neoliberal roll-out policy, where the state through the BOT seeks the cooperation of the MNOs and the banks to help enhance MM services. See Sections 6.4.2.1, 6.4.2.1.1, and 6.4.2.1.2. Neoliberalism, therefore, dismissed the 1980s and 1990s financial repression (see Chapter 2). During that time, the state-led financial sector provided a few individuals with access to formal financial services (Hanson and Ramachandran, n.d.). However, financial deregulation and liberalisation policies led to innovative solutions (Ellis, 2007). Today we can analyse the moderation of FE by MM.

6.2.2 How Do These Findings Relate to Previous Studies?

According to Porter (2006), the literature on FE has often been based on two principal arguments. First, his findings place much importance on the role of the financial elites to deliberately exercise power over states and markets (also see as cited in Porter, 2006: Gill, 1990; Carroll and Carson, 2003; Roberts et al., 2003:443; Bhagwati, 1998; and Soederberg, 2003; Porter, 2006:21). He also provides structural factor explanations as his second key argument. He asserts that some structural factors enhance "the dominance of finance over the aspect of contemporary life". This literature also provides an institutional analysis of specific financial controls. Chapter 2 provides other literature. In this chapter, I explain the findings by using the literature and the interviews to demonstrate how the findings relate to the previous literature. There is more literature on FI and MM, and less literature on MM and FE in Tanzania (more explanations in Chapter 2). This chapter, therefore, advances the debate on MM and FE.

6.2.3 Was There Anything Surprising that Came Out of the Findings?

Usually, new technologies develop in industrialised economies first and then spread to developing economies. MM was the reverse. Addisu et al. (2019) call this "puzzling". Aron (2017) and Van der Boor et al. (2014) also note this. The ability of MM to leapfrog the banks in offering formal financial services to both low-income and financially-excluded individuals (Aron, 2018) is surprising. MM also leapfrogged the MFIs. In political-economic terms, the ability of MM to include more individuals and in transforming and reducing the high levels of FE, and therefore, changing the dynamics of exclusion and inclusion in accessing financial services, is of paramount importance. Also, its ability to solve the issues of financial delivery infrastructure and "the cost structure of conventional banking" (Aron, 2017) is worth noting.

6.3 Brief History and MM Context at Both Global and National Levels

6.3.1 MM: Origins

MM, as we know it today, was introduced in Tanzania in 2008 by Vodacom after a successful launch in Kenya the previous year. Tanzania's e-fulusi and 'Mobipawa' platform are sometimes credited for starting the MM innovation in Tanzania. Since 2008, MM has grown significantly, and according to GSMA (2017b), there are estimations that about 52% of GDP transactions in Tanzania pass through mobile financial services.

6.3.2 MM at the Global Level

There are institutions at the global level that facilitate MM rules, policies, regulations, and innovations. According to GSMA (2016a:27), in 2008 the GSMA established an MM programme for unbanked people, initially funded by the Bill and Melinda Gates Foundation. Furthermore, in 2011 the Bill and Melinda Gates Foundation through its Financial Services for the Poor (FSP) Programme supported investments in digital finance and global advocacy. The programme was established in 2005. According to AFI (2012), the AFI's Mobile Financial Services Working Group (MFSWG) assists policymakers and regulators in the financial sectors with establishing a conducive policy and regulatory environment, which expands the reach of MM services, and enhances FI. Also, GSMA (2016a:27) asserts that in 2012, the United Nations (UN) launched the Better Than Cash Alliance (BTCA) to support the digitisation of cash payments supported by various donors.

GSMA (2016b) also lists global institutions setting financial service standards and the global standards-setting bodies. Firstly, the Committee on Payments and Market Infrastructure

(CPMI), also known as, the Committee on Payments and Settlement Systems assists with regulatory issues. It proposes functional and non-discriminatory regulations, as well as, proportionate and adjusted regulations depending on the risks that each service poses. Secondly, the Basel Committee on Banking Supervision provides a platform for central banks to discuss banking supervision issues. Thirdly, the Financial Action Task Force (FATF) works on FE and money laundering and terrorist financing issues. It incorporates Anti-Money Laundering and Counter-Financing of Terrorism (AML/CFT) systems as well as risk-based approaches. Fourthly, the International Association of Deposit Insurers deals with insurance issues.

Moreover, in 2014, the UN Capital Development Fund (UNCDF) launched MM for the Poor (MM4P) to help increase branchless and mobile financial services (GSMA: 2016a:27). Likewise, the World Bank's Taskforce on Payment Aspects of Financial Inclusion (PAFI) supported MM and worked to promote access to digital payment services, raising awareness of banking benefits to generate new openings of bank accounts (BIS, 2015). MM gained more support when the UN Sustainable Development Goals (SDGs) were launched, and according to GSMA (2016a:27), MM was "poised to contribute to 11 of the 17 SDGs".

According to Ghazizadeh (2012), the introduction of the Global System for Mobile Communications (GSM) has helped the growth of wireless communication. The Enhanced Data Rate for GSM Evolution (EDGE) and the General Packet Radio Service (GPRS) were technologies that offered benefits such as saving costs for accessing data networks. They also utilised the IP-based networks. Likewise, the 3rd Generation (3G) technology met the specifications of the International Telecommunications Union. Furthermore, the Universal Mobile Telecommunications System (UMTS) technology provided different platforms and network infrastructure, enabling telecoms to offer a variety of services to customers, including MM. GSMA (2018:18) predicts that 4G will take the lead by 2019 and that 5G will move from trials to commercialisation as well. As technology evolves, it becomes easier for MM to transform financial services.

Table 6.1: MM: Number of Registered and Active Customers, by Region (Recent 90 days Active Accounts, Dec. 2016)

Region	Registered Accounts (in Millions)	Active Accounts (in Millions)
Europe and Central Asia	10.4	1.4
Middle East and North Africa	44.1	13.3
Latin America and the Caribbean	23.0	10.8
Sub-Saharan Africa	277.4	100.1
South Asia	164.2	40.4
East Asia and Pacific	36.6	7.1

Source: Table based on the information gathered from (GSMA. 2016a)

From Table 6.1, Sub- Saharan Africa has the most registered MM accounts, of which more than 100 million were active in 2016. This trend underlines the importance of MM in Africa.

Graph 6.1: Growth of Registered and Active MM Accounts

Source: GSMA (2017a:18).

Graph 6.1 shows the growth of mobile accounts across the world, with active accounts growing at a plodding pace.

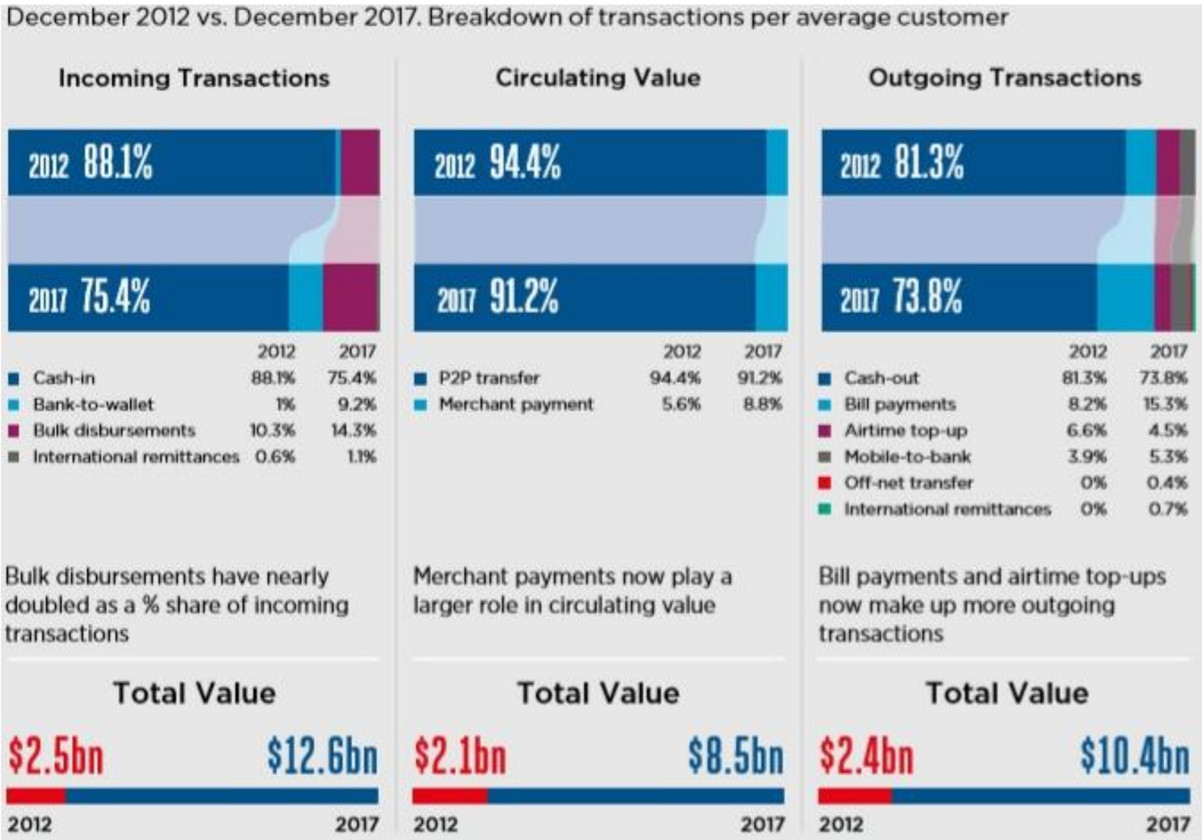
Table 6.2: Unique Mobile Subscriber Penetration (% of Population)

Region	Percentage in 2017
North America	84%
Europe	85%
Latin America	67%
Sub-Saharan Africa	44%
Middle East and North Africa	62%
Asia Pacific	67%
Commonwealth of Independent States (CIS)	80%

Source: Author Using GSMA (2018:13)

Table 6.2 shows the potential for growth of mobile subscription in Africa, which may increase the use of MM services. Growth is slow in developed mobile markets, nearly approaching saturation. According to Donner (2008), there are more mobile phone owners than bank account owners in the world. According to GSMA (2018:12), there were more than five billion unique mobile subscribers in the world at the end of 2017.

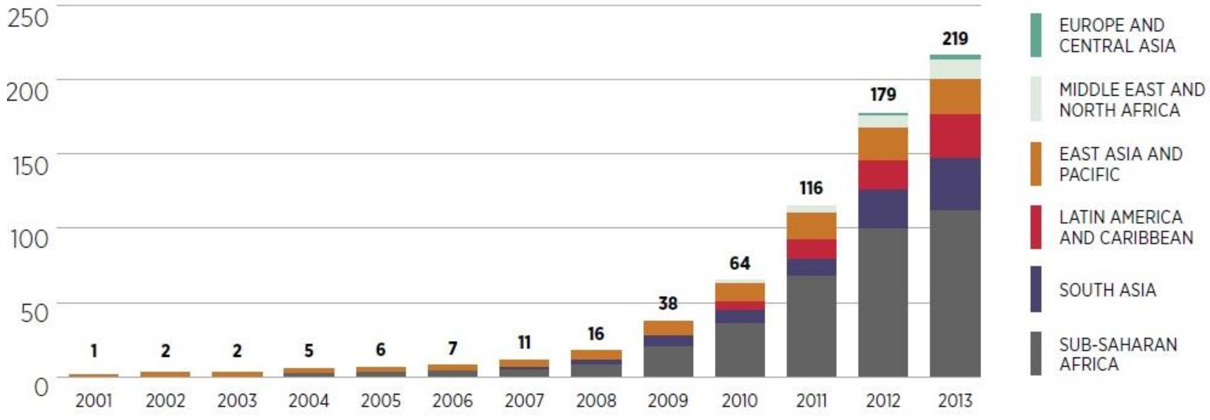
Table 6.3: An Overview of the Mobile Ecosystem



Source: GSMA (2017a:23).

Table 6.3 illustrates the shifting of the cash economy to a digital ecosystem. These transactions were able to be recorded thanks to the high level of digitalisation between 2012 and 2017. By December 2017, about $12.6 billion went into the global mobile ecosystem. The most used services being: cash-in, cash-out, bill payments, airtime top-up, mobile-to-bank, bank-to-wallet, P2P transfer, merchant payment, international remittances, bulk disbursement, and off-net transfer. As more services enter the MM industry, its potential for growth increases (GSMA, 2017a:22-23). Also, see Graph 6.2.

Graph 6.2: Number of Live MM Services for the Unbanked by Region (2001-2013 Year End) GSMA



Source: GSMA (2013:9).

In developing countries, the transfer of money (cash-in and cash-out) was the purpose of MM when it started. The agents were primarily used to help with these transfers of money. Money transfer services continue to increase, and so does the number of agent, as shown in Graph 6.3. According to GSMA (2017a:26-27), the agent network remains the backbone of MM in some countries, and the MNOs spend big to maintain these networks. Digitalisation has been used to address this.

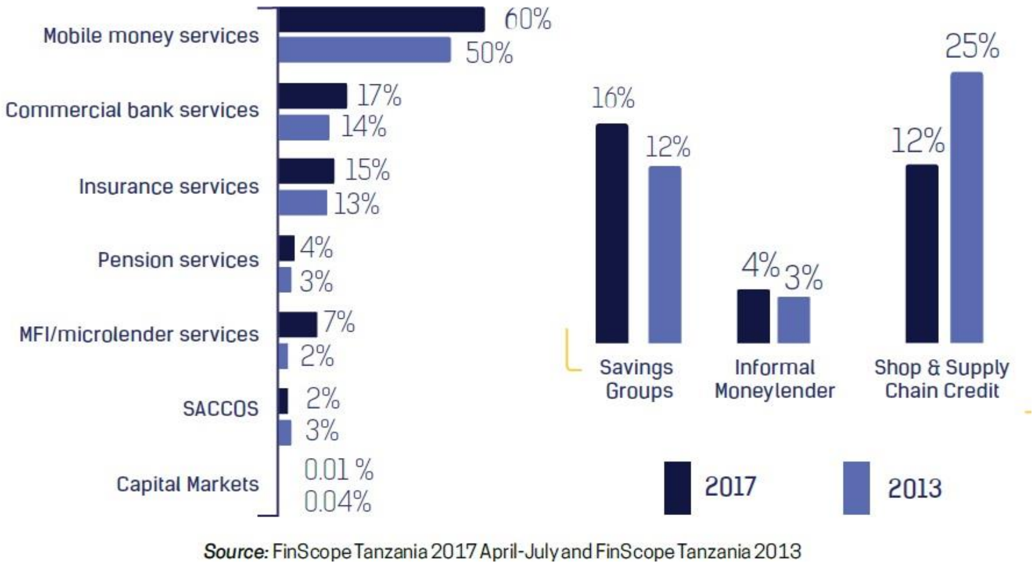
Graph 6.3: Global Growth of Cash-in and Cash-Out Values and Active Agents

Source: GSMA (2017a:27).

6.3.3 MM in the Tanzanian Context

The FinScope studies estimated that about 60% of Tanzanians used MM services in 2017 (FinScope, 2018). Also, see Graph 6.4. Only 50% of Tanzanians used MM services in 2013 (FinScope, 2013a). From 1961 to 2006, only 11.2% of the adult populations of Tanzania had access to formal financial services (FinScope, 2006). With the successful reintroduction of MM in 2008, in 10 years 72% of the population of Tanzania used formal financial services. The percentage of financially-excluded people decreased from 54% in 2006 to 28% in 2017 (FinScope, 2006; FinScope 2018).

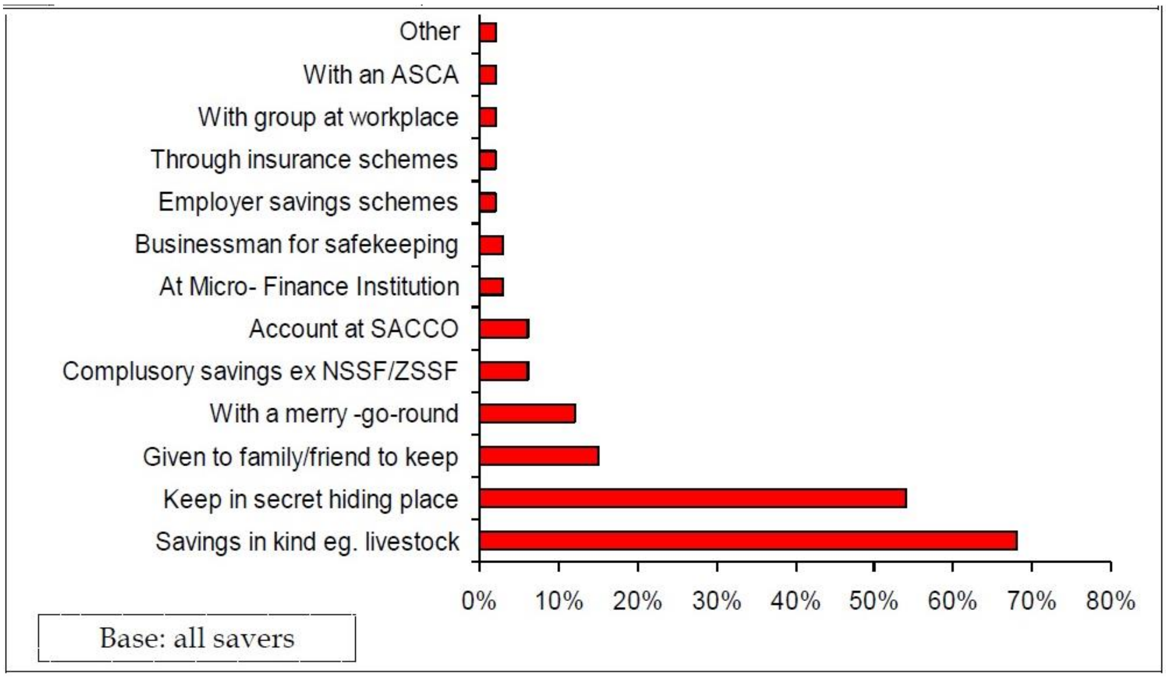
Graph 6.4: Uptake of Formal Financial Services and Uptake of Informal Financial Services



Source: FinScope (2018).

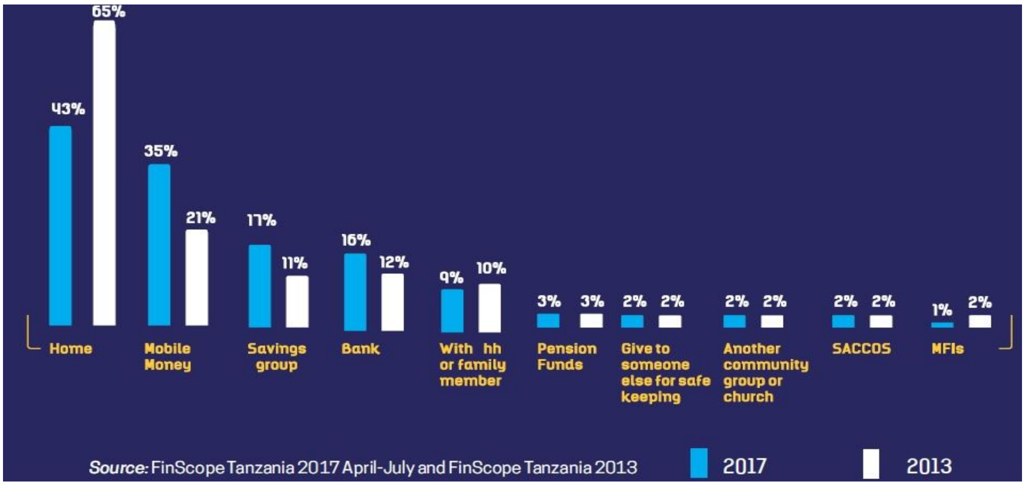
Graphs 6.5a and 6.5b below show the difference before and after the introduction of MM. In 2006, savings on mobile phones did not have any significance in Tanzania as Graph 6.5a illustrates. However, between 2013 and 2017, MM became one of the leading savings instruments in Tanzania, see Graph 6.5b.

Graph 6.5a: How and Where Tanzanians Kept Their Savings in 2006



Source: FinScope (2006).

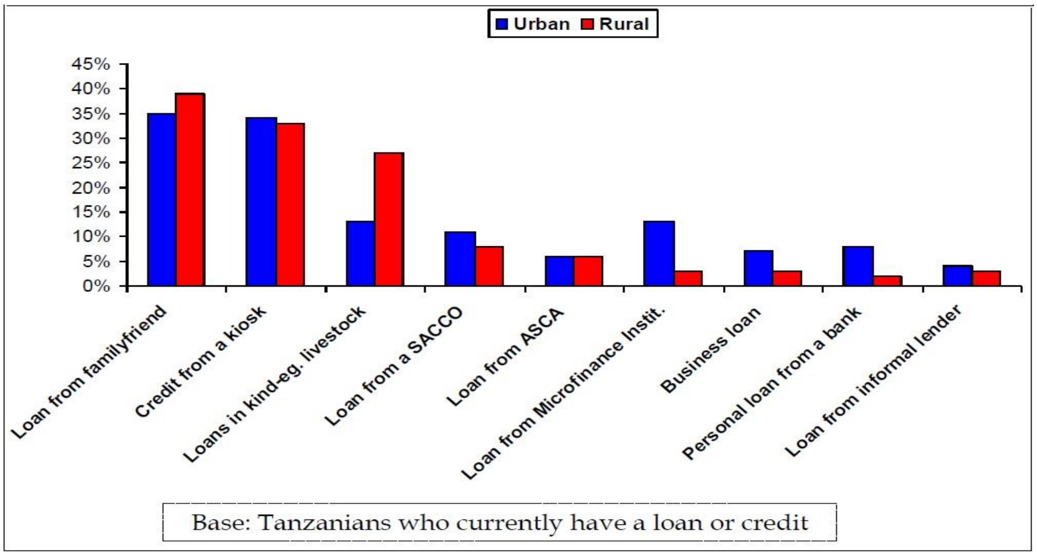
Graph 6.5b: Where Did People Save Between 2013 and 2017?



Source: FinScope (2018).

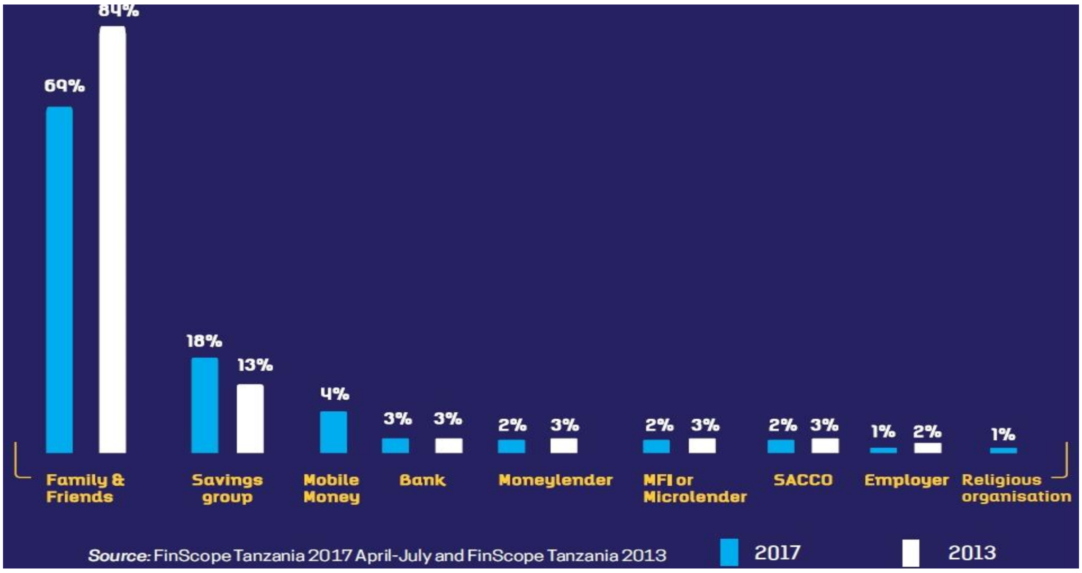
Moreover, sources and trends in borrowing have also started to change. Graphs 6.6a and 6.6b illustrate this. While in 2006, loans came from family/friends, MFIs and Savings and Credit Cooperatives (SACCOs), the MFIs and SACCOs financed more urban than rural populations, and so the need for loans was high. Between 2013 and 2017 (as illustrated in Graph 6.6b) borrowing for the poor through MM started to take off and jumped a little bit above the banking institutions.

Graph 6.6a: Sources of Borrowing by Urban-Rural Population



Source: FinScope (2006).

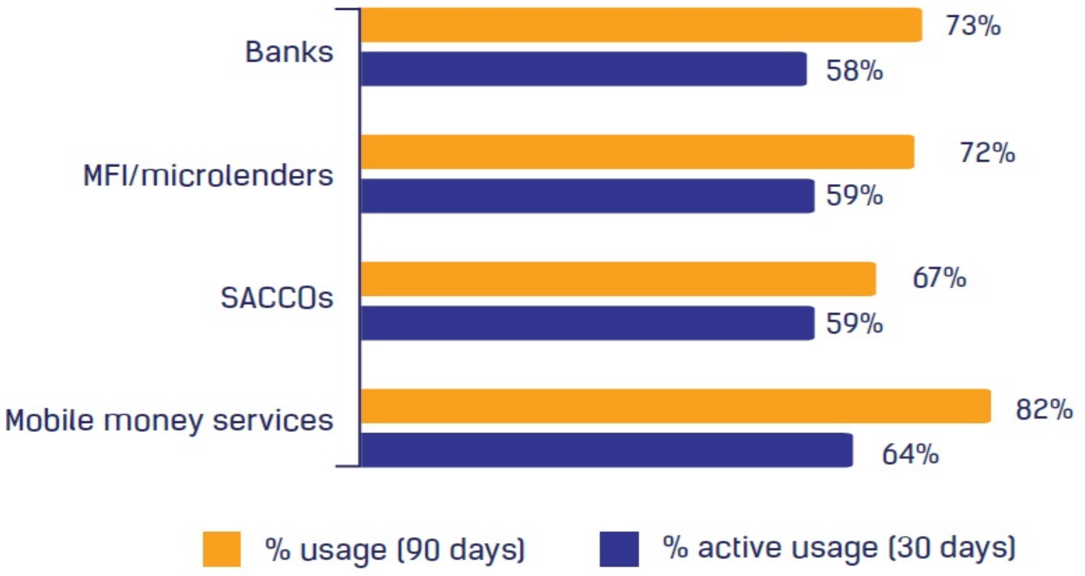
Graph 6.6b: Where Did They Borrow?



Source: FinScope (2018).

Graph 6.7 illustrates how people keep their accounts active. Active usage of MM accounts surpasses that of bank accounts and other types of accounts, with MM active accounts at 64% and other types of accounts below 60%.

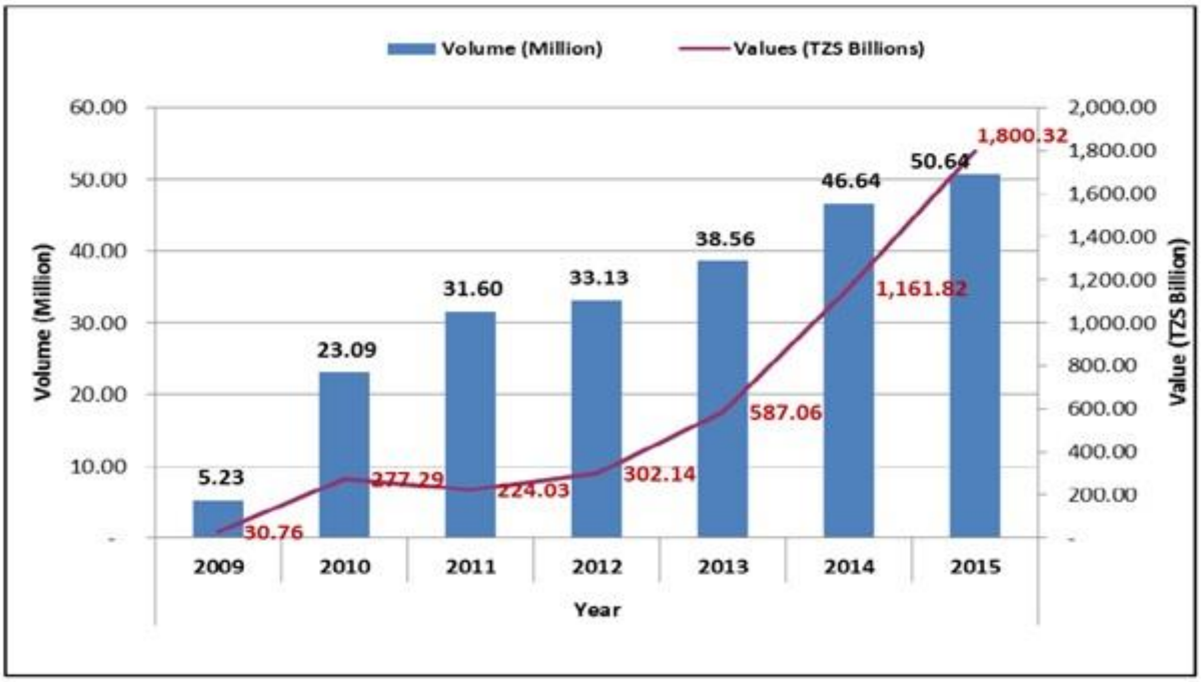
Graph 6.7: Recency of Financial Service Usage



Source: FinScope Tanzania 2017 April-July

With MM competition, mobile banking also grew between 2009 and 2015. See Graph 6.8. Between 2010 and 2012, sluggish growth was recorded. However, from 2012 mobile banking growth has continuously increased. We should not confuse mobile banking and MM or mobile payments. Hence, Graph 6.9 illustrates the trend for mobile payments.

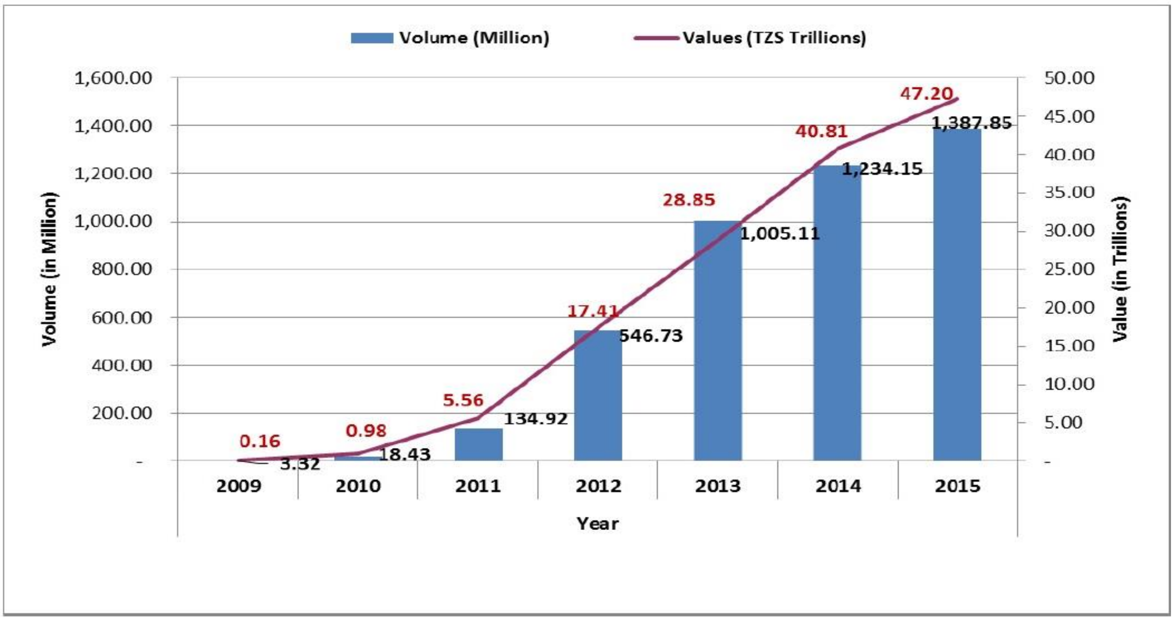
Graph 6.8: Mobile Banking Growth (2009-2015)



Source: BOT (2017).

Graph 6.9 shows rapid growth in mobile payments since 2010, and Table 6.4 below presents registered and active accounts for MM.

Graph 6.9: Mobile Payment Growth (2009-2015)



Source: BOT (2017).

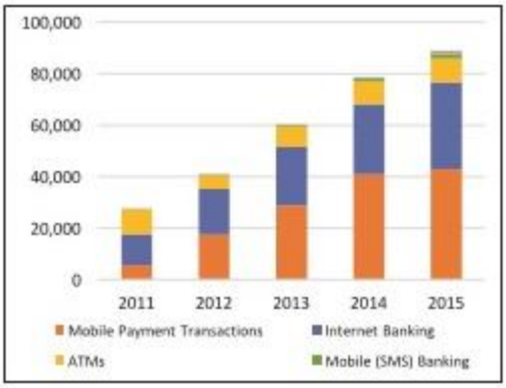
Table 6.4: Mobile Payment Services Statistics

	2008	2009	2010	2011	2012	2013	2014	2015	2016
Registered Accounts	112,000	4,192,683	10,663,623	21,184,810	26,871,176	31,830,289	41,380,791	49,356,465	71,245,336
Registered Active Users					7,872,749	11,016,657	13,856,667	19,793,087	17,025,685
Registered Agents	2,757	14,469	29,095	83,795	97,613	153,369	238,461	267,047	371,132
Trust Accounts Balance (TZS billion)	-	7.11	30.34	96.06	192.42	293.52	450.95	561.2	665.7 billion

Source: BOT (2017).

There were only 112,000 registered mobile payment accounts in 2008, and 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 2008 to 371,132 in 2016 (see Table 6.4). For the trends in electronic payments, see Graph 6.10. MM takes the lead.

Graph 6.10: Trends in Electronic Payments, 2011-2015 (TZS billions)

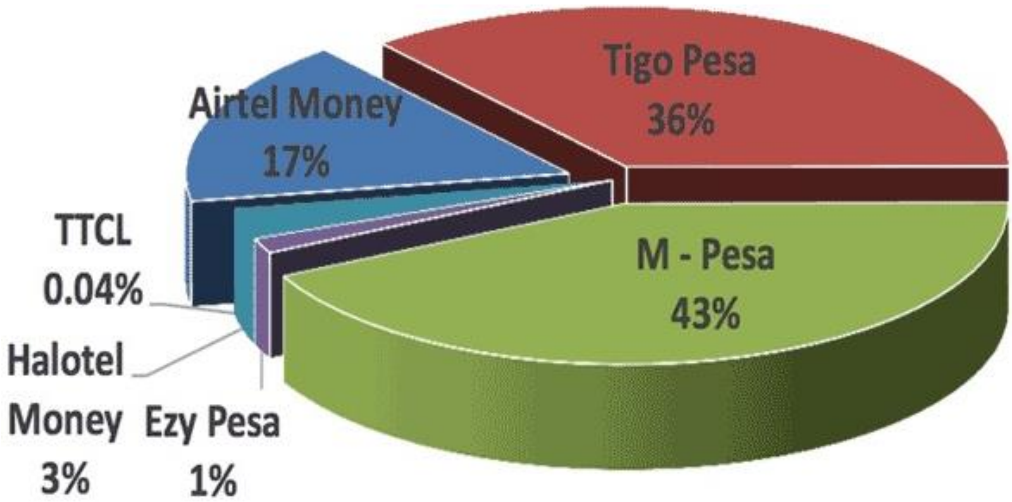


Source: Bank of Tanzania 2016.

From the above analysis, I argue that MM in Tanzania has changed the provision of financial services as it includes more of the adult population than banks and other FIs do. Between 2009 and 2013, FinScope (2013a) shows that the percentage of adults with access to financial services increased to 57.4% from 15.8%, mainly due to the use of non-bank formal financial services, which reflect the uptake in use of MM services. Between 2013 and 2017, access to formal financial services increased from 57.4% to 72%, with MM providing about 60% of the formal financial services uptake (FinScope, 2018). There are about four model categories of mobile payments. They are: (i) operator-centric or telco-led 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 third trusted party; (iv) peer-to-peer model: which includes 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 MM, 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). As mobile financial services mature, there needs to be regulations. According to the RCA, re-regulation controls market failures. To regulate MM the BOT uses the following regulatory tools: (i) the 2015 NPS Act; (ii) the 2015 Payment Systems Licensing and Approving Regulations; (iii) the 2015 Electronic Money Regulations (BOT, 2017). To operationalise 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). Before the introduction of these regulatory requirements in 2015, the MNOs required a 'letter of no objection' to operate. They were also required to form separate legal entities that dealt with financial services. The BOT regulated them. The communication aspect of those entities is still under the TCRA. According to Parkes (2014), the BOT and the TCRA also have an MoU to help them regulate MM services. This MoU was for administrative purposes, and it did not give the status of co-regulators to the above-mentioned regulating bodies. It was the 2012 Mobile Payments Regulations (MPR) that provided a system for regulatory and supervisory coordination between the two bodies. Chart 6.1 illustrates the MM Providers in Tanzania and their market share.

Chart 6.1: Tanzania MM Market Share (March 2018)



Source: TanzaniaInvest (2018).

During the time of my fieldwork research in April 2018, there were six MNOs in Tanzania, while Smart entered the market later. Vodacom M-Pesa, Airtel Money and TigoPesa are the three biggest MNOs in Tanzania. Halotel Pesa, Zantel EzyPesa, and TTCL Pesa have a small market share.

Following the above explanations of MM in Tanzania, the question remains what does MM do to moderate the factors of FE? I will delineate the theoretical assumptions as well as the qualitative findings to support my claims.

6.4 Theoretical Assumptions and Qualitative Findings: Moderation of the Factors of FE

Neoliberalism seeks to produce both big and small entrepreneurs. Entrepreneurs maximise profits and want to reach a wide range of customers. FE bars low-income entrepreneurs and customers from accessing financial means. This challenge threatens their neoclassical profit-maximising efforts (Christiaens, 2019b). During the neoliberal era, a time arrived when FE became a social problem requiring alternative solutions (Marron, 2013). DFS emerged for various reasons to provide access to different segments of the populations (Burns, 2019). DFS helped to expand the delivery of essential financial services to low-income and poor individuals through innovative technologies such as MM (Layman and Lauer, 2015).

In this section, I present the theoretical assumptions and findings of my research. I argue that MM moderates the factors of FE. I start by asserting the classical and neoclassical perspectives. The classicists are more concerned with the removal of any forms of exclusion. They understand that FE is a market failure. According to Majone (1992) and Hurwitz and Manne (2018), the classicists contend that failure can be corrected through regulations, use of technology, or other means. The neoclassicists would support moderation of some factors of FE by MM if they saw profit and utility maximisation with it. Fortunately, MM provided all of these elements.

From the classical perspective, and as depicted in Chapter 2 (Section 2.5.1), FE can be explained through the angle of value and distribution. The value of financial services relies on the costs of accessing those services, as well as the costs of delivering those services. As a result, beyond certain costs, some people cannot access financial services. The classicists support the use of technology (Hurwitz and Manne, 2018), and in this case, MM facilitates FI as technology increases benefits and lowers costs (Maurer, 2011; McKay and Pickens, 2010). From these perspectives, the classicists would support MM, and its benefits would be its ability to moderate the factors of FE and to increase the freedom of every individual to be part of the mainstream financial sector. See Section 6.4.

From the neoclassical perspective, and as depicted in Chapter 2 (Section 2.5.2), people would support inclusion by MM if it moderated the factors of FE because human beings would make rational decisions to maximise profit and utility. As such, utility maximisation would be in terms of people being able to access formal financial services at lower costs while their usage of formal financial services would maximise the profits of the MNOs. As Schmookler (1962) and Ruttan (1997) assert, the neoclassical theory of innovation and technology places significance in the role of demand in triggering innovative activity at the centre of debate, as it discusses the timing and location of innovation. And from the RCA, as detailed in Section 3.3.1 of Chapter 3, it could be argued that the deregulation and re-regulation of MM services as depicted in Chapter 5, provided both the visible and invisible hands that helped MM to coordinate supply and demand mechanisms of formal financial services. Contextually, both classicists and neoclassicists help us to understand the importance of the moderation of the factors of FE through technology, making it possible for me to extend this theory to MM. I discuss these issues below.

Based on research findings, I argue that the emergence of MM resolved the following issues: (i) lack of access to formal financial services to financially excluded people, which include: (a) the physical barrier in terms of the distance that existed between the banks and the customers, therefore, inconvenience of services; (b) the lack of wide scale-adoption of new innovative services to serve the poor; (ii) high costs of formal financial services; (iii) the risk of providing formal financial services to financially-excluded people, therefore, risk management issues.

6.4.1 Lack of Access to Formal Financial Services to Financially-Excluded People

Neoliberalism allowed the growth of financialisation, also depicted in Sections 1.2 and 2.3, as well as the widening of the breadth and scope of financial markets, which transformed how people lived. Thus, people related closely to financial markets and needed financial services. FE became a policy issue in many countries (Marron, 2013).

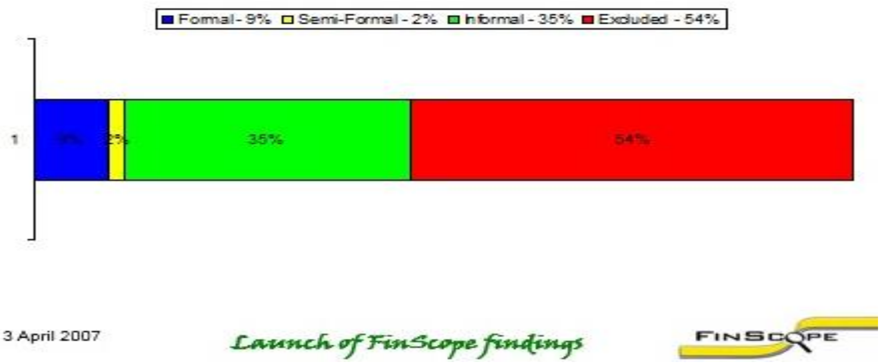
> "The biggest constraint to financial inclusion or if you want the main factor behind exclusion, was first access. You can't give service if you can't reach the one that you want to serve. And the reasons for challenges in access were obvious, eh one is simply distance, space, and scale. You cannot open a branch where there are five customers. The cost of opening a branch can never be absorbed by that small number. It means that if you only use the traditional system, there is no way you can go beyond where most of the branches now are. In a district, headquarters, eh small towns upward. So that was the challenge number one" (Former BOT Governor).

The above respondent was right. Financial deregulation, thus, roll-back financial neoliberalisation paved the way for innovative business solutions. In many cases, FSPs deemed the provision of access before these solutions unprofitable (Ellis, 2007). From 1961 to 2006, those who had access to formal financial services were about 9% (FinScope, 2006). Due to the lack of access, people started using buses to transfer money.

> "Mobile financial services aided to mobilise funds. Access, people kept their money under the pillow. They were waiting for buses to help them transfer money. To send money to their mothers in the villages, they put money in the envelopes. They gave it to an agent. The agent took it to Dar Express Bus" (Senior Official BOT).

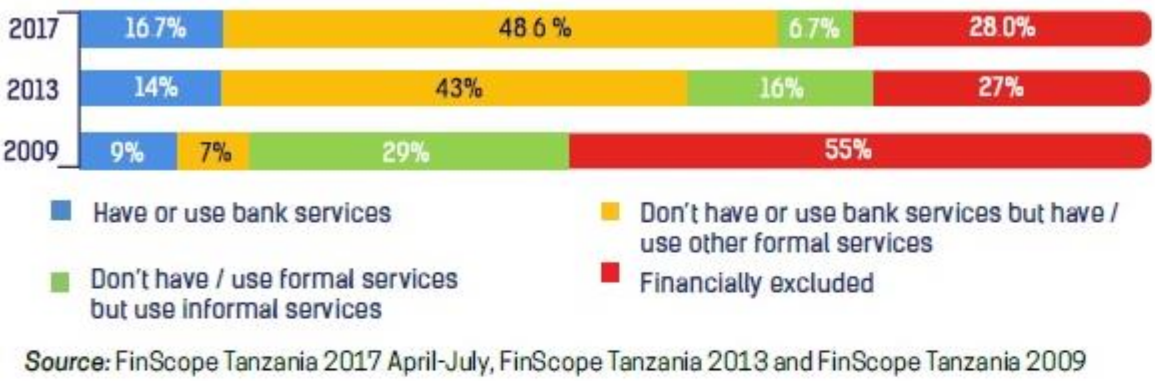
Access strands 6.1 and 6.2 illustrate that access was an issue with high levels of FE in 2009 at 55%, and with MM, those levels plummeted to 28% in 2017.

Access Strand 6.1: Access to Financial Services by Categories in 2006



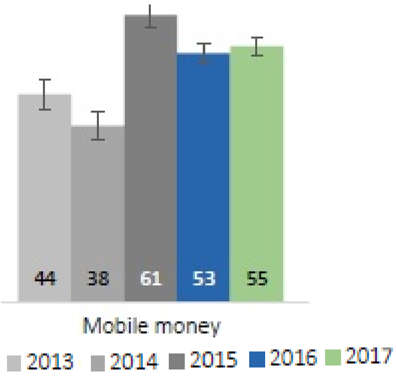
Source: FinScope (2006).

Access Strand 6.2: Uptake of Financial Services



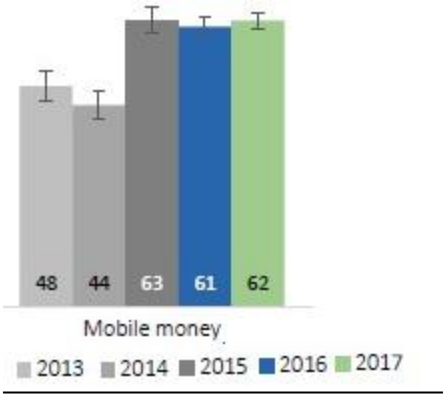
Graphs 6.11 and 6.12 reveal the results of InterMedia surveys conducted between 2013 and 2017. The surveys indicated that the growth in access to formal financial services was driven by MM (InterMedia, 2017; InterMedia, 2018). Demombynes and Thegeya (2012) also acknowledge the transformation of poor rural households through MM that has increased access to essential financial services such as money transfer and saving services.

Graph 6.11: Registered Users (% of Tanzanians Adults by Year)



Source: InterMedia (2018:11).

Graph 6.12: Account Access/Trials (% of Tanzanians Adults by Year)



Source: InterMedia (2018).

The data presented in Graphs 6.11 and 6.12 help me to argue that MM increased access to formal financial services in Tanzania. It reached those people who were unreached by the banks. It reduced the issues of distance, space, and scale, which enhanced FE. MM moderated the issue of scale as it created six networks to reach the financially unreached. Some researchers provide evidence to show that MM offers a solution to resolve the proximity to banking infrastructures (Jack and Suri, 2011; Morawczynski and Pickens, 2009; Mbiti and Weil, 2016).

> "We were able to increase access to people who used formal financial services, which was a success, and we were able to increase proximity to financial service providers, which was also a success. We were able to meet that … For instance, some people argue that the issue was the proximity to the branches and now you have mobile money so no matter where you are you can do transfers, you can receive money without going to a bank. For instance, issues of cost like I was in the village, and I have to go to town every time I have to put money in the bank. But, now with mobile money, I

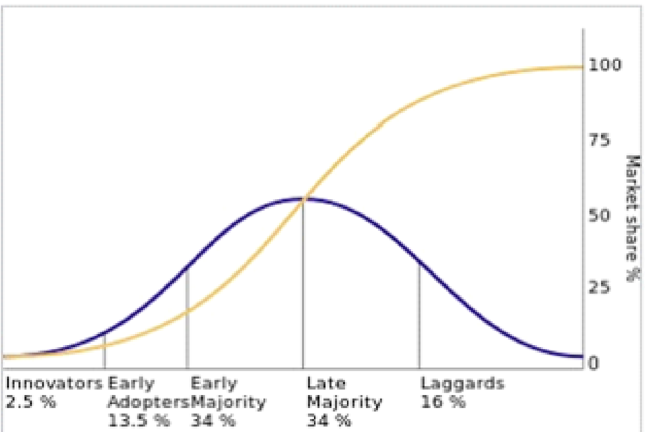
can buy and sell and get my value on the phone without having to transfer and pay for the bus, whatever, so the cost is cut" (Financial Sector Official).

To moderate the access barrier, MM technology was quickly diffused to reverse the distance, space, and scale issues. This is in line with the innovation of diffusion theory and the theory of change. Invented in 1962 by Rogers, the innovation of diffusion theory could explain how MM diffused among the financially excluded over time. It may also explain the customer's behaviour towards the adoption and non-adoption of new technology (Munyoki et al., 2015). The classical views have been widely used in the development world to assist with the attainment of different forms of development. For instance, the classical diffusion model fit well with the dominant paradigm of development of the 1970s.

"The paradigm of development implied that the transfer to technological innovations from the development agencies to their clients lay at the heart of development" (Rogers, 1983:121-122).

Classical and neoclassical views still support technology for development as demonstrated in Chapter 3. For financially-excluded people, I found that MM was appealing to them as it was quick, convenient, and easy because they could use their mobile phones anywhere, at any time and freely, which enhances the classical values of freedom. Hence, its diffusion amongst the poor was quicker. Rogers defined users in a graph as innovators, early adopters, early majority, late majority, and laggards. See Graph 6.13. The Tanzanian situation still shows an upward trend if you fit it in Roger's graph.

Graph 6.13: Diffusion of Innovation (Adopter's Classification)



Source: Different authors depicting the Rogers's explanations

Groups of consumers adopting a new technology

The market share which obviously reaches 100% following complete adoption

Moreover, increased access is supported by the theory of change. Using the theory of change, Leydier (2016:3) argues that MM affects savings in several ways. Firstly, MM increases income as the volume of money transfers increases due to cheap transfers of money. As a result, the adoption of MM helps increase the likelihood of saving behaviour. Secondly, MM is also a saving product itself, as it scales up and encourages the use of formal financial services. Thirdly, as more people join MM services, MM is considered as a bridge towards FI. Medhi and Ratan (2009) also claim that there are more MM account users than there are bank account users in the world.

Of the 10 respondents, I had interviewed in Phase 3, 8 respondents used MM services, and only 2 had bank accounts. Of the 10 respondents I interviewed in Phase 1, 7 did not have bank accounts. 7 out of 10 respondents in Phase 3 also claimed to have used MM for saving purposes. Their stories were first-hand evidence from the low-income respondents that MM had provided access to formal financial services, as most of the respondents did not own bank accounts. Below I include some quotes from the interviews with low-income people and MM agents as evidence that MM moderated lack of access to formal financial services for financially-excluded people.

Said (Low-Income Respondent), who lost his mobile phone:

> "My trade, as you see, I repair punctured tyres. I wash cars, and I am also a car mechanic. I repair cars. Sometimes I drive a commuter bus. How I use mobile money, I transfer money when asked, perhaps for my kid at school. When I have a debt, I pay back through mobile money transactions. I want to go back and use a line to facilitate transactions. I will go back to Tigo or Airtel or Zantel. I used mobile money for a long time for about five years … If I meet someone walking with money, I will tell them to put that money in a bank, but more likely, I will encourage them to use mobile money. You have it there, and you can use it at any time and faster. You own the phone even when you are in bed sleeping, and you can still make transactions while at home. If you have TigoPesa, you directly and quickly go to buy some rice to cook. It is convenient and easy to use these services".

Gaston (Low-Income Respondent):

> "I am self-employed selling 'kashata' (candy) and other small items. I get some little money. Yes, I get something. I walk and stroll-out selling candies. In this way, I get money to eat and survive. I use AirtelMoney a lot. I just like Airtel. I started using it since I owned my first mobile phone. I have stayed with Airtel, and I have not changed to getting another line with Tigo or Zantel. It helps me to send money. To save, I put money on my phone. In short, it helps me as

I do not have a bank account. Mobile money helps small traders like me to get a wide range of financial services."

Mama (Low Income Respondent):

"Mobile money empowers me financially and smoothens my consumptions. Sometimes, I am not near a financial point, and I need some money. The day before yesterday, I urgently needed money, and my sister was able to send it to me. I got it and transferred it where it was needed as I was not near a cashing agent. These transactions are quicker and timely. I like mobile financial services, the issue is we are low-income people and do not have a lot of money, but we use mobile money … There are microloans. There is 'Tigo Niwezeshe' (Tigo Empowers Me) loans. What do they call it? … 'Tigo Timiza'. They give cash, and they include you in their account".

Seki (Low-Income Respondent):

"I remember one day, my son was sick. I did not have money for his treatment. I thought what was I going to do to get some money. I called one of my relatives in Mwanza. We had met a long time ago. I told him what was going on and that I needed some financial help. Within 10 minutes, he was able to send me some money through TigoPesa. I thought about the importance of TigoPesa in serving low-income people as it had helped me. I thought I would like mobile money to keep on serving people. That's one. The second reason is that TigoPesa helps me to manage my personal and business expenses. When I drive passengers and they do not have cash, I ask them to pay me through TigoPesa. They also pay the associated charges. It makes us feel better sometimes … Some other times I feel like it is like picking a mango from a guava tree. I cannot believe it!"

Karin (Low-Income Respondent):

"When it comes to loans, there is Tigo, 'Tigo Niwezeshe' (Tigo Empowering me) … They give you cash, or they transfer that into your wallet … They choose who is eligible for those loans. They examine your transfers. I had that service as well … There is a small amount they start with. They keep on increasing it. You could reach about 300,000 Tanzanian Shillings … It helps me to pay electrical bills. When I cannot go to a shop at night, or when I feel tired, I do mobile transfers. So, it helps a lot. I get those services. I always save and keep balance. I always have money on my phone. Yes, I do."

From Said, Gaston, Mama, Seki, and Karin, it is evident that MM provides access to formal financial services to low-income and financially-excluded individuals. To conclude on the issue of moderation of lack of access, MM is designed to offer access to financially-excluded people (Peruta, 2018:155). It is easier to measure the moderation of lack of access through studying: (i) mobile and bank accounts (Toxopeus and Lensink, 2007; De Koker and Jentzsch, 2013; InterMedia, 2017; InterMedia, 2018); (ii) availability of bank and MM services (Amidzic et al, 2014; Beck et al., 2008; Demirguc and Klapper, 2012b; Sarma , 2008; Sarma, 2012; InterMedia, 2017; InterMedia, 2018). Refer to the provided statistics throughout this chapter.

6.4.2 High Costs of Formal Financial Services

The second factor of FE and also the primary challenge to FI, was the high costs of formal financial services. What caused financial liberalisation was the high costs of financial services. Before neoliberal roll-back policies, repressed state-led systems were costly (Hanson and Ramachandran, n.d.). Neoliberal roll-back policies allowed new FSPs to use the NPS to provide low-cost and affordable financial services. Technology helped to cut costs (Masci, 2008).

To understand the high costs of formal financial services during the neoliberal era and before the advent of MM, one needs to understand the financialisation issues during that time. According to Davis and Welsh (2017), one has to contemplate the following five factors:

> "the creation of money in financial markets, the transactional basis of finances, the centrality of financial markets to economies, the orthodoxy of shareholder value, and the intense microeconomic focus of investors. Each of these creates a microclimate for financialisation in which cultures, epistemology, and practices develop autonomously from neoliberalism. Such differences are further emphasized by the reliance of neoliberal theory upon a neoclassical economics that has never come to grips with the role of finance nor the growing primacy of financial markets to the exclusion of so much else".

Before the advent of MM, the costs of accessing formal financial services were so high that would-be users were not ready to absorb the exorbitant costs associated with the service:

> "A lot of banks in Tanzania still have minimum balance requirements for account owners. That minimum balance is 10,000 TSh. For a person who earns an average of 40,000 TSh a month, 10,000 TSh is a lot of money. It is a fourth of what they are supposed to spend. So having that 10,000 TSh in a bank account is a lot of money. So, we don't have 10,000 balance requirements for mobile money. You don't need 10,000 TSh to stay active with mobile money" (Financial Sector Official).

These views were supported by Mbwana (Daladala Bus Driver):

> "I am a commuter daladala driver. I drive the Tandika-Makumbusho route. It is known as Temeke-Makumbusho. We work with challenges. We just work. I do not have a bank account. I have not used banking services ever since I was born. I don't use bank services because my income does not allow me to do so … It is not about the inconvenience. I get, for instance, 10,000 TSh, I go home, and my wife wants it to feed the kids. You cannot deposit 2,000 TSh

only in the bank account. At the same time someone gets sick, how can you save? It is hard to manage and maintain a bank account. Mobile money has brought financial services to low-income people like me. I want to ask for 2,000 TSh from my friend. I get it. I tell him, Bwege, please send me 2,000 TSh and things like that. Mobile money has also helped small traders to do their businesses … Mobile money helps. You can put 500 TSh, 1,000 TSh, 2,000 TSh, 3,000 TSh. A day arrives, and you think you do not have money. Then you remember you have saved on your mobile phone. Then, you use it to buy food, and you eat for that day. It helps sometimes. That saving is like you carry a 'Kibubu' (piggy-bank)."

Maurer (2011) argues that MM is in a position to fight against banking exclusion. Other researchers have also demonstrated that MM provides a solution for the high price of banking services (Donavan, 2012; Morawczynski and Pickens, 2009; Arestoff and Venet, 2013; Mbiti and Weil, 2016). One thing for sure, is that technology opened the door for the inclusion of the poor.

According to Aker et al. (2014), electronic payment systems are more efficient than traditional banking services as they reduce transaction costs and time. Technology ensured that one could reach customers without investing much in bricks-and-mortar branches. McKay and Pickens (2010) studied 18 branchless service providers in 10 countries and found that they were 19% cheaper than the banks, and that their services were more inclusive. This finding matches my finding in Tanzania. Also, the Former BOT Governor asserted:

"… to start with the cost of the transfer, the cost of transactions, went way down, typically before it was almost like about 10 cents to a dollar about 10%. After the introduction of mobile money, it went down to 1 cent to a dollar. It is one percent. So, this is affordable. So, it is access, affordability. These were the two main, eh, targets that were being resolved by the introduction of this technology. So, I think that's number one as to what occurred" (Former BOT Governor).

MM systems can easily be linked to other financial systems, and the concept of open systems theory can be used to link MM with other systems to further cut down prices. An open system is a system that has external interactions (also see: Bertalanffy, 1968). With open systems theory, one could understand how MM was influenced by its environment and other players in the financial sector (Dahlberg et al., 2008). The system could also mean various networks. Dahlberg et al. (2008) have used the open systems theory to also to study MM. According to the World Bank (2014b), increasing mobile phones network adoption and penetration, its affordability and lack of affordable alternatives in the financial system, as well as higher conventional banking account fees, have helped MM to include more financially unreached populations. Moreover, the World Bank (2002) claim that the poor depend heavily on existing social networks to transact and trade in developing markets. Therefore, the link between MM and other financial services, networks, and systems is imperative. Also, USAID (2012) sees MM as a cost-effective technology and more efficient when compared to cash payments.

CGAP (2013a) acknowledges the fact that the poor use their closed networks of relatives and open networks of friends, to learn more about the use of mobile phones for saving and transferring money. As saving and money transfers through other financial channels can be expensive, MM becomes the most efficient means for saving and transferring money. Said (low-income respondent) reaffirms these views:

> "I remember to have saved money through TigoPesa. I saved on my phone to get money to pay for my license. I started saving when I was thinking about getting money to attend NIT to get me a license. I had no other option than using TigoPesa. Every time I worked as a 'bajaji' driver, I saved 3,000 or 4,000 TSh every day. I used TigoPesa as my bank, where I deposited money. After I had saved enough, I was able to get my license. Therefore, I use mobile money, especially, TigoPesa and MPesa. I mainly use it for savings. Low-income people like me can do it through mobile money."

The Former BOT Governor also supports these views:

> "I was interested, so I asked to visit the villages to have a couple of sessions with people, just to know why they don't opt to actually put their money in a bank account instead of keeping it in their phones. Do you know what their answer was? One said, if you put your money in a bank account, every end of the month, even if you did not use that account, the balance has reduced. Because, you know, ledger costs, etc. Eh. But, if you saved by using a mobile money account, that was what they said, even before the profit-sharing, your money was intact. Well, that was a big difference. Now, I am sure if you ask them again, and on top of that, I also still earn some profits on this mobile money side."

Thus, profit and utility maximisation, as we perceive it in the neoclassical sense, encourage people to use MM as detailed by the Former BOT Governor. Furthermore, the interoperability of MM systems also reduced the cost of MM services.

6.4.2.1 Interoperability

Neoliberal roll-back policies slackened obstacles that prohibited the expansion of formal financial services. Likewise, neoliberal roll-out policies encouraged the creation of business partnerships and alliances, as well as the development of new financial systems and solutions which facilitated efficiency in the financial sector. Thus, neoliberalism facilitated the increase of FSPs (Konings, 2016). There was a need to harmonise different financial delivery systems to allow direct and seamless transfer of funds from one FSP to another FSP across networks, switches, and systems. Interoperability was a way to enhance microfinancing, electronic billing, electronic transactions between the government, and non-government users (Warioba, 2016).

Interoperability enables MM services to interact with benefits for customers and operators. MM agents also enhance interoperability:

> "I like this agent job because it helps me serve the people. It also helps low-income people and the nation to empower financially-excluded individuals. It is also a system that protects your earned income because it has a limit. If I get my monthly pay, I save some of it there. Moreover, it helps people start saving. It is one type of 'kibubu' (piggy-bank) … As an agent, I serve Tigo and Voda … There is not any conflict arising from serving multiple MNOs. We, as small agents, are between companies and super agents. Super agents do not work with numerous MNOs. If he serves Voda, it is only Voda. If he serves Tigo, it is only Tigo. Only small agents serve customers of any mobile network. The customer comes to you knowing that the services will be available. As an agent, I become a one stop-centre. Customers from Tigo, Airtel, Voda or Zantel, come here to receive services. We work with all MNOs. The super-agent does not have any issues with these arrangements" (Noorah - MM Agent).

A customer owning a mobile account with an MNO can make transfers from his account to another account with a different MNO. The first interoperability agreement in Tanzania was signed in 2014 (also see Chapter 5, Section 5.4.5). The government got involved in ensuring the signing of the agreement, and this is one of the examples of the rolling out of state power to enhance MM services.

> "The Bank of Tanzania provided a supportive regulatory environment for engagement. Importantly however, the bulk of the content came directly from the industry … Through frequent meetings, debate, negotiations and eventually consensus, the industry has successfully put together a set of standards that will govern how person-to-person payments will be handled across networks" (Musa et al., 2015).

According to Di Castri (2013a), interoperability has the following benefits, it: (i) makes commercial sense for providers, and creates value for customers; (ii) helps share regulatory risks; (iii) lowers the costs of financial services, and increases a customer's choices; (iv) increases competition and breaks dominant positions; (v) removes the need for individuals to own and manage multiple SIM cards.

Metcalfe's theory explains the importance of interoperability:

> "There is a correlation stating that the value of a network is exponentially based on the number of players in a network. Going with that theory, the more players you have connected, the value of that network grows. Theoretically, the volume of that network should grow. And with higher volumes, you should be able to run those transactions at a very low cost. And when you run those transactions at a very low cost, that is when you will be able to include people that are not in the system because of unaffordable costs. If you look at it from that angle, yes, interoperability will bring more volume. Yes, it's true, but first, the pricing has to be right" (Senior Interoperability Expert).

Furthermore, Moore's law has been used to help reduce the costs of technology. According to Oxford (2009), Moore's law states that the number of transistors packed into a given unit of space will roughly double every two years. The law has been used to develop new technologies and to improve existing technologies (The Economist, 2015b). Literature suggests that Metcalfe's law and Moore's Law together provide us with the best basis to understand how networks lower prices of services. Put together the two laws explain the supply side and demand side of services. On the supply side, the diseconomies of scale may lead to expansion in the size of networks, which may increase costs (Yoo, 2015:88) quoting Mann (2000)). Moore's law claims that digitisation reduces costs and can reduce the increases in costs. If the increase in costs produced by the expansion in size remains lower than the reduction in costs related to Moore's law, costs should remain manageable even as a network continues to grow (Yoo (2015:88) quoting Metcalfe (2013)).

> "On the demand side, Metcalfe's law states that the number of potential connections increases quadratically with the number of nodes. To the extent that expanding the number of potential connections increases the value of a network. The Metcalfe's law provides another reason for believing that growth in network size will be automatically beneficial" (Yoo, 2015:88).

If the MNOs manage to get the pricing right, they will be able to involve those who have been excluded because of pricing. However, they may not be able to include those people who are excluded because the market has the wrong products for them or because they do not have the right to insurance, and so forth. In Sections 6.4.2.1.1 and 6.4.2.1.2, I will explain the application of interoperability to bring the costs down in Tanzania. I argue that interoperability has been allowed in Tanzania for 'exclusivity' and 'non-exclusivity' reasons.

6.4.2.1.1 Exclusivity and Non-Exclusivity Reasons for Interoperability

When MM started in Tanzania, M-Pesa had its own agents. Airtel had its own agents, and so forth. Later on, Tigo also came with its own agents. The problem was that the volume of business through the agents was low. The M-Pesa agents were restricted to deal with M-Pesa customers. Likewise, the other agents dealt with their MNOs only. To remove this aspect of exclusivity, the 'non-exclusive' interoperable system was launched to facilitate profit and utility maximisation by businesses and individuals in the neoclassical sense.

> "We call the first stage: 'non-exclusivity'. You know when we started if the agent served M-Pesa, he only worked for M-Pesa. Airtel needed their own agents. The M-Pesa agent could not serve Airtel. So, the first major step we took was to remove exclusivity. Now, the agent can serve any number of mobile money services eh that s/he has a contract with. You will see that the agent has advertisements from various MNOs. He serves M-Pesa. He serves Airtel. He serves another MNO. That's step number one. There still existed two significant costs incurred by the customer. When you sent money as an M-Pesa client, and the receiver is from Airtel, it was sent as a message. He had to go to the sender's network through their agent to receive cash. The receiver paid fees. If he wanted to send the same money elsewhere, as it was not the end process, he needed to go to an Airtel agent to buy electronic money and put it in his wallet as a balance. So, cost of time. There are fees because you have to pay for both services" (Former BOT Governor).

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 known 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:

> "I liked to do this business to provide financial services to a wide range of customers. Even when they are far away, they can still get financial services … I serve Tigo, Airtel, and Vodacom. I like to work with Tigo than other companies because Tigo pays well. Tigo has many customers as well. There are many customers because TigoPesa grew exponentially, and many low-income people like to use Tigo. Their charges are fairly low as well. Services at Tigo start at 500TSh … Everything is fine. Their services do not collide or are not in conflict. I do well. I have clients … I am always busy. My key customers are low-income people … Here, I offer deposit and withdrawal services. I connect bundles and help customers to send money … Sending money, withdrawing money, and selling airtimes are the main things I do here (Abuu – MM Agent).

> "We sell vouchers and deal with mobile money transactions … Services from different MNOs work together. There are also services that MNOs do not offer. However, MNOs offer float, and we get connected to work with other businesses. The MNOs have provided access to TANESCO by offering LUKU payment solutions. In this way, some other services are included in our

> transaction services. We get access to billing and payment platforms through other companies and the MNOs. Some share other services we do not provide" (Noorah – MM Agent).

Hence, a M-Pesa agent or 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. It also maximises profit in the neoclassical sense. Also, if the agent rented a place for his business, now he covers a much larger area than before. Meanwhile, when a non-M-Pesa customer receives money from an M-Pesa customer, the agent is likely to transfer the money from an M-Pesa account to a non-M-Pesa account. The non-M-Pesa customer will be able to 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.

> "You know interoperability is something you can only convince the MNOs to do. There is only one reason for this. The one who puts 'minara' (towers) has already suffered a cost. And the prime movers always get their benefit from the fact that they will enjoy renting for a while. Later on, Airtel and only with its small system, Tigo were also starting. M-Pesa, who is the giant, has spread in many locations because he had massive investments. Now you tell them, ahhaa Tigo, now Tigo's customer can also send money to their system. So, what happens in interoperability is to remove these two costs, and if I send you money from my M-Pesa account it comes straight to you, and it reflects in your balance as an Airtel's customer. No agent is needed for this transfer. You don't have to go, nor do you have to get charged. Now, the thing was how do you convince the prime movers?" (Former BOT Governor).

This situation leads us to the second level of interoperability in Tanzania known as 'wallet-to-wallet' level. My findings confirm that Tanzania was the first in the world to reach this level of interoperability. At this level, an M-Pesa customer could send money directly to an Airtel e-wallet:

> "Before you received an SMS, you were required to cash, and you were charged while cashing out your money. Then, you bought the Airtel float and you were charged again. These days, from my Vodacom account, it goes straight to your Airtel account. You don't need to visit the agent. You are not charged to cash out. You do not need to buy the Airtel units. This decreased expenses for the user and has also increased business volumes for the operators" (Former BOT Governor).

The wallet-to-wallet interoperability triggered the banks to rethink their operations:

> "So, going with the Metcalfe's theory, if you have a network of two operators, the value of that network is what you could send to and from. I can only send from Airtel to Tigo. If I bring in

> Vodacom, TTCL, Zantel, and Halotel, in all of a sudden, I have increased or improved. I could send across, then is much more work" (Senior Interoperability Expert).

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:

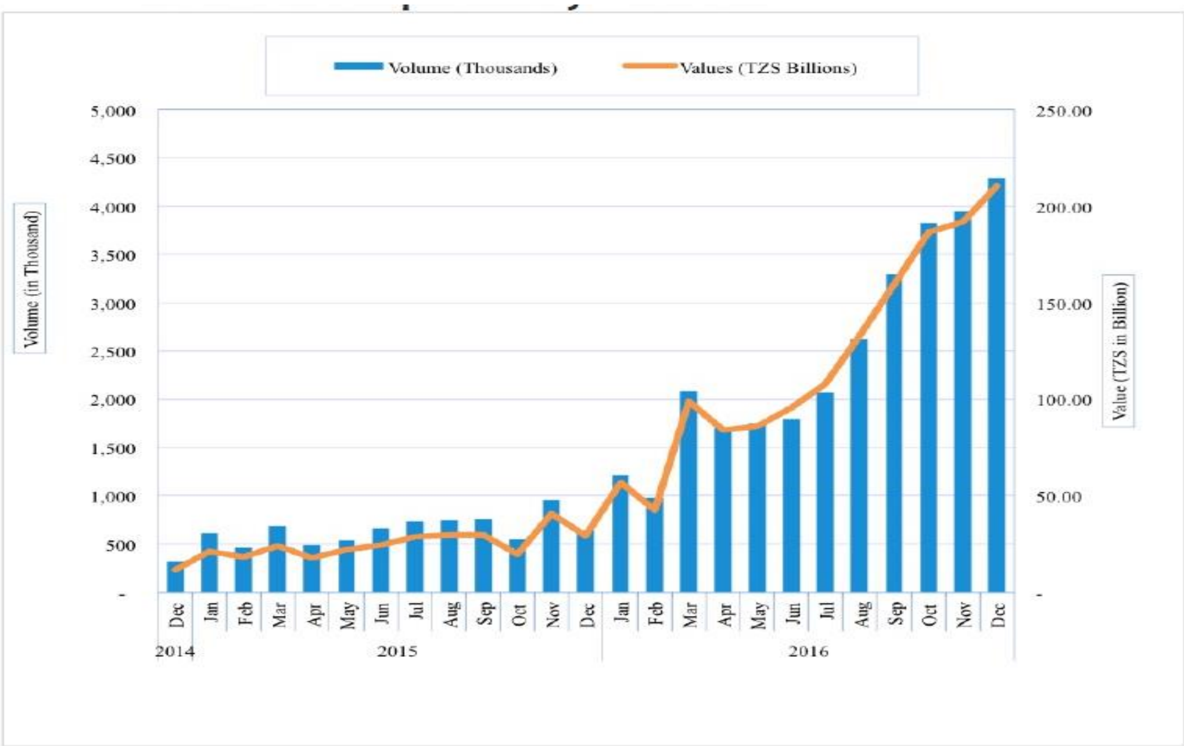
> "It is something that banks have been doing for a while and send money from one bank to another bank. Of course, why is it not inclusive? Because the price is not right. The swift will charge you 40 dollars to send money from one bank to another, regardless of the amount, right? … That's an example, you have an interoperable environment, but it is not inclusive" (Senior Interoperability Expert).

Hence, competitive pricing and the right products are key to interoperable systems. The MNOs with affordable services and the right products for financially-excluded people have managed to include more of the financially-excluded people in their interoperable systems. Because of the convenience of the MM 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 MM account, and he wants to pay for his electricity bill. This led to 'wallet-to-other platforms' interoperability. It is between the MM 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 the intermediaries who receive payments from customers 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 interoperability between the financial service provider and the ultimate service provider.

> "Therefore, what has this done? Firstly, it increases convenience. Secondly, it reduces the cost of service. Thirdly, as a result, it grows utilisation and the financial services market as a whole. It is a big motivator for the growth of the business, convenience, and reduction of cost" (Former BOT Governor).

Graph 6.14 illustrates the growth of an interoperable MM market in Tanzania. Interoperability volume and values among the MNOs (TigoPesa, Airtel Money, EzyPesa and Vodacom) recorded an upward trend.

Graph 6.14: MNOs Interoperability Trends



Source: BOT (2017) – Oversight Department.

6.4.2.1.2 Background on Tanzania's MM Interoperability

In 2014, an interoperability agreement between the BOT, two banks, and all four MNOs (Tigo, Vodacom, Zantel, and Halotel) was reached and laid the foundations for the above-mentioned different levels of interoperability. Tigo led the remaining MNOs into an agreement as the MNOs became aware of the challenges facing the MM sector, which included: (i) the direct competition for market share; (ii) the slow-pace of the 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 (see Jones-Evans, 2016 and Borreau and Valletti, 2015). In 2015, Vodacom started discussions to join the interoperability agreement (IFC, 2015) and in 2015 it joined to make Tanzania the first African MM market with full interoperability for MM peer-to-peer (P2P) transfers (Kabendera, 2015). Furthermore, in 2015, 'the 2015 NPS 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.

6.4.3 Moderation of Risk by MM Services

Financial neoliberalism changed how governments and FSPs viewed risks. It also changed how the two engaged with financial risks, allowing them to find better ways of managing and controlling risks (Gould, 2019). Financial deregulation supported by neoliberal roll-back policies involved the following three steps: (i) the opening up of the country's economy to the free flow of capital in and out of the country: (ii) the removal of regulations on financial institutions operating within the borders; (iii) the removal of political controls from the central banks (Beder 2009). Each of these actions came with risks.

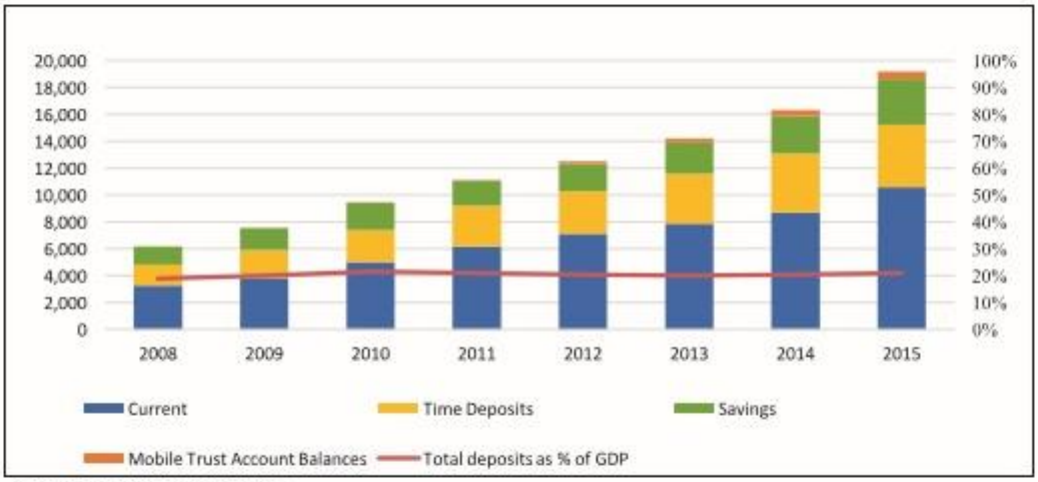
Risk is the other factor causing FE that MM has been able to moderate:

> "Before I started using mobile money, I had some challenges. People used to steal money from me. Since I was a child, I used to put money in nylon bags. I also used to sell Rambo plastic bags to get money. I used the daladala commuter bus to travel. You push people here and there to board the bus. While you are struggling and pushing to get on the bus, someone is stealing from you" (Mbwana - Daladala Bus Driver).

People like Mbwana, therefore, could only walk with their little monies and were risking being robbed. Today, they store their money on e-wallets, which helps them avoid being robbed. In the financial sector, and for this research, risk can be grouped into: financial risk, performance risk, and privacy risk (John et al., 2018). While financial risk may include things such as credit risk, liquidity risk, capital risk, and moral hazard; performance risk includes things like: market risk, business risk, systemic risk, reputational risk and legal risk (Apătăchioae, 2015:38; Rodica, 2011; Piciu, 2013). Meanwhile, privacy risk includes leaking of information to unrelated third parties (Giovanis et al., 2012). Over time, banks have considered these risks (Apătăchioae, 2015). The poor were considered a financial risk and therefore, unbankable because they did not have a regular income (Ayres, 1983; Bakhoum, 1989). MM has changed this, the MNOs consider people like Mbwana as customers and not as risks. If a poor person owned a business, the performance of their business was at risk due to their inability to navigate through turbulence in the business environment, should it occur. A poor person may also be a risk in terms of their identity as they did not have IDs, and how to verify their particulars was an issue that could infringe their privacy. More often, the banks did not deal with the poor. The MNOs deal with the poor.

Mishkin (1998) and Stiglitz (1990) claim that transaction costs and information asymmetry; are market imperfections that limited access to credit for the poor. The poor did not have collateral (Akerlof, 1970) or credit history, and lending to the poor was a risk because the cost of doing so was high (Bakhoum, 1989). For these reasons and for neoclassical rational assumptions, the banks excluded poor people. The MNOs instead were required to open a trust account that could be used to cover liquidity, credit, or other risks should they arise. Graph 6.15 illustrates MM trust account balances. Those accounts have kept on growing since 2008, keeping the MM market stable (Bank of Tanzania, 2016).

Graph 6.15: Bank Deposits and MM Trust Account Balances (TZS Billion and % GDP)



Source: Bank of Tanzania, 2016.

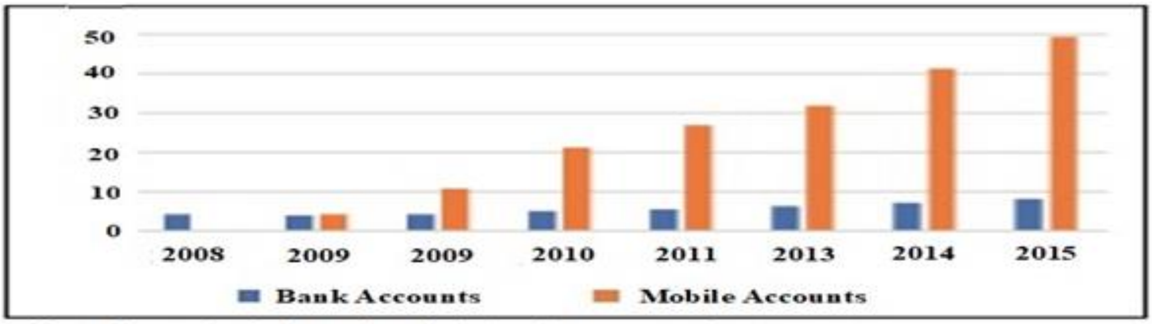
> "Firstly, mobile money providers are purely operating a money transfer system. It is a platform. They don't issue money. For every unit that a customer buys in mobile money, there is a unit which is sitting in a trust account in a bank. So, there is no creation of money. It is also true that they are not taking deposits. This is clear. They are not doing credit. It is clear. What distinguishes banks from other institutions is the fact that they are deposit-taking, and per regulations, they are essentially in terms of supervision in managing the risk in relation to the protection of deposit interests. That's the main principle. So those (MNOs) are not taking deposits. There is no risk of exposure to the depositors. They are involved in payment systems, and that's purely a platform. Yeah, purely a platform. And, we told them that it is also true that actually every shilling of the electronic money balance sitting in the e-wallet of someone, they (banks) are the custodians in the trust account, of the equivalent that gives it" (Former BOT Governor).

Traditional banking with siloed channels such as bricks-and-mortar branches was neither friendly nor efficient in meeting the poor's needs. The risk of losing money by allowing the poor to use banking services was perceived to be high. Hence, bank products were not made to meet the needs of the poor (Ayres, 1983; Bakhoum, 1989). On the other hand, MM focuses more on the poor (Peruta, 2018:155). It opens accounts for them. The classicists view the costs of services both as market costs and natural costs. According to Elsner et al (2015):

"Market prices are the prices at which goods and services are exchanged. Natural prices are theoretical construct and served as a supposed centre of gravity of market prices. Natural prices cannot be observed directly but can be computed based on costs of production".

Given the predictability and efficiency of technologies, the classicists are in the position to predict technological outcomes in terms of cost reduction and constant returns to scale. With the MNOs ready to embrace these views, they offered financial services to the poor through MM which helped to cut down the costs of financial service delivery and increased MM's economies of scale. Graph 6.16 illustrates that the penetration of MM accounts is higher than that of bank accounts.

Graph 6.16: Account Penetration, 2008-2015 (Millions of Account)

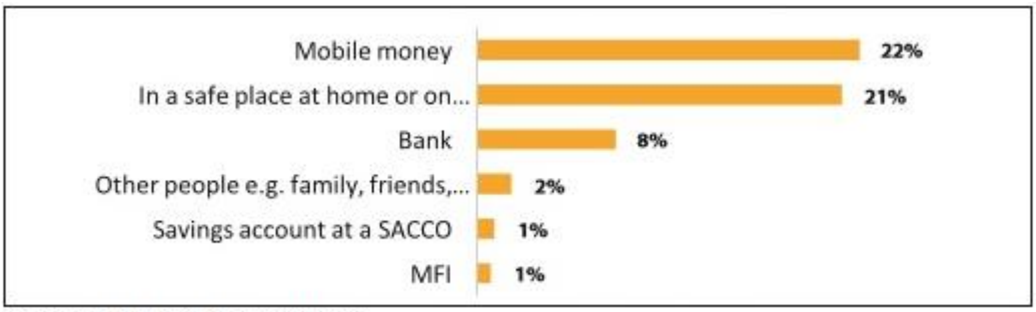


Note: Figures include retail and wholesale accounts. One individual/firm may have multiple accounts.

Source: Bank of Tanzania (2016).

Moreover, more people now save more in MM accounts than they save in banks, see Graph 6.17:

Graph 6.17: Saving Channel (% of Adults)



Source: InterMedia (2016:20).

Furthermore, MM has started to provide microcredit services in collaboration with banks (e.g., Vodacom M-Pesa and CBA provide M-Pawa microloans; Airtel Money with Jumo Microfinance Service provide Timiza microloans, Tigo and Jumo provide Tigo Nivushe microloans). The model is pretty much the same for these services. For M-Pawa loans, initial loans are based on the applicant's history of M-Pesa deposits for six months, including: deposits over time, M-Pesa usage or airtime purchases. The minimum loan amount for M-Pesa was 1,000 Tshillings, and the maximum amount was 500,000 Tshillings (Blechman et al., 2017). These loans have been quicker to obtain, and the transfer of funds has been faster as well.

> "Then, there is the risk part. You know the usual system would take many days and uncertainties to do transfers. This (MM) was almost instantaneous, eh, and virtually risk-free because there is virtually no timeline between sending and you getting confirmation that it is here. Immediately you push the button the other guy after a few seconds gets feedback that I received it. You know that hugely releases risks. So, it is convenient. It is secure. It is affordable. And those were the three main features that certainly were behind if you want the big push to get from exclusion to that degree of inclusion that you find today. Yeah" (Former BOT Governor).

Aghion et al. (2005) argued that small enterprises in developing countries lacked access to credit, which led to unsustained underdevelopment. Income inequality and slow growth were a result of lack of access to financial services. The provision of microloans was a new aspect of MM that boosted economic development, given that MM accounted for about 52% of the Tanzanian GDP (GSMA, 2017b). Everybody knows that credit is essential and that it enables the growth of investments. It also provides working capital, and it allows the provision of a whole range of services. That is FI. It facilitates insurance. It facilitates treasury. It facilitates student loans. It promotes education. Development does not have to generate income; there is also the human component of it. At least, in the political sense, there is an attempt to make neoliberal policies inclusive as discussed in Chapter 1. It is all facilitated by financial services. The connection has to be financial services and development, and then FI is what grows financial services. Microcredit services target the poor, and it helps them improve their lives. Here is an example:

> 'Mama Ntilie' (a lady who cooks and sells food on the streets), in the morning she goes to a fish market at Ferry and to the market to buy the ingredients. She uses mobile money and gets micro-credit loans. She will be able to cook and sell. At the end of the business day, she will be able to repay the loans. It becomes a working capital source of those people who cannot get that kind of credit from banks. Just because the standards and requirements of the banks are different, they get secured credit. No collateral" (Former BOT Governor).

This is how MM facilitates credit to low-income people. The risks are kept low. Moreover, MNOs, banks, and other third parties recognise that risk management is key to the success of MM deployment (Gilman and Joyce, 2012: 1-2). Muralidharau et al. (2014) argue that electronic payments are less prone to mistakes, theft, and corruption. MM payments are more traceable than cash, and they are regarded as having the potential to reduce risks compared to cash payments (Solin and Zerzan, 2010).

6.5 Aggregate Data: Analysis and Limitations

Aggregate data are not only data on populations, groups, regions or countries (Anderson et al., 1981; Speier-Pero, 2019), but also condensed and summarised data (Barefield, 1972; Speier-Pero, 2019; Alfieri and Urgo, 2015). Examples of aggregated data are examples of rates of FI, rates of FE, financial literacy rates, GDP, and headcounts of financially-included or financially-excluded individuals to determine their numbers in specific geographical areas. Global Findex Surveys, FinScope Surveys, InterMedia surveys and other surveys I described in Chapter 4 also compile and use aggregated data (Demirguc-Kunt and Klapper, 2013). What all these have in common is that they are produced by combined data from individuals who participated in the surveys. For example, data from Graph 6.4 in Section 6.3.3 demonstrated that the uptake of MM services stood at 60% in 2017. However, this aggregated data did not tell us the concerns or details of those using MM services between 2013 and 2017. The disaggregation of this data in Graphs 6.5b and 6.6b allowed researchers to identify where people saved between 2013 and 2017 and their sources of borrowing between 2013 and 2017, respectively. This data is still at the aggregation level, and it does not tell us more about the individual issues of the respondents of those surveys. This is one of the limitations of the aggregated data. To know more about each individual issue, we need to disaggregate the data more and more. The same aggregated data could be used to identify the barriers to FI. Another example is the data on Access Strand 2.1 in Section 2.6.1. It shows FI by demographics where the aggregated data is placed in the following categorisations: gender, rural or urban settings, income-generating activities, and age groups. This data is at the country level, and it shows sharp disparities between men and women where women are more likely to be financially excluded than men. Also, those living in rural areas are more likely to be excluded than those living in urban centres. Moreover, those salaried and working in the formal sector are more likely to be financially included than those working in the informal sector. Also, those between 16 and 24 years old and those above 65 years of age are more likely to be financially excluded (Appendix 6.1 briefly explains who is likely to be excluded). Again, this data is at the aggregate level, and it does not tell us much about each individual issue. Hence, aggregate data minimise the amount of data and details that we may want to know about each individual participating in the survey. This is another limitation of data at an aggregate level (Speier-Pero, 2019). However, aggregate data help researchers to reduce details of data and to create variables and groups of data that they use to analyse issues at the macro level. Researchers seeking to disaggregate data also risk aggregation bias and more significant variance in data interpretations (Vibhanshu et al., 2015; Speier-Pero, 2019). Data aggregation becomes an integral aspect of the presented data from the surveys as it combines many details and information from various sources and respondents to prevent information overload. The empirical literature on information overload has been found across several disciplines including consumer behaviour (Cheung et al., 2014), finance and accounting (Brown-Liburd et al., 2015) and social media (Bright et al., 2015). Also, see Speier-Pero (2019).

Aggregate data on financially-excluded people are either counts or averages or a total number of financially-excluded people derived from the individual level data found in the surveys as demonstrated throughout this dissertation or through census results. Say, for example, we have the total headcount for everyone who participated in FinScope national representative samples in 2013 and 2017 in Tanzania from the 16 to 24 age group who identified themselves as financially-excluded people. This is an aggregate count as it is produced as a total from the individual survey's results in 2013 and 2017. The FinScope samples had 7,987 and 10,000 respondents, respectively (see FinScope, 2013a; FinScope, 2018). These are counts from national representative samples and not from the country's census where the entire population is counted. Policymakers cannot wait for a census count which comes every ten years. They use national representative samples to get accurate counts and numbers of financially-excluded people. These statistics help them to make high-quality decisions regarding FI strategies. In Tanzania, the FinScope surveys are used for these purposes. Hence, from these national representative samples, one could question the quality of data (also see: Bronner, 1982; Speier-Pero, 2019; Abdel-Khalik, 1973). This is another limitation. However, governments, the World Bank and other global standard-setting bodies have agreed to regard data from these surveys as official data (also see: Demirguc-Kunt and Klapper, 2013; see Chapter 4 Section, 4.8.3.1 and Appendices 4.5 and 4.6). Furthermore, country original aggregate data are often time series data where the measurements are taken and triangulated. Time series data are often presented as tables with time running across the horizontal axis or as strands and graphs given specific dates as an annual time series data of the country that demonstrate the uptake of MM services or the levels of FI and FE (see Access Strands 2.1 and 2.2 in Section 2.6.1; Strand 5.4 in Section 5.5; Graph 6.1 in Section 6.3.1, or Table 6.4 in Section 6.3.3). Aggregate data are such counts as counts of registered MM accounts (see Table 6.4 in Section 6.3.3) derived from micro-level survey data by applying statistical methods summing or averaging then applying additional calculations such as weighting and estimations and sampling errors. This procedure has been designed to provide reliable inferences about the entire population based on data collection, collected from specific surveyed samples. For example, FI is one of the most-watched measures of the country's increasing levels of access to formal financial services. But how is it calculated? The standard measure of FI is an access rate which measures the number of people who use formal financial services including MM as a proportion of the adult population in Tanzania (FinScope, 2006; FinScope, 2009; FinScope 2013a; FinScope, 2018). This FI rate is derived from FinScope survey data or other surveys. FI through MM stands at 60% and FI through the banks is at 17%, and total FE is 28% (FinScope, 2018). FE is at 28% in Tanzania in 2017 because some people use both banks and MM services. In Tanzania, the FinScope surveys provide official statistics for FI and FE. The FinScope surveys are conducted every three years. There are other alternative surveys for Tanzania, such as the global Findex and InterMedia (InterMedia 2014; InterMedia, 2016; and InterMedia, 2018). Thus, the FI rate is an aggregate example of how an aggregate indicator is produced from a survey. However, based on the FI rate calculated from the survey, some methodological issues can be raised. Firstly, although the FinScope survey covers a large representative sample, not absolutely everybody aged over 16 in Tanzania is included in the survey. In a few cases, sampling errors may occur. This means, arguably, a different sample would produce slightly different results. This is another aggregate data limitation. Borgatti (2002), Lago (2013), Roediger et al. (1993) and Bound et al. (2001) conducted different experiments and noticed some of these aggregate-data limitations. Despite the results that researchers obtain from the different national representative samples, those results are expected to show 'sampling variability'. Resh (2011), Sailor and Vasireddy (2006), Lapp and Smith (1992) explain the variability issues. Sampling variability places confidence in deriving a final FI rate produced by the surveys. Secondly, as it is spaced on the survey, the FI rate also needs to be adjusted to reflect the population as a whole, perhaps by adjusting the results from certain areas or by age group and gender as demonstrated in Access Strand 2.1 in Section 2.6.1. The second measure of FI is MM service active user accounts count. This comes from a survey as a count of everybody who is claiming to own and use MM services. Table 6.4 in Section 6.3.3 provides the number of active registered MM users. Since it takes a 100% count, the FI rate remains unaffected by counting variability. Active users of MM services will remain a percentage part of those using formal financial services. Hence, active MM account users can be used as an indicator of FI, even in small levels of geography. However, if we look at MM active account users and the FI rate together, we see the number of MM active account users as consistently lower than the FI rate. This is because not everyone who is financially included uses MM, as FI counts simply measure people using MM and other formal financial services. Thus, the number of MM active account users is considered to be the more accurate measure of accessibility to formal financial services as it is one of the standard indicators of FI (also see: AFI, 2013b; AFI, 2020; FinScope, 2006; FinScope, 2009; FinScope 2013a; FinScope, 2018). Hence, we have seen that aggregate data are data that have been derived from individual-level data, which put together large patterns and through which trends can be seen. Aggregate data are often data collected from different groups of people or regions for administrative or policymaking purposes (Speier-Pero, 2019). The government of Tanzania and other institutions in the financial sector use aggregate data to identify how and where they should be using public resources to eradicate FE and to enhance FI. They use such information to know how different segments of the population are affected by existing policies and to inform and shape future economic and financial sector policy changes. Despite the accuracy of the aggregate data they use, aggregate data based on national represented samples may still have errors and limitations, and any efforts to transform microdata into macro data requires attention as measurement or any other errors are likely to be an issue (Bound et al., 2001). How did I respond to the issues of aggregation of data? I interviewed 20 low-income people to learn whether the aggregate data and other data at meso and macro levels make sense. In short, the findings from those interviews suggested that both meso and macro data made sense (for meso level data limitations see Appendix 6.2). To learn more about macro data limitations, please see Appendix 6.3.

6.6 How Do Low-Income and Financially-Excluded Individuals Benefit When We Analyse Aggregate Level Macro Data?

It will be hard to reach 100% inclusion. But reaching high levels of FI is the target. According to Masha (2016), research that enhances financial development theory in cross-country contexts demonstrates that MM has an essential micro- and macro-economic impact that can be extrapolated from macro data studying the aggregate economy. Thus, MM growth expands financial intermediation. Levine (2005) and Pasali (2013) demonstrate that through financial development theory, financial intermediation correlates positively with growth and employment (also see Masha, 2016). Cross-country analyses pinpoint three substantial macroeconomic impacts of MM on economic growth, inequality and financial system stability (Masha, 2016). Several empirical studies demonstrate the link between FI and economic growth (Oruo, 2013; Babajide et al., 2015; Gretta, 2017; Adeola and Evans, 2017). These are benefits that MM brings to financially-excluded individuals. I will expand more on these benefits in Section 6.6.2. For macro-level data issues on growth, inequality and financial stability, see Appendix 6.4. The next section will briefly detail the patterns of phone use in Tanzania.

6.6.1 Mobile Phone Use in Tanzania: Extreme Poverty and MM Exclusion?

According to InterMedia (2018):

> "Many adults in Tanzania rely on others for assistance using mobile phones. While the majority (81%) reported using a mobile phone to call someone, only 69% reported 'complete ability' to make or receive a call … Both unregistered and registered users rely on agents or other people to assist them with transactions; 52% have used a phone to make a financial transaction, but only 42% report having complete or some ability to perform such a transaction."

According to Hancock (2005), about 97% of Tanzanians claim to have access to a mobile phone. According to InterMedia (2018):

> "Tanzania's population shows high capacity for using mobile technology. In 2017, 64% of adults owned a mobile phone, 19% used a borrowed phone, and 74% were able to send and receive text messages – the key proxy indicator of ability to use digital financial services (DFS) unassisted."

In 2017 Tanzania had 23 million internet users. 82% of these users surfed the internet via phones, which is around 19 million people. About 6 in 10 adults in Tanzania are financially included, and over 55% of financially-included individuals use MM accounts. In 2017 Tanzania had 40.08 million mobile phone subscribers. Tanzania has around 50 million people (Reuters, 2018). Also, see InterMedia (2016).

According to Borg (2014), between 2010 and 2015, MM subscriptions increased by 300 million across the world. Ericsson, a Swedish mobile operator, estimates 1.6 billion subscriptions will be added by 2020. This means more than 3 billion people will have access to a smartphone in 2020 (also see GSMA, 2020b). The ability of financial institutions to facilitate connectivity is vital for the provision of their financial services. Hence, we must go beyond the macro and meso levels when we analyse FE. Transferring and handling money is an everyday activity in developed countries but can be transformative in a developing country.

FI is a step-by-step journey. In this journey, and as far as MM is concerned, InterMedia (2018) makes the following classifications: non-users, unregistered users, registered users, active primary users, advanced users, and mobile credit users. Intermedia surveyed 3,060 respondents throughout Tanzania. Less than a third of the Tanzanian population can be said to have difficulties in accessing mobile phone and MM services (InterMedia, 2018; FinScope, 2018).

About 44% were considered to be non-users of digital-enabled financial accounts in 2017. About less than a third of the adult population had no access to formal financial service. The non-users consist of women, rural residents and below-poverty-line individuals who earn less than $ 2.50 per day. Lack of enough money was reported as a cause for not owning a bank or MM account. Most of these individuals still use MM ‘over-the-counter’ through agents or via a registered mobile phone account or through their friends’ accounts. 43% of non-users save their money by hiding it somewhere, which is not only risky but also exposed to thieves (InterMedia, 2018).

Some unregistered users use MM at agent locations over-the-counter. These include users from other financial institutions such as banks and via accounts registered to other individuals. Of the unregistered over-the-counter users: (i) 53% are women, and 47% are men; (ii) those below the $ 2.50 per day poverty line reach 83%, while 17% are those above the $ 2.50 per day poverty line; (iii) 74% come from rural areas and 26% from urban areas; (iv) 35% are younger than 35 years and 33% are 35 years or older. Most of the unregistered users save money at home at about 53%. They reported MM as the second-best available saving method. 17% save by electronic transfers as they wait to cash out when they need money via an MM agent (InterMedia, 2018).

Registered inactive user is the other category identified by InterMedia (2018). About 9% of MM users were inactive in 2017. Inactive users are users who do not use their accounts for over 90 days. Registered inactive users consist mainly of some males, a few urban people, and some above-poverty adults (InterMedia, 2018). Active primary users are another categorisation. They usually cash in or out with person-to-person transfers. Active basic users are almost equally distributed among the different population groups. The fact that they are almost equally distributed across demographic groups demonstrates that the money transfers cut across other income groups (InterMedia, 2018).

Advanced users are another category. 27% of adults were advanced MM users in 2017, compared to 6% who used banking services and 2% who used non-banking financial services. These groups consist mainly of males, people living in urban centres, and those above the poverty line. Those living in rural areas and below-poverty adults make up most of the population. However, they struggle to adopt advanced services when compared with their urban counterparts and those above the poverty line (InterMedia, 2018). Mobile credit users form another group. According to InterMedia (2018), more males than females live above the poverty line and use more mobile credit services.

6.6.2 Benefits of Using MM for the Financially-Excluded People

To reduce poverty, poor people must manage their money (Rutherford, n.d.; Hartfree and Collard, 2015; Rutherford, 2000). Most poor individuals cannot afford expensive banking services (Matin et al., 1999; Nice and Irvine, 2010; Davies et al., 2016). MM accounts are usually affordable and can be easily managed when compared to bank accounts (David-West et al., 2019; Aron, 2018; Aron and Muellbauer, 2019; Ouma et al., 2017). MM, therefore, helps to prevent poor people falling into poverty by smoothening the impact of immediate expenses (Suri and Jack, 2016; Riley, 2018; Abiona and Koppensteiner, 2020). Microinsurance services through MM channels help financially-excluded people when they get sick (Heymann, 2014; USAID and HFG, 2014; TIGO, 2017) by allowing them to receive health services and pay for associated expenses (Raithatha and Naghavi, 2018; BIMA, n.d.). Many financially-excluded individuals in Tanzania and Africa get accounts through mobile phones (The Global Findex Database, 2015; FinScope, 2018). As a result, MM account ownership has almost doubled since 2014 (The Global Findex, 2017). Eradicating poverty is a challenge. However, mobile phones have proven to be an effective solution that facilitates FI by providing access to formal financial services (The Economist, 2008; Mhella, 2020; Evans, 2018; Lenka and Barik, 2018).

As a lot of people use MM and own a mobile phone in Tanzania, they are likely to access formal financial services in the future, when banks and other FIs start to validate payments using mobile phones. Some banks have considered the enhancement of 'customer authentication' by using any of the following: (i) password or pin; (ii) a card reader or registered mobile device; (iii) a digital fingerprint or voice pattern. Those who do not have any of these things risk the rejection of their payments (Cavaglieri, 2019; Fang and Zhan, 2010; Sung et al., 2015). Tanzania having MM success has resolved the authentication issue as more people are using registered mobile phones for their transactions and payments.

According to GSMA (2020b), mobile technology services accounted for 4.7% of the world GDP, contributing to $ 4.1 trillion of economic value, and 30 million jobs were created through the mobile ecosystem. In Tanzania, MM agent jobs increased, as illustrated in Section 7.7.2. MM also contributed to public sector funding across the world, raising $ 490 billion through taxation (GSMA, 2020b). Moreover, MM helped bridge the FE gap in low- and middle-income countries, where 1 billion accounts were registered at the end of 2019 (GSMA, 2020b). In Tanzania, 55% of the population use MM services, while only 17% use banking services (InterMedia, 2016).

There is literature detailing the benefits of mobile phones and why people own them (de Silva and Zainudeen, 2007; Sridhar and Sridhar, 2007; Mpogole et al., 2008; Souter et al., 2005; Samuel et al., 2005; Donner, 2007; Chakrabarty, 2005). Mobile phones have more than 5 billion subscribers worldwide. Moreover, mobile phone networks cover more than 7 billion people providing access to a variety of life-enhancing services that facilitate the attainment of the UN SDGs. The mobile phone networks also have a crucial impact on FI (GSMA, 2020b). A study conducted in Tanzania by Sife et al. (2010) revealed that mobile phones created arrangements to help low-income people remit money via social networks. Mwaikali (2013) reminds us that before the advent of MM, Tanzanians sent money through buses and that the arrival of MM reduced the risks associated with this. Traditional means used to deliver money such as the use of buses are not risk-free and could be interrupted by thieves and conmen as well as by delays (Mwaikali, 2013; McNamara, 2008). A study of African countries conducted by Andrianaivo and Kpodar (2011) revealed that MM provides access to formal financial services to financially-excluded people in low-income and middle-income countries (also see Mwaikali (2013)). Solin and Zarzan (2010) also provide evidence to reaffirm the role of MM in providing access to formal financial services. FI bridges the gap between financially-excluded people on the one hand, and financial infrastructure and channels on the other. By doing so, FI through MM enhances access to microloans and savings. It also supports money transfers and in some cases provides working capital to financially-included people, which in turn stimulates investments and economic growth (Samuel et al., 2005; Mwaikali, 2013).

Moreover, MM helps reduce the costs of formal financial services which empowers the MNOs to provide these services as well as the financially excluded to access the same services (Hassan and Semkwiji, 2011; Mwaikali, 2013). According to Ahmad et al. (2020), there is empirical evidence that MM contributes to the economy via its positive effects on financial and food security, employment, and on financial, human, and social capital accumulation (also see: Yang and Choi, 2007; Andrianaivo and Kpodar, 2012; Aker and Wilson, 2013; Beck et al., 2015; Carlson et al., 2015; and Ky et al., 2018). For small and low-income businessmen, first, MM has improved payment and collection mechanism as it helps them receive payments from customers as well as allowing them to pay their suppliers while reducing unnecessary costs and expenses and avoiding the risks of using cash. Second, MM enhances transparency and reduces the risk of financial misbehaviour. MM also allows small businessmen and low-income individuals to pay their utilities, reducing the costs of queuing at the bank for hours which could impact negatively on their businesses (Parikh et al. 2013).

6.6.3 Costs of Running a Mobile Phone

Further research is required to determine the number of people who remain financially excluded because they cannot afford the costs of running a mobile phone. According to Kleinman (2013), the cost of running a phone varies from a simple phone call to a wide range of phone services including time spent on social networks, checking emails, uploading photos and files etc. The costs vary much depending on how much data you use or the time you use to engage with mobile phone services. There are pay-as-you-use mobile phone services and there are also fixed mobile phone contracts which may include a package of free minutes and data use for a specific period. Mobile phone costs can become unbearable or expensive when a user of mobile phone services exceeds his allowance (Kleinman, 2013).

According to Minihane (2020), data allowance can challenge mobile phone users. As costs of data continue to drop, new apps and services can challenge customers as they cannot know how much data use will suffice their needs. Firstly, there are 'low-data' users who use their mobile phones to keep up with their family and friends or read the news. They usually use a data allowance of about 5 GB per month. Secondly, there are 'medium-data' users who use their mobile phones for emails, social media and entertainment. They usually use a data allowance of at least 10 GB per month. Thirdly, there are 'heavy-data' users who use their mobile phone for entertainment and work and could need a data allowance of around 20 GB per month (Minihane, 2020). According to Mpogole et al. (2008), the cost of running a mobile phone in Tanzania for low-income people ranged from 15,000 TSh (6.5 USD) to 45,000 TSh (19.4 USD) per month.

According to Luxton (2016), eight in ten people living in developing countries own a mobile phone. However, the operating costs remain disproportionately high in some countries. Tanzania has one of the cheapest costs of running mobile phone operations in Africa. According to RAMP (2017), Tanzania is ranked fourth among 49 countries in Africa when comparing the affordability of 1 GB of prepaid mobile data. InterMedia conducted surveys in 2014 and 2015 and interviewed 3,000 and 3001 respondents, respectively. These samples were considered to be the national representative. In 2014, 89% of the respondents had access to mobile phones as compared to 96% in 2015 (InterMedia, 2016). In 2015, 54% of the adult population owned basic mobile phones, 44% owned feature phones, and 12% owned smartphones (InterMedia, 2016). In 2015, 77% of the adult population owned a mobile phone, 20% of adults could borrow a mobile phone, and 4% of adults had no access to a phone in Tanzania (see Appendix 6.5). 61% of the adult population used MM services in Tanzania in 2015. 66% of males used MM services as compared to only 57% of females. 79% of adults living in urban centres used MM in 2015 as compared to 54% of people living in rural areas. 79% of those living above the poverty line used MM services in Tanzania as compared to 58% living below the poverty line (see Appendix 6.6).

6.7 Conclusion

This chapter answers the research question: 'How did MM moderate some factors of FE that other financial institutions failed to moderate in Tanzania?' My findings demonstrate that neoliberal roll-back policies relaxed financial repression and facilitated the boom of innovative financial services (Ouma et al., 2017), which included MM. This revolutionised and improved the provision of formal financial services, creating new delivery channels that have moderated some of the factors of FE. For instance, my findings demonstrate that MM has come to resolve three challenges. Firstly, the lack of access to formal financial services, which also includes the moderation of distance and scale. Secondly, moderation of high costs of financial services for the poor or affordability. Thirdly, managing risks and allowing access to more financially excluded people. These are the technical solutions to removing some factors of FE. In this regard, MM is a means to an end. It is used to correct some market failures causing FE. The end result of MM is more FI and reduction of the banking exclusion for financially-excluded people. The following scholars also have written in favour of these arguments (Camner and Sjöblom, 2009; Di Castri, 2013b; Merritt, 2011; Hayer and Mas, 2009). Bina and Giaglis (2007) see mobile phones as the best solution for FI. Those who support this view argue that this is due to: location free access, improved control on bank accounts, and timely information (Scornavacca and Hoehle, 2007; Krishna and Walsham, 2005; Varshney and Vetter, 2002).

Neoliberalism supported ‘poverty finance’ (Rankin, 2013), which extended formal financial services to financially-excluded individuals. Through neoliberal roll-back policies, MM was left to serve the poor without strict regulations when it started, as has been explained in Chapter 5. This policy was essential as the neoclassicists would argue that too much government intervention and poor resource distribution due to unfounded pricing policies would lead to market failure, high prices, and underdevelopment. A free market, according to neoclassicists, creates a competitive environment and boosts technological advancement (Schoepf, 2000). Liberalised markets, the neoclassicists say, determine effective policies of services and deregulation removes the barriers to trade and service provisions. MM services emerged in the liberalised economy and enjoyed the advantages of being part of the liberalised and deregulated economy. The rolling out of state power through the BOT helped the MNOs to create interoperable systems, which facilitated the lowering of financial service delivery. As a result, both the public and private sectors let technology bring down the costs of financial service delivery, facilitate access to formal financial services, and manage the risks of providing financial services. With the classical perspective bringing in the re-regulatory aspect of MM, technological reduction of costs, and the setting up of legal institutions to facilitate innovations and technology as described in Chapter 5, it helped bring down transaction costs which also facilitated the efficient outcomes of MM in moderating the factors of FE as discussed in this chapter. The classicists would also support MM because of its affordability that would lower the costs of accessing and delivering of formal financial services. These facts are aligned with the classical ideas of stable price levels and their support to Say's law, which states that "supply creates its own demand" (Baumol, 1999). In this regard, the classicist would assume that the supply of MM creates the demand for MM. MM's ability to moderate the factors of FE would increase its demand. This increase in demand would prompt the reaction of the banks. The next chapter discusses this issue.

Chapter 7: The Changing Banking Sector's Response to the High Levels of Financial Inclusion Caused by Mobile Money in Tanzania[3]

7.1 Chapter Overview

This chapter analyses the response of the banking sector to the increasing levels of FI resulting from MM innovations or services. It answers research question number 3: "What was the response of the banking sector to increasing levels of FI through MM in Tanzania?" By doing so it also fulfils research objective number 4, that seeks to investigate the possibility of any changes in the banking sector due to the successful penetration of MM services in the sector. It, therefore, builds up from the previous chapter, which discussed the role of MM in moderating FE. Banks and MNOs in Tanzania have one thing in common, they are all the stakeholders in the NPS. While the banks are deposit-taking institutions, the MNOs are non-deposit taking institutions. The rolling back neoliberalisation and deregulation allowed the emergence of non-deposit-taking institutions, while the rolling out neoliberalisation and re-regulation created a new NPSA and its regulations, which regulated both deposit and non-deposit-taking institutions. Through the NPS, the MNOs have increased levels of FI. This chapter does four things: Firstly, it analyses what the banks have done in terms of innovation both at global and local levels. Secondly, it also incorporates the findings of my fieldwork research in this analysis. Thirdly, it continues the discussion to show the transformation of Tanzania's banking sector. Fourthly, it fills in the gap that exists in terms of few research works being conducted to address the response of the banking sector to increasing levels of FI in Tanzania due to MM. In this regard, several studies on banking innovations at the global level have been conducted (CPSS, 1996; CPSS, 1999; CPSS, 2000a; CPSS, 2000b; CPSS, 2001a; CPSS, 2003; CPSS, 2004; CPSS, 2012; CPSS, 2014; World Bank 2014a; World Bank 2014c). These studies did not focus on Tanzania. There is literature on the banking sector reforms and FI in Tanzania (Ndanshau, 1996; Mbowe, 2010; Ndalichako, 2014), however much of this literature does not explicitly cover the banking sector's response to FI resulting from MM, and other digital financial services. There is this gap, and this chapter tries to address it.

With the increasing rate of mobile services penetration, the banking sector witnessed significant changes in the way transactions are performed. It is not surprising that the banks

[3] I presented this chapter at the 7th International Congress on Technology, Science and Society in Madrid, Spain on the 3rd of October 2019. Thus, some sections of the chapter appear online. I will send out this chapter for publication after the Ph.D. viva.

have adopted these changes and at times sought to meet the consumer's requirements using new innovative services. According to Moga (2010:255):

> "the core of the bank's new strategic orientation currently consists of developing new alternative distribution channels".

There are two main methods banks use to operate their services, namely: 'intermediation' and 'money creation' models (Kumhof and Jakab, 2016). In modern neoclassical intermediation of loanable funds theories, banks intermediate real savings. New bank loans create new funds. In this regard, the banks need to attract customers from outside of the banking system to ensure continued profitability. Hence, their collaboration with the MNOs is justified. MM trust funds in bank accounts, as discussed in Chapter 5, is one of the examples of the bank's intermediation role. The second model that the banks use is the 'money creation' model. This is financing through money creation. The bank can immediately reduce the quantity of their lending if they think doing so will boost profitability. This may increase interest rates and make financial services more expensive. Due to MM lower interest rates and affordability of financial services, the banks tend to innovate and take on the intermediation role to attract more customers by working with the MNOs, or by using other innovations. Moreover, neoclassicists are pro-markets. They support innovations that make markets more efficient (Sredojević et al., 2016; Solow, 1956; Acemoglu, 2009). Hence, banking innovations and changes that are beneficial and profitable will be supported by the neo-classicists (also see: Mehra et al., 2011). Likewise, the classicists believe in the economics of value in exchange (Robinson, 1962). It would therefore be correct to say that the classicists would support MM services because of their affordability.

> "According to classical and neoclassical economics payment instruments, methods and habits compete with each other for the attention of parties that participate into an exchange transaction. This means payments with a mobile device (= a payment habit) must increase productivity and/or decrease costs for both parties and other stakeholders of the ecosystem" (Dahlberg, 2016).

The services also present greater value than that of the banking services, and this would be the explanation why many people would choose MM over banking services. In this regard, classicists would see the logic behind the banks putting more value in their services to respond to increasing MM services. These views shaped how I designed this chapter to show how the banking sector responded to increasing FI through MM services.

In this chapter, I argue that the banking sector is transforming, and this is illustrated by how the sector innovates itself by undergoing several changes (MM, also being the cause of some of these changes). The chapter consists of seven sections as follows: Section 7.1 provides the overview of the chapter. Section 7.2 briefly introduces the main findings of the chapter. Section 7.3 briefly mentions the surprise of the findings. Section 7.4 introduces the four main issues that trigger a response from the banking sector. Section 7.5 analyses the global standard-setting bodies and their role in setting standards for national payment systems. Section 7.6 analyses Tanzania’s national retail payment system to establish an understanding of the changes in the banking sector. Section 7.7 provides a review of the different responses of the banking sector to higher levels of FI caused by MM. It analyses the various steps the banks took to reach the poor and financially-excluded populations. Section 7.8 summarises the other significant findings. Section 7.9 briefly suggests the expected future responses. Section 7.10 concludes the chapter.

7.2 What are the Main Findings of this Chapter?

The rolling back of the government let innovation determine the regulations. Innovations such as MM could kick off without strict regulations, and the regulations came later after the innovations flourished. According to Major (2012:537), neoliberalism is seen as a process of market deregulation relaxing the controls over the banking sector. Supporting innovations was the agenda of the BOT to facilitate the growth of MM, and it created some tensions between the banks and the MNOs. The government had to roll-out its power and influence to thwart those tensions through the BOT. According to Major (2012), “neoliberalism manifests itself in the changing forms of financial market regulation”. This is a phase of depoliticisation and re-regulation where governments indirectly use finance ministries and central banks. Moreover, the rolling out of neoliberalisation processes facilitated the inclusion of non-deposit-taking institutions in NPS activities, which allowed the MNOs to participate in the NPS. The banks, on the other hand, participate in the NPS as the deposit-taking institutions. The global standard-setting bodies facilitated the neoliberal rolling out by setting NPS standards that became accepted worldwide to harmonise the functions of NPS networks across the world. It was the inclusion of the MNOs in the NPS and the increased levels of FI it created that triggered responses from the banks. This chapter discusses those responses.

7.3 Was There Anything Surprising that Came Out of the Findings?

One would think that banks and other financial institutions are the only well-equipped institutions with relevant knowledge and skills to provide financial services, and that they should be left alone to do just that. It is usual to see banks providing financial services on their own. However, technology and MM have changed this. Due to pressure from the MNOs, the banks form strategic alliances and partnerships to help them offer affordable financial services, including their collaboration with the MNOs. Thus, they respond to MM by innovating some aspects of their services, products, and processes, and by enhancing strategic alliances and partnerships. They cannot do everything alone. They also depend on those who have competitive advantages in providing certain services, including the use of technology to deliver financial services. Developing new technologies is expensive, and banks must collaborate with MNOs and other innovative institutions to resolve this issue. These findings are somehow surprising, given the structural and financial powers that banks have. On the structural power of banks, see: Culpepper and Reinke, 2014; Culpepper, 2011; Bell and Hindmoor, 2015; Bell and Hindmoor, 2017; Dafe, 2014.

7.4 The Three Main Factors That Trigger a Response from the Banking Sector to the Increasing Levels of FI Caused by MM

In the previous chapter, I argued that MM moderated some factors of FE such as: (i) lack of access to financial services which included: distance, scale and scope; (ii) high costs of formal financial services; (iii) the risk of providing formal financial services to financially-excluded people, therefore, the issue of risk management. The moderation of these factors was possible through the: (i) economies of scale; (ii) economies of scope; and (iii) the networks created by interoperable networks. These three main factors have forced the banks to come forth and react.

As I mentioned earlier, both the MNOs and the banks are stakeholders in the NPS. However, the MNOs with innovative solutions benefit from the economies of scale and scope. According to CPSS (2012:18):

> "Significant supply-side economies of scale and scope apply to the payment infrastructure used to process payment information. Such economies are achieved when the average cost of producing a payment service decreases with the quantity produced (scale), or if the joint production of two or more products in the same infrastructure reduces the cost or improves the quality compared with producing them independently (scope)".

The benefits of the economies of scale and scope also include:

> "Economies of scale and scope are important in evaluating the costs and benefits of payment innovations. On occasion, the benefits of multiple systems can outweigh the cost of savings from maintaining just a single platform. For example, competition between payment systems can keep prices lower than if a monopoly existed. Further, different types of payment instruments may not be perfect substitutes, allowing them to satisfy different needs. Also, while a low-cost payment service is desirable, it may delay the entry of innovative payment methods until the new method can become cost-effective enough to compete with existing methods" (CPSS, 2012:18).

This means that the banks have to innovate to keep up with the MNOs that heavily use the economies of scale and scope. Moreover, the MNOs have created social systems of agents and interoperable systems. On the demand side of the financial infrastructure, MM, including other digital financial technologies, increase the value of the existing shared networks:

> "the basic payment network effect derives from the fact that each additional user increases the value of the network for each of the existing users, i.e., adding one more node in the network creates a positive externality or 'spillover' for all other nodes. A classic example of network externality takes place in the telephone network, where the value of holding a telephone for each user increases with the number of users' access via the network. Because of high fixed costs, payment networks often need to sign up a minimum number of users, often referred to as the 'critical mass', in order for the total value of the network to exceed the operating costs" (CPSS, 2012:13).

There is also the risk management issue that MM has been able to manage (Gilman and Joyce, 2012: 1-2; Muralidharau et al., 2014; Solin and Zerzan, 2010). All this prompts the banking sector to innovate and respond to the challenges brought by MM services. Before I analyse the banking sector's innovations and responses, there are rules of the game that govern the banking sector. These are standard-setting bodies, both at global and national levels, that facilitate the governance of the banking sector and other digital financial services. The standard-setting bodies are a result of the roll-out neoliberalisation policies that I discussed in Chapter 3, Section 3.6.1. They are there to ensure that different banking and financial systems can work together.

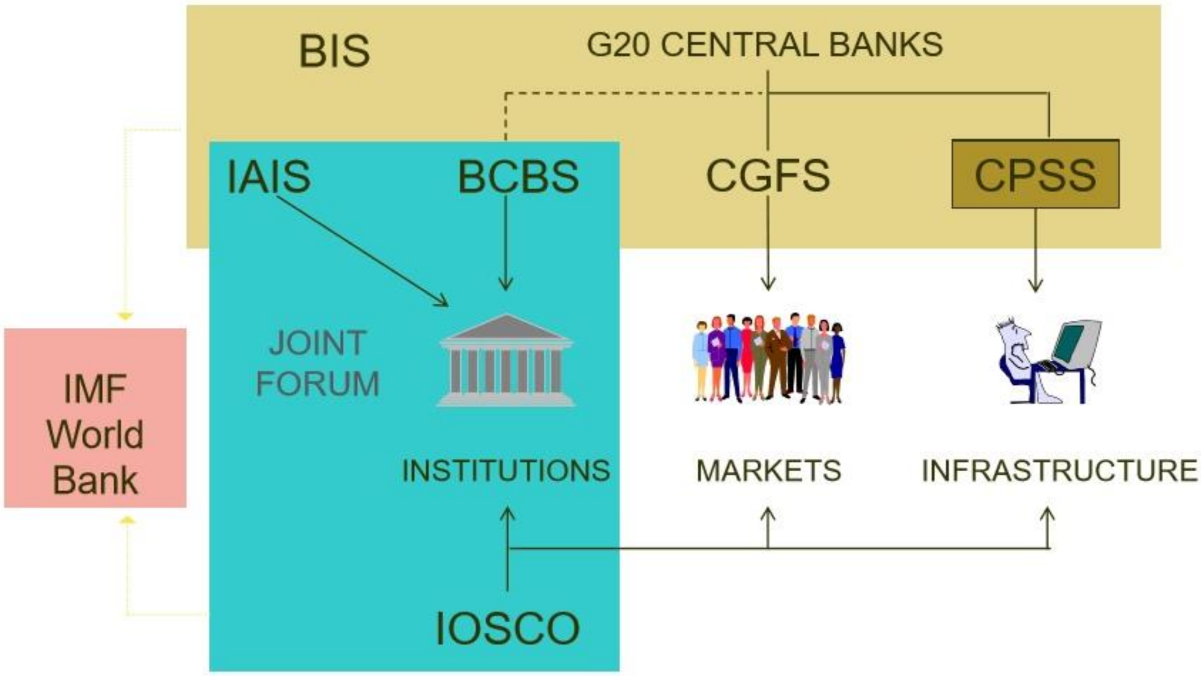
7.5 Standard-Setting Bodies at the Global Level and Their Roles in Setting the Rules of Payment Systems

According to Peck and Tickell (2002:384):

> "the neoliberal project … constituting an ongoing 'neoliberalisation' … focus on the purposeful construction and consolidation of neoliberalised state forms, modes of governance, and regulatory relations".

The Bank for International Settlements (BIS) acts as a bank for central banks. It serves central banks and facilitates their efforts to maintain monetary and financial stability. It also facilitates discussions between the banks and other authorities working on promoting financial stability. Within the BIS, the Committee on Payment and Settlement Systems (CPSS) is a standard-setting body dealing with payments including clearing and settlement systems as well as other related issues (CPSS, 2001b; BIS, 2004; Blommstein, and Summers, 1994). The CPSS reports to the Governors of the Global Economy Meeting. There are global policies and principles originating from the CPSS such as: the '2003 Role of the Central Bank in Payment Systems', the '2005 Central Bank Oversight of Payment and Settlement Systems', the '2008 Interdependencies of Payment and Settlement Systems', the '2012 Innovations in Retail Payments' and the '2012 Principles for Market Infrastructures'. The CPSS also acts as a forum for central banks to monitor and analyse financial schemes, instruments, settlements, associated arrangements, and payment systems both within and across countries. There is also a 'Joint CPSS-World Bank Taskforce on Payment Aspects of FI' that facilitates FI within and across the jurisdictions (Löber, 2014). The 'Basel Process' promotes the global governance of payment systems and banking sectors. The process is simplified in Diagram 7.1 below:

Diagram 7.1: The Basel Process



Source: (Löber, 2014).

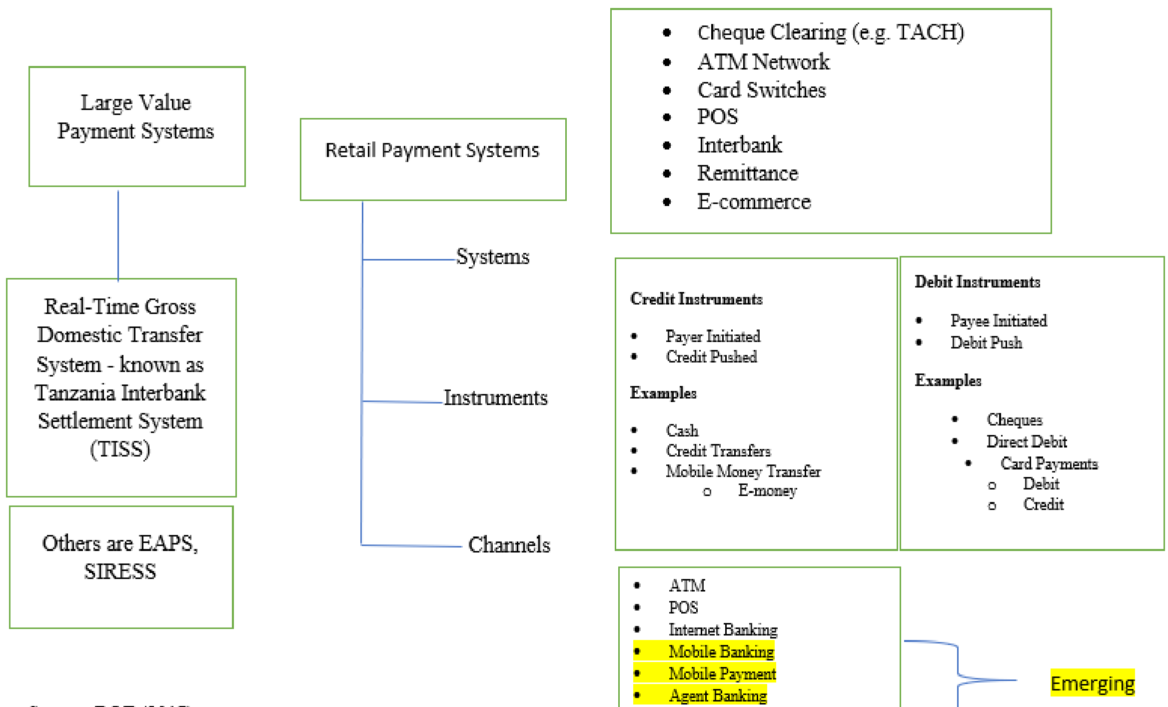
In summary, Diagram 7.1 illustrates how the BIS interacts with national and global actors. The BIS in this process is used as a platform for discussion and cooperation among global financial authorities, including the national central banks. I will provide the names of the institutions mentioned in this process: the International Association of Insurance Supervisors (IAIS), the Basel Committee on Banking Supervision (BCBS), the Committee on the Global Financial System (CGFS), the CPSS and the International Organisation of Securities Commissions (IOSCO). There are meetings at a high-level for senior financial officials, as well as the facilitation of the activities of the different groups supporting financial stability. All of these bodies, as mentioned above, facilitate the ‘Basel Process’. Brenner and Theodore (2002:362-363) discuss further these institutional changes generated through the deployment of neoliberal political and economic programmes. They are vital in setting up internationally agreed standards. The process is crucial because it sets rules that affect the banks and the MNOs, who are the key stakeholders of the payment systems (CPSS, 2012; GPFI, 2016).

The CPSS, for instance, categorises banking and MM innovations. There are, therefore, ‘process-oriented categorisation’ or ‘product-related categorisation’ of banking and MM innovations. If it is a ‘process-oriented categorisation’, then it deals with payment process innovations; this includes: (i) how to initiate payments; (ii) overall payment process, including clearing and settlement; (iii) how the payments are received; and (iv) new schemes to offer solutions. If it is the ‘product-related categorisation’, then it deals with products and how they are innovated; this includes: (i) innovation in the use of card payments; (ii) internet payments; (iii) mobile payments; (iv) Electronic Bill Presentment and Payment (EBPP), and improvements in infrastructure and security (CPSS, 2012: 9-13; OECD, 2005). Also, there are other innovations or instruments for reaching out to financially-excluded people such as: the cooperatives, microfinance institutions, agent banking outlets, and community banks, that will be discussed later in this chapter.

7.6 Tanzania’s Situation

Before neoliberal policies, the government controlled both fiscal and monetary policies. After the neoliberalisation, the government rolled back and left the monetary policy aspect and banking supervision under the central bank. Hence, the removal of political controls from the central bank (Patnaik, 1999). The BOT is an authority regulating and supervising the NPS. The MNOs, on the financial side, are regulated by the BOT because they use the payment system. The MNOs are not on the banking side. As discussed in Chapter 5, to regulate the payment system, the BOT uses the following regulatory tools: (i) the 2015 NPSA; (ii)the 2015 Payment Systems Licensing and Approving Regulations; (iii) the 2015 Electronic Money Regulations (BOT, 2017). Diagram 7.2 below summarises the Payment Systems and Digital Financial Services (DFS) in Tanzania.

Diagram 7.2: Payment Systems and DFS Landscape in Tanzania

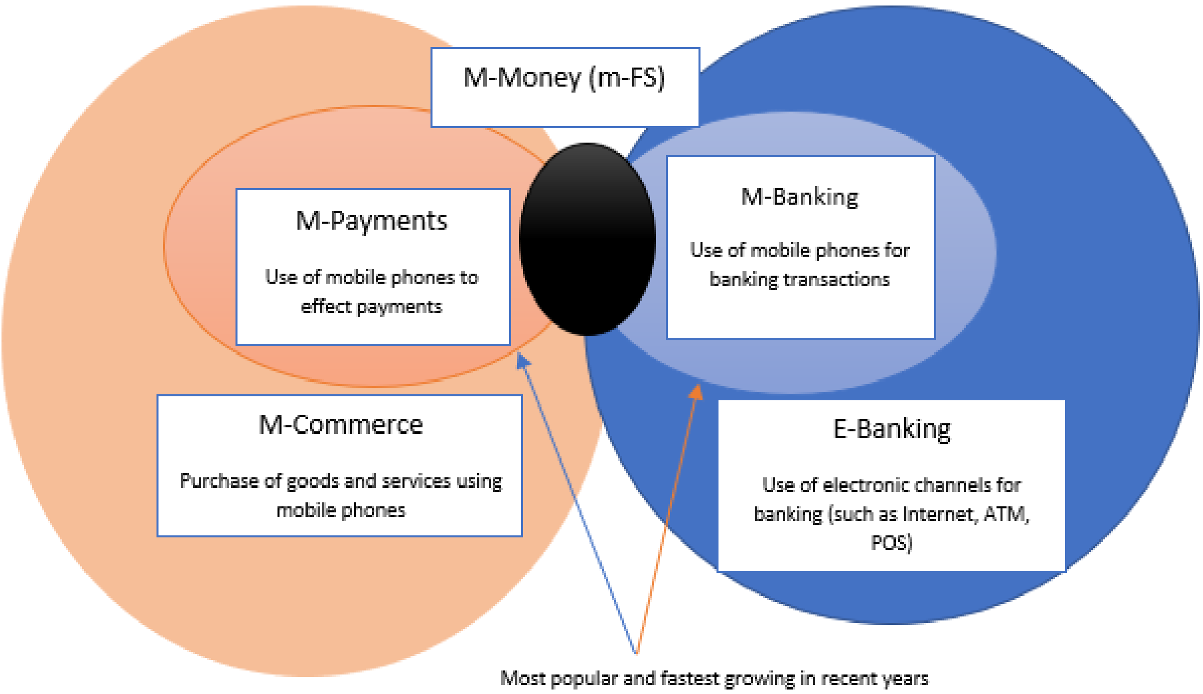


Source: BOT (2017).

From Diagram 7.2: the Retail Payment Systems (RPS) are of particular attention to this research. They have systems, instruments, and channels. The systems are in terms of: (i) cheque clearing system; (ii) ATM networks; (iii) card switches; (iv) Point-of-Sale (POS); (v) interbank services; (vi) remittance services; and (vii) e-commerce. Furthermore, the instruments are in terms of: (i) credit instruments which include: payer-initiated payments and credit push payments such as cash, credit transfers, MM transfers, and e-money transfers; (ii) debit instruments which include: cheques, direct debit, card payments including debit and credit payments. Moreover, the channels include: ATM, POS, internet banking, mobile banking, mobile payment, and agent payments. Hence, mobile banking, mobile payments, and agent banking are emerging channels. This is what the Tanzania retail NPS looks like.

In Tanzania's RPS, the most popular and growing mobile financial services are depicted in Diagram 7.3:

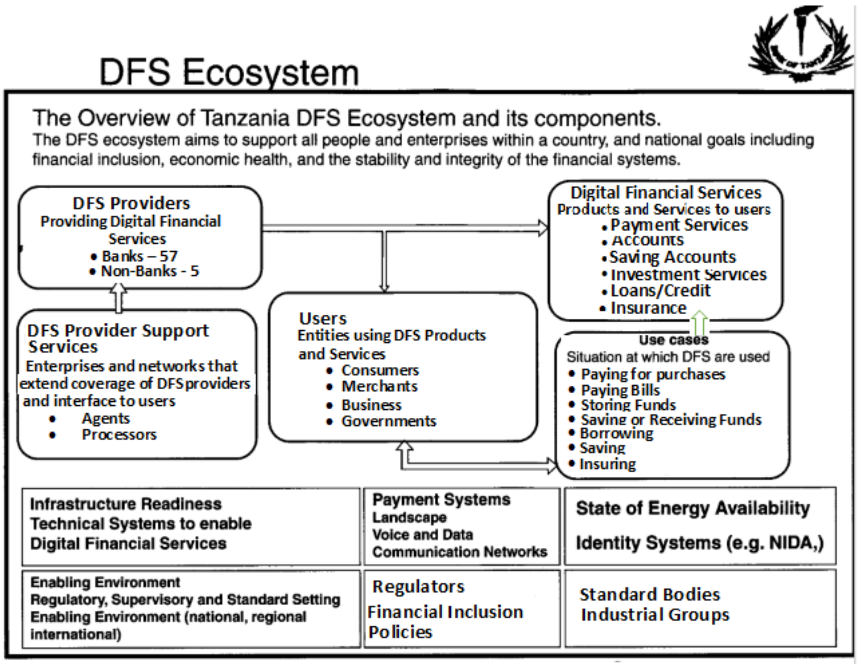
Diagram 7.3: The Most Popular and Fast-Growing MFS Models in Tanzania



Source: BOT (2017).

As demonstrated in Chapters 5 and 6, MM is the fastest-growing model. Mobile banking (which is the use of MM for banking transactions), mobile payments (which use mobile phone to effect payments), mobile commerce (which is the purchase of goods and services using mobile phones) and e-banking (which uses electronic channels for banking including ATMs, POS, and Internet) are also other fast-growing models. Hence, the banking sector's response is also how to cope with these new developments as they emerge, as will be discussed later in this chapter. However, it will be necessary to also understand the Digital Financial Services (DFS) ecosystem in Tanzania to understand the different components involved in it.

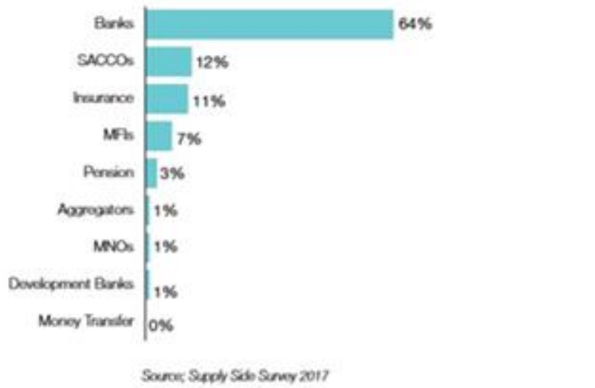
Diagram 7.4: The Overview of the DFS Ecosystem and its Components



Source: BOT (2017)

The DFS is a complex system, as shown in Diagram 7.4. The system includes both traditional and non-traditional providers of financial services. As far as the banks and financial institutions are concerned, as of March 2017, there were forty-two commercial banks, three financial institutions, twelve community banks, four deposit-taking microfinance, two private credit reference bureaux. Likewise, there were two-hundred-eighty-six Bureaux de Change. The pension sector had six public pension funds. The insurance sector had twenty-eight private insurance companies and two re-insurance companies. As far as the MM side was concerned, there were twenty-two internet banking providers; thirty mobile banking providers; five mobile payment providers and as of December 2018, that number had reached eight providers. Diagram 7.4, therefore, provides a simple picture of the banking sector and the digital financial service providers. Strand 7.1 and Strand 7.2 illustrate the products share for each sector in this ecosystem. Because of its affordability, MM has created a discrepancy between market share in terms of products for MNOs and banks, whereby 60% of Tanzanians utilise MM. However, the MNOs contribute to only a 1% share of products in the market. The banks, with a 64% share of products, have only reached 17% of users.

Strand 7.1: Financial Products in the Market by Provider Type
Base: All products; n=1,534



Strand 7.2: Uptake of Formal Financial Service
Base=Tanzania Adult Population

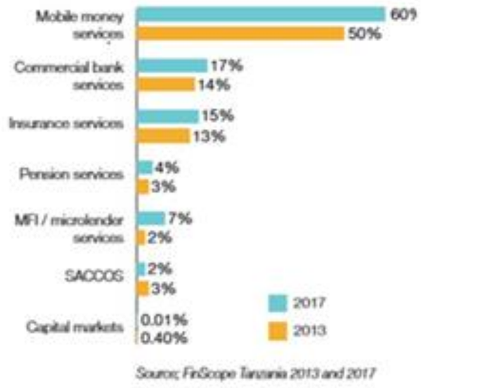


Table 7.1 illustrates the structure of the banking sector between 2012 and 2016 to facilitate an understanding of the above analysis.

Table 7.1: Distribution of Banking Institutions' Branch Network

Categories of Banking Institution	2012	2013	2014	2015	2016
Commercial Banks	32	34	34	36	38
Development Financial Institutions	-	-	-	2	2
Microfinance Banks	1	2	3	3	4
Community Banks	12	12	12	12	12
Financial Institutions[1]	4	4	4	3	3
Total	**49**	**52**	**53**	**56**	**59**

Source: BOT (2016c:1).

7.7 The Advent of MM and the Initial Reaction from the Banking Sector

This section presents my research findings. The advent of MM was not unopposed. The banking sector objected:

> "And we were open, but the banks objected of course in the very beginning. Eh, they objected. They said that the MNOs were entering the money business. They were also in the payment system. But they had no supervision, and strict regulatory requirements like the banks did. In which case, they believed that that created unfair competition. And from their point of view and as they had heard it from elsewhere, they thought a bank-led model would allow the MNOs to work under the banks" (Former BOT Governor).

The regulation and requirements for the MNOs were stricter than they were for the banks because there were no regulations when MM started. Neoliberalism relaxed the regulations for new entrants such as the MNOs. Neoliberalism can be seen:

> “as a process of financial market deregulation, marked by the relaxation of controls over the banking sector” (Major, 2012:537).

However, the ‘test, monitor, and regulate’ approach was used by the BOT to design good regulatory policies (see Chapter 5). The idea was to let innovation determine the regulations, which is a neoliberal roll-back policy:

> “I had that clear. Clear commitment on that one. Secondly, we had meetings every two years to discuss the financial sector issues, if you want, eh; it was like a ‘symposium’. The banks in that symposium, of course, they were very clear also about the same. Hence, I understood clearly that, look, firstly the MNOs were purely doing transfer system. They are a platform. They didn’t issue money because, for every unit bought with mobile money, there was a unit which was sitting in a transfer account in a bank. So, there was no creation of money. Eh, mm, eh, mm, then it is true that they are not taking deposits. This is clear. They are not doing credit. It is clear. What distinguishes a bank from other institutions is the fact that they are deposit-taking, and per regulations and essentially in terms of supervision is to manage the risk in relation to the protection of deposit interests. That was the main principle. So those are not taking deposits. There is no risk of exposure to the depositors. They are involved in the payment system, and that’s purely a platform. Yeah, purely a platform. And, we told them it was also true that actually every shilling of the electronic money balance sitting in the e-wallet of somebody, they (the banks) are the custodians in the trust account, of the equivalent that gives it. Yeah, so we told them that there is no competition. There is no competition in relation to the core business of the banks” (Former BOT Governor).

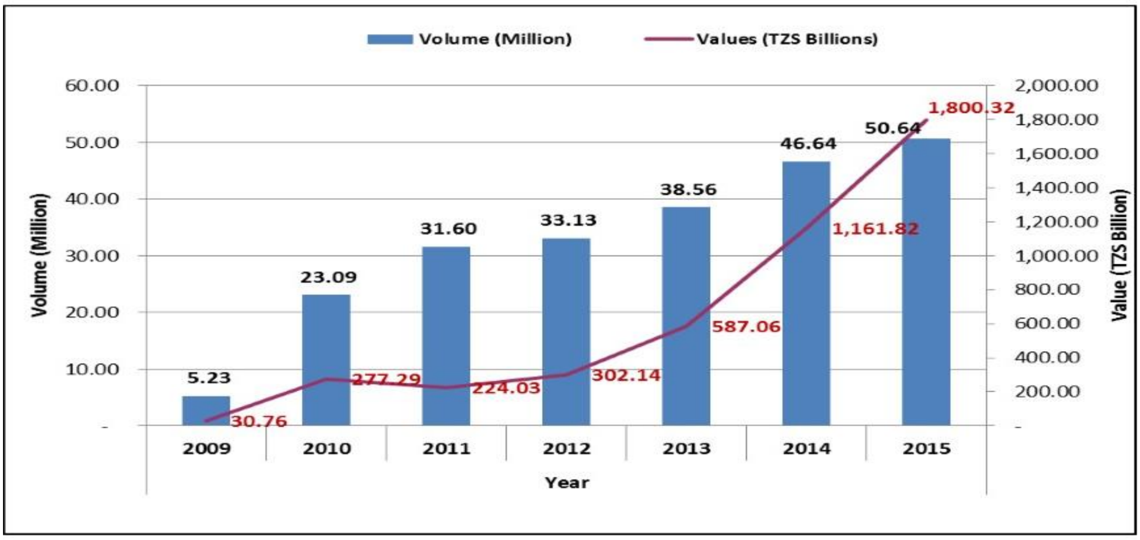
The BOT reassured the banks that MM was not competing with them. Since the banks also make transfer payments, maybe one can argue that there is competition. However, banks have limited technology and cannot reach customers in remote areas. Hence, the banks also understood that the MNOs were trying to solve the problem that they never themselves solved, which was to reach financially-excluded people. The bricks-and-mortar branches would not resolve the issue. The ATMs were very few, and they needed to reach everyone in a cost-effective way:

> “And we told them, look, if you use this platform well, you could actually grow your business in a very cost-effective way. Fortunately, they started talking about agent banking. And they started seeing that actually now they can widen their net and network without having to go through the branches. Yeah. So, they started having agents, big banks like CRDB and NMB were the first to embrace that, and they could see that that was what was there. Second, I think they also saw that it made banking much more efficient and convenient, eh, for their customers because now they do it on the, eh, through the mobile banking platform” (Former BOT Governor).

7.7.1 The Mobile Banking Platform

One of the first responses was for the banks to start using mobile banking platforms. The m-banking services have grown over time, as is illustrated in Graph 7.1.

Graph 7.1: Mobile Banking Growth, 2008-2015



Source: BOT (2017).

Rotchana and Speece (2003) studied m-banking from the customer's point of view and found that it is convenient, and it facilitates transactions as it is accessible 24/7. However, Cruz et al. (2010) argue that the use of m-banking services is still lower or underused. Moreover, the m-banking transaction volumes are also smaller compared to other banking transaction volumes (Huili and Chunfang, 2011). However, Graph 7.1 illustrates that despite all these issues, m-banking is still growing. M-banking, therefore, offers the possibility of increasing efficiency of the payment system and of expanding access to formal financial services (Porteous, 2006:12). An excellent example of a collaboration between an MNO and a bank is that between Vodacom Tanzania and Commercial Bank of Africa (CBA) that launched a banking service known as M-Pawa. M-Pawa allows customers to save and borrow money on their mobile phones (Masamila, 2014:55). Neoliberalism enhances these collaborations as it acts as a process of marketisation to help the various actors to reach a wide range of customers (Birch and Siemiatycki, 2016). Also, other payment services facilitated by the aggregators go through m-banking:

> "Further, once you have these integrators, operators like MaxMalipo and others that were platforms for them, could help them connect with their customers through mobile devices. Eh, they are aggregators, eh, essentially you are going through them when you are doing mobile banking. Except

for one, which wanted to create its own platform which became very expensive … NMB wanted to do so. Even those who did so, eh, Standard Chartered, eh, CRDB, as they had to manage the adaptation of their platforms despite working with an aggregator, which made it very expensive. So, actually the cost and I told them … that look your mobile money, eh, operations without thinking about a switch, would be extremely expensive because of your investment costs and costs of overhead that you are spreading across very few customers of yours. Whereas if you have a switch, everybody goes through that system. And the costs go down. So, yeah, we have come to the level of understanding that this could be in their favour. So, now they are thinking about actually a switch, yeah, a collective switch for the same purpose. Even more, these steps were taken to clarify the issues. This was how, you know, ultimately peace was brought through all these steps" (Former BOT Governor).

Hence, during the time of my field research, I realised that the banks were thinking about creating their collective switch for the same reasons explained by the 'Former BOT Governor'. Hence: (i) the collaboration with the MNOs through MM and mobile banking services; (ii) other opportunities the banks have to create their switches; as well as (iii) the possibility the banks had to work with the aggregators; reduced the opposition from the banks directed towards MM services. Section 7.8.2 discusses the switch issue. I will have to go through other innovations first before discussing the switches. Hence, I discuss agency banking in the next section.

7.7.2 Agency Banking

The 'intensification of neoliberalism requires institutions' and agents 'that are not only complementary but also interactively reinforcing' (Wrenn, 2015). Hence, agents within the specific contexts of neoliberalism and industries are also the drivers of changes and innovation. The classicists would support a free financial system and other systems to support it (also see: Pennington, 2011; Le Maux, 2019). Applying the open systems theory, banks are in constant interaction with their environment in which they operate. In the era of MM technology and other digital financial innovations, new innovations change the global economy with the banks striving to achieve a competitive advantage as the changes present both opportunities and challenges. Contingencies come with these opportunities and challenges (Dahlberg et al., 2008) as the banks innovate to reflect the changes in both internal and external environment (Alrawi and Thomas, 2007). The contingency theory is well placed to explain how the banks can hardly shy away from innovations that sustain their operations and businesses. Agency banking is one of the new innovations that the banks have adopted (Ivatury and Lyman, 2006; Ignacio, 2008; Chiteli, 2013). Also, agency theory explains better why any organisation should use agents

(Lambert, 2006). Agency theory allows the 'Principal' to delegate work to the 'Agent' who performs the work. The theory explains the dynamics of the contracts between the 'Principals' who are the owners of the economic resources and the 'agents' who are the managers responsible for using and controlling those resources (Lambert, 2006; Boučková, 2015; Kambua, 2015:17). For this research, the banks and MNOs are regarded as the 'Principals'.

A banking agent is a retail or post outlet contracted by an MNO or financial institution to process a client's transactions (Chiteli, 2013:207). Hence, agency banking is not available through a bank branch teller, but it is done through the owner or an employee of a retail outlet that conducts transactions by letting customers deposit or withdraw funds, transfer funds, inquire about an account balance, pay bills, get direct deposits from their employers, and open up bank accounts. Hence, the banking agent is an important distribution channel for FIs (Ignacio, 2008).

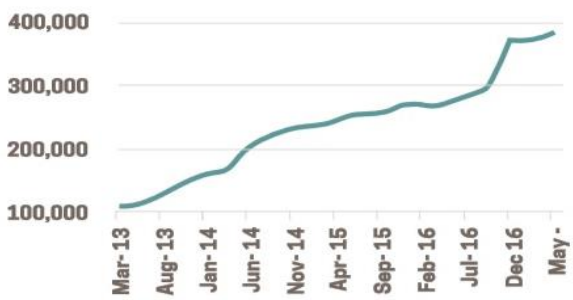
There are two reasons for the banks to develop a network of banking agents namely: (i) the cost to the provider of originating and processing the transaction; and (ii) the cost to the user of accessing the service (traveling and lining up for services) (Ignacio, 2008). According to Ignacio (2008), the economies of scale reduce the provider's costs. The banks would concentrate transactions at specific locations where they believe a larger volume of transactions would absorb the cost of running bricks-and-mortar branches. This strategy produces results where customers are densely populated and where there are enough resources to cover fixed costs. The story is different for the poor customer who lives a few kilometres away from the bricks-and-mortar branches. He incurs extra costs. In this case, the costs shift from the provider to the poor user, who must travel long distances and spend time lining up for the bank services (Ignacio, 2008). Most poor customers cannot afford these extra costs and are therefore excluded from accessing formal financial services. Hence, agent banking shifts the emphasis at the retail level from the concentration of bank branches in highly populated areas to retail outlets in less populated or poor areas to increase the provision of financial services in those areas.

Access Strand 7.3: Access Channels for Financial Solutions in Tanzania – Base: All Products

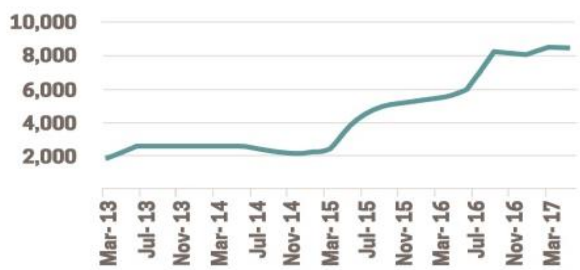
Source: FSDT (2017:22) – Supply-Side Survey 2017.

From Access Strand 7.3, both MM and m-banking agents still offer a significant share of money transfer or payments. They are also crucial in both insurance and credit services. The agents provide only 3% of access to the deposit. Credit is more likely to be offered through branches. Moreover, Graph 7.2 shows the growing number of MNO agents. The banks have increased not only the number of bank agents, as shown in Graph 7.4, but also the number POS and ATMs, as shown in Graphs 7.3 and 7.5, respectively.

Graph 7.2: Number of MNO Agents

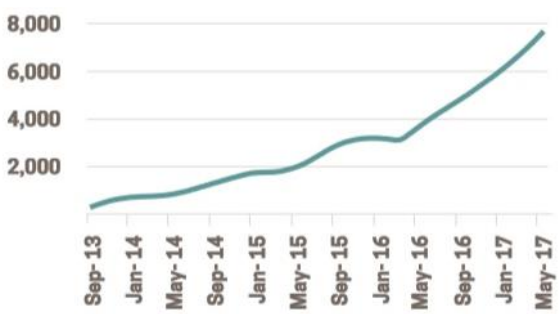


Graph 7.3: Number of POS

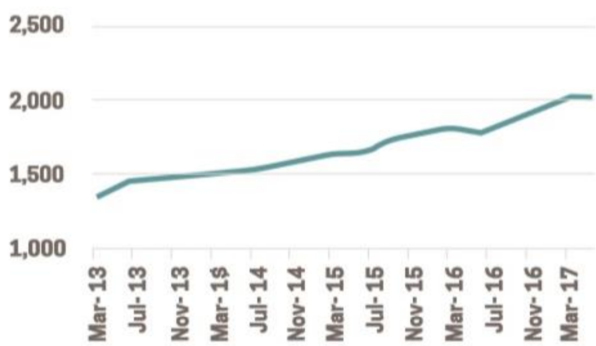


Source: Bank of Tanzania and TNCFI (2017a:26-27)

Graph 7.4: Number of Bank Agents



Graph 7.5: Number of ATMs



From the Graphs 7.2, 7.3, 7.4, and 7.5 the number of MNO agents in Tanzania grew by 147% to 379,254 as at the end of May 2017, from December 2013 when the NFIF launched. At the same time, the number of bank agents increased to 7,717 from 591; the points-of-sale increased to 8,474 from 2,552, and the number of ATMs increased to 2,017 from 1,481 (TNCFI, 2017a:26). Table 7.2 shows the increase in the number of contracted agents between 2013 and 2016. During that period, there has been an average of a 72% increase in contracted agents per year (BOT, 2016c). As the number of agents has increased, the number of community banks has remained constant, as shown in Table 7.5 in Section 7.7.4. According to Wrenn (2015), in the neoliberal context, agents are used to sustain systems. This section has therefore illustrated the importance of agents in the provision of formal financial services.

Table 7.2: Agents Contracted by Banks and Financial Institutions

S/no	Institution Name	2013	2014	2015	2016	% Annual Growth
1	CRDB Bank Plc	294	956	1719	2415	40%
2	Equity Bank Tanzania Ltd	63	220	333	595	79%
3	Tanzania Postal Bank Ltd	142	270	301	341	13%
4	DCB Commercial Bank Plc	90	132	138	193	40%
5	Amana Bank Limited	2	42	42	118	181%
6	NMB Bank Plc	0	8	571	1613	182%
7	Letshego (Advans) Bank Tanzania	0	12	21	53	152%
8	Finca Microfinance Bank	0	12	56	120	114%
9	KCB Bank Tanzania Limited	0	0	0	0	0%
10	Mwanga Community Bank Limited	0	0	0	0	0%
11	African Banking Corporation	0	0	0	50	0%
12	Efatha Bank Limited	0	0	14	24	71%
13	Access Bank Tanzania Limited	0	0	104	154	48%
	Total	**591**	**1,652**	**3,299**	**5,676**	**72%**

Source: BOT (2016c:49).

7.7.3 Community Banking

Community Banks were another innovation that was encouraged by the BOT. Olawepo and Ariyo (2011) recognise the importance of community banks in financing poor communities with the focus on improving their development through financial and social intermediation services they provide, such as: (i) provision of micro-savings, microcredit and micro-investment services in rural areas; (ii) employment to community members, which increases their financial capabilities; (iii) involvement in local development projects; (iv) the largest part of the bank shares are owned by members of the community; (v) performing banking and non-banking activities to promote low levels of development within and outside local communities. One of my respondents also echoed these views:

> "The idea of community banks was actually to bring if you want banking services closer to the community. Eh, by letting them own those services as part of the community. Eh, with a clear understanding that most of the commercial banks did not want to go that far. Thus, community banks began back in 1998, I think. Around there. Eh, they were banks. They were around to do deposit-taking. But restricted to do their business only within the locality. And they were allowed to start with a much smaller capital. Eh, with the understanding that they will keep their overheads fairly low and be able to serve the community and over time grow. So, I think they grew up to about twelve where the community now start being also defined not only along geographic lines but along categories of people" (Former BOT Governor).

Tables 7.3 and 7.4 confirm the assertions made by the Former BOT Governor. While the number of community banks remained constant from 2012 to 2016 as illustrated in Table 7.3, Table 7.4 reaffirms their services in certain locations along with categories of people they served, as well as the number of the employees they had, demonstrating the capacity they had to offer services. According to Mataba and Aikaeli (2016:78), Tanzania has Cooperative Community Banks (CCBs) and Non-Cooperative Community Banks (NCCBs) as also shown in Table 7.4.

Table 7.3: Distribution of Banking Institutions' Branch Network

Categories of Banking Institution	2012	2013	2014	2015	2016
Commercial Banks	32	34	34	36	38
Development Financial Institutions	-	-	-	2	2
Microfinance Banks	1	2	3	3	4
Community Banks	12	12	12	12	12
Financial Institutions[1]	4	4	4	3	3
Total	**49**	**52**	**53**	**56**	**59**

Source: BOT (2016c:1).

Table 7.4: Community Banks and their Main Features, 2015-2016

Community Bank	2016			2015		
	Branches	No. of ATMs	No. of Employees	Branches	No. of ATMs	No. of Employees
Tandahimba Community Bank Ltd	1	0	15	1	0	8
Njomba Community Bank Ltd	1	1	34	1	1	34
Mwanga Rural Community Bank Ltd	1	2	47	1	2	47
Meru Community Bank Ltd	2	2	28	2	0	17
Mbinga Community Bank Ltd	1	0	23	1	0	29
Covenant Bank for Women Ltd	1	0	27	1	0	13
Kagera Farmers' Cooperative Bank Ltd	1	1	17	1	1	18
Kilimanjaro Bank Cooperative Ltd	1	1	34	1	1	32
Tanzania Women's Bank Plc	2	5	99	2	6	95
Efatha Bank Limited	1	1	22	1	0	26
Maendeleo Bank PLC	3	2	60	1	1	34
Uchumi Commercial Bank	1	2	38	1	2	38

Source: BOT (2016c).

The categorisation of community banks, as illustrated in Table 7.4, include: women, farmers, cooperatives, etc.:

> "All these are community banks. Their capital requirements are different, but prudential rules are the same as those of the banks. There are issues of capital and liquidity because ultimately, it is the safety of the depositor. Notwithstanding who owns the banks, we are not much interested in who owns the community banks. We are interested in what would it take to keep the deposit essentials. However, a good number of these couldn't keep the costs down. They had full-fledged boards even when their business base was tiny. They had full systems rather than shared systems with others even when their business base was small. So, typically, the cost of operating began eating into the capital. So over time, they eroded the capital, bringing it down to negative. Under those circumstances, a number of them cannot continue, partly because they have already endangered the depositor's money. Hence, these banks were part and parcel of the broader effort at financial inclusion" (Former BOT Governor).

Community banks emerged to provide inclusive financial services in the areas they served. The relaxation of some banking requirements and regulations, which were less strict than the commercial banks but stricter than the MNOs, made them survive. However, the implementation of the Basel III standards caused several issues to community banks (Mnuchin and Phillips, 2017). Unfortunately, in 2018, the BOT had to revoke five licenses of these community banks due to their undercapitalised status to protect financial stability in the country. These banks included: Covenant Bank for Women Ltd, Efatha Bank Limited, Njombe Community Bank Limited, Kagera Farmers' Cooperative Bank Limited, and Meru Community Bank Limited. Unfortunately, community banks seem to have done worse in terms of cooperating with technology (Baily and Montalbano, 2015) such as ATMs and MM, the area in which my findings suggest they have to improve. They also have to improve in the number of branches as well as in cutting down the number of employees, which increases overhead costs. Table 7.4 shows this in detail. Closer to community banks are the microfinance institutions.

7.7.4 Microfinance Institutions

Microfinance is another innovation in the banking sector that is used to reach poor customer. In some cases, microfinance banks have partnered with the MNOs to efficiently reach financially-excluded people. Microfinance in Tanzania began in 1995 with NGOs and Savings and Credit Cooperative Societies (SACCOs). For SACCOs, see Section 7.7.5. Neoliberal financial market failures caused the emergence of microfinance services to provide microloans to needy individuals. The dire need for microloans to the poor was a result of the rolling back of the state in the early 1990s. The cutting of subsidies and social welfare:

> "had neoliberalism proposing a solution of simply making the affected population pay themselves. This required the expansion of finance" (Muhammad, 2015).

It sought to link the gap between formal financial institutions and the poor by offering intermediary solutions of transaction aggregation and rationalising transaction costs to bring about efficiency. In developing countries, these costs are high because of poorly designed financial and legal systems as well as informational networks. Poor customers are mostly affected by lacking collateral and information asymmetries such as moral hazards and adverse selection. Hence, it becomes more difficult for banks to work with poor customers, as poor customers are considered to be unbankable. What microfinance institutions brought to the financial sector was the provision of small loans to poor customers who do not have access to commercial banks without asking for collateral. Hence, microfinance institutions lend to individuals and groups. Group-lending brings in the notion of joint-liability and helps to mitigate issues caused by adverse selection and moral hazard. According to Kipesha (2015), microfinance institutions intended to assist the poor and to provide financing of poor communities to help them improve some aspects of their lives, such as acquiring basic education, fighting against poverty etc.

In Tanzania, the NGO-supported institutions or any formal bank can provide microfinance services (Brown et al., 2015). By 2015 four NGOs dominated the NGO-supported microfinance institutions: Pride Tanzania (102,000 borrowers); BRAC Tanzania (102,000 borrowers), FINCA Tanzania (78,000 borrowers), and Vision Fund (34,000 borrowers) (Brown et al., 2015:10 quoting MIX, 2015 and MF Transparency, 2015). In 2016 FINCA, became a microfinance bank. In 2016, the microfinance banks were: EFC Tanzania Microfinance Bank Limited, FINCA Microfinance Bank, Vision Fund Tanzania Microfinance Bank Limited, and Hakika Microfinance Bank Limited. Altogether, the four banks had 38 branches and 41 operational centres (BOT, 2016c:24). Table 7.5 illustrates the recent entries of banks into the microfinance market. Other banks regulated by the BOT that provide microfinance services include: Equity Tanzania, Access Bank, NMB, Akiba Commercial Bank PLC, Mbinga Community Bank Limited, Mwanga Community Bank, and CRDB.

Table 7.5: Distribution of Banking Institutions' Branch Network

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Financial Institutions[1]	4	4	4	3	3
Total	**49**	**52**	**53**	**56**	**59**

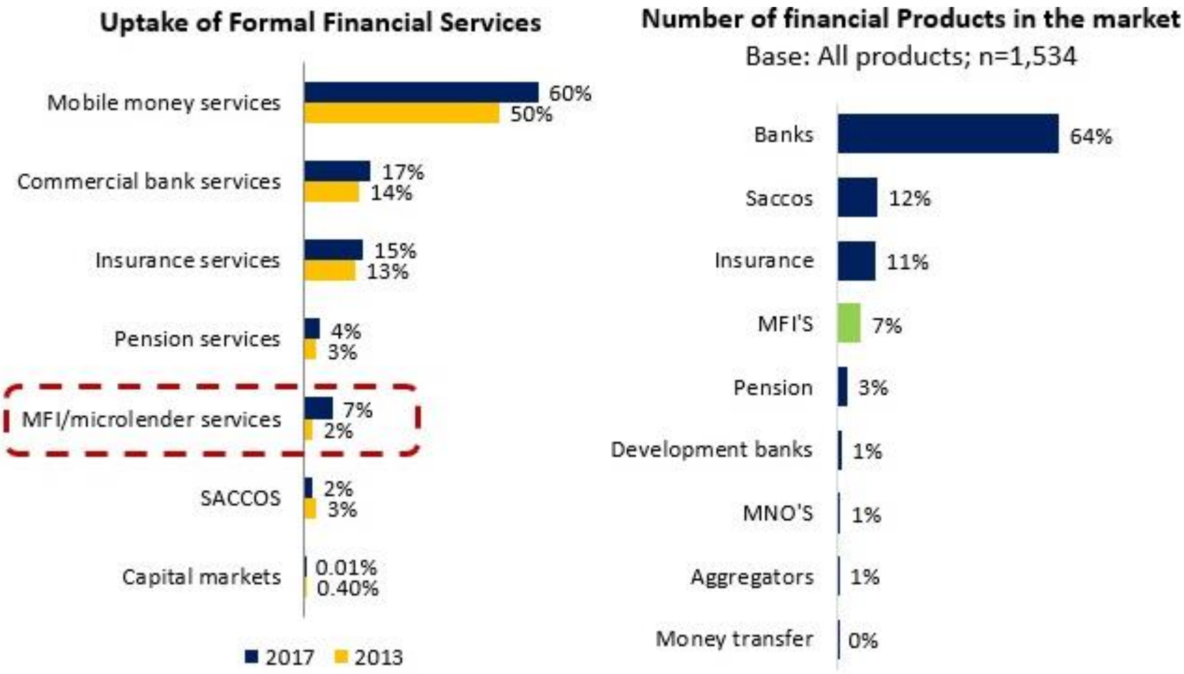
Source: BOT (2016c:1).

There have been several challenges existing in Tanzania's banking and microfinance sector. These challenges have restricted access to financial services due to the use of traditional banking approaches. Traditional banking approaches have made it difficult for banks to deliver financial services to the poor at the bottom of the pyramid, especially those living in rural areas. Understanding this challenge, banks and MFIs have reorganised their approach. In this effort, there is no doubt that a wave of digitalisation has started in every bank, and some of the MFIs. For instance, FINCA Microfinance Bank and Halotel (a mobile company providing MM) work together to provide access to low-income people and financially-excluded people:

> "And last year (2017), FINCA was able to launch a mobile savings product, which is of its kind. It is the second mobile financial product in this country, and this product goes by 'Halo Yako' with the partnership of Halotel, it enables the account holder to transfer in as small amount as 100 shillings to the account at no cost. Indeed, this digitalisation has helped those in rural areas to be included in formal financial services. And it has enabled these people to create and build savings, which traditionally, it has been difficult" (Senior Banking Official).

Hence, microfinance banks have started to digitalise their services or partner with MNOs to provide digitalisation or technological solutions that increase access to financially-excluded people. However, the microfinance sector in Tanzania still lags behind, as shown in Strand 7.4.

Strand 7.4: Demand for and Supply of Financial Services



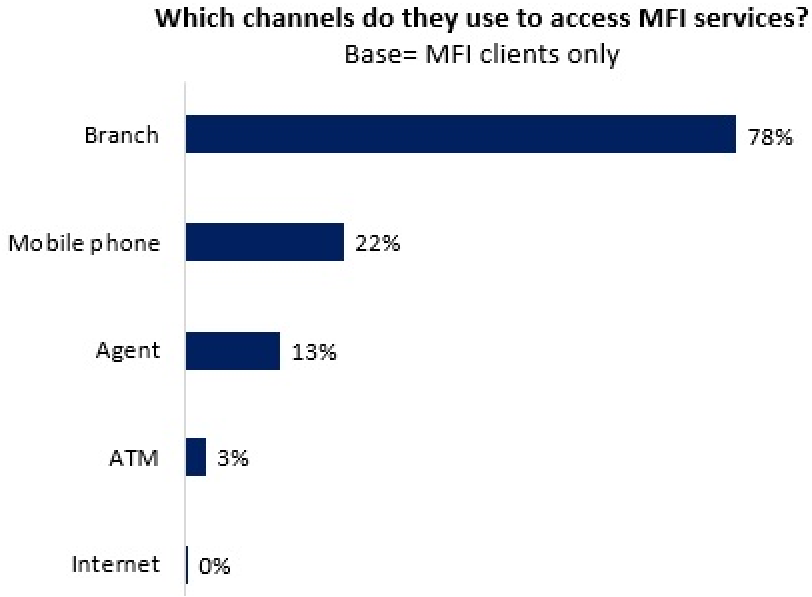
FinScope (2018).

The uptake of microfinance services in Tanzania is still low at 2% and 7% between 2013 and 2017 respectively. However, the MFIs have 7% of financial products share. While MM has only 1% of products share and about 60% of uptake of formal financial services. Hence, there is a big difference between the MFIs and the MNOs. Meanwhile, the banks have 64% of the financial products to share in the market, and only 17% of the uptake of formal financial services. Thus, the response of the banking sector to digitalise financial services and to work with the MNOs provides a promising solution towards reaching financially-excluded people. Furthermore, and according to FinScope (2018), and as shown in Strand 7.5, 97% of microfinance clients own a mobile phone. Only 22% utilise it to access microfinance services.

> “The spreading of and innovation within the microfinance sector demonstrates a successful neoliberal initiative that is both socially conscious and economically beneficial. By connecting groups of poor individuals to lending institutions or affluent individuals in developed countries, microloans have been able to foster the strengthening of local economies, necessary for consuming life-improving technology, while incurring minimal risk to the lending party” (Campbell, 2010:1081).

Given the success of MM, the efforts of digitalising and partnering with MNOs, just as FINCA and Halotel did, could increase FI through digitalisation. Another example is that of TigoPesa (an MNO) partnering with NMB to digitise cashew nut sales in Mtwara with 'TigoKorosho' services reaching a wide range of small farmers.

Strand 7.5: Channels Used to Access Microfinance Services in Tanzania



Source: FinScope (2018).

Furthermore, the microfinance and commercial banks have also tried to reach the financially excluded people through the SACCOs (Kaleshu and Temu, 2012; Ndiege et al., 2014; Ndiege et al., 2013; Ndiege and Pastory, 2012; Temu and Ishengoma, 2010).

7.7.5 SACCOs

SACCOs are member-driven cooperatives and make decisions democratically. They have an identity, values, and principles. They are formed by members who have common interests or belong to specific groups such as labour unions, churches, clubs, or communities. Their main purpose is to alleviate poverty by building their members' capacities to utilise limited resources. In Tanzania, SACCOs proliferated in the 1980s and 1990s when most crop marketing cooperatives collapsed (Maghimbi, 2006). Since then, they have grown in numbers.

According to the Ministry of Agriculture Food Security and Cooperatives (2011), SACCOs have increased in numbers from a membership of 291,000 to 1,552,000 between 2006 and 2011, which is an increase of 433%. See Table 7.6.

Table 7.6: SACCOS Statistics – May 2007 to 2011

	2006	2007	2008	2009	2010	2011 Mar
Shares (SH) (US$ millions)	10.5	14.7	22.2	27.9	23.3	54.4
Deposits (D) (US$ millions)	0.4	59.6	14.1	12.6	16.8	40.2
Savings (S) (US$ millions)	27.4	42.1	75.7	119.7	131.4	258.2
Total loanable funds (SH+D+S)(US$ millions)	38.3	116.3	112.1	160.2	171.5	352.8
Loans disbursed (LD) (US$ millions)		93.8	191.1	351.1	386.4	494.0
Loans outstanding (LO) (US$ millions)	53	39	116	120	161	284
Members (000s)	91	590	713.7	911.9	933	1,552
No. of SACCOS in 000s	2.0	3.5	4.8	5.3	5.2	5.3
Average savings and deposits per member (US$)	95.6	172.3	125.8	145.1	158.9	192.30

Source: Department of Cooperative Development: Ministry of Agriculture Food Security and Cooperatives Annual Reports, June 2006 to March, 2011

By March 2013, the number of SACCOs reached 5,559 with 45% in urban areas, which is an increase from 5,344 in 2011 (Brown et al., 2015:9).

Strand 7.4 (in Section 7.7.4) shows the share of SACCOs uptake of formal financial services at 3% and 2% between 2013 and 2017 respectively. As far as the number of financial products in the market is concerned, SACCOs have a 12% share. Only the banks had more product shares in the market. The neoliberalised economy gives incentives for profit-maximisation as SACCOs seek to partner with banks to enhance their competitive strategies (Macharia and Tirimba, 2018).

According to Kaleshu and Temu (2012:149), only three banks have branch networks that cover at least each regional headquarters, namely: CRDB, NMB, and NBC. Out of these three banks, only the NMB has branches in almost all district headquarters in mainland Tanzania. Moreover, Kalesha and Temu (2012:150) also acknowledged that joint action between banks and SACCOs would expand financial services in rural areas. The practice of linking SACCOs to banks is known as 'linkage banking'. It started way back before MM and even increased more after the advent of MM. For instance, the Kilimanjaro Cooperative Bank began to extend credit to SACCOs in 1998. The CRDB started issuing credit to SACCOs in 2001. The NMB established a department to work with the MFIs and SACCOs in 2007. The MM era has seen other banks extending linkage banking to SACCOs including: Tanzania Investment Bank, Akiba Commercial bank, Uchumi Commercial Bank, Kagera Farmers' Cooperative Banks, Mufindi Community Bank, Dar es Salaam Community Bank, Mwanga Community Bank, Njombe Community Bank, Mbinga Community Bank. According to Kaleshu and Temu (2012:152), banks confirm that their partnerships with SACCOs help in building capacity for the SACCOs board of directors, management, staff, and members of SACCOs. All this is done to direct formal financial services to the SACCOs. For benefits to both sides, there has been an expanding of financial linkage between SACCOS and banks (Kaleshu and Temu, 2012; Ndiege et al., 2014; Ndiege et al., 2013; Ndiege and Pastory, 2012; Temu and Ishengoma, 2010).

7.8 Further Findings

The sections above have shown how banks have responded to increasing FI through alternative channels and instruments. As mentioned earlier, at the very beginning the banks opposed MM. After long discussions with the BOT, they started collaborating with the MNOs. They used MM as a platform to help increase access to financial services for financially-unreached populations. Microfinance institutions have also begun to use the same platform to reach their customers and clientele. Hence, the banks have responded by forming partnerships with the MNOs, or with other formal and non-formal financial institutions as well as by developing or using other digital financial services as the previous sections have shown. Therefore, I argue that banks and other FIs use MM as a platform. Various types of financial service delivery systems can use MM to effect payments. The same system of agents that MM has been using over time, has recently been used by the banks through 'agency banking'. Ultimately, the banks have come to understand that they need to respond and adjust to the MM revolution, and by doing so, they are transforming the banking system.

7.8.1 Bank-MNO Collaboration or Partnership

In the neoliberal era, the state rolling back its powers allows the formation of partnerships. The partnership between the CBA and Vodacom M-Pesa, for instance, is an example of how a bank can use an MM platform to deliver saving and credit services. 'Tigo Nivushe' partnership with Jumo, as well as 'Airtel Timiza' partnership with Jumo. The banks have an advantage because while the MNOs can offer credit services, they are not deposit-taking institutions. This arrangement makes a distinction. In the case of CBA and Vodacom M-Pesa, it became obvious that CBA performs the banking functions even when it uses the platform known as M-Pesa for transactions:

> "So, whoever that's involved in M-Pawa is a client, a customer of the bank. So, over time, their coverage, in terms of the customer base growth expanded with agent banking, with eh, services such as M-Pawa. Everybody saw that, and then I think they agreed very clearly that this (mobile money platform) acts complementary to banking. Not a competition. And fortunately, during my time, every two months after MPC (Monetary Policy Committee) meeting, we met with the CEOs of the banks to let them know about the new decisions we made, etc. But that also gave us an opportunity to always talk about these things. And we also had what we called 'quarterly' meetings with banks, where we dedicated about two to three hours once a quarter whenever we did it, to discuss issues with them that would require joint solutions. And we used those opportunities to deal with these issues. Yeah, and we made it very clear that, look, if there were questions about this, put them on the table. We will work together on them, and we will find solutions. It is also true that we had a national financial inclusion council where banks were represented, so are the other stakeholders where we talked about various innovations and various actions for promoting financial inclusion … there, that was a platform as well of resolving any potential conflicts across various stakeholders" (Former BOT Governor).

The banks had different platforms they could use to discuss the developing changes in the banking sector, including those brought by MM. Importantly the BOT was and still is chairing the National Financial Inclusion Committee (NFIC), which is another platform that provides opportunities to talk about any issues transforming the banking sector and how to respond to the transformation (see Chapter 5, Section 5). At the NFIC, not only do the BOT and the banks negotiate, as they usually do in their bi-monthly or quarterly meetings, they also consult with other FI stakeholders. This gives everybody who uses the payment system or who works to raise FI levels, an opportunity to discuss the essential developments and how to face challenges. These meetings have been beneficial to the banks:

> "The good thing, we work together, that is all I can say. In the action plan, there is always who is the key implementer. So, a chance of being against each other or whatever is minimal. Whatever needs to be handled by the MNOs will be clearly stated. But banks will do their assignments to complement what the MNOs do. Who is a leader in implementing a certain task, will always be known. It is either a bank or an MNO … if you look at some actions to be taken by the MNOs, the majority of those actions are not to extend usability because usage is already there. However, they need to deepen and improve the functionality of their platforms. From there, the banks can easily use them to link up with or reach out to their customers" (Executive Banking Sector Official).

When MM started, its regulations were less strict than those of the banks. This was due to deregulation of financial sector, and the 'RCA' as explained in Chapter 3, provided the rationale for these arrangements. Following complaints from the banks, the BOT ordered that MNOs should form separate legal entities for MM services that would be regulated by the BOT. This was in line with the 2015 NPS Act, the 2015 Payment Systems Licensing and Approval Regulations, and the 2015 Electronic Money Regulations. The requirements for issuing an electronic money license demand for a non-banking institution to establish a separate legal entity for the BOT regulations:

> "They had to get permission from us. We told the mobile money companies that they should be separated from the telecommunications side. So, we did have simple initial rules. But in terms of setting the regulations, we introduced the NPS Act after we had learned what was, eh, risky. What was not risky. How risks could be mitigated" (Former BOT Governor).

These steps also helped to facilitate collaborations and partnerships between the banks and the MNOs. The process of establishing the NPS Act and the related regulations was quite smooth. The TCRA who regulated the telecommunications sector, as well as the BOT who controlled the banking sector, were all present. They came together to align the interests of the two sectors. The Attorney General's (AG's) Office was also interested in those negotiations. The AG's Office had toured some of the institutions in an attempt to create an 'electronic evidence act'. It sought to understand the issues associated with presenting evidence in an electronic format, and whether that evidence could be considered admissible in the same way as something signed physically would be.

> "There was a related eh act on resolving disputes also originating from electronic transactions. Eh, and I think eh, those two as precursors, plus … the dialogue that we had, eh, banks were allowed to react. Mobile phone companies, mobile money subsidiaries were given a chance to react … as part of the process of the preparation of the act. And then the usual steps which involved a possible hearing. Yeah. So, I don't think, it (the process of bringing together the banks and the MNOs to discuss the creation of the NPS Act) was contentious … You know it is only contentious if you do not have a process of engagement and dialogue continuously… Hence, all these mentioned channels were part and parcel of the process of, yeah, ultimately coming to consensus and understanding" (Former BOT Governor).

7.8.2 Bank Switches and Consortium

From the findings, I also learned that banks had to react because their traditional approach of using bricks-and-mortar branches could not resolve the proximity issues. They also could not maximise the advantage of the economies of scale, scope, and external networks using bricks-and-mortar branches, as explained in Section 7.4. Coping with technology, partnering with the MNOs and other FIs, as well as copying the agent model from the MNOs were the alternatives that Section 7.7 detailed.

Neoliberal regulatory capitalist principles enable rapid widespread partnerships for FI (Soederberg, 2013). Also see Section 3.6. With the MNOs using their interoperable network, the banks have also sought to create a national payment switch that connects with any ATMs, POS systems, mobile payment systems, and internet-oriented commercial portals (Uddin and Akhi, 2014:216). The national payment switch, therefore, connects all electronic transactions and channels them to one or more payment processors for authorisation and payments. Just as it is with the interoperable mobile system, and according to Uddin and Akhi, (2014:216), the national payments switch lowers the costs of payments and transactions.

I provide the following example to help understand the benefits of the financial switch. When small banks started in Tanzania, they needed channels to help them deliver financial services. Most of those delivery channels are electronic channels such as ATMs, POS, etc. In the past, the new small banks did not have those channels. Their customers had to go to the banks to get financial services:

> "It reached a time when they decided to start a platform that they would share instead of each bank running its platform or instead of each bank running its switch to drive its one or two ATMs. At that time, even mobile money had not become so popular. What was in their minds was the ATMs. They wanted a collective switch, and that was how the 'Umoja Switch' started. It was just a club of banks where several banks were members. Six banks launched the consortium" (Senior Switch Officer).

During my field research, there was an attempt by the banks and the TBA to connect banking and other financial providers to a national payment switch to reduce the costs of making transactions between different financial institutions. The banks seemed to have learned from the MNOs and their interoperable system:

> "A customer with an NBC account, if he wants to send money to a customer of a different bank, such as the Azania Bank, he cannot do it in a cost-effectively manner. He needs to use the EFT or TIS. The interoperability with mobile money providers hasn't been possible yet. Even though the NBC has a mobile banking product and the Azania Bank has the same product, these two products cannot talk account to account. But we believe now with the existence of an interoperable mobile money system, if we will have it as soon as we want it to be, the national payment switch will

interlink all the banks, all the payment providers, and so forth. It will lower down the costs of connectivity that the banks have to incur in the absence of the central switch, which helps the exchange of the accounts' details … Yes, we are now pushing for the establishment of the national payment switch" (Executive Banking Sector Official).

There were two famous switches in Tanzania at the time of my research, namely: the Umoja Switch and the BCX. The BCX started in 2006 with six banks namely: Dar es Salaam Community Bank (DCB), Azania Bank, Akiba Bank, Bank of Africa (BOA), Twiga Bancorp Limited and Tanzania Investment Bank (TIB). Given the changing realities of the banking sector, including MM and other digital financial services, in 2011 the members of the Umoja switch reached 18:

"In 2012, the banks realised that there was a need for a separate company to manage the switch on behalf of the banks. Before that arrangement, the banks had to take the members of staff to establish a committee to help manage the switch. This is the management of the network. A new company was created. From the beginning of the consortium, the banks met and worked together, but they did not invest big in owning the structure. They, therefore, agreed to outsource management services from a different company. That was why the BCX emerged from the Umoja Switch. BCX came with a switch. The banks outsourced its services" (Senior Switch Officer).

By 2016, 27 banks had joined the club and used the BCX switch. With the TBA and other banks pushing for a national payment switch, the TAMNOA and the MNOs have been reluctant to participate in this project. This has, at times, created tensions:

"We thought when we would be together, it would be easier and cheaper for the customers to transact anything. But they (the MNOs) were reluctant because they had their infrastructure ready. They wanted the banks to connect to them. That they have the infrastructure, so, the banks should connect to them, switching to them. And then we said no, we also have our switches, so let us come together and establish one new infrastructure, and we will all connect whether you have a switch or not, but you connect to the main switch" (Executive Banking Sector Official).

As far as the national payment switch is concerned, my view is that the use of the switch can be analysed from different perspectives. It indeed lowers the costs, but it is also true that it needs members to be part of it. Otherwise, you do not have a switch. There is also an issue that foreign banks are part of other international switches. And this explains why the national payment switch project has taken so long to realise, despite all the benefits it will bring to the banking sector. Similarly, the KYC requirements were also an issue.

7.8.3 The Know-Your-Customer (KYC) Requirements

Neoliberalism has been behind the financial regulatory reforms (Campbell, 2010:8). International standard-setting bodies orchestrated risk-assessment and management policies implemented globally (BCBS, 2001; BCBS et al., 2003; FATF, 2003; FATF, 2007). BCBS, FATF, and IAIS have contributed to the diffusion of risk-management policies. This includes the diffusion of the KYC requirements. The diffusion of the KYCs is one of the examples of 'neoliberal bureaucratisation' of some aspects of financial governance policies and regulations (Amicelle, 2011). The FATF '40 recommendations' were published in 2003 to provide due diligence measures on risk-sensitive issues, including customer-identification issues (FATF, 2003). According to Rajput (2013), KYC is what enables the banks or financial institutions to know their customers and their financial activities to be able to serve them better. There are three key elements to the KYCs, which include: how customers are accepted to be members of a financial institution, how to identify customers, and how to monitor higher risk accounts. Usually, a financial institution will require a photograph, proof of identity, and proof of address to allow anyone to use its services. All this is what I mean by the KYC requirements (also see: Rajput, 2013). Rajput (2013) argues that banks that ignore the KYC requirements put themselves at legal and reputational risks. They may also put other banks at risk as well. They may also become vehicles of money laundering, terrorist financing, and other unlawful activities. The banks with good KYC policies may not only put themselves in the right position to avoid risks, but may also contribute to the safety and soundness of the entire banking system.

In Tanzania, the banks were not happy with the KYC requirements for MM services. They thought that MM KYCs were less strict than their KYCs were. They raised the issue with the central bank, stating that it created an unfair competition or rules for the different players in the payment system:

> "We told the BOT about our position with our concern on the advent of mobile money … we thought that more of our customers would use mobile money rather than using banking products. As it was, we did not get a quick response as we expected from the government or the Ministry of Finance. Our major concern was that mobile money providers had been allowed to do business in the same space while having very relaxed KYCs" (Executive Banking Sector Official).

The BOT and the NFIC supported the National Risk Assessment as a way to know how the KYC issues would be addressed. The results would go to the global standards-setting bodies I introduced in Section 7.5. To have the different tiers of KYCs in place, the global standard-setting bodies require the results of the national risk assessment:

> “For different levels of transactions, in essence, that was what we had used as far as mobile money was concerned. Eh, we limited the transactions to reduce the exposure to risk. So, as a condition, of moving to tiers, they (the Global Standards-Setting Bodies) want you to do a national risk assessment, which will give comfort for the first time. The tiered KYCs we used so far for mobile money as opposed to banks were different … that consent is there, is known, solutions are being sought with tiered KYC, but there is a requirement that you need to fulfil to get a green light from the global standard-setting bodies” (Former BOT Governor).

The global standards-setting bodies established the KYC risk management requirements as a supplement to the Basel Committee’s customer due diligence for banks. The requirements were issued in October 2001 (Rajuput, 2013). According to Rajput (2013), the requirements examine the critical elements of the KYC requirements with bank branches and subsidiaries. The global standard-setting bodies see the adoption of the KYC requirements as an essential part of the bank’s risk management practices. During my field research, the government issued national ID cards, which would facilitate the KYC procedures. The biometric cards were also issued to curb crime. The BOT had also set strict procedures for MM KYCs in response to the banks’ complaints.

7.8.4 Banks and Other Digital Platforms Such as Selcom and Maxicom (Malipo)

Papadimitropoulus (2019:584) argues that neoliberalism supports digitisation to create more choices and opportunities. He also asserts that digitisation also helps businesses to cut down “costs by downsizing, outsourcing, and crowdsourcing”, “thus, individuals break with the bureaucratic structures of corporations” as they make payments and receive services easily. There are digital platforms that have been allowed to operate using the payment system. They include Selcom and Maxicom (MaxiMalipo). They play an aggregation role. According to Winiecki (2017, aggregation is a:

> “development strategy focused on maximising transaction volumes by providing services on a non-exclusive basis”.

According to Papadimitropoulus (2019:567):

> “In neoclassical economics which form economic bedrock of neoliberalism, technology is considered a means of production the development of which spurs innovation and productivity, thus offering more negative freedom, that is more opportunities and choices for the individual to maximise her subjective utility”.

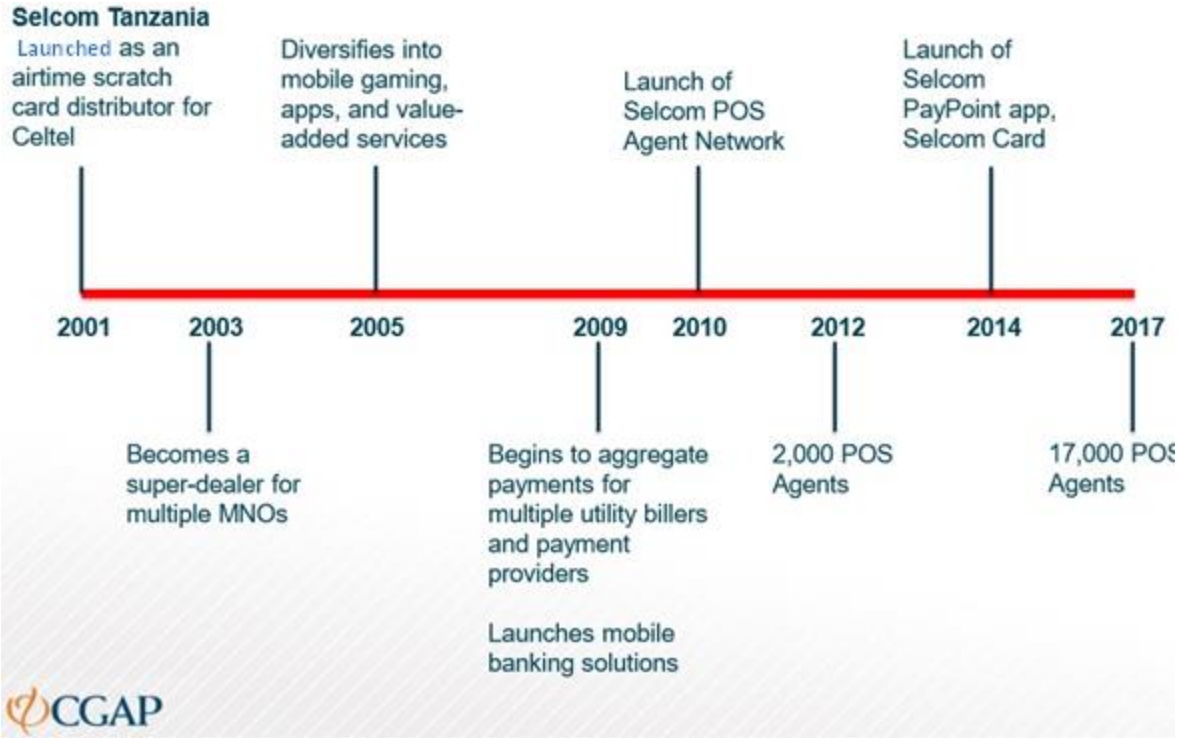
It is, therefore, a neoclassical approach. Hence, aggregators work with banks, MNOs, and other financial service providers in the back end, and they also seek to have as many access points and customers as possible on the front end. These are aggregators, and at times they are regarded as switches because they also work with banks. They provide an integrating infrastructure to expand both financial and non-financial services. They have developed quality platforms for electronic billing, MM distribution, payments to bank accounts, etc., and by doing so, they are advancing financial services to the different segments of society.

Banks, having seen the benefits of using these aggregators, have joined their platforms in an attempt to reach those people they failed to reach before. For instance, at the time of my field research, Selcom had connected more than 20 banks to mobile banking for core services. Selcom had also connected 30 banks for value-added services such as bill payments, merchant payments, and interoperability with other financial institutions:

> "We have integrated about 35 banks in our services. We provide them with banking services on their phones. We have 18,000 agents all over Tanzania. We are TCRA licensed, and we are also BOT licensed. In that regard, we are regulated by the TCRA and the BOT … We are also a switch in the sense that we also serve the banks … We also serve the MNOs. If you want to transfer money through us, let's say using M-Pesa, from a M-Pesa wallet to a bank account, we will facilitate that transfer. If you want to withdraw money from the banks and send it to M-Pesa, you pass through us. If you want to purchase Luku (electricity services), you do that through us. It does not matter where your payment comes from, our job is to deliver it to its final destination" (CEO Aggregator).

Diagram 7.5 illustrates the development of Selcom as an aggregator. It also incorporates the above-provided evidence more systematically. The banks have used the aggregators to reach the services they would hardly reach without an aggregator. The MNOs had used these aggregators before the banks started to use them, as illustrated in Diagram 7.5.

Diagram 7.5: The Selcom Journey: From Airtime Distribution to Aggregation, Agent Network Management, VAS

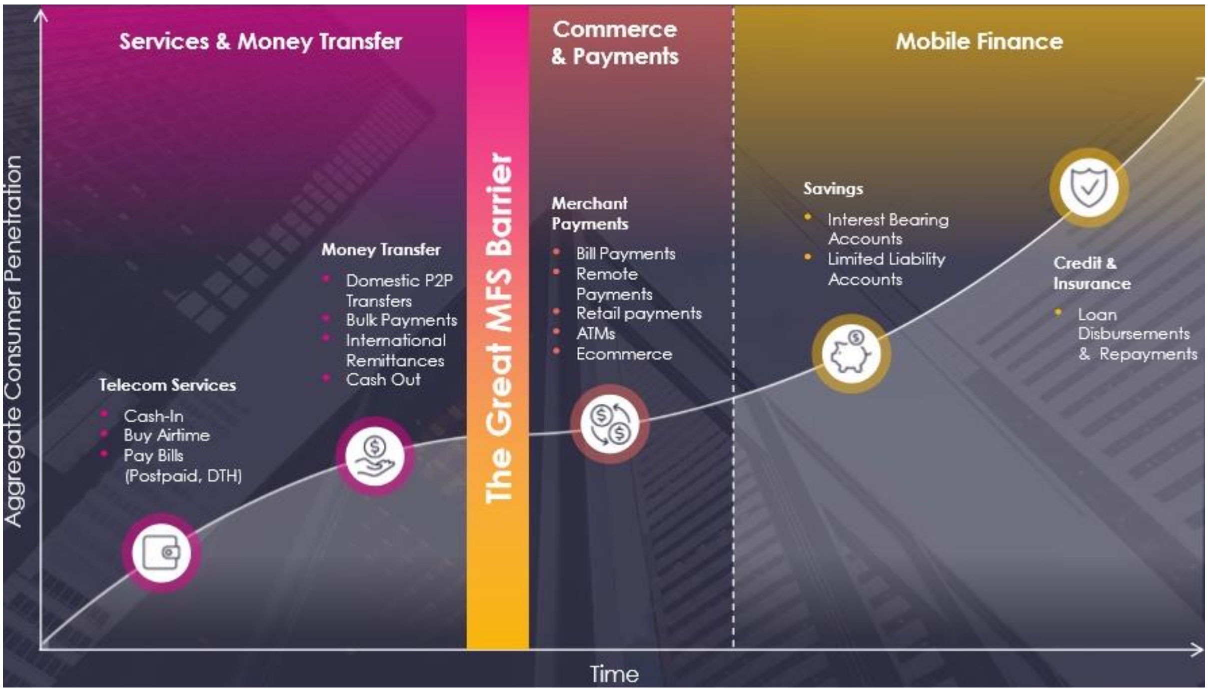


Source: Winiecki (2017).

7.9 The Future of the Banks' Responses

Digitisation supports neoliberalism as it allows financial institutions and businesses to reduce costs, outsource, and crowdsource (Papamitropoulus, 2019; Howe, 2008). Neoliberalism produces ideas that facilitate the creation of platforms to support service delivery through marketplaces (McKee, 2017). Banks, MM, and digital financial transactions are essential building blocks of payment systems (Panagariya, 2019). For instance, Ho (2018) captures well the development of MM in Graph 7.6. The details for the graph are in Chapter 5. He calls this development the journey to fully digital financial services.

Graph 7.6: The Journey to Fully Digital Financial Services



Source: Ho (2018).

There are three phases in the journey described by Ho (2018), namely: Phase 1: the services and money transfer, Phase 2: the commerce and payments, and Phase 3: the mobile finance. Each phase represents a few services that the customers enjoy. It is tough to move from Phase 1 to Phase 2. But once in Phase 2, the MNOs connect the unbanked customer to more advanced financial services. Once in Phase 3, most customers are more than ready to use banking services. Graph 7.6 demonstrates the characteristics of the innovation diffusion theory. The classical theories investigate:

> "the acceptance of innovative elements in the conduct of traditional services based on the innovation diffusion theory" (Moga, 2010:256).

The theory determines the adoption of innovations at different stages as follows: 'relative advantage', 'compatibility', 'complexity', 'trialability', and 'observability' (Moga, 2010: 256; Rogers, 1983; Rogers, 1995). According to Moga (2010):

> "researchers such as Tan and Teo (2000), Gerrard and Cunningham (2003), and Nor and Pearson (2007) had tested the theory on the e-banking adoption. The nominalised factors are complexity, trialability, and observability".

For all these reasons, the future of the banking sector will depend heavily on the success of MM and how the banking sector responds to digital financial services. MM has been a game changer. Technology, therefore, will always be a game-changer.

Several banking institutions have also failed to use the mobile platform to expand their financial services. This has been the case with the community banks and some microfinance institutions. More has to be done in that area to tap the benefits of mobile financial payments into building inclusive financial systems in Tanzania. Inclusive financial systems will help boost the country's economic growth as well as the development of individual Tanzanians.

7.10 Conclusion

From this chapter, the rolling back of the government not only allowed MM to grow but also provided other financial service alternatives to emerge. The emergence of these new solutions triggered a response from the banking sector, which was not only to innovate but also to work or partner with financial and non-financial institutions. The chapter also details the rolling out of the state through the central bank and that the global standard-setting bodies also informed BOT policies and regulations.

The chapter has answered the research question number 3: "What was the response of the banking sector to increasing levels of FI through MM in Tanzania?" It provides the response of the banking sector to the increasing levels of FI caused by MM services. This has fulfilled research objective number 4: to investigate the possibility of any changes in the banking sector due to the successful penetration of MM services in the sector. I have shown how the banks opposed the advent of MM. Given the efforts of the BOT to ensure that the roles of the banks and the MNOs are established, only then did the banks started to collaborate with the MNOs. To increase levels of FI, the banks also started mobile banking and recruited bank agents all over the country. They also collaborated with aggregators and SACCOs to reach the customers they would otherwise not be able to reach. Moreover, some banks started providing microfinance services. Alongside these banks, microfinance banks and community banks, were also established. All these innovations sought to promote FI. Hence, the banking sector has transformed over time. The transformation is illustrated by how the banking sector innovates itself by undergoing several changes (MM, also being the cause of some of these changes).

In terms of political economy, tensions between the banks and the MNOs were thwarted by the BOT taking a leadership role convincing them to work together. This is another example of rolling out the state power. See Section 7.7. In this way, the banks and MNOs had to perceive each other as partners and not as competitors. As a result, various working collaborations and partnerships were formed to increase efficiency in the financial sector due to cost-sharing between the MNOs and banks in terms of service delivery. This was an example of the 'regulatory capitalist governance approach', where the government allowed partnerships to increase efficiency in the sector. Neoliberal policies encourage such types of PPPIs. MM interoperability also encourages the idea of starting a switch that would be used by both the MNOs and banks as well as the other FSPs. The banks increased their reach to potential customers using agent banking to imitate agents used by the MNOs. The reduction of costs was one of the main issues that eased the collaborations between the FSPs. Both classicists and neoclassicists also support cost reduction in financial markets to favour efficiency. There were also different platforms the banks and MNOs could use to settle their differences, including the NFIF (another example of RCA as explained in Chapter 5), as well as their regular meetings with the regulators, including the BOT.

Chapter 8: Summary, Conclusions and Recommendations

8.1 Overall Recapitulation of Purpose and Findings

This research seeks to: (i) explore MM growth; (ii) study how neoliberal roll-back and roll-out policies enhanced MM growth; (iii) investigate how MM moderated the factors of FE; (iv) examine how MM increased FI in Tanzania and the response of the banking sector to MM growth.

The findings suggest that inclusive neoliberalism facilitates technological advancement. Whether neoliberalism is inclusive or not has been argued depending on the country of analysis. Some theorists claim that neoliberalism has extractive and exclusive outcomes (Christiaens, 2019a; Duménil and Lévy, 2011). In Tanzania, neoliberalism created a conducive environment that helped the provision of access to formal financial services for financially-excluded people through MM, as illustrated throughout this dissertation. This was one way of reducing FE. Moreover, the inclusive neoliberal agenda, which meant giving neoliberal policies a "human face" (Pastor and Wise, 1999), also facilitated the invention and implementation of inclusive financial ideas, and ways of using technologies to moderate some factors of FE. There are times when neoliberalism has turned inclusive (Craig and Porter, 2007). The use of technology such as MM proves this fact, as it has been detailed in this dissertation. This chapter seeks to provide some explanations and concluding remarks on these arguments.

This chapter seeks to discuss why and in what ways my theoretical framework, main theories, and the methods of research, I have used in this dissertation should now be used to facilitate research in the political-economic sense to further understand the issues of MM and the response of the banking sector, be it for efficient resource allocation or further regulatory development issues. Before this research, the following theories were used to study MM: diffusion of innovations, financial intermediary theories, supply-side and demand-side theories, market for the poor theory etc. (also see examples from: Kim et al, 2018; Munyoki et al., 2015 Aduda and Kalunda, 2012; Kumar, 2014; Fischer, n.d.; Joy et al., 2011; Nielsen, 2014; Burjorjee and Scola, 2015; DFID, 2005; DFID/SDC, 2009b; DFID/SDC, 2009c; Diamond, 1984; Demirguc-Kunt et al., 2008). But with my study, classical and neoclassical theories connect MM studies to the political-economic world. The two theories are complementary and capable of explaining market failures, technological efficiencies, technological advancement, and use of technology and innovations such as MM as well as how to regulate them for their growth and survival. Moreover, the two theories also explain how policymakers design and implement neoliberal policies that affect the included as well as the excluded people. In this context, I refer to all forms of exclusion, including any forms of FE.

With my findings derived by using the classical and neoclassical perspectives as the analytical tools of analysis, the advent and growth of MM can now be understood through neoliberal roll-back and roll-out policies. The findings presented evidence that the two policies contributed to the advent and growth of MM. Moreover, both classical and neoclassical views facilitated the role of MM in moderating some of the factors of FE. By doing so, MM helped to increase FI in Tanzania. Hence, political economists and development theorists will now have to take account of my work to explain further the rolling back and rolling out policies, inclusive neoliberal policies, and MM growth for FI.

8.2 Relationship with Previous Research and Summary on How I Answered the Research Questions

In terms of the first research question which looked at how neoliberalism facilitated the growth and development of MM, the findings of this study seem to build on the key neoliberal policies as well as on some other researchers as delineated in Chapter 5. The key neoliberal policies included the liberalisation of both the telecommunications and banking sectors, the creation and implementation of the CLF, the deregulation and re-regulation of the telecommunications and banking sectors as well as the practicality of the MNOs in delivering formal financial services to everybody, even financially-excluded people. For instance, Maurer (2011) claims that MM stands in opposition to banking exclusion, which facilitates innovations in the changing banking sector. Many of the researchers I cited in Chapter 5 claimed that MM linked people to financial services; the official documents I cited also demonstrated the different stages of MM development in Tanzania.

To respond to the second question: “How did MM moderate some factors of FE in Tanzania?” The findings in Chapter 6 explored ways through which MM moderates the factors of FE. By doing so, it provided the rationale for MM survival. Its usefulness and practicability, in terms of transforming financial services, were key to its survival. These facts not only echo the views of the respondents, but also of the researchers such as Jack and Suri (2011); Morawczynski and Pickens (2009); Mbiti and Weil (2016) who provide evidence to show how MM offers a solution to resolve the issue of lack of proximity to banking infrastructure. Regarding the role of MM in reducing the high prices of financial services, some researchers have argued in favour of the argument (Donavan, 2012; Morawczynski and Pickens, 2009; Arestoff and Venet, 2013;

Mbiti and Weil, 2016). As it regards the moderation of risk, Gilman and Joyce (2012) claim that risk management is key to the success of MM development, while Solin and Zarzan (2010) argue that MM payments reduce risks as they are traceable and safer when compared to the cash payments.

The findings of Chapter 7 reveal that the advent of MM did not occur unopposed. The findings answered research question number 3: "What was the response of the banking sector to increasing levels of FI through MM in Tanzania?" The banks at first perceived the MNOs as their competitors and opposed their entry into the sector. With the efforts of the BOT, who regulated the NPS, the opposition was thwarted. Banks and MNOs decided to cooperate. Masamila (2014) demonstrates how Vodacom Tanzania and the Commercial Bank of Africa (CBA) work together. Chapter 7 also described other innovations that occurred in the banking sector, partly as a response to the advent of MM. Those innovations included: agency banking, mobile banking, community banking, microfinance services, bank-MNO collaboration, new bank switches and consortium, review of the KYCs, and a collaboration between banks and other digital platforms such as Selcom. The response of the banking sector to MM has also been studied by the World Bank (2014b).

The systematic reviews on MM, development, and FI on the one hand (Kim et al., 2018; Dahlberg et al., 2008; Duncombe and Boateng, 2009; Diniz et al., 2011), and the systematic reviews on the ICTD on the other hand (Lwoga and Sangeda, 2019; Zaremohzzabieh et al., 2014; Thapa and Saebo, 2014; Mbuyisa and Leonard, 2015; Duncombe, 2016), facilitated the process of finding the theoretical and methodological gaps for my research topic. Their findings reveal that no study has used classical and neoclassical theories to study neoliberalism and how it facilitated the growth of MM and its role in moderating FE and increasing FI. This makes the current research unique. Also, their findings called for in-depth qualitative research to facilitate the attainment of critical understanding of MM. Hence, their claims justify the use of in-depth unstructured interviews, which make this research unique.

The contributions of the researchers mentioned above, and their publications demonstrate how my research is related to previous research. They also proved to be useful in informing or supporting my key research arguments and findings. In terms of the policy, Chapter 2 revealed that Tanzania does not have an NFIP. Instead, it has had two NFIFs with NFISs. Researchers who analyse the NFISs and the key roles of the different stakeholders include: Aro-Gordon (2017); Mihak and Singh (2013); and Newnham (2014)). Their contributions did not relate to

MM directly. Through interviews, it was clear that the NFIFs facilitated MM growth to catalyse an increase in inclusive financial services (also see TNCFI, 2017b). This again demonstrates how my research relates to previous research.

8.2.1 A Synthesis of Findings from the Three Empirical Chapters

The objectives of this Ph.D. research were: (i) to explore the advent and successful growth of MM in Tanzania with a view to determine how it happened; (ii) to study the levels of FE and FI in Tanzania to understand the seriousness of these issues, and how they relate to MM, and neoliberalism; (iii) to assess the role of MM in moderating FE; and (iv) to investigate how the banking sector responds to increasing levels of FI caused by MM. A key finding suggests that neoliberalism facilitated the advent of MM in Tanzania, which in turn aided in reducing FE levels and increasing the FI rate in Tanzania. This finding answered the first research question: how did neoliberalism facilitate the growth of MM in Tanzania? (see Section 1.3). Furthermore, another finding suggests that MM moderated some of the factors of FE, which answered the second research question: how did MM moderate the factors of FE in Tanzania? Moreover, the third finding suggests that there was a response from the banking sector to increasing levels of FI in Tanzania caused by MM, which responded to the third research question: what was the response of the banking sector to rising levels of FI through MM in Tanzania? Also, see chapters 5, 6, and 7.

Neoliberalism and MM in Tanzania, and how this has facilitated the transformation from FE to FI, has not been systematically documented anywhere to my knowledge. Moreover, theorising about roll-back and roll-out and their link to FE and FI using classical and neoclassical perspectives helped to demonstrate the advent and growth of MM, as well as how MM moderates some factors of FE to increase FI, as well as how the banking sector responded to the increasing levels of FI through MM in Tanzania. To achieve all this, there was a need to collect data through in-depth unstructured interviews. In-depth unstructured studies help us understand neoliberal political-economic issues and issues of FE, FI and MM. In Section 3.1, I briefly introduced the issue of the lack of in-depth qualitative case studies that provide a basis for theorising MM research. Duncombe and Boateng (2009:1250) claim:

> "Overall, there is noticeable lack of in-depth qualitative case studies that could provide a basis for theorising".

In Section 4.3, the in-depth unstructured interviews were part of my efforts to try to address this gap by collecting hidden data to help inform my investigated research issues. The in-depth unstructured interviews I used, provided in-depth data that enabled me to arrive at the findings and the theorising I discussed and analysed in this dissertation (see Sections 1.4 and 3.4 for the theoretical framework, also, see Sections 5.2.1, 5.7, 6.2.1, 7.2, 7.3, 7.4 and 7.8 for the findings). I had to use secondary official sources also to check consistency or divergence of the collected views from the respondents, as well as to track down new emerging data (see Section 4.8.3). The in-depth unstructured interviews were also used as argued in Section 4.8.1 because of their flexibility in allowing interviews to talk about a wide range of important issues.

Apart from the in-depth unstructured interviews that brought in the CLF and NPS issues and how they related to MM, FI and FE, the literature review helped me to identify critical research gaps (see Section 1.2) that needed to be addressed in terms of MM and the transition from high levels of FE to increasing levels of FI, as well as the theorising between neoliberal roll-back and roll-out issues (also see Sections: 1.5.1, 1.5.2, and 1.5.3, 2.6, 2.9, 3.2, 3.6.1, 6.3). From the literature we found that the research gaps included: (i) the inclusion through neoliberal policies using MM has not been well researched, and that (ii) when it comes to MM, its growth, and its role in moderating FE, as well as, its role in increasing FI, these issues have not been given much attention, and that there is no evidence of researchers theorising MM issues using a theoretical framework that combines classical and neoclassical perspectives to help explain the role of neoliberal roll-back and roll-out policies in facilitating FI through MM (for extensive systematic literature reviews on these issues see: Duncombe and Boateng, 2009; Lwoga and Sangeda, 2019; Dahlberg et al., 2008; Kim et al., 2018; Sharma and Kansal, 2012; Diniz et al., 2011; Zaremohzzabien et al., 2014; Duncombe, 2016; Thapa and Saebo, 2014; Mbuyisa and Leonard, 2015; Fernández-Olit et al., 2020). It also helped to link these issues to the GPE (see Sections 1.4.1, 1.4.2), where I explained the three essential perspectives to inform research in GPE, namely, the ‘economic-nationalist’, ‘liberal’, and ‘critical’ (O’Brien and Williams, 2016). I linked this research with liberal perspectives, specifically the neoliberal perspectives and by using classical and neoclassical views which are the main variants in the liberal thoughts. The literature further informed the selection of appropriate: issues/factors to be investigated (see the research gaps above and literature that supported empirical Chapters 5, 6, and 7), and methodologies to be used and in this case in-depth unstructured interviews (also see: Duncombe and Boateng, 2009; Lwoga and Sangeda, 2019; Kim et al., 2018). Literature also served as the basis for supporting, comparing and contrasting the findings or arguments of the study as demonstrated in Chapters 5, 6, and 7.

8.2.1.1 Finding 1: Neoliberalism Facilitated the Advent and Growth of MM in Tanzania, Reducing FE Levels and Increasing FI in Tanzania

During the initial stages of designing this Ph.D. research, the first question I posed to myself was ‘what political economy facilitated the advent of MM?’ During the interviews, I realised that it was the neoliberal political economy as the liberalisation of the telecommunications and financial sectors played a key role in allowing the entry of private institutions into these sectors, and also allowed innovations to evolve and survive. These findings helped formulate the first research question for this research: ‘how did neoliberalism facilitate the growth of MM in Tanzania?’ In responding to this question using the responses from the interviews and literature, it became clear that both the CLF and the NPSA facilitated the growth of MM and that deregulation (neoliberal roll-back policies) and re-regulation (neoliberal roll-out policies) supported the creation of the CLF and the NPSA (as demonstrated in Sections 3.7.2; 5.4.2; 2.4.1.1; 2.6.1; 4.8.3; 5.4.4; 7.6). For the NPSA also see: URT, 2015a; URT, 2015b; URT, 2015c; URT, 2015d, URT, 2015e.

8.2.1.2 The CLF and the NPSA

The first key finding that helped structure this dissertation was that neoliberal roll-back and roll-out policies could be used to explain deregulation, liberalisation, and re-regulatory policies (Peck and Tickell, 2002; Benner et al., 2010:13), which could also explain the creation of the CLF and how it paved the way to MM services, and how these services were allowed to enter the NPS. I started explaining this process right from Chapter 2. In Chapter 3, Section 3.7.2, I explained how the CLF began and how it was used as a key strategy to implement the full liberalisation policy of the telecommunication sector (also see Appendix 8.1). I also discussed how it enhanced the concept of technology and service neutrality (also see: (Nkoma, 2010; Mwalongo and Hussein, n.d.; Mfungahema, 2014; Materu-Behitsa and Diyamett, 2010; Gunze, 2014; Mfungahema, 2006). I also outlined the essence of the CLF and how it influences the regulatory environment (also see: Materu-Behitsa and Diyamett, 2010; Mfungahema, 2006; van Gorp and Maitland, 2009; Boshe, 2013; and Moshiro, n.d.). In Chapter 5, Section 5.3.2, I explained that not much on the CLF and MM had been investigated by researchers in Tanzania, even though the CLF facilitated the advent of MM. I also mentioned how the CLF helped additional financial services to be added to the providers in the telecommunications sector. These assertions were also supported by one of the respondents as it appears in Chapter 5, Section 5.4.2:

> "The best thing that the TCRA did a while ago was creating what was referred to as the 'Converged Licensing Framework' … That Framework I am talking about 2006 or 2007. The issuance of the license to every service, as technology has changed over time. We issued converged licenses since 2006. They said they provided a license that was technologically and service neutral. What did all this mean? … They are free to do any innovation based on the licensing framework. As I said earlier, it is converged and that we do not regulate the technology. We do not regulate the service …. Hence, mobile money was like an addition to the services offered by the operators" (Senior Telecom Sector Official).

Moreover, as value-added services were added to telecommunications services, the CLF brought flexibility into the legal and regulatory framework in the telecommunications sector. This framework was also in line with the technological and service neutrality discussed in Chapters 3 and 5 as well as by the Senior Telecom Sector Official. The TanzaniaInvest (2020) also echoed these views:

> "the CLF ensures regulatory flexibility, addressing market and technology developments, as well as efficient utilisation of network resources and encouraged the market entry of small-scale operators. The CLF of Tanzania establishes four categories of licenses as follows: Network Facilities Providers (NF), Network Service Providers (NS), Application Service Providers (AS), and Content Service Providers (CS) … The licensing regime provides separate licenses for infrastructure and services. Previous regime services, including internet provision, were licensed individually."

Hence, the relaxation of licensing regulations to ensure flexibility as guided by the CLF was a game-changer. What was regulated was not the technology itself but the services. This style of regulating helped create innovative opportunities (Mfungahema, 2006; Mfungahema, 2014). Through the CLF, it is clear that the regulations of the markets took into consideration the neoliberal realities, as the CLF could be considered as a neoliberal roll-back initiative, as it allowed private telecommunications providers to enter Tanzania's market to create innovative opportunities that cut across the different sectors of the economy. With the CLF, the MNOs required the use of the NPS to provide formal financial services. The MNOs enter the NPS not as deposit-taking institutions but as non-deposit-taking institutions that offer formal financial services.

> "Any payment mechanism that is in the country is grounded. It falls under the BOT mandate. Whether you pay through the bank, whether through the Western Union, through TigoPesa, M-Pesa, whether through the EMS, whether it is through the bus, anything involving the payments is under the BOT supervision" (Former BOT Governor).

The agreements between the BOT and TCRA facilitated the operations of MM in Tanzania. As demonstrated in Chapters 5, 6, and 7, the introduction of the NPSA was key to the smooth functioning of MM in Tanzania. The NPSA was an example of the neoliberal rolling-out policy to accommodate new challenges created by DFSs such as MM (also see Appendix 8.2). With the 2015 NPSA, laws, and regulations for the issuance of e-money were enacted including: the 2015 PSLARs (dealing with payment systems licensing and approval regulations) and the 2015 PSEMRs (dealing with payment system electronic money regulations) (URT, 2015a; URT,2015b; URT, 2015c; URT, 2015d; URT, 2015e). The NPSA allowed the MNOs to use the NPS as well as to register as financial institutions and become directly regulated by the BOT for their financial tasks. In contrast, TCRA regulated the communications aspects of MM. Since then, MM has been key to increasing FI. From Chapters 5, 6 and 7 (Sections 5.2.1; 5.4.4; 5.5; 6.3.3; 6.4.2.1.2; 7.1; 7.2; 7.6; 7.8.1). The rolling out (re-regulation) neoliberal policies enhanced the growth of MM through the NPS regulations that defined and accepted e-money as part of the NPS. The NPSA and its regulations resolved the compliance issues and legally recognised e-signatures. The regulations dictated who got involved in the NPS. Likewise, deregulation and liberalisation allowed MM to operate, during its initial stages, without stricter regulations. As it appears in Section 7.8.1:

> "They had to get permission from us. We told the mobile money companies that they should be separated from the telecommunications side. So, we did have simple initial rules. But in terms of setting the regulations, we introduced the NPS Act after we had learned what was, eh, risky. What was not risky. How risks could be mitigated" (Former BOT Governor).

In Section 7.2, I briefly demonstrated how the global standard-setting bodies aided the neoliberal rolling out by setting NPS standards that were accepted worldwide to harmonise the functions of NPS networks across the world. In accepting the NPS standards, the NPSA was created as demonstrated in Section 7.8.1:

> "There was a related eh act on resolving disputes also originating from electronic transactions. Eh, and I think, eh, those two as precursors, plus … the dialogue that we had, eh, banks were allowed to react. Mobile phone companies, mobile money subsidiaries were given a chance to react … as part of the process of the preparation of the act. And then the usual steps which involved a possible hearing. Yeah. So, I don't think, it (the process of bringing together the banks and the MNOs to discuss the creation of the NPS Act) was contentious … You know it is only contentious if you do not have a process of engagement and dialogue continuously… Hence, all these mentioned channels were part and parcel of the process of, yeah, ultimately coming to consensus and understanding" (Former BOT Governor).

8.2.1.3 Issues of FE, FI, and MM through Classical and Neoclassical Perspectives

There is a transformation from high FE levels to increasing FI levels in Tanzania facilitated by MM services (see Sections: 2.6.1; Access Strand 2.2; Strand 5.2; Strand 5.4; Access Strand 6.2; Graph 6.16).

My findings reveal that there was no theoretical perspectives or frameworks that explained the earlier mentioned transformation. Linking MM, neoliberal policies and the transformation from FE to FE have not been easy. I demonstrated how to link them through literature I presented in Chapters 1, 2, 3, and 4. Creating theoretical frameworks to study MM has been an issue (see Chapters 1 and 3). Moreover, MM studies often involve interdisciplinary theories and methods (see Chapters 3 and 4). The interdisciplinarity nature of MM studies and the absence of enough frameworks of analysis are issues that researchers cannot ignore (also see: Duncombe and Boateng, 2009; Kim et al., 2018; and Chapter 3). From these issues and the existing literature and theoretical perspectives on MM and FI, I was able to fill in the gap that existed in terms of linking MM, neoliberal policies and the transformation from FE to FI as demonstrated throughout this dissertation. I presented this through the theoretical framework, as explained in Chapters 1 and 3, and by applying the concepts it generated in the subsequent chapters. I used the theoretical framework, and the concepts it has produced as the basis for my arguments in the subsequent chapters of this dissertation.
Thus, it turned out that classical and neoclassical perspectives informed the neoliberal policies and were able not only to explain roll-back and roll-out policies but also issues of FE and FI (also see Sections: 1.1; 1.4; 2.5; 2.5.1; 2.5.2; 3.4; 3.5; 3.6.3). I argued that neoliberal roll-back and roll-out processes facilitated the arrival and development of MM, and that neoliberalism also facilitated the inclusive digital agenda that catalysed FI by providing access to financial services to financially-excluded people through MM technology.

For discussion and analysis, I introduced the issues of FE and FI in Tanzania in Chapter 2. I also used statistics from FinScope surveys to demonstrate the transformation from high FE levels to increasing FI levels. Concrete evidence to demonstrate FE in Tanzania came from the 2006 FinScope survey, where the FE rate was 54% (FinScope, 2006). That rate increased by 2% in 2009 to 56% (FinScope, 2009). In 2013, the FE rate went down to 27% (FinScope, 2013a). In 2017, the rate remained at 28% (FinScope, 2018). This trend demonstrates a significant shift from 54% in 2006 to 27% in 2017 of financially-excluded individuals. Access Stand 2.2 in Section 2.6.1 demonstrates this transformation. MM aided the transformation as the uptake of MM services jumped from 0% in 2006 to 60% in 2017 (see Strand 5.1 in Section 5.3.4; FinScope, 2006; and FinScope, 2018). Moreover, Strand 5.4 in Section 5.5 also demonstrates the uptake of MM services. Strands 5.1 and 5.2 demonstrates the importance of MM in Tanzania. From Strand 5.1, the bank has only 17% of the uptake of formal financial services while MM has 60%. Importantly, Strand 5.2 demonstrates the share of financial products in the market. While MM accounted for 1% of the market share of products, with 60% of financial service uptake, the banks accounted for 64% with 17% of financial service uptake. Access Strand 6.2 in Section 6.4.1 shows that the uptake of financial services stood at 45% in 2009, reached 73% in 2013, and remained at 72% in 2017 (also see: FinScope, 2018). This trend demonstrates the increase in FI over time. Moreover, Graph 6.16 in Section 6.4.3 shows an increase in account penetration between 2008 and 2015. MM accounts have increased significantly when compared to bank accounts. This increase is another evidence to demonstrate how MM plays an essential part in increasing FI.

As it regards classical and neoclassical perspectives, I started by introducing essential classical and neoclassical concepts and literature in Section 1.1 to link the two views with the issues related to the research objectives. In Section 1.4, I briefly introduced the theoretical framework and how it facilitated the analysis of this research. Moreover, Sections 3.4, 3.5, and 3.6.3 further elaborate the theoretical perspectives. In these sections, I explained how classical and neoclassical perspectives explained the rolling-back and rolling-out of neoliberal policies concerning deregulation/liberalisation and re-regulation. Ontologically, neoliberalism supports the view that markets are socially constructed. Epistemologically, neoliberalism promotes the construction of markets (Cahill et al., 2012; Birch, 2016; Swarts, 2013). The construction of markets also alternates between classical and neoclassical principles, where the classicists would want to correct the market failures by allowing limited government intervention. At the same time, the neoclassicists would emphasise deregulation and liberalisation of markets to correct emerging market failures. Through these views, I argued that the CLF was a result of deregulation and liberalisation of the telecommunications sector, and the NPSA was a result of re-regulation aimed at supporting MM and other DFSs without inconveniencing other FSPs to enhance FI. These above-explained views underline the importance of classical and neoclassical views in this research. Section 2.5 briefly explained how one could link classical and neoclassical perspectives to exclusion debates, FE and neoliberalism. Neoclassical perspectives provide explanations for poverty and exclusion that are beyond a person’s control, such as market failures (Davis and Sanchez-Martinez, 2015). The classical perspective is likely to claim that individuals and laissez-faire policies may cause poverty and exclusion (also see Section 2.5.1). As explained in Chapter 1 and with the theoretical framework, inclusive neoliberalism can easily be explained by also using classical and neoclassical perspectives which are crucial to describe rolling-back and rolling-out neoliberal policies.

8.2.2 Findings in Chapter 5 (Inclusive Neoliberal Agenda).

In Chapter 5, Section 5.3.3, I discussed the theoretical assumption that backed the 'test, monitor, and regulate' approach, which facilitated the advent of MM (also see: Haider, 2013; Castri and Gidvani, 2014). Also, see Diagram 5.2. I asserted that the 'test, monitor, and regulate' approach was a classical perspective as it views markets with success and failures. It encourages the regulator to observe how new services develop before placing rigid regulations on them to achieve the best market efficiency. Lack of strict regulations for MM services during the arrival of MM facilitated the survival and growth of MM services, and this can be viewed from the neoclassical sense where deregulation and lack of government intervention are said to have facilitated the development of new services and markets to help achieved profit-maximisation. From Diagram 5.2 in Chapter 5, there was the creation of proper legal and regulatory frameworks to facilitate MM development (also see: UNCTAD, 2012; Di Castri and Gidvani, 2014; Ondiege, 2015). This move could mark the roll-out or the re-regulation phase where rules and laws are established to support the growth of MM to provide a legal and regulatory framework that facilitates the functioning of MM services. The third assumption depicted in Diagram 5.2 in Chapter 5 was the conducive environment and the politics of FI involved that helped MM to thrive. The creation of the conducive environment and the rolling out of FI politics were achieved through the creation of partnerships among different MM stakeholders which demonstrated how the RCA supported the creation of conducive environments. The NFIF is an example of this partnership, as shown in Section 5.5 in Chapter 5.

From Chapter 5, Section 5.7, the findings suggest that MM helps reduce the digital divide issue in the delivery of formal financial services in Tanzania. Usually, literature covering technology discusses the digital divide issue in a neoliberal and globalised information economy. Literature also suggests that technology creates a 'national digital divide' and an 'international digital divide (also see: van Dijk and Hacker, 2003; Warschauer, 2004; Stevenson, 2009; Al-Jaghoub and Westrup, 2009; Ragnedda and Muschert, 2013). It also suggests that poor communities lack the technology and struggle to develop economically (Wilson, 2004). MM somehow helps us to rethink this literature. Thanks to inclusive neoliberal agenda, mobile phones can be used to provide financial services and therefore to provide a solution to moderate some factors of FE (Geach, 2007; Hinson, 2011). MM and other Fintech technologies have been used as tools to unite the poor and the rich through financial services (Riley and Kulathunga, 2017). This finding is one big surprise from this research, that somehow MM bridges the digital divide gap (also see: Kizza, 2013; Southwood, 2013). MM succeeded because a lot of low-income people own or can get access to mobile phones (also see: GSMA, 2020b; InterMedia, 2013). Chakrabarty (2005) argues that the use of mobile phones can help increase growth, alleviate poverty, and overcome a perceived digital divide. De Silva and Zainudeen (2007) also claim that mobile phones contribute to addressing specific social and economic development goals as well as playing a key role in broader national development strategies. Mobile phone divide has reduced significantly in Tanzania and the world (see: Mpogole et al., 2008; InterMedia, 2013; GSMA, 2020b; Curry and Koczberski, 2013; Pimenidis et al., 2009). When people have access to mobile phones, it makes it easy for them to receive digital financial services through their mobile phones. Mobile phone use has increased thanks to neoliberal roll-back policies of deregulation (liberalisation) which allowed easy entry of technology to the financial sector (also see: Howard and Mazaheri, 2009; Duso and Seldeslachts, 2010; Materu-Behitsu and Diyamett, 2010; Mwakatumbula, 2017). McKinnon (1973) and Shaw (1973) claimed that direct controls on financial markets hindered financial development. Neoliberal rolling back policies facilitated the creation of the CLF as discussed in Sections 3.7.3, and 5.4.2. The CLF was the primary tool that was used to facilitate the liberalisation of the telecommunications sector and allowed value-added services such as MM. Hence, liberalisation was essential to the emergence of MM. We also found in Chapter 5 that neoliberal roll-out (re-regulation) policies facilitated the creation of the NPSA which formalised the entry of MM and resolved the regulatory and legal issues related to MM and other digital service providers. We also found in Section 5.4.5 that the interoperability agreements were also part of neoliberal roll-out policies where the government facilitated the negotiations through the BOT and brought together the MNOs and therefore improved efficiency of MM services. As Section 5.7 briefly emphasises neoliberal literature that covers technology and discusses the digital divide issue (Van Dijk and Hacker, 2003; Warschauer, 2004; Stevenson, 2009; Al-Jaghoub and Westrup, 2009; Ragnedda and Muschert, 2013), this digital divide can create a 'national digital divide' and an 'international digital divide' (also see: Rao, 2005; Cullen, 2003; Skaletsky, 2013; Guillén and Suárez, 2005). Communities that lack technology could be excluded from socio-economic and financial activities and services (Geach, 2007; Cichowicz, 2018; Claessens, 2006). However, as has been demonstrated throughout this dissertation, mobile phones are essential links between financially-excluded individuals and formal financial services. MM has been a tool used to unite the poor and the rich through financial services. It has, therefore, bridged the digital divide gap between financially-excluded people and access to formal financial services. As explained in Section 5.7, this has been one surprise from this research, that somehow MM helps to bridge the digital financial gap in Tanzania and elsewhere (also see: Kizza, 2013; Southwood, 2013). Also, see Section 5.2 and 5.2.1 to view other explanations of the findings.

8.2.3 Findings in Chapter 6

In Section 6.4, I explained the theoretical assumptions and qualitative findings that helped the moderation of the factors of FE. From the neoclassical perspective, FE bars low-income entrepreneurs from accessing financial means which challenges neoclassical profit-maximising efforts (Christiaens, 2019b). Classicists are more likely to support the removal of any forms of exclusion as they can use the angle of value and distribution to explain FE (see Section 2.5.1). The neoclassicists would also support FI through MM if it moderated the factors of FE by maximising profit as human beings make rational decisions to maximise profit and utility (see Section 6.4). Hence, lack of access to formal financial services to financially-excluded people (as discussed in Section 6.4.1) as well as high costs of formal financial services (as mentioned in Section 6.4.2), and the risks associated with a cash economy (as discussed in Section 6.4.3) are all potential barriers to profit-maximisation for the MNOs and businesses in a neoclassical sense.

From Chapter 6, we find that MM moderates some factors of FE. This means it removes or weakens some barriers to FI (Ahmad et al., 2020; Mhella, 2020). Sachs (2008) acknowledges the transformative ability of mobile phones, while Davidson and McCarty (2012), and Aron and Muellbauer (2019) discuss transformative MM services and how they drive customer usage of MM for the unbanked. The statistics and evidence provided in Chapter 6 demonstrate the MM transformation in Tanzania and how MM moderates the factors of FE. Issues of distance, scale and scope, including risk management, have been resolved by using MM technology in Tanzania. We also see the problems of interoperability and how they support the issues mentioned above in Chapter 5 (Section 5.4.4) and Chapter 6 (Section 6.4.2.1). We also learned that MM has successfully reduced the proximity issue. Proximity means being near to formal financial services (also see: TNCFI, 2014). Proximity issues have also been mentioned in Tanzania's NFIF as one of the barriers to FI (TNCFI, 2014). MM is like an FSP in a pocket

(ACP, 2014). People walk around with their mobile phones and their e-wallet accounts in their pocket. They use mobile phones to access formal financial services anytime they want to do so. (ACP, 2014). As MM services are available 24/7 and anywhere, they also reduce the costs of accessing financial services. As we saw in Chapter 6, the cost of accessing FI could be travelling for hours to reach a bank or a financial point, or allowing technology to reduce the costs (see Section 6.4.2) and as the banks have a reserve requirement and some people may not be able to afford to open an account in those banks, FI becomes an issue. Hence, MM is cheaper and therefore, likely to be used by financially-excluded people, as demonstrated in Chapter 6. Interoperability, as discussed in Section 6.4.2.1, is also one of the ways used by the MNOs to reduce the costs of providing formal financial services (also see: Di Castri, 2013a). Interoperability is also part of neoliberal rolling-out efforts, where the state through the BOT brought together all the MNOs to facilitate their agreements to work together. From Chapter 2, we outlined how the state-led financial sector provided only a few individuals with access to formal financial services (also see: Hanson and Ramachandran, n.d.). From this dissertation, we learn that financial deregulation and liberalisation, as part of neoliberal roll-back policies, facilitated the advent of innovative solutions such MM, which increases access provision to formal financial services. Thus, today we can analyse the moderation of the factors of FE as we did in Chapter 6.

8.2.4 Findings in Chapter 7

In Chapter 7, Section 7.1, I introduced the notion that neoclassicists support innovations that make markets more efficient (Sredojević et al., 2016; Solow, 1956; Acemoglu, 2009). Thus, the neoclassicists support banking innovations and changes that make financial services more profitable (also see: Mehra et al., 2011). Classicists are more likely to support MM services because of their affordability as they support the economics of value in exchange (also see: Robinson, 1962). Hence, innovations that increase the efficiency of banking services would be supported, and the reaction of the banking sector to the growth of MM has been to support innovations that improve the efficiency of the banking sector, as it has been demonstrated in Chapter 7. Hence, the neoclassical perspective, which forms the economic bedrock of neoliberalism, supports technology such as MM that maximises profit and productivity (also see Section 3.7). It also supports other innovations, as demonstrated in Chapter 7.

One of the findings to emerge in Chapter 7 was that the banking sector has responded to the increased FI caused by MM. The rolling back of the government in Tanzania let innovation determine the regulations. The BOT used the 'test, learn, regulate' strategy. These findings are broadly in line with researchers such as Di Castri and Gidvani (2014), Haider (2013), UNCTAD (2012), Oyebode (2014), and Llewellyn-Jones (2016). Furthermore, several studies on banking innovations at the global level have been conducted (CPSS, 1996; CPSS, 1999; CPSS, 2000a; CPSS, 2000b; CPSS, 2001a; CPSS, 2003; CPSS, 2004; CPSS, 2012; CPSS, 2014; World Bank 2014a; World Bank 2014c). These studies did not focus on Tanzania. There is literature on the banking sector reforms and FI in Tanzania (Ndanshau, 1996; Mbowe, 2010; Ndalichako, 2014), however much of this literature does not explicitly cover the banking sector's response to FI resulting from MM, and other digital financial services. Chapter 7 tries to address this gap. Addressing this gap is also in line with Chapter 5, Section 5.5, where I briefly demonstrate the importance of the RCA through the different coalitions that facilitate FI and its politics. The neoliberal roll-out strategies through the global standard-setting bodies and the government and how international standards were implemented nationally were the other examples of the RCA, as briefly explained in Chapter 7, Section 7.5. The surprise is that banks and other financial institutions under normal circumstances are the ones who provide formal financial services. Non-deposit-taking institutions are now providing formal financial services and even collaborating with deposit-taking institutions. This finding is somehow surprising. The PPPIs have been created (also see Sections 2.6.1, 3.3.1.2, 3.6.2, 5.5, and 7.5). Initially, there was opposition from the banks, as demonstrated in Section 7.7:

> "And we were open, but the banks objected of course in the very beginning. Eh, they objected. They said that the MNOs were entering the money business. They were also in the payment system. But they had no supervision, and strict regulatory requirements like the banks did. In which case, they believed that that created unfair competition. And from their point of view and as they had heard it from elsewhere, they thought a bank-led model would allow the MNOs to work under the banks" (Former BOT Governor).

The findings in Chapter 7 demonstrate that the banks reacted to the expansion of MM services in Tanzania. The neoliberal rolling-back of the government let innovation determine the regulations, as shown in Section 5.4.3:

> "You know, the central bank is an authority. It has authority over the National Payments System. The MNOs and the other non-financial institutions get involved in the payment system side. They are not on the banking side. We were open to this. The banks objected in the very beginning. They said the MNOs were entering the money business. And that they were in the National Payments System. And that they did not have strict supervision and the requirements. They thought the requirements and supervision favoured the MNOs and not the banks. In which case, the banks

> thought this created the conditions for the unfair competition. And as they heard it from elsewhere that they could use the bank-led model to run mobile money, the big difference was whether one proceeded with innovation or not, and the willingness to take the risk to let innovation lead while you monitor and then appropriately manage the risks. The system was called 'test, monitor, and regulate.' This was the concept" (Former BOT Governor).

Hence, MM in Tanzania started at a time when the rolling-back policies allowed MM services to kick off without stricter regulations. In Tanzania, regulations came later after the innovations had flourished. Di Castri and Gidvani (2014), and Parkes (2014) also share the same findings. These re-regulations were part of neoliberal rolling-out policies. From Chapter 7, the moderation of some factors of FE by MM was made possible through: (i) economies of scale; (ii) economies of scope; (iii) the networks created by interoperable systems (This has been well-discussed in Sections 6.4.2.1, 6.4.2.1.1, and 6.4.2.1.2). Ignacio (2008), CPSS (2012), Mas and Radcliffe (2011), and Logan (2017) would also agree with these findings. These three factors could not be ignored and forced the banks to react. In Section 7.4, I discussed how the MNOs used innovative solutions to capitalise on the economies of scale and scope. It means as MM services expand and more customers use these services, the costs of providing formal financial services through MM decrease with the increase in the number of people using them (scale). I discussed this view briefly in Chapter 6, Section 6.4.2.1, where Metcalfe's and Moore's theories were used to explain how digitisation could reduce costs and scale up MM services. It also means the production of two or more financial products in the same infrastructure brings down the costs or improves the qualities of those services by producing them independently (CPSS, 2012). These are some of the fundamental reasons why MM services have survived, expanded, and succeeded to the point of making the banking sector respond by working together with the MNOs or by resorting to other innovations to remain profitable. This means that the banks have to innovate to keep up with the MNOs that heavily use the economies of scale and scope. Neoliberalism policies encourage profit-maximisation and utilisation of technology to support financial services' efficiency, and profitability of the FSPs. Papadimitropoulus (2019), Howe (2008) and Mohan (2019) support these views. As mentioned earlier, through the RCA neoliberal policies facilitate the creation of the PPPIs, which allow banks to work with MNOs and other FSPs to provide formal financial services. These collaborations enhance FI in Tanzania, as I demonstrated in Chapter 7. The reaction of the banking sector was also made possible because both the classicists and neoclassicists support cost reduction in financial markets to favour efficiency and profitability. The solutions and collaborations discussed in Chapter 7 helped the banking sector respond to increasing FI levels caused by MM.

8.3 Limitations of the Research and the Anticipation of Criticisms

I should stress that my study has been primarily concerned with neoliberal policies, MM, FE, and FI. FI, as demonstrated in Chapter 2, has been defined as the provision of access to formal financial services for everyone at a reasonable price. This meant that the study limited FI to this definition. Moderation of some factors of FE by MM also reflected this definition as well as the definition of FE as delineated in Chapter 2, as the inability, the difficulty or reluctance to access appropriate 'mainstream', also referred to as 'formal' financial services (Mitton, 2008:1; McKillop and Wilson, 2007:9). This means that the study limited FE and FI to these definitions. The moderation of FE also reflected the realities of the two definitions. The study did not delve into other ways of enhancing FI, such as job creation, welfare service provision, etc. Hence, the findings of my research are limited/restricted to FI as perceived in Chapter 2. I should also make it clear that I deliberately did so to narrow the focus of my study as well as to help my research concentrate on inclusive financial issues as perceived by existing literature on FI, FE, neoliberalism, and MM. For this research, FI and inequality are two different concepts.

The findings of my study do not imply that other researchers should not investigate FI issues from the unemployment angle, or any other poverty-related issues. FI encompasses many interdisciplinary issues, and access to formal financial services is just one of the many issues out there to be studied. Unfortunately, the nature of the Ph.D. programme and its design, as well as the data I collected allowed me to concentrate only on the issues regarding access to formal financial services. My research has analysed FI issues and MM issues from these points of view. Many theories can help explain MM, FE, and FI, as depicted throughout the thesis. However, classical and neoclassical theories were more appropriate for the design of this research, given the involvement of neoliberal policies.

8.4 Problems Arising During the Research

Several issues arose during the data collection and write-up stages. The most serious was the rejection I got from the National Assembly to conduct my research on their premises. As I used snowballing techniques, some respondents recommended that I got the Hansard notes from the University of Dar-es-Salaam where they were stored. The good news was that I got the Hansard notes, which turned out to cover most of the issues I wanted to investigate.

A second problem was the observance of the conditions stipulated by the research ethics committee. The ethics forms required that all interviews should be free, and people should consent to how they wanted to be interviewed. In three cases, the respondents preferred focus group interviews instead of in-depth unstructured interviews. To not miss opportunities with key respondents, I had to accept focus group sessions in these three cases. This made the respondents feel comfortable as they consented to be interviewed. The changes limited the gathering of as much information as I wanted to obtain. However, the focus groups were also the right way of confirming the respondents' assertions by asking other respondents if they agreed with what the other respondents had said.

The third issue concerned the research assistant who accompanied me to different institutions, and who called the relevant institutions for appointments. He initially transcribed the recorded interviews. Issues arose when some institutions did not authorise his requests for interviews, which delayed the availability of a few interviews. I had to go to those offices to follow up their refusals. In most cases, upon my showing up, we were granted interviews. Likewise, the interview transcriptions were not written properly. I had to start transcribing all over again, which delayed my data analysis and follow-up sessions with key respondents.

8.5 Implications of the Findings

My study offers suggestive evidence for the role of neoliberal policies in facilitating the advent and growth of MM, and how MM moderated the factors of FE to enhance FI in Tanzania. The 'test, learn and regulate' approach adopted by the BOT (Di Castri and Gidvani, 2014), was also supported by the classical and neoclassical perspectives as illustrated in Chapter 3 and throughout this dissertation. MM offers an alternative for moderating the factors of FE and for increasing FI in Tanzania, and probably elsewhere. Some literature and evidence support neoliberal policies and exclusion (Arce and Pantazis, 2019; Christiaens, 2018). Other literature and evidence support neoliberal policies and inclusive arguments (also see: Porter and Craig, 2004; Craig and Porter, 2003). This dissertation also tries to tell the other neoliberal inclusive story (also see Chapter 1). Rolling-back and rolling-out policies through classical and neoclassical perspectives are both practical solutions with a result that teaches us how we can make neoliberal policies exclusive or inclusive depending on the choice we want to support. The two solutions also show us how to regulate and support innovations such as MM for the benefit of the entire adult populations, as it has been demonstrated by using the Tanzanian case study in this thesis.

In this sense, the classical and neoclassical solutions are the relevant approaches that have a wide range of use from correcting market failure to facilitating technological advancement to transforming societies; as well as from managing exclusive neoliberal policies to creating inclusive neoliberal policies. In most cases, the choice depends on the policymakers and political scientists and how they want to shape the markets and economies.

Although this study was specific for MM development and its role in transforming the highest levels of FE to increasing levels of FI in a neoliberal era, it is nevertheless possible that the findings of the study may contain pointers to the ways in which other inclusive developmental solutions could be generally developed in other areas of political economy and development in the future.

8.5.1 Theoretical and Policy Implications

This dissertation has been written to fulfil the requirements for a Ph.D. in GPE: Transformations and Policy Analysis. The transformation is in terms of the transition from high levels of FE to increased levels of FI in Tanzania. I argue that neoliberalism facilitated this transition through the growth of MM. The neoliberal policies analysed here are the roll-back (deregulation and liberalisation) and roll-out (re-regulation/state intervention) policies which aided the advent and growth of MM which in turn facilitated the transition from high levels of FE to increasing levels of FI in Tanzania.

I have argued that the growth of MM was facilitated by its roles in moderating the factors of FE and in facilitating FI (see Chapters 2, 5 and 6). Meanwhile, neoliberalism caused and facilitated the growth of MM because of deregulatory, liberalisation and reregulatory policies that resulted in the creation of the CLF, which facilitated the adoption of financial technologies by the MNOs as well as their entrance in the financial sector which allowed them to use the NPS. This is one way of demonstrating inclusive neoliberalism through MM, as MM facilitates FI. In this regard, neoliberalism is informed by classical and neoclassical perspectives. Thus, I deploy and develop a conceptual framework that includes both classical and neoclassical perspectives to explain the roll-out and roll-back neoliberal policies and how they facilitated FI through MM. Therefore, the significance of this study is that it informs our empirical and theoretical understanding of inclusive neoliberalism and MM by introducing a focus on the transition from FE to FI through classical and neoclassical lenses hitherto lacking.

Thus, this study moves the research on MM and FI to embrace further evaluations of existing regulations and policies. While neoliberalism promotes deregulation, it is also accompanied by (re)regulations. According to Levi-Faur (2005), neoliberalism creates a new global order referred to as ‘regulatory capitalism’ (see Section 3.6). The classical and neoclassical perspectives determine which regulations and policies are required to resolve government intervention issues or market failure issues (see explanations on Sections 1.4, 3.4, 3.5 and 3.6). Attention is paid to what has already been done and the results that have already been produced to help us think about possible outcomes of present and future policies and research.

Moreover, the use of neoclassical and classical perspectives to explain the ‘RCA’ (see Section 3.6) showed that it was possible to generate a conceptual framework to tell how the two perspectives support MM development as shown in Chapters 1 and 3. The research findings have shown that the two perspectives are complementary, and explain policymaking and help policy analysis for MM and other regulatory issues. One of the significant implications of these theoretical perspectives is that they can serve as a productive framework from which further MM and their policy issues, and their effects on FE and FI, can be studied in more detail. For instance, deregulatory and re-regulatory policy analysis through the lenses of roll-back and roll-out neoliberalisation processes, and as informed by the classical and neoclassical perspectives in previous chapters, indicates that in Tanzania, apart from promoting MM, the Tanzanian Government also has a vision to enhance FI. Here I advise the government to consider both neoclassical and classical perspectives in their policymaking processes. Tanzania does not have an NFIP. It opted for an NFIF. The reason for adopting an NFIF was that it was easier to use different policies cutting across sectors to achieve FI goals. The NFIP is usually ‘distributive’, ‘constituent’, ‘regulative’, or ‘redistributive’ in nature; or a combination of these. According to Lowi (1972:300), Lowi (1964:713), Greenberg (1977:534), and Hult (2015), policymaking is about choosing these options. Based on the Tanzanian situation, the NFIP would be hard to implement across the different sectors of the economy and I agree that the NFIF remains the best strategy for FI policies in Tanzania. Hence, the use of classical and neoclassical perspectives for policymaking supports better NFIF. This will also support the PPPIs and the ‘consultative policymaking processes’ that Tanzania has created for its NFIF, as both classical and neoclassical perspectives protect both public and private interests, respectively.

8.5.2 Methodological Implications

Although the research methods used in this study were not entirely new, they were combined in ways that were rarely used previously. In particular, the use of in-depth unstructured interviews, focus groups and selected secondary sources for statistics was unique. It gave me the possibility to unveil previously hidden details, as the in-depth unstructured interviews allowed the respondents to respond to the questions, as well as to add to the details further information they deemed relevant.

Moreover, the method of analysis as detailed in Chapter 4, started with interview transcriptions, and the identification of possible themes using the 'thematic analytical method'. This method facilitated the process of extracting themes from the interviews to help answer the main research questions, and then creating a useful thematic map for further data analysis. The thematic analysis proved to be useful when putting together arguments to strengthen the research findings. The interview transcripts, and the data from various selected secondary sources provided both primary and secondary logic that was needed to explain the research findings. The methods provided transparent ways to ensure the acceptability, reliability, and validity of the research findings and their explanations. Hence, the methods used for this research have shown to be quite effective at providing data and at facilitating the analysis of data and the findings.

8.6 Research Recommendations

Research into MM growth and development and its role in moderating FE and increasing FI is still in its initial stages. This study is distinctive because it contributes to the overall body of knowledge related to MM growth through inclusive neoliberal policies to moderate factors of FE to increase FI. However, further research related to these areas needs to be done.

More research with more case studies is needed to facilitate the generalisability of my research findings. As reported earlier, my findings apply to Tanzania due to the qualitative methods used, and in order to claim that the findings are applicable elsewhere, further research is needed. Studies in neoliberalism and MM growth will help assist in determining more ways of making financial services more inclusive, and in reaching remote and financially-excluded people.

Furthermore, studies that distinguish between the non-deposit and deposit-taking institutions will help create strategies or policies to further enhance FI through the NFIF. As MM matures, more regulations will be required. Hence, there is a need to expand beyond the use of classical and neoclassical perspectives to justify the relevance of new policies, strategies, and regulations.

Additional research is needed to expand on the new emerging factors of FE and FI. There is an ongoing transformation of the banking and financial sectors. As MM matures, and as the world shifts from a neoliberal political economy to other forms of political economies, we need to understand what new alternatives will be employed in pursuit of inclusive development, a new political economy, and how access to formal financial services for financially-excluded people changes over time.

Likewise, more research is needed to perceive the patterns of changes in the banking sector and its continuous response to the increasing levels of FI brought about by new technologies and innovations such as fintech technologies. At the same time, as NPSs change, new regulations will arise, and new ways of delivering financial services will also emerge. How to allocate and distribute these services is also what needs to be researched to ensure that the political economy of FI and development benefits each segment of the adult population.

Finally, the different roles of various FI stakeholders, both at national and international levels, need to be investigated. An expanded study would expose any tensions or new emerging interests, ideas, and institutions. The three analytical tools are also vital in determining emerging any changes in the political economy of MM, banking, FE, and FI.

8.7 Contribution to Knowledge

Contribution to knowledge comes in two forms, namely: contribution to literature and theoretical contribution. See Sections 8.7.1 and 8.7.2. I will start this section by detailing what I mean by contribution to knowledge before detailing theoretical and literature contributions to research from this Ph.D. In addition to the recommendations for future research as detailed in Section 8.6, my research has made three key contributions to the literature on neoliberalism, MM growth, FE, and FI. The research combines and integrates these areas, which is relatively new. The related literature usually takes aim at one research area. My research, therefore, is one of the very few research works that simultaneously investigate these issues. This type of literature is new and is still developing, for instance, literature on neoliberalism that explains MM is hard to find. My research provides this literature.

Furthermore, MM is just over a decade old; its development and the reaction of banking institutions to MM are new pieces of knowledge that need to be researched and disseminated, especially at a time when fintech and digital platforms have become the key channels for financial service delivery. My study should contribute doubly to the understanding of the process that helped MM development and growth in Tanzania, and perhaps elsewhere.

The theoretical framework I used depended much on classical and neoclassical perspectives and their relationship to neoliberal roll-back and roll-out policies which created a conducive environment for the advent and growth of MM services. Of importance is also the notion of inclusive neoliberalism, which is always overlooked. The dissertation contributes to the literature that demonstrates the inclusive role of neoliberalism through MM to help it moderate the factors of FE, and therefore, increase rates of FI. Although there were studies that researched inclusive neoliberalism (Porter and Craig, 2004; Craig and Porter, 2003), these studies did not elaborate on the role of inclusive neoliberalism and how it energised the efforts to eradicate FE and make FI a global agenda as depicted in Chapter 2. Some literature tends to focus on inclusive finance and economic growth (Corrado and Corrado, 2017; Abor et al., 2018; Demirguc-Kunt et al., 2017). It is hard to find research works linking neoliberalism with MM.

Likewise, my research contributes to the literature as follows. Firstly, it deviates from mainstream African mobile literature, which mostly employs qualitative and microeconomic assessments (Jonathan and Camilo, 2008; Merritt, 2010; Demombynes and Thegeya, 2012). This research adds more value to the above literature by including the empirical macroeconomic assessment of what contributes to the growth of MM. Secondly, the research uses MM data used in various official documents such as the FinScope Surveys, InterMedia Surveys, GSMA statistics, World Bank data, the supply-side report, the first and second NFIF documents as well as the evaluation document of the NFIFs. By doing so, the data has been rigorously studied, checked, and verified to make the analysis of MM more credible. Thirdly, the increasing collaboration trend between the MNOs and banks to serve low-income and financially-excluded people through mobile innovations increases the importance of this study and follow-up studies in the future in the political-economic, and development sense.

Finally, my investigation of the NFIF and the role of the different stakeholders in supporting MM and FI increased the originality of my study. Although its application started in 2014 (TNCFI, 2014), the NFIF and its impact on FI and MM remains a topic for research, mainly because Tanzania does not have an NFIP. It depends much on the NFIF to implement various policies to help it enhance FI. The implementation of multiple strategies enhances FI and MM development. Therefore, I hope that the findings of my study could attract other researchers' attention to the issues discussed in this dissertation.

8.7.1 Contribution to Literature

Gaps in the existing empirical literature drive part of my research. I have used systematic literature reviews to identify these gaps. The following are the systematic and standard literature reviews I have used: Kim et al. (2018), Duncombe and Boateng (2009), Dahlberg et al. (2008), Lwoga and Sangeda (2019), Diniz et al. (2011), Zaremohzzabien et al. (2014), Thapa and Saebo (2014), Duncombe (2016), Alampay and Moshi (2018), Dahlberg et al. (2015); De Albuquerque at al. (2014), Dennehey and Sammon (2015), Dobbie and Gillepsie (2010), Duvendack (2020), Fernández-Olit et al. (2020), Koku (2015), Leite et al. (2019), Mbuyisa and Leonard (2017), Nan et al. (2020), Shaikh and Karjaluoto (2015), Slade et al. (2013), Zewge et al. (2017), Johnson et al. (2015), Donner and Escobar (2020), Avgerou (2010), and Karsen et al. (2019). This body of literature and systematic reviews demonstrates that there was a gap in knowledge in terms of linking together FE, FI, neoliberalism, and MM. At its early stage, researchers find it challenging to theorise MM, which makes it hard to fill in some existing knowledge gaps (Duncombe and Boateng, 2009; Kim et al., 2018). Moreover, current literature tends to shy away from political-economic issues and solutions, which can help advance MM research and its links to FE and FI in Tanzania and elsewhere. The literature to support FE in Tanzania is rare, let alone how to link it with neoliberal realities and political-economic theoretical perspectives. These issues cannot be ignored, and I hope that the knowledge I have generated while putting together the empirical evidence of my interviews and other secondary sources has contributed to knowledge and literature in this field. Using literature and systematic reviews to identify the gaps has helped me to ensure that the literature gap I have identified exists beyond any doubts.

It is worth noting that the empirical data, knowledge and literature generated from this research will direct researchers to find unexplored areas of analysis. The literature and knowledge gathered in this dissertation will also prove useful to researchers and policymakers desiring to have a better understanding of MM, neoliberalism, FI and FE. As a result, it is possible to use the knowledge and literature included in this research to improve MM debates and issues of theorising its problems. Researchers can also benefit from using the knowledge and a body of literature used to advance the arguments of this dissertation to detect scarcely analysed areas and to engage in political-economic debate on neoliberalism, MM, FE and FI. It is also worth highlighting that although this research uses a variety of primary and secondary empirical data and literature, its usefulness, contribution, and academic value should be noted as it is intended to advance knowledge and literature in this field of study. Most of the literature that build concepts and arguments for this research have been provided in Chapter 2.

To show the gaps in literature and how this researched has responded to address them, I will start by briefly outlining how the literature informed this research and helped it to identify the gaps that this research addressed. The literature as discussed in Chapter 2 and this chapter, supported the research to identify critical areas of investigation of literature gaps that needed to be addressed in terms of MM and the transition from high levels of FE to increasing levels of FI, as well as the theorising between neoliberal roll-back and roll-out issues. It also helped the research to link these issues to GPE as described in Chapters 1 and 2 (also see Sections 1.4.1; 1.4.2; 3.3.1.2; 8.9). It also helped to identify the critical issues of investigation (see Appendix 4.7) and it also played a vital role in the formulation of the three main research questions. In some cases, also helped check the relevance of the empirical data.

From the literature review, past research had a lot of written literature on mobile/digital devices, financial services and development (Kim et al., 2018; World Bank 2012a; Kpodar and Andrianaivo, 2011; Waverman et al., 2005; Saker and Wells, 2003; Leistert, 2013; Qiang et al., 2011; Aker, 2010; Duncombe and Boateng, 2009; Dahlberg et al., 2008). Also, the literature includes studies on MM, financial services, and FI (Peruta, 2015; Duncombe and Boateng, 2009; Maurer, 2011; Morawczynski and Pickens, 2009; Mbiti and Weil, 2016; Donavan, 2012; Jack and Suri, 2011; McKay and Pickens, 2010). Also, the literature has focused more on FI and development (DFID, 2004; Klapper et al., 2004; Morduch and Haley, 2002; Sarma and Pais, 2011; Beck et al., 2007a; Demirguc-Kunt and Klapper, 2012a). The literature has also focused on MM and development (Mendoza and Thelen, 2008; Spence and Smith, 2010; USAID, 2013; GSMA, 2015a; Beck et al., 2015; Aker et al., 2016; Sekabira and Qaim, 2017; Chale and Mbamba, 2015; Nan, 2019).

There is literature that focuses on mobile phones, MM, and neoliberalism (Leistert, 2013; Tyce, 2019; Miller and Rose, 2008). There is also literature that backs the role of neoliberal, classical and neoclassical views on technological advancement (Comin and Hobijn, 2004; Butter and Hofkes, 2006; Leistert, 2013; Hurwitz and Manne, 2018; Ricardo and Jimenez, 2019; Sredojević, 2016). There is also literature to help understand classical and neoclassical theories (Fogelberg and Kulkarni, 2006; Hurwitz and Manne 2018; Pennington, 2011; Thweatt, 1988; O'Brien, 2004; Tsaliki and Tsoulfidis, 2019; Wellisz, 2002). Also see Chapters 2, 5, 6, and 7.

Moreover, other literature unveils how neoliberal policies of deregulation and re-regulation emerged and survived (Edwards et al., 2012; Lockie and Higgins, 2007; Graefe, 2006; Self, 2000; Majone, 1992; Majone, 1997). Likewise, some other literature supports inclusive neoliberal developments (Klak et al., 2011; Craig and Porter, 2007; Porter and Craig, 2004; Bergh, 2012; Kushnir, 2020; Golooba-Mutebi and Hickey, 2010; Stiglitz, 2008; Konings, 2016). Madise (2019) provides excellent literature to discuss regulation and MM in sub-Saharan Africa by using a Malawian case study. Mooslechner et al. (2006) illustrate the dynamics of inclusion and exclusion as they link them to finance. As far as the theories and methodologies of neoliberalism are concerned, Cahil et al. (2012), Peck et al. (2012), and Edwads et al. (2012) provide relevant literature for this Ph.D. study. For the political economy of capitalism and regulations, I considered the views of the following researchers: Scott (2006), Booth (1997), Majone (1992), and Majone (1997). For neoliberalism and forms of exclusion including financialisation: Christiaens (2019a), Fama and Jensen (1983), Sassen (2010), Sassen (2014), Jensen and Meckling (1976), Davis and Walsh (2017), and Vogl (2017) also provided relevant literature.

By considering the above literature and the literature I have used throughout this dissertation, I was able to map and identify my contribution to knowledge which fills in gaps in the existing literature. My empirical data and the literature I have used provide new evidence on inclusive neoliberalism and MM and how they facilitate the transformation from FE to FI that has not previously been published. Theoretical advances from the theoretical framework as illustrated in Chapters 1 and 3 help researchers to perceive inclusive neoliberalism and MM and how they facilitate the transition from FE to FI. This is detailed in Chapters 1, 3, and 8. Firstly, linking MM and FI is a political-economic concern for researchers seeking to understand the transformations caused by MM in Tanzania and elsewhere. Researchers should not accept these transformations at face value but should examine them using classical and neoclassical theories as well. Secondly, the issues of neoliberal roll-back and roll-out policies on the one hand, and classical and neoclassical perspectives on the other, are deeply interrelated. Thirdly, MM moderates some factors of FE, and therefore facilitates FI.

Most of the literature I presented earlier takes aim at one research area. This research is one of the few studies that simultaneously investigates the issues of neoliberalism, FE, FI, and MM. The research combines and integrates these areas/issues and therefore contributes knowledge to the existing literature. The combination of neoliberalism, FE, FI, and MM is relatively new, and this type of knowledge and literature is still at its nascent stage. Second, MM is just over a decade old. Its development and the reaction from the banking institutions it created, as demonstrated in Chapter 7, are new pieces of knowledge that need further research and dissemination at a time when fintech and digital platforms have become the essential channels for financial service delivery. This study contributes doubly to the literature that analyses the undertaking of the process that helped MM development and growth in Tanzania and, perhaps elsewhere.

Furthermore, the theoretical framework this study uses as presented in Chapters 1 and 3, depended much on classical and neoclassical perspectives and their relationship to neoliberal roll-back and roll-out policies and how they created a conducive environment for the growth and advent of MM. This new knowledge helps researchers to explain the inclusive role of neoliberalism and how it facilitated the advent of MM. This body of knowledge and literature is hard to find. Thus, this research provides this knowledge and adds it to the existing body of literature.

This research also deviates from mainstream MM literature, which employs qualitative and microeconomic assessments. Thus, the study adds more value to the above literature by including the empirical macroeconomic assessment of what contributes to the growth of MM. The increased collaboration between MNOs and banks to serve low-income and financially-excluded people through mobile innovations increases the importance of this study and other follow-up studies in the political-economic and development sense. The inclusion of NFIF and the different stakeholders, as well as the classical and neoclassical perspectives supporting FI, increases the originality of this study. The NFIFs are rarely mentioned in academic literature, and the knowledge produced by this research is one of the first attempts to include them in academic literature. Few researchers have tried to do so (Aro-Gordon, 2017; Mihak and Singh, 2013; Newnham, 2014; AFI, 2016b; World Bank, 2012c). Their contributions did not have MM and neoliberal views, and how the theories link these two together.

The knowledge that this study has generated doubly adds value to the existing body of literature to support MM investigations and how they moderate some factors of FI and how they facilitate increasing levels of FI. To debate or engage in academic discussions about the issues mentioned above, the knowledge that this dissertation adds to the literature is also the role of inclusive neoliberal perspectives as they have been well discussed in this dissertation. Literature has biased other areas of investigations and forgot the above-mentioned areas of studies. The role of MM in moderating FE, and how it does this, is rarely discussed. The inclusion of the issues of lack of access to formal financial services to financially excluded people, high costs of formal financial services, moderation of risk by MM services, and how MM moderated them, adds knowledge to the existing literature (see Chapter 6). The discussion about the CLF and NPSA in Tanzania also adds knowledge to the current literature on MM. The inclusion of the politics of FI in Tanzania and the growth of MM in Tanzania also adds value to the existing research (see Chapter 5). The analysis regarding the response of the banking sector to increased levels of FI caused by MM in Tanzania also adds value to the existing literature (see Chapter 7).

In this study, I reviewed the literature on FE, FI, MM, and neoliberalism, see Chapters 2 and 4, and throughout this dissertation. I presented a discussion that deregulation (liberalisation) aided the advent of MM through the CLF and that re-regulation through NPSA strengthened MM, and that both deregulation/liberalisation and re-regulation were part of neoliberal roll-back and roll-out respectively. I linked this experience to Tanzania. Furthermore, in Chapter 2, I presented details of FE and FI in Tanzania. I also offered details on classical and neoclassical perspectives and their supportive literature and how the different concepts link to this study. The local and global contexts of FE and FI are also outlined. Details on local and global contexts of MM are provided in Chapter 6. Chapter 7 provides details on the global standard-setting bodies and how they facilitated MM and FI.

8.7.2 Contribution to Theoretical Perspectives for Studying MM

My contribution has been in terms of combining classical and neoclassical perspectives as discussed in Chapters 1 and 3 and throughout the dissertation to demonstrate how MM succeeded in moderating FE and increasing FI levels in Tanzania (also see Sections 1.4 and 3.4; Appendix 8.3). The explanations provided to support these theoretical perspectives reveal that the two theoretical perspectives can be used to support inclusive neoliberal efforts to increase FI through MM. This evidence advances current and future academic thinking. This way of thinking and theorising is not only unique but also useful in providing a basis for further theorisation in this area. The use of literature and the application of the above theoretical perspectives to my study and arguments, as demonstrated throughout the dissertation, not only concretised the contribution mentioned above, but also made the dissertation arguments and the issue of inclusive neoliberalism tangible. The literature provided in Chapter 2 and in the subsequent paragraphs of this section demonstrates the gaps and how the above theoretical perspectives helped to fill in those gaps. There are lots of theoretical perspectives, as you will see in this section. Still, they failed to demonstrate the role of neoliberalism in helping MM thrive and how MM moderated some factors of FE to increase FI levels. Classical and neoclassical theoretical perspectives as employed in this study have helped fill in the above gaps by demonstrating the role of neoliberal roll-back and roll-out in facilitating the growth of MM and FI. This new way of explaining the advent and growth of MM is an essential contribution because MM research is in the nascent stage, and different theoretical perspectives to support MM studies are needed. Researchers shied away from political-economic solutions to help explain MM issues and the transition from FE to FI in Tanzania. I have addressed this issue by using classical and neoclassical perspectives.

My research indicates that current research on the themes of MM, FI, FE, and neoliberalism or development are still in the nascent stage. Kim et al. (2015) concur with these views. Duncombe and Boateng (2009:1250) claim:

> "… overall, there is a noticeable lack-of-depth qualitative case studies that could provide a basis for theorising."

My research uses in-depth unstructured interviews and secondary sources to resolve this research gap and to provide a basis for theorising. They also claim that studies on mobile payment need more than one theory:

> "m-finance research related to the design and adoption has been fairly well conceptualised, drawing more strongly on approaches borrowed from innovation research. Conversely, needs and impact research is more conceptual, and consequently appears not to be following a well-defined and thought out research trajectory … one reason for this may be that the complexity of influencing factors makes it challenging for practitioners and researchers to conceptualise needs and assess financial impact within a single model-based approach" (Duncombe and Boateng, 2009:1252). (also see Section 3.1).

I came across these difficulties and decided to conceptualise my research using classical and neoclassical perspectives around the 'RCA' as explained in Chapter 3. Moreover, few systematic research articles examine the theoretical and conceptual frameworks used to study MM and other related ICTs for FI and development (Kim et al., 2018; Dahlberg et al., 2008; Duncombe and Boateng, 2009; Diniz et al., 2011; Lwoga and Sangeda, 2019; Zaremohzzabien et al., 2014; Thapa and Saebo, 2014; Mbuyisa and Leonard, 2015; Duncombe, 2016). (Section 3.2). There are also other extended systematic and regular literature reviews informing this study on MM, FE and FI issues (Fernández-Olit et al., 2020; Shaikh and Karjaluoto, 2015; Kabakova and Plaksenkov, 2018; Koku, 2015; Dobbie and Gillepsie, 2010; Mbuyisa and Leonard, 2017; Zewge et al., 2017; Duvendack, 2020; Karsen et al., 2019; Leite et al., 2019; Dahlberg et al., 2015; Slade et al., 2013; Dennehey and Sammon, 2015; De Albuquerque et al., 2014). None of these essential literature works identifies any other researcher who has tried to study MM by using classical and neoclassical perspectives to show the transformation from FE to FI through neoliberal roll-back and roll-out policies. This lack of other researchers studying these issues jointly signifies the importance of my theoretical framework's contribution to this area of study.

According to Duncombe and Boateng (2009), no single theory provided a 'valuable' initial understanding of analysing mobile financial services. Many theories and approaches have also been used to study MM and its related issues (Kim et al., 2018; Dahlberg et al., 2008). Research approaches including theoretical and conceptual frameworks can be grouped to fit into the categorisation of issues addressed through the various models and approaches, including: (i) theoretical-based approaches which test and apply a specific theory; (ii) framework-based approaches, which use a framework for analysis derived from 'a body of theoretical work'; (iii) model-based approaches which employ models without 'reference to a deeper body of knowledge'; (iv) concept-based approaches, which use defined concepts not theoretically grounded; (v) category-based approaches, which prescribe a set of factors to carry out analysis (Duncombe and Boateng, 2009).

Regarding MM and other Mobile Financial Services (MFSs), the conceptual frameworks seem to be conceptualised around innovation. Some other frameworks access the financial impact of MM and other digital financial services. The contexts for these studies differ from one research to the next, and from one country to another. In an attempt to theorise the success of M-Pesa innovations in Kenya, Tyce (2019) considers neoliberalism and a developmental state as forces working together to boost M-Pesa success. She concludes that both neoliberal and statist accounts fail to explain the success of the MM story in Kenya. However, this Ph.D. study has demonstrated that by using a classical-neoclassical theoretical framework (see Sections 1.4 and 3.4) it is possible to show how inclusive neoliberal agenda facilitated the success of MM in Tanzania. The use of these theoretical perspectives is a pivotal contribution to theorising the success of MM in this field.

According to Duncombe (2011), conceptual approaches are significant in looking at the process that links the use of ICTs to measures of outputs, outcomes or impacts (also see: Lwoga and Sangeda, 2019). These conceptual and theoretical frameworks use different theories to study MM. There are also individual studies that chose the use of theories or models only. Lwoga and Sangeda (2019) categorise theories as 'explanatory' and 'predictive'. Explanatory theories are those focusing on social capital, socioeconomic issues, network analysis, technology adoption, and development. Examples of explanatory theories used to study MM and FI include: contingency and systems theory (Dahlberg et al., 2008); diffusion of innovations theory (Munyoki et al., 2015); theory of change (Aro-Gordon, 2017; Betete et al., 2018) etc. Predictive theories, on the other hand, tend to focus on microeconomic analysis. These may include the issues of supply and demand, issues with poor and financially-excluded people, financial deepening, connectivity, and economic growth (see: Lwoga and Sangoda, 2019; Duncombe and Boateng, 2009).

The systematic reviews on MM, development, and FI on the one hand (Kim et al., 2018; Dahlberg et al., 2008; Duncombe and Boateng, 2009; Diniz et al., 2011), and the systematic reviews on the ICTD on the other hand (Lwoga and Sangeda, 2019; Zaremohzzabien et al., 2014; Thapa and Saebo, 2014; Mbuyisa and Leonard, 2015; Duncombe, 2016), facilitate the process of finding the theoretical and methodological gaps for my research topic. Their findings reveal that no study has used classical and neoclassical theories together to study neoliberalism and how it facilitated the growth of MM and its role in moderating FE and increasing FI. The inclusion of classical and neoclassical theoretical perspectives makes this Ph.D. study unique. (see Section 8.2).

Neoliberalism and MM in Tanzania, and how it facilitated the transformation from FE to FI, is a new topic. It has not systematically been documented anywhere to my knowledge. Moreover, theorising about roll-back and roll-out and their linkage to FE and FI on the one hand, and classical and neoclassical perspectives, on the other hand, is new.

In Chapter 3, I started by identifying existing critical literature on the conceptual and theoretical perspectives, and other related ICT for development, FI and FE issues. By doing so, I recognised the gaps and proposed the theoretical framework as a bridge. I also discussed the different theoretical perspectives on neoliberalism. I selected the RCA as appropriate for this research. Classical and neoclassical views guided the approach of this research to investigate neoliberal rolling-back and rolling-out policies. I also explained the key concepts and issues of the theoretical framework and how they applied to my crucial research issues to help answer the main research questions. Most conceptual and theoretical frameworks I came across with did not bring together the puzzle of neoliberalism and MM growth for FI through classical and neoclassical views (also see Appendix 8.3 for selected theoretical approaches used to study FE, FI, MM). The theoretical framework used in this research brings these issues together. By doing so, it distinguishes itself from previous conceptual and theoretical frameworks used to study MM. The used theoretical framework provides an understanding of neoliberalism and its role in the growth of MM via rolling-back and rolling-out policies. This body of knowledge is new and adds knowledge to the existing literature review.

I will close this section by summarising the relevance of the contributions as mentioned above. Existing theoretical approaches and frameworks tend to shy away from political-economic solutions or explanations of MM and the transition from FE to FI in Tanzania, let alone literature – in the academic sense on - FE and Tanzania is rare. Not much has been done academically despite the presence of increasing peer-reviewed articles on FI as well as the reports on FI and FE research conducted through FinScope and InterMedia surveys (also see: FinScope, 2006; FinScope, 2009; FinScope, 2013a; and FinScope, 2018; InterMedia, 2014a; InterMedia, 2014b; InterMedia, 2016; InterMedia, 2017; InterMedia, 2018). Researchers have found it hard in some cases to explain the role of neoliberalism in facilitating FI (also see: Tyce, 2019). In addressing this gap, this research raises awareness, and it contributes to theoretical knowledge that includes classical and neoclassical perspectives and how they inform neoliberal roll-back and roll-out policies in facilitating the transformation from high levels of FE to increasing levels of FI. The role of MM in catalysing this transformation is hard to ignore in GPE and development studies.

8.8 Autobiographical Reflection

Doing this Ph.D. research helped me to not only broaden my knowledge of the researched topic, but also to gain invaluable research skills that I will use in my future teaching and researching career. I gained valuable understanding of what it means to conduct research as well as what it means to analyse various policies and research findings. Research, indeed, is a complex and tiring experience, with some critics being helpful, while others being unhelpful. Research can be frustrating and tedious, but it is also an opportunity to distinguish oneself in the field, which turns to be very rewarding and encouraging.

Moreover, the research helped me to view the world through multiple lenses, and thus, it advanced my expertise in the areas of neoliberalism, MM, and the issues of FE and FI. It also helped me to perceive my professional values and beliefs, putting me in a position to be able to explore possible changes to the above-mentioned areas in the future. I have begun to believe in making neoliberal policies more inclusive and in using the classical and neoclassical perspectives to even advocate for more inclusive policies. In summary, the research process has prepared me for becoming one of the critical researchers in the future.

8.9 The Importance of This Research to the GPE?

In 2008, the World Bank Annual Report, namely, 'Finance for All', emphasised the significance of FI. That move created inclusive markets. It shifted the global development paradigm from the Washington Consensus agenda to the 'post-Washington Consensus' agenda (Gabor and Brooks, 2017). The global inclusive markets agenda also moved the focus from microcredit and microfinance services to a wide range of financial products and services (Gabor and Brooks, 2017; Soederberg, 2013). The concept of inclusive finance also emerged. It made formal financial services available to broader segments of society at affordable costs to reverse FE (Corrado and Corrado, 2017). Global and inclusive financial institutions also emerged. The likes of AFI, Better Than Cash Alliance, several G20 initiatives, etc., all worked to build national and global inclusive financial systems (AFI, 2014, Goodwin-Groen, 2016). With the G20 agenda to foster global finance-led capitalism and with the Bill and Melinda Gates Foundation, Omidyar, and other philanthropic initiatives to finance inclusive financial initiatives, new digital financial technologies emerged to foster inclusive financial services. MM is one of them. As demonstrated in Chapters 2 and 5, access to formal financial services increased throughout the world, providing opportunities to low-income and financially marginalised people. MM has increased FI significantly in developing countries empowering people to exploit better economic and financial possibilities. Thus, FI drives global economies on a sustainable growth trajectory. Hence, these issues are of paramount importance to GPE, and this research contributes to the GPE scholarship by studying Tanzania's MM, neoliberalism, and the transformation from FE to FI.

8.10 Behind the Empirical Data

From the empirical data I collected, 100% of the respondents agreed that MM facilitated FI. Nearly 100% of the respondents agreed that the role of the BOT in providing leadership for national FI processes was undisputable. The key elites interviewed also acknowledged the roles of regulators such as the TCRA, FCC, TIRA, and TRA in facilitating FI in their respective industries in collaboration with the BOT. Nearly all sixty elite respondents from the five regulatory authorities and some other vital respondents from research institutions, banking, and MM sectors recognised the role of neoliberalism. Due to the word limit, I could only directly quote eleven of the elite interviewees who had the most relevant data (I have also used some extracts from eight low-income respondents in Chapter 6 to substantiate some of their views and support the research findings).

The elite interviews produced original data that I used to inform the arguments of my thesis. The elites were policymakers and leaders in their organisations, associations, and institutions. They implemented FI or MM strategies. They worked at senior and technical professional levels, and their actions affected policy formulation, implementation, and evaluation. The majority were in the committees, as depicted in NFIFs. Some of the elite interviewees attended those meetings regularly by invitation. The respondents had or were still working with the following organisations: BOT, TCRA, FCC, TIRA, TRA, FSDT, MoF, Selcom, Maxicom-Malipo, AirtelMoney, TigoPesa, Vodacom M-Pesa, HaloPesa, Zantel-EasyPesa, TTCLPesa, ACCESS, AKIBA, Amana, BCX, CBA, NBC, NMB, DANIDA, DCB, Exim, FINCA, FIU, TBA, TIA, TPB, UDSM, Umoja-Switch, USAID-ASPIRE, WS Technology Consulting Office and a SACCO. From the insurance sector, respondents came from Alliance Insurance, GStar, Milvik, Mo Insurance, and Resolution.

Also, I randomly selected twenty low-income individuals on the Dar-es-Salaam streets who varied from a woman selling food on the road to a ‘bodaboda’ driver. The purpose was to quickly check if the empirical data from the ‘elites’ matched with their experiences. I found out that 100% of the low-income respondents agreed that MM empowered them and that without MM, life would be tough for them as they depended much on sending and receiving money to and from their families. They also depended on microloans to meet their everyday demands. Surprisingly most of them used TigoPesa, followed by AirtelMoney. M-Pesa and Zantel were mentioned with some of them having more than two MM e-wallets with different providers. Zantel and Halotel were hardly mentioned because they invested heavily in other regions. 100% of the respondents also agreed that MM services were more convenient and less costly as compared to banking services. Of the twenty low-income respondents, only four had a bank account. The majority of the respondents did not want government intervention in MM business as they seemed to suggest more deregulation than re-regulation for formal financial services. For them, MM was key to their inclusion in the mainstream financial sector. To write this dissertation, I only used eleven elite interviews because they provided the most relevant information I needed (I have also used some extracts from eight low-income respondents in Chapter 6 to substantiate some of their views and support the research findings). See Appendices 4.9 and 4.10. However, all the responses from every interviewee (of the eighty-four interviewees) had been taken into consideration. See Appendix 4.1.

8.11 Concluding Remarks

From the findings, we conclude that MM growth and development is key to FI, economic growth and development, poverty reduction, and to promoting the fight against FE. Therefore, neoliberal roll-out and roll-back policies along with classical and neoclassical views facilitate MM growth and FI.

MM development and growth would be difficult to fathom without liberalisation, deregulation, privatisation, and re-regulation policies. These neoliberal policies, in the case of MM growth and its role in facilitating FI have been inclusive. This has been clearly demonstrated throughout the dissertation. The CLF and NPS regulations act as the key policies that consolidate MM survival and growth. The CLF supports the neutrality of technology and permissionless innovations using neoclassical grounds as detailed in Chapters 3 and 4. The concept of permissionless innovation endorses the avoidance of any legal rules or regulations that constrain technological advancement. By doing so, the idea of permissionless technology protects both individual and firm liberty which also concurs with classical views (also see: Hurwitz and Manne, 2018). In this regard, both classical and neoclassical views favour the deployment of technology to increase market efficiency. The CLF and how it has been implemented in Tanzania to support MM development is an excellent example of this. How the NPS has permitted different digital platforms to be used to facilitate MM and other financial services, is another example.

High-volume and low-volume transactions and extensive networks of air time, and other services such as microloans through mobile devices, including the issuance of e-money and other mobile financial services outside the conventional bank branches, as well as the reliability of existing infrastructure and technology to lower costs of financial service delivery, especially in remote and sparsely-populated areas, have gained the attention of the policymakers. Policymakers are continuously seeking the creation of effective policies, legal, and regulatory frameworks for effective MM growth. Allowing MM growth has been a critical policy issue as MM facilitates FI. FI enhances growth and development in some cases (Chiba, 2017).

Economic theory supports the development of the financial system to ameliorate allocation of resources, which is a political-economic issue, and an essential component of growth (Schumpeter, 1911; King and Levine, 1993; Banerjee, 2004). Likewise, there is empirical evidence from the development literature that demonstrates that access to formal financial services through savings and credit tends to reduce poverty to some degree (Burgess and Pande, 2005; Dupas et al., 2012). There are also arguments that access to financial services smooths consumption and lower the costs of inclusion in economic activities (Fereira and Shady, 2009; Bruhn and Love, 2009; Rosenzwig and Wolpin, 1993). Modern development theories have identified financial markets as an essential part of the development process (Flores-Roux and Mouriscal, 2011).

There is also evidence that MM has transformed the lives of many poor households through 'mobile-based money transfer and storage'. There is evidence that the number of mobile phone users has surpassed the number of people with bank accounts (Demombynes and Thegeya, 2012; Medhi and Ratan, 2009). World Bank (2014b) and CGAP (2013b) acknowledge the existence of social networks that mobile users use for saving and transactions to reach the poor who have no access to formal financial services. These networks, according to Jack and Suri (2011) and Demirguc-Kunt et al. (2015), render MM services cheaper and more profitable in developing countries. MM has triggered a FI revolution through these networks that serve millions of unbanked and poor adult populations. MM resists banking exclusion (Maurer, 2011) and moderates the factors of FE by: lowering the high prices of financial services (Donavan, 2012; Morawczynski and Pickens, 2009); increasing proximity to financial services (Jack and Suri, 2011; Morawczynski and Pickens, 2009); reducing financial service risks (Gilman and Joyce, 2012). Some studies have demonstrated that a lack of financial services could cause poverty and inequality (Banerjee and Newman, 1993; Beck et al., 2007b). In light of the conglomeration of evidence and my research findings, I confidently argued that previously mentioned policies of deregulation, re-regulation, liberalisation, and privatisation, which formed part of the neoliberal roll-back and roll-out policies, sustained MM growth. I also argued that MM facilitated the transition from high levels of FE to the current raising levels of FI. A lack of NFIP in Tanzania, has not stopped the fast pace of FI in Tanzania. The NFIFs have kept the key FI stakeholders together through the PPPI arrangements. This involved a consultative process attended by both private and public sectors to help facilitate the implementations of the agreed FI strategies. Through the neoclassical perspective, the PPPI limits government influence in the NFIF. The political economy of the NFIF, as illustrated in

Chapters 2 and 5, has defined the different roles of key stakeholders, including the MNOs. This political economy was guided by the following processes: (i) national vision building for FI; (ii) implementation of the formulated FI strategies; (iii) management of the results of the implemented FI strategies; (iv) engagement of every key stakeholder in the implementation of FI strategies and how the key issues were communicated; (v) resource allocation in terms of time, space and money. I will conclude by elaborating these key issues.

The shared vision of the NFIF was formulated to allow the MNOs and other stakeholders to engage in the NFIF. This shared vision allowed financial strategies, including MM strategies, to receive a national priority. The vision building process was a challenge because different stakeholders were mandated or had legal jurisdictions that made them reluctant to get involved in certain developments. The question was how they could be brought together to create a shared vision for the NFIF. The BOT provided leadership and helped them create an NFIF vision without stepping out of their mandates and jurisdictions. Furthermore, the implementation of the FI strategies also depended on the specific mandates that the institutions had, as well as the flexibility they had to accommodate MM and other digital financial services. This is what I refer to as the politics of flexibility. They had to appreciate how their business models would change if they adopted these new technologies and that MM could drive or accelerate the growth of their businesses or increase FI. The regulators had to ensure ways through which financial institutions adapt and work with the fast-growing MM innovation. By doing so, the institutions had to manage the results generated by their involvement with MM or other innovations while achieving their FI goals. Likewise, monitoring and tracking the progress of meeting the NFIF targets were the tasks that both regulators and institutions had to manage. This needed the engagement of the policymakers, regulators, and financial institutions. With so many parties involved through the PPPI, how to communicate different results and decisions without triggering adverse reactions from the financial institutions or the MNOs also involved politics. Consequently, their engagement, as well as an effective communication strategy, was the essence of the NFIF. Through the NFIF, the MNOs could negotiate the importance of MM and different strategies to enhance its development and growth. The current neoliberal political economy made all this possible.

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APPENDICES

Appendix 4.1 – List of Respondents and their Institutions

Type of Institution	Name of the Institution	Number of Respondents
Banks	Tanzania Postal Bank (TPB), National Microfinance Bank (NMB), National Bank of Commerce (NBC), EXIM Bank, Dar-es-Salaam Community Bank (DCB), Commercia Bank of Africa (CBA), Amana Bank, Akiba Bank, Access Bank	10
Mobile Network Organisations (MNOs	AirtelMoney, Vodacom M-Pesa, TigoPesa, HalotelPesa, Zantel EzyPesa, TTCLPesa	10
Regulators	Bank of Tanzania (BOT), Tanzania Insurance Regulatory Authority (TIRA), Tanzania Communications Regulatory Authority (TCRA), Fair Competition Commission (FCC), Tanzania Revenue Authority (TRA), Some of them are also the members of the National Financial Inclusion Steering and Technical Committees	12
Digital Platforms and Switches	BCX, Umoja Switch, Selcom, Maxicom Malipo,	5
Insurance Companies and Brokers	Alliance Insurance, G-Star, Milvik, Mo Insurance, Resolution	6
Associations	Tanzania Insurers Association (TIA) and Tanzania Bankers Association (TBA)	2
Financial Sector Development Agencies	Financial Sector Deepening Trust	2
Government Agencies	Ministry of Finance (MOF), Financial Intelligence Unit (FIU)	2
Development Donors	Danish International Development Agency (DANIDA); World Bank and USAID	6
Higher learning Institutions	University of Dar-es-Salaam	2
Relevant Professionals	Former Governor, Former Chair of the National Financial Inclusion Council, Interoperability Expert from WS Technology Consulting, IT Platform experts, Financial Sector Researcher and Author; 2 Professors	7
Low-Income Micronarratives from Low Income People	Commuter bus driver, street food and products businessmen and women, carpenter, mechanic	10
Low Income Interviews from Low-Income People	Various Background	10
Total		**84**

Appendix 4.2 Field Research Letter

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22 January 2018

To Whom It May Concern

Reference for Deogratius Joseph Mhella

I am writing to confirm that Deogratius Joseph Mhella is a student in the School of Sociology, Politics and International Studies (SPAIS) at the University of Bristol (he is registered at the University until 2019).

Mr Mhella will be conducting research in Tanzania (Dar es Salaam and Dodoma) between 1 February and 30 April 2018. The proposed research in Tanzania will serve to contribute to Mr Mhella's PhD study in the field of Global Political Economy (Thesis title: 'The Changing Political Economy of the Banking Sector: From Financial Exclusion to Financial Inclusion, 2006-2015'). It would be greatly appreciated if Mr Mhella could be afforded every assistance with regard to his research.

If you have any questions regarding Mr Mhella's work, please do not hesitate to contact me.

Yours sincerely

agut

Dr Adrian Flint
Senior Lecturer
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University of BRISTOL

Appendix 4.3 The Interview Questions

Interview Part I:

The main questions to be addressed here, which provide answers to the main research questions, include (as Interview questions):

- What kinds of changes have taken place within the banking sector that helped the emergence of the mobile money sector?
- What were the drivers and obstacles of these changes?
- Who has been part of these changes? How many Banks/Telcos have been involved?
- When and where did it happen? And How did it happen?
- What was the contribution of mobile money to the observed changes? For this element, I will also have to depend on e.g. banking sector reports, as well as reports by the MNOs and mobile money stakeholders;
- Did mobile money have any effects? What are these effects?
- What is the dynamics of financial exclusion in Tanzania and what are their consequences?
- What is the banking sector and the mobile sector doing to respond to the demand for financial inclusion?
- How important is this change in the dynamics of financial exclusion and inclusion, as well as for the financially excluded people?
- How important is this change in the dynamics of financial exclusion and inclusion, as well as the financially excluded people?
- How are the banking and mobile money policies designed and implemented?
- Are there any societal factors affecting financial exclusion and inclusion?
- Are there any market dynamics affecting financial exclusion and inclusion?
- How does regulation affect financial exclusion and inclusion?
- The sustainable development goals 1 and 10 deal with erasing poverty and income inequality respectively. How do the banking sector and mobile money affect poverty? And how does poverty affect the banking sector and mobile money?

Interview Part II:

The Interview questions, which help to answer the main research questions, include:

- What is the impact of your institution on financial exclusion/financial inclusion?
- In the advent of mobile money, what are the changes brought about at the level of banks and MNOs in dealing with financial exclusion and financial inclusion?
- How do the customers perceive these changes themselves? The changes that are referred to are the: (i) changes in the dynamics of exclusion and inclusion, (ii) economic situation; (iii) changes in their relationships with the banks and MNOs; and (iv) changes in their lives?
- All these changes, could they have happened without mobile money services?
- What is the perspective of the banks/MNOs on their interaction with the mobile money/mobile banking services?

Interviews with policymakers, bankers, mobile money providers and political elites can help to inform the study on:

- The details of the sectoral change process, for instance, what were the drivers and obstacles in the process of sectoral change? What strategies worked or what strategies did not work in making optimal use of the drivers in addressing the obstacles in the change process?
- The different steps that took place in helping the financially excluded to get access to (formal) financial services. What did Banks/ MNOs do to help include the financially excluded people? What kind of attitude change and/ or concrete action was needed?

To investigate power relations, the following questions may be asked:

- To what extent is the power vested in the hands of specific individuals/groups?
- How do different interest groups outside and inside the government seek to influence policy?
- How do the Banks and the MNOs use their 'structural' and 'instrumental' powers?
- How does the state use its power to control the banking sector?
- What are the predominant identities in the banking and mobile money sectors?
    - How are these identities shaped and reproduced by social and cultural norms?

- How do they influence political and judicial structures and processes?
- How do people perceive these identities?
- How do these identities shape different values or discourses?

Additional Questions for Regulators:

- What are the existing frameworks or regulations defining the existing rules guiding the banks in terms of competing with the MNOs (and or vice versa)?
  - Are these framework or regulations stable over time or predictable?
  - Are they legitimized or widely accepted?
  - Are they effectively applied? If not, why?

- What are the existing practices defining how the banks and the MNOs work together?
  - Do these practices seek to expand, complement, or contradict the existing frameworks or regulations?
  - Are these practices stable over time or predictable?
  - Are they legitimized or widely accepted?
  - Are they effectively applied? If not, why?

- Who participated in drafting the rules of the game (for instance: frameworks, regulations and practices)? At what point in time where these rules decided?
  - Do the rules represent the views, values or interests of a particular group?
  - Who opposes these rules and who supports them and why?

Additional questions for Banks and MNOs to address the transformation of the banking sector:

- Who are the main actors transforming the banking sector?
  - Who is decisive to produce sectoral changes?
  - Who is present, but not decisive?
  - Who is decisive, but not present or (not yet) mobilised?

- What are the prerogatives, attributions, responsibilities of these actors?
  - Who established these roles?

- What are the motivations of these actors to fulfill their responsibilities?
  - What are their preferences, interests, strategies?
  - What do they really do in practice?

- What are the actors'' motivations to cooperate with one another?
  - Is it the duty, tradition, self-interest?
  - Is it short-term or long-term interest?

- What makes cooperation possible?
  - Is it formal agreements, informal pacts or material exchanges?
  - Do existing institutions facilitate cooperation?

- How do actors ensure cooperation?
  - What happens if/when actors abandon their agreements?
  - Are there any explicit rules, formal agreements or informal pacts ensuring cooperation?

Appendix 4.4 Criteria for Assessing the Quality of Documents[5]

No.	Criteria for Quality Assessment (CQA)	Quality Checking Questions (QCQ)
1.	Document's Authenticity (the satisfaction that the documents were genuine)	There are nine ways of checking quality: (i) Are the data genuine? (ii) Are they from a primary or secondary source? (iii) Are they actually what they appear to be? (iv) Are they authentic copies of originals? (v) Have they been tempered with or corrupted? (vi) Can authorship be validated? (vii) Are they dated or placed? (viii) Are they accurate records of the events or process described? (ix) Are the authors of documents believable?
2.	Document credibility: (the extent to which the evidence was undistorted and sincere, free error and evasion)	In determining the credibility two will be asked: (i) Are the people who recorded the information reliable in their translations of information that they received? (ii) How accurate were their observations and records?
3.	Document's Representativeness	The 'typicality' of the document in terms of their relevance to the aim of the research.
4.	Document Meaning: (the clarity and comprehensibility of a document to our analysis)	Two Questions are important here: (i) What was it? (ii) What did it tell us about our research questions?

Source: Sansa (2010) quoting May, 2001:189-190 citing Scott, 1990.

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[5] The Table has been taken from Sansa (2010). Please, see above.

Appendix 4.5 Multi-Country Demand-Side Surveys on Financial Inclusion[6]

Multi-Country DEMAND-SIDE DATA SURVEYS on Financial Inclusion				
Survey	**Description**	**Frequency**	**Country Coverage**	**Publicly Available**
Global Findex	Cross-country, nationally representative survey of households' finances	Triennial rounds, annual rounds for selected questions	Global	Yes
Enterprise Surveys (World Bank)	Firm-level surveys, representative sample of a country's private sector. Broad range of business environment topics including access to finance measures	Every few years	Over 125 countries	Yes
Consumer Prote-ction, Financial Capability Surveys (World Bank)	Nationally representative survey of money management, planning behaviour, consumer protection awareness, and usage of financial products	One time, with potential to repeat	Selected countries (17 to date)	Yes
Living Standards Measurement Study (LSMS)	Multi-topic, nationally representative household data. Module on access to and usage of financial services available for some countries	Irregular	Selected countries	Partially
FinScope	Nationally representative study of consumers' perceptions on financial services and issues	Irregular	14 in SSA; India and Pakistan	No
MECOVI	Information about the living conditions of people with data on financial access rates	Irregular	12 in LAC	No
Financial Diaries	Year-long household survey that examines financial management in poor households	One year-long survey	Bangladesh, India, South Africa	No

Source: GPFI. (2011). 'Financial Inclusion Data: Assessing the Landscape and Country Level Target Approaches'. *Discussion Paper Presented by IFC on Behalf of the Global Partnership for Financial Inclusion – No. 94734*. Washington DC: International Finance Corporation (IFC) and global Partnership for Financial Inclusion (GPFI).

[6] For the original Table, see: https://www.worldbank.org/en/topic/financialinclusion/brief/how-to-measure-financial-inclusion

Appendix 4.6 Multi-Country Supply Data Surveys on Financial Inclusion[7]

Multi-Country SUPPLY-SIDE DATA SURVEYS on Financial Inclusion				
Survey	**Description**	**Frequency**	**Country Coverage**	**Publicly Available**
IMF Financial Access Survey (FAS)	Cross-country data on penetration and usage of financial services collected from regulators	Annual	Global	Yes
Global Payment Systems Survey (World Bank)	A snapshot of the payment and securities settlement systems in both advanced and emerging economies	Bi-annual	Global	Yes
Global Remittance Prices (RPW) database	Data on the cost of sending/receiving small amounts of money from one country to another.	Every 6 months	Global	Yes
MIX	Detailed operational and financial statement data from Microfinance institutions	Irregular	Over 110 countries	Partially
BankScope	Database with information on public and private banks. Detailed balance sheet and income statements per bank	Irregular	Selected countries	No
FinStats	Data on validated equities, gilts, fund prices, currencies, dividends and indices	Irregular	Selected countries	No
IMF-International Financial Statistics (IFS)	Collects eight financial inclusion indicators from regulators of roughly 190 countries	Varies	Global	Yes
IMF Financial Soundness Indicators (FSI)	Indicators of Financial Soundness that assess strengths and vulnerabilities offinancial systems	Varies	Global	Yes
GPFI. (2011). 'Financial Inclusion Data: Assessing the Landscape and Country Level Target Approaches'. *Discussion Paper Presented by IFC on Behalf of the Global Partnership for Financial Inclusion – No. 94734*. Washington DC: International Finance Corporation (IFC) and global Partnership for Financial Inclusion (GPFI).				

[7] For the original Table, see: https://www.worldbank.org/en/topic/financialinclusion/brief/how-to-measure-financial-inclusion

Appendix 4.7: Summary of the Key Documents[8]

The 1991 Banking and Financial Institutions Act (BFIA)	An Act to consolidate the law relating to the business of banking; to harmonise the operations of all financial institutions in Tanzania; to foster sound banking activities; to regulate credit operations; and to provide for other matters incidental to or connected with those purposes.
The 2006 Banking and Financial Institutions Act (BFIA)	An Act to provide for comprehensive regulation of banks and financial institutions; to provide for regulation and supervision of activities of savings and credit co-operative societies and schemes with a view to maintaining the stability, safety and soundness of the financial system aimed at the reduction of risk of loss to depositors; to provide for repeal of the Banking and Financial Institutions Act (Cap.342); and to provide for other related matters.
The 2015 National Payment Systems Act (NPSA)	An Act to make provisions for the regulation and supervision of payment systems; regulation of electronic payment instruments, electronic money, payment system services providers, validity and enforceability of netting arrangements, finality and settlement of payment instructions, and to make provisions for related matters.
The 2015 National Payment Systems Act Regulations (NPSARs)	Regulations to cover the following areas: licensing of payment systems, governance of payment systems, payment system associations, risk management, scope of services, approval to issue payment instruments, license to issue payment instruments, sanctions, and miscellaneous provisions.
The 2015 National Payment Systems Act: The Electronic Money Regulations (NPSEMRs)	Regulations to cover the following issues: electronic money issuance approval, electronic money issuance licenses, electronic money issuance, trust and special accounts, risk management and accounting, permissible services, transaction limits, agents, submission returns, consumer protection, sanctions, miscellaneous provisions.
The 2015 Electronic Transactions Act (ETA)	The Act covers the following: recognition and effects of electronic transactions, e-government services, admissibility and evidential weight of data messages, recognition of electronic contracts, consumer protection, cryptographic and certification service providers, general provisions, consequential amendments.
The 2003 Tanzania Communications Regulatory Authority Act (TCRAA)	An Act to establish the Tanzania Communications Regulatory Authority for the purpose of regulation of telecommunications, broadcasting, and postal services; to provide for allocation and management of radio spectrum, covering electronic technologies and other Information and Communication Technologies (ICT) applications and to provide for its operation in place of former authorities and for related matters.
The 2010 Electronic and Postal Communications Act (EPCA)	An Act to make provisions for the enactment of electronic and postal communications law with a view to keeping abreast with developments in the electronic communications industry; to provide for a comprehensive regulatory regime for electronic communications service providers and postal communications service providers; to establish the Central Equipment Identification Register for registration of detachable 81M card and built-in sim card mobile phones; to provide for duties of electronic communications and postal licensees, agents and customers, content regulation, issuance of postal

[8] This Appendix is a collection of details copied directly from the documents detailing these Acts.

	communication licences, and to regulate competitions and practices; to provide for offences relating to electronic communications and postal communications; and to provide for transitional provisions, consequential amendments and other related matters.
The 2006 Universal Communications Service Access Act (UCSAA)	An Act to establish the Universal Communications Service Access Fund for enabling accessibility and participation by communication operators in the provision of communication services, with a view to promoting social, education and economic development of rural and urban under-served areas; to provide for availability of communication services by establishing a legal framework for universal service providers to meet the communication needs of consumers and to provide for related matters.
The 2017 Finance Act (FA)	An Act to impose and alter certain taxes, duties, levies, and fees; and to amend certain written laws relating to the collection and management of public revenues.
The 1993 Tanzania Communications Act (TCA)	An Act to establish the Tanzania Communications Commissions to be responsible for the regulation of postal and telecommunications services in the United Republic of Tanzania; to provide the designation of public postal and telecommunications licensees; to provide for all matters pertaining thereto.
The 1993 Tanzania Broadcasting Services Act (TBSA)	An Act to make provision for the management and regulation of broadcasting and other related matters.
The 2015 Cybercrimes Act	An Act to make provisions for criminalising offences related to computer systems and Information Communication Technologies; to provide for investigation, collection, and use of electronic evidence; and for matters related therewith.
The 2006 Anti-Money Laundering Act (AMLA)	An Act to make better provisions for prevention and prohibition of money laundering; to provide for the disclosure of information on money laundering; to establish a Financial Intelligence Unit and the National Multi-Disciplinary Committee on Anti-Money Laundering; and to provide for matters connected thereto.
The 2003 Tanzania Fair Competition Act	An Act to promote and protect effective competition in trade and commerce, to protect consumers from unfair and misleading market conduct and to provide for other related matters.
The 2002 Companies Act	An Act to provide information on how to register companies in Tanzania.
The 2002 Prevention of Terrorism Act	An Act to provide for comprehensive measures of dealing with terrorism; to prevent and to co-operate with other states in the suppression of terrorism; and to provide for related matters.

Appendix 4.8: Some Extracts from the Research Diary to Outline the Evolution of Ideas

While FI is regarded as a policy objective in Tanzania by the BOT (di Castri and Gidvani, 2014), essential literature and studies on FI and MM tend to concentrate on the micro level rather than the macro level. FI policies or strategies at the macro level have been mostly under-researched by researchers in this field (also see: Jonathan and Camilo, 2008; Merritt, 2010; Demombynes and Thegeya, 2012). This situation leads to the first purpose of this study which is to determine the type of political economy that led to MM's advent and the transformation from high levels of FE to increasing levels of FI. The objectives of this study, as explained in Chapter 1, were also vital in determining how I selected the respondents or institutions I wanted to interview (also see Sections 4.6.3 and 4.6.4). Research questions were established (see Chapter 1) not to drive the research in a particular direction but to enable conversations with the interviewees to help select the central emerging themes (also see Appendix 4.3). It helped to draw some tentative conclusions after interviews about the research issues. During the interviews, I remained flexible to allow as many ideas and as much evidence as possible to help me investigate the emerging issues even further. The responses from the respondents were extremely diverse. I realised later that a structured and standardised questionnaire with little flexibility would not be a useful tool for data collection.

I developed the theoretical framework after I had conducted data analysis, which I did months after I had used the in-depth structured interviews to collect the data. Given the complexity of the investigated issues and the exploratory nature of this research, it made sense to develop a theoretical framework after I had conducted the analysis of the data. Cobbledick (1999:347) suggested that in-depth unstructured interviews should be flexible and that the extraction of data for the analysis should be carefully done to include the most relevant respondents who generated and revealed useful and hidden crucial data.

As the study was exploratory, I selected 11 key elites whose explanations during the interviews reflected the policy issues I was investigating at a macro level (see Sections 4.6.3 and 4.6.4). This sample was somehow small but represented some of the diversity in the initially selected sample of 64 elite respondents in the area of interest. The 11 elites came from different institutions from the financial and telecommunications sectors or were other FI stakeholders, including those providing digital platforms for banks and MNOs. They were either members of the various committees in the NFIF, or were invited to attend the meetings of those committees in some instances (also see: TNCFI, 2014; TNCFI, 2018). They shared may perspectives, goals, tasks, and responsibilities. Also, they were all interested in how the banks and MNOs worked together to facilitate FI.

The four research objectives I had shaped how I planned the interviews (see Section 1.3). Drawing on several years of personal research on Tanzania's financial sector reforms, I used a systematic structure to guide the line of data collection and questioning in the interviews (see Appendix 4.3). The structure had two parts. Part 1 sought to investigate the political economy of FE, FI, MM, and banks. Part 2 aimed to examine the transformation from FE to FI, including how the regulators, banks, and MNOs responded to this transformation (see Appendix 4.3 for the specific questions).

In in-depth unstructured interviews, the above structure can be referred to as 'aide memoir' (also known as an 'agenda') (Minichiello et al., 1990; McCann and Clark, 2005). The aide memoir is a tool that makes researchers remember to cover all the issues they are interested in during the interviews (also see: Burgess, 1984; Briggs, 2000). The structure I used during the interviews could come close to semi-structured interviews at times in terms of the selection of the key issues I wanted to explore in some specific interviews. However, the interviews remained unstructured in terms of the format and the range of the questions, and the order in which the questions were asked was not predetermined. Likewise, I did not differ from other unstructured interviewers because I had to ask questions focusing on the individual context of the conversation (on unstructured interviews see: Punch, 1998; Patton, 2002; Minichiello et al., 1990).

The aide memoir, as described above, helped me generate hidden, consistent and structured data from the different respondents, which is difficult to achieve when researchers conduct interviews without any pre-existing structure. The aide memoir made the data analysis easier. I used thematic analysis for data analysis. The thematic analysis can efficiently be conducted when the researcher has an idea about the possible outcomes of the findings and the structure of the interviews. Burgess (1984) supports these views.

On average, the time I used to interview the respondents varied from nine minutes (for financially-excluded people) to two hours and thirty minutes (for the elite respondents). Other interviews fell in between these times. Most low-income people I interviewed had a primary or secondary level of education and provided short answers. They did not like to talk much. I had to ask them a lot of questions to get some useful data. The steps I took to probe issues of particular interest during the interviews were to keep on asking to know more about specific topics, and to follow up with other respondents later, including reading the relevant literature to learn more about those issues. As these were in-depth unstructured interviews, the environment was more friendly, just like a discussion, where I asked open questions and discussed some of the raised issues. This strategy helped me to assist the interviewees in unveiling new and sometimes hidden information (on the strategy, also see: Moyle,2002; Streubert and Carpenter, 1999; Sutcliffe-Braithwaite, 2016; Kombo and Tromp, 2009). The research aimed to report the findings rather than elaborating on methodological concerns. Reporting methodological concerns could determine if other studies could be repeated in the future by other researchers, as they continued the work or verify the findings. Thus, I handled the emergent issues well by asking other respondents about those issues during other interviews to see their reactions and to get their responses regarding those issues.

At the onset, the study tried to investigate MM's political economy and the changing banking sector due to the transformation from FE to FI. The sample consisted of 84 respondents: 64 elites, who worked for different institutions, and 20 low-income individuals from all walks of life. Follow-up interviews to collect additional data were conducted when needed. Due to ethical considerations and to ensure confidentiality, most interviewees' identities were not revealed. The research objectives were to provide a rich account of MM growth and its advent as well as the transformation from high levels of FE to increasing FI in the financial sector, as well as the banking sector's response to this transformation (see Chapters 5, 6, and 7). I intended to probe how MM started in Tanzania, how it grew, what facilitated its advent and growth, how it enabled FI, how it moderated the factors of FE, and how the banks reacted to the new entrants (MNOs) in the NPS. I did not have a preconceived theoretical framework for this study. I had a tentative conceptual framework that ended up changing and was replaced by a new theoretical framework as delineated in Chapters 1 and 3. I did not conceive the classical and neoclassical perspectives as the two foundations of my theoretical framework at the time I started this research. Neither did I think of rolling-back and rolling-out neoliberalisation as the two policies that helped bring about the advent of MM and, after that, allowed MM to moderate the factors of FE to increase FI in Tanzania. Hence, I did not have pre-defined hypotheses to test. I sought to understand MM, FE, FI and the banking sector's reaction as well as to gain an understanding of a political economy that facilitated the growth and advent of MM and FI. I depended much on every respondent to help me understand the Tanzanian MM and FI realities. The intensive and detailed data depended on the research objectives (see Section 1.3) and led to the selection of in-depth unstructured interviews as a data collection method (see Chapter 4).

Interviews were conducted at different workplaces or other locations, and each lasted between nine minutes and two and a half hours. I did not prepare questions for each interview session. At the beginning of each interview, I used one of the questions from a list of questions as they appear in Appendix 4.3. After that, I followed up on the answers and asked new questions as they emerged, and as the evidence unfolded. I did focus each interview on the research purpose and objectives (see Section 1.3). Interviews started by the researcher asking the respondent(s) to describe what they do or what their institutions do, which I considered to be very general questions. It was a good beginning as it helped the respondent(s) to explain what they do every day, and it helped to break the ice, and relevant research questions followed. That question helped reveal contextual information about themselves or their institutions. It also presented me as a researcher who wanted to learn what their work or responsibilities were and what their institutions did.

Hence, these general questions were used as good starting points to help engage the respondent(s) in the conversation (also see Appendix 4.3). I reverted to more relevant and challenging research questions as the interviews progressed. This is an in-depth unstructured interview technique (also see: Moyle,2002; Streubert and Carpenter, 1999; Sutcliffe-Braithwaite, 2016; Kombo and Tromp, 2009). This led the discussions toward more relevant and specific research questions to unveil the issues of MM, FE, FI, and the response of the banking sector. This technique of questioning and interviewing facilitates not only the engagement of the respondent(s), but also led to more focused conversations. There were many different questions used for each interview, depending on the issues discussed in those interviews. I captured the interviews by recording through a Dictaphone and on very few occasions by writing down the answers when the respondent(s) refused to be recorded. This situation was repeated three times. I also transcribed the interviews for the analysis. It took about three months and it was a time-intensive and consuming task. From the transcripts, it was clear that unstructured interviews produced varying data from one session to another, which helped construct the Ph.D. story about MM, FE, FI, and the response of the banking sector. I used a thematic analysis technique for data analysis, which enabled me to select the key themes and content emerging from the interviews (especially from well-informed respondents) (see Chapter 4). I started by creating the codes first. The coding helped to identify and link the different emerging themes and concepts. Then, those codes turned into themes. Those themes helped me build my Ph.D. story and created the relevant research objectives for this Ph.D. study. From these research objectives, literature review, and interviews in Phase 1 and other emerging themes in phases 2 and 3 of the interviews, the three research questions emerged (see Section 1.3). I had to answer these research questions by reading the interview transcripts, literature reviews and other follow-up interviews.

When I chose unstructured interviews, I intended to use them to study complex policy and political-economic issues leading to the transition from FE and FI, including the advent of MM and the banking sector response. The in-depth unstructured interviews provided detailed descriptions of the researched issues. I used these details to design and to write this Ph.D. dissertation.

Phases Involved in In-Depth Unstructured Interview Sessions

Phase 1:

I used three phases in conducting in-depth unstructured interviews: first, I interviewed eight low-income people near the Tandika Daladala Station to have an idea of MM, FI, FE, and banking issues. The interviewees included four small MM agents: a 'mama ntilie' (a woman selling food on the streets), a car mechanic, a 'muuza kashata' (candy seller), and a 'daladala' driver (commuter bus driver). Second, after interviewing in Tandika, I interviewed other respondents near the Makumbusho area. I interviewed two elites: an MM platform expert and a senior employee of a big aggregator company. I also interviewed an MM super-agent at the Mnazi Mmoja area. As listed above, in Phase 1, I interviewed 11 respondents ranging from low-income and financially-excluded people to an MM platform expert. These were unstructured interviews. This first phase of interviews helped me build an understanding of Tanzania's MM, FI, FE, and banking sector issues. It also helped me develop a sampling strategy based on what I heard from the first 11 respondents. This first phase strengthened the sampling strategy that I prepared before arriving in Tanzania (see Section 4.6).

Phase 2:

Before arriving in Tanzania, I wrote down a list of who I had to interview (see Section 4.6). I also prepared tentative interview questions to help me investigate further the issues of my research (see Appendix 4.3). In most interviews, I did not use this set of questions, but they were there to consider asking them if I had to. Having in mind what I prepared before arriving in Tanzania, and what I got from the first phase of interviews, I furthered the investigations in Phase 2 where I interviewed 62 elite professionals from different institutions to understand the various policy issues affecting MM, FE, FI, and aspects of the banking sector. The results from this stage of interviewing brought the focus down to policy and political-economic issues that facilitated MM, FI, moderation of FE, and the banking sector's response to the increasing levels of FI caused by MM.

After the first 14 interviews, which included TTCL as an MNO, and FINCA and AMANA Banks, I reached out to the senior policymakers. They included the MoF, BOT and TCRA officials. I reached out first to the BOT senior officials; the first interview was with the policy people, and the second interview was with NPS experts and the senior TCRA official. Before meeting with the senior TCRA official, I met with TigoPesa officials. In this order, I had met with the two MNOs (TTCL and TigoPesa) before I met with TCRA. These two meetings helped me to understand some of the MM challenges before I met TCRA as the regulator. Furthermore, I met with the remaining four MNOs (HalotelPesa, Vodacom M-Pesa, AirtelMoney, and Zantel - EasyPesa) after I had met with the TCRA. I also met with ten banks (FINCA, AMANA, AKIBA, TPB, NBC, DCB, EXIM, CBA, ACCESS, and NMB) before I met with a respondent from TBA and the former BOT governor. By the time I met a respondent from TBA and the former BOT governor, I had interviewed the respondents from all six MNOs and respondents from at least eight banks. I had also met with the BOT, MoF, FIU, TCRA, FSDT, and the World Bank. These interviews helped me to follow up with the issues I learned from all of the above respondents by asking the former governor, who was the chief policymaker, and the NFIC chairperson, on the one hand, and with the TBA respondent on the other. The governor was key in bringing into perspective everything I had learned before meeting him. Meeting the governor was a turning point, as I started to understand the critical policy issues and how I would need to analyse them to write a meaningful dissertation. He also advised me to meet with a few people as well. Thus, I ended up meeting with donors such as DANIDA, USAID, FCC, and the insurance institutions, including TIRA, TIA, Resolution, MO Insurance, Alliance, and Milvik Insurance Brokers. I also asked for a follow-up interview with TBA.

Phase 3:

I implemented Phase 3 in two different stages. The first stage was interviewing 13 low-income people, and the USAID-ASPIRES and -ENGINE teams as one of the development donors. During these interviews, I wanted to know what the low-income people knew about MM, FI, and banking issues. I also wanted to check what I had learned from the elites was what low-income people acknowledged. I also wanted to know from one of the donors about FI and MM in Tanzania, and what they think about MM, FE, FI, and the banking sector response. The second stage of this phase was to conduct follow up interviews on the critical policy issues with the former BOT governor and the former chairperson of the NFIC, two respondents from FSDT, and one of the financial sector's prominent authors who also worked with the BOT. These interviews helped me to clarify some of the critical policy issues I did not understand when I conducted other interviews earlier. It was during this stage that I was also introduced to the essential and official documents on FI in Tanzania, such as FSDT (2017), TNCFI (2017a), TNCFI (2017b), and TNCFI (2018).

Other Qualitative Data from Other Respondents (other than the 11 Elites) and How It Has Informed the Research's Perspectives and Findings

The three phases explained above, 1 demonstrated who I met and how my thinking kept on developing from one interview to another. See the earlier sections above to know the sequence of how the interviews occurred. I used Phase 1 as a pilot. I was trying to understand the issues that low-income and financially-excluded individuals had, so I could seek policy and theoretical perspectives and clarifications when I met with policymakers, MNOs, banks, and other FI stakeholders (see Section B.2).

From the interviews in Phase 1, the following issues were raised: first, taxation was not an issue when mobile money started as the government did not impose taxes. In 2017, the government began imposing taxes, and MM users felt this taxation. It turned out that taxation was low and fair. However, for a financially-excluded individual, even a dime was too much. I explained these issues in Section 5.5. Second, the agent factor emerged. Agents are of two kinds: small agents and super agents. They both help the MNOs reach the financially-excluded people easily (also see Sections 6.4.2.1.1, 7.4, 7.7.2, and 7.8 to understand the role of agents and their contributions to these academic debates). Third, of the 11 respondents I interviewed in Phase 1, seven did not have bank accounts. This lack of owning bank accounts by the low-income respondents demonstrated that not only was FE a problem, but it also illustrated that MM moderated some factors of FE and increased FI, as discussed in Chapter 6. Fourth, I also discovered during the Phase 1 interviews that MM users not only deposited, withdrew and transferred money, but also saved, got microloans, and paid bills and utilities using mobile financial services. The microloans were also becoming a working capital for some financially-excluded individuals. I discussed these issues in Section 6.4.3. Fifth, the issues of KYCs also emerged. Some of them contributed to FE the financially-excluded people lacked IDs or the documentation they needed to open an account with a bank. It appeared that MM services had less strict KYCs that attracted many financially-excluded individuals to start using MM services. The TTCL interview brought in the factors and challenges of operating MM services in Tanzania. I used some of the knowledge I got in the interview also to write Chapters 5 and 6 to explain MM's advent and growth in Tanzania.

Phase 2

During Phase 2, I learned that the critical issues for the research I was conducting were situated around the CLF and the NPS. The CLF has been detailed in Chapters 3 and 5 (see Sections 3.7.3 and 5.4.2). I also detailed the NPS in Chapters 3 and 5 (also see Sections 3.7.4 and 5.4.4). It emerged that the CLF facilitated MM advent during the deregulation and liberalisation of the telecommunications sector, also referred to as the roll-back era. In this dissertation. The CLF was used as a tool to advance the liberalisation of the telecommunications sector and added value to the mobile phone services, which gave rise to MM services:

> "The best thing that the TCRA did a while ago was creating what was referred to as the 'Converged Licensing Framework' … That Framework I am talking about 2006 or 2007. The issuance of the license to every service, as technology has changed over time. We issued converged licenses since 2006. They said they provided a license that was technologically and service neutral. What did all this mean? … They are free to do any innovation based on the licensing framework. As I said earlier, it is converged and that we do not regulate the technology. We do not regulate the service …. Hence, mobile money was like an addition to the services offered by the operators" (Senior Telecom Sector Official).

At the same time, the NPS was flexible to allow services outside the banking sectors to offer formal financial services to financially-excluded people. There was a need to regulate the financial sector to enable fair competition between the banks and the MNOs. This phenomenon is referred to as the rolling-out neoliberal era in this dissertation:

> Eh, you know, the central bank is an authority. It has authority over banking and payment systems. Eh, the MNOs which provide mobile money services use the payment system and become part of the payment system. They are not doing banking business. And we made it clear from the very beginning about these two different roles as the banks objected of course. They objected from the very beginning, arguing that the MNOs were entering the money business. They argued that MNOs use the payment system. They complained that the MNOs did not have appropriate supervision and requirements while using the payment system. The banks had strict supervision and requirements. In which case, they saw it clearly, that lack of strict supervision and requirements created conditions for unfair competition. And as they learned from elsewhere, mobile money services could be under the banks … Therefore, this National Payment System Act, eh, came after we have gone through all these experiences and the NPSA provided the legal space for mobile money activities (Former BOT Governor).

It became clear from the interviews in Phase 2 that the CLF and NPS were the two main bedrock foundations for this research. This is reflected in every chapter of this dissertation. Whether it is the 'test, monitor and regulate' approach, interoperability issues, barriers to FI, or the banking sector's response to increasing levels of FI through MM, the CLF and NPS perspectives could explain these issues. The interviews in this phase helped me to come up with the theorising of these issues and facilitated locating of the literature gaps. Of course, as you will see in the dissertation, I also had to depend on the literature to explain the theorising of these issues (see Chapters 1 and 3). However, the interviews led me to conclude that roll-back and roll-out neoliberalisation processes catalysed the advent of MM and its growth as well as facilitating how MM moderated some factors of FE to increase FI in Tanzania. Through literature, I could explain this thinking through classical and neoclassical perspectives, as demonstrated throughout this dissertation. Some respondents could also help this research explain the advent of MM and its growth in Tanzania (in Chapter 5), the moderation of factors of FE (in Chapter 6), and the banking sector's response (in Chapter 7). Some of the ideas and knowledge from the interviews were incorporated and included in these chapters, even though the quotations were not provided. They claimed that the impact of MM was massive and has helped to change their lives.

Phase 3

During Phase 3, I sought to understand if what I heard from Phase 2 was correct and convincing. I had to go back to low-income and financially-excluded individuals and to one of the donors (USAID) to understand how they perceived MM and FI in Tanzania. I asked the low-income and financially-excluded people what they thought about MM and banking services. Most of the respondents did not have bank accounts, but the selection was random. and I did not know whether they had a bank account. I also did not know if they had an MM account either. Of the 10 low-income respondents I had interviewed in this phase, eight respondents used MM services, and only two had bank accounts.

The respondents agreed that MM services were empowering them financially:

> "For me, Tigo services, especially 'Tigo Timiza'. Therefore, 'Timiza' has helped me and have facilitated in smoothing my financial shocks and issues. I remember I had problems with paying rents. I had no money. I got a loan from them. I was able to pay my rents. Now I live better with my kids. Airtel is the MNO that has helped me to meet my financial needs" (Fisher - Low Income Respondent).

> "Although there are challenges here and there, mobile money services have provided us with affordable financial services. We can now save and deposit small amounts. It does help because you save in a small amount to make it a significant amount. Your savings stay there, and you will use that in the future" (Mbwana – Low-Income Commuter Daladala Bus Driver).

> "Mobile money technology has helped to change people's lives. The impact is massive. Without mobile money, making ends meet would be very challenging for some people. At times, you are at work, and someone at home needs money. If it were not mobile money, you would leave the workplace to go home. With mobile money, you still stay at work and continue working while you send money home through your mobile phone device" (Emanuel - Low-Income Respondent):

> "As I have mentioned earlier, mobile money has become part and parcel of our lives. Thus, people have made these transactions part of their lives. Whether it is a boss in the office or a passerby, everyone walks with his mobile phone and has a float on the phone. He wants to buy things when he gets to the shop. It is an alternative of you holding cash in your hand or an alternative to a bank card. Now, they use mobile money … He comes to an agent to withdraw 200,000 TShs and goes to buy what he wants. It has become part of our lives" (Noorah - MM Agent).

Most of them did not consider banking services an option as they thought their incomes were not good enough to cover the banking services. They used MM services to pay their bills, rents, and other utilities. They also used MM to send money to their families and loved ones. They also received money from their families and friends:

> **Researcher**: Who is helping you the most? The MNO or the banks?
>
> **Mbwana (Bus Driver)**: Airtel money. Airtel money.
>
> **Researcher**: It seems like you don't often use bank services.
>
> **Mbwana (Bus Driver)**: I have never used the bank services.
>
> **Researcher**: That is fine. It seems like mobile money, and this Airtel money serves better low-income people.
>
> **Mbwana (Bus Driver)**: Yes. If you follow their conditions and take loans and pay on time, you get money and you can finance your small business, then yes, they serve us better.
>
> **Researcher**: What I get from you is that the MNOs serve the low-income people and that the low-income people like to use them. This is real. It is not a fabrication of publicity from them. Isn't it?
>
> **Mbwana (Bus Driver)**: That is true.

Some of them used MM to accept transactions when cash was not available. They felt the burden of taxation and other charges and could recommend their removal:

> "I use the Tigo service. TigoPesa helps me. When I want to send money to my village, I do so easily. It has simplified these financial services. The government has increased taxation, so they have increased service charges. At times, I have to use AirtelMoney services. It helps. AirtelMoney charges seem to be lower" (Fisher – Low-Income Respondent).

Another respondent a bus driver also echoed these views:

> **Mbwana (Bus Driver)**: I think the agent services could be improved. For instance, when I send 10,000 shillings the commission and taxes are also charged. So, I have to send 11,500 for the receiver to received 10,000. These expenses can be a challenge to those living in villages.
>
> **Researcher**: Do you think that the taxes have increased?

Mbwana (Bus Driver): Here in Dar es Salaam the charges are not an issue. I am not sure about those living in the villages. Based on the low-incomes, I assume that any increase in charge affects them somehow.

Researcher: Do you think there are different rates for urban and rural areas?

Mbwana (Bus Driver): I don't think so. It is just me thinking about the economic activities in these two areas and the residents' income levels in these two areas with different development levels.

Most low-income respondents thought that the government should not interfere with blocking MM, but figured it could use its powers to improve how MM served financially-excluded and low-income people. They confirmed that MM helped to bring formal financial services close to low-income and financially-marginalised individuals. They also reaffirmed the importance of agents as a link between MNOs and financially-excluded people. Seven out of 10 low-income respondents in this phase also claimed to have used MM for saving purposes:

"I am self-employed selling 'kashata' (candy) and other small items. I get some little money. Yes, I get something. I walk and stroll-out selling candies. In this way, I get money to eat and survive. I use AirtelMoney a lot. I just like Airtel. I started using it since I owned my first mobile phone. I have stayed with Airtel, and I have not changed to getting another line with Tigo or Zantel. It helps me to send money. To save, I put money on my phone. In short, it helps me as I do not have a bank account. Mobile money helps small traders like me to get a wide range of financial services" (Gaston - Low-Income Respondent).

Low-income respondents thought that MM was good for the country's development and credited globalisation/neoliberalisation for MM technology development. They reaffirmed the availability of microloans and how they would get microloans. In short, they preferred MM services over banking services.

"I credit globalisation/neoliberalism for mobile money success. Second, any developing country must change to develop. How? Nobody succeeds right from the beginning. We started slowly by buying vouchers for airtime. Then, we call. In the past, for instance, we used TRITEL. During that time, there were no mobile money services. However, people added money through vouchers, and you needed to buy a significant amount of airtime using a voucher. These days they have lowered the costs, and we have mobile money. We can put 3,000 or 5,000 TSh on mobile phones. When I need money, I can even cash out of my savings" (John – Low-Income Respondent).

> "If I meet someone walking with money, I will tell them to put that money in a bank, but more likely, I will encourage them to use mobile money. You have it there, and you can use it at any time and faster. You own the phone even when you are in bed sleeping, and you can still make transactions while at home. If you have TigoPesa, you directly and quickly go to buy some rice to cook. It is convenient and easy to use these services" (Said – Low-Income Respondent).

> "A lot of banks in Tanzania still have minimum balance requirements for account owners. That minimum balance is 10,000 TSh. For a person who earns an average of 40,000 TSh a month, 10,000 TSh is a lot of money. It is a fourth of what they are supposed to spend. So having that 10,000 TSh in a bank account is a lot of money. So, we don't have 10,000 balance requirements for mobile money. You don't need 10,000 TSh to stay active with mobile money (Financial Sector Official).

Also, I interviewed the USAID (ENGINE and ASPIRES Programmes) to follow up with what I had learned about development donors in Phase 2. From Phase 2, I realised that donors did not support MM innovation with the same interest they had in other development projects. Of course, it got the DFID support to materialise operationally. The experts who initially created those systems were Tanzanians and not Kenyans. They were called the e-Fulusi. Their first role was to back up innovation with risk, and risk that the private sector itself could not take.

> "Traditional donors usually do not do innovation. They want proven systems that they can use to support delivery. However, with FSDT, a nucleus around which several supporters/development partners actually congregated, eh, as if you want a coordinator, a coordination of that kind of support. I think that was quite important. Eh, from the data and surveys, and the interoperable activities, almost along the work step. The fundamental principle is that their money can bear that type of risk and play a significant role in terms of innovation, but the traditional aid money does not. When you see some results, they can, and they came very late into this. Yeah" (Former BOT Governor).

Subsequently, since many development partners were interested in poverty alleviation and fighting exclusion, MM innovation was picked up quickly by many foundations and not so much by the traditional development partners to start with. Foundations were typically money that could bear the risk of innovation and its proceedings. Traditional donors usually do not support innovations in the same way they help other development projects. They wanted proven systems to be used to support delivery. But with FSDT as a nucleus around which several stakeholders and development partners congregated to provide coordinated support, new innovations transformed access to formal financial services. Interviewees asserted that traditional development partners came later to support MM innovations in Tanzania. The foundations were the first, except for the DFID, according to one respondent. This delay by traditional donors to support MM would be verified by other interviews with DANIDA, UNDCF, and USAID (ENGINE and ASPIRES Programmes).

From the three phases of interviews, it became clear that NPS, CLF and neoliberalism were vital in answering my research questions. This was how my research thinking started to develop. The research questions were formulated based on in-depth research and using documentary or secondary data. My data analysis established the research gaps in FI, FE and MM. Based on my research objectives and interests on the one hand, and on the literature and research gaps I identified along with the Ph.D. upgrade examiners' advice, I developed an interest in learning more about the political economy that facilitated the development and growth of MM in Tanzania. Therefore, the following research question was created: what was the political economy that facilitated the growth of MM in Tanzania? I went to Tanzania to understand this political economy. Among many other research questions and issues, I wanted to answer that question or understand that political economy. Based on the respondents' responses to the many questions I was asking, and after the consultation with my supervisors, it became clear that it was a neoliberal political economy. After considering the previous literature, research gaps, objectives, theoretical perspectives, and the Ph.D. upgrade examiners' advice, the question was 'how did neoliberalism facilitate the growth of MM in Tanzania?' The fieldwork responses I got from the interviewees and the themes evolved from the interview data analysis, including the literature provided answered this question.

As I mentioned earlier, the literature review, including theoretical and research gaps I provided during my upgrade examination coupled with my interests in studying MM and FI, identified the need to research MM and FI and MM and FE. Researchers have often investigated MM and FI but have rarely investigated MM and FE. Therefore, it made sense for me to examine the moderation of FE factors through MM in Tanzania. The upgrade examiners and I arrived at this conclusion based on the literature I had read and presented, which showed a research gap in this area. The line of thinking that supported this idea was also based on the research objectives I had presented to the Ph.D. upgrade examiners and on the fact that if MM survived and succeeded in Tanzania, then there should be something of value that made MM survive. Hence, I formulated the following question: how did MM moderate the factors of FE in Tanzania? After considering the research objectives, literature review, the research and theoretical gaps that I had identified, and the Ph.D. upgrade examiners' advice, I formulated this research question. We all agreed that looking at how MM moderated FE's factors to increase FI could be one of those values. The responses I had received while doing fieldwork in Tanzania and the themes evolved from the interviews during data analysis provided answers to this second research question.

Moreover, based on the previous research I conducted before the fieldwork in Tanzania, the research objectives, and the Ph.D. upgrade examiners' advice, it became clear that the banks have a significant contribution in the financial sector. One would think that the banks should be at the forefront of FI. Having discovered that some FI comes from the MNOs and not the banks, and a body of literature also supports these views, it became clear that there is inclusion through the MNOs. The question was: "what are the banks doing and what are their responses?" Hence, the third research question was formulated as "what was the banking sector's response to increasing levels of FI through MM in Tanzania?" The different themes and evidence emerged from the data analysis provided answers to this third question as well.

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Appendix 4.9: Selected Elite Respondents Whose Quotations Appear in the Dissertation

Labels Given to the selected Respondents
Former Governor
Senior TBA
Senior Telecom Sector Official
Financial Sector Official
Executive Banking Sector Official
Executive Financial Sector Official
Senior Official BOT
Senior Interoperability Expert
Senior Banking Official
Senior Switch Officer
CEO Aggregator

Appendix 4.10: A Full List of the Respondents

Interview Number	Name/Job Title	Organisation	Place	Date
1	Zalona/"Mama Ntilie" (Woman Selling Food on the Street)	Low-Income Business	Tandika, Dar-es-Salaam	February 2018
2	Ferouz - Small Mobile Money Agent	Low-Income Business	Tandika, Dar-es-Salaam	February 2018
3	Abuu - Small Mobile Money Agent	Low-Income Business	Tandika, Dar-es-Salaam	February, 2018
4	Said - Mechanic/Driver	Low-Income Business	Tandika, Dar-es-Salaam	February, 2018
5	Mbwana - Daladala Commuter Bus Driver	Low-Income Business	Tandika, Dar-es-Salaam	February, 2018
6	Gaston - "Kashata" (Candy Seller on the Streets)	Low-Income Business	Tandika, Dar-es-Salaam	February, 2018
7	Noorah - Small Mobile Money Agent	Low-Income Business	Tandika, Dar-es-Salaam	February, 2018
8	Emmanuel - Super Mobile Money Agent	High-Income Business	Mnazi Mmoja, Dar-es-Salaam	February, 2018
9	MaxMalipo Senior Officer	MaxMalipo	MaxiMalipo Office – Millennium Tower, Dar-es-Salaam	February, 2018
10	Platform and Infrastructure Expert	Independent Expert	Makumbusho, Dar es Salaam	February, 2018
11	TTCL MM Official TTCLPesa Marketing Official	TTCL	TTCL, Headquarters, Dar es Salaam	February, 2018
12	Senior Banking Official	FINCA Microfinance Bank	Serena Hotel, Dar-es-Salaam during a FINCA Conference	February, 2018
13	Senior MoF Official	Ministry of Finance	Serena Hotel, Dar-es-Salaam during a FINCA Conference	February, 2018
14	Amana Bank Senior Official	Amana Bank	Amana Headquarters, Dar-es-Salaam	February, 2018
15	Senior TBA Offical	Ministry of Finance and Planning	Ministry Headquarters, Dar-es-Salaam	February, 2018
16	BOT Official BOT Senior Financial Inclusion Policy Official BOT Senior Financial Inclusion Expert BOT Senior Staff Member – Microfinance BOT Senior Staff Member – Financial Inclusion	BOT	BOT Headquarters, Dar-es-Salaam	March, 2018
17	Senior BOT Official NPS Financial Analyst Senior Financial Analyst	BOT	BOT Headquarters, Dar-es-Salaam	March, 2018
18	MM Expert	TIGO	TIGO Headquarters, Dar-es-Salaam	March, 2018
19	Senior Telecom Sector Official	TCRA	TCRA Headquarters, Dar-es-Salaam	March, 2018
20	Senior Financial Intelligence Official	FIU – Ministry of Finance and Planning	FIU Office at Ministry of Finance and	March, 2018

			Planning, Dar-es-Salaam	
21	AKIBA Bank Senior Official	AKIBA	AKIBA Bank Ilala Branch	March, 2018
22	The CEO Aggregator	SELCOM	SELCOM Headquarters, Dar-es-Salaam	March, 2018
23	Mobile Money and Mobile Banking Expert	TPB	TPB Headquarterts, Dar-es-Salaam	March, 2018
24	Financial Sector Official	FSDT	FSDT Headquarters, Dar-es-Salaam	March, 2018
25	Mobile Money Compliance Expert Mobile Money Services Official	Airtel	Airtel Headquarters, Dar-es-Salaam	March, 2018
26	Mobile Money Services Expert	Zantel	Zantel Headquarters, Dar-es-Salaam	March, 2018
27	Senior Interoperability Expert	WSConsulting	Diamond Plaza Building, Dar-es-Salaam	March, 2018
28	Digital Alternative Channels/Retail Banking Expert	NBC	NBC Headquarters, Dar-es-Salaam	March, 2018
29	Mobile Banking and Customer Official	DCB	DCB Headquarters, Dar-es-Salaam	March, 2018
30	SACCOS and VICOBA Expert	Hazina SACCOs	Ministry of Finance and Planning, Dar es Salaam	March, 2018
31	Author, Economist and Financial Specialist	BOT	BOT Headquarters, Dar-es-Salaam	March, 2018
32	Umoja Switch Financial Inclusion Expert	Umoja Switch	Umoja Switch, Letsya Towers, Kijitonyama, Dar-es-Salaam	March, 2018
33	Halotel Mobile Money Expert	Halotel	Halotel Headquarters, Dar-es-Salaam	March, 2018
34	Exim Bank Senior Mobile Banking Expert	Exim Bank	Exim Headquarters, Dar-es-Salaam	March, 2018
35	M-Pesa Float Expert Senior M-Pesa Official Vodacom M-Pesa Marketing Official	Vodacom	Vodacom Headquarters, Dar-es-Salaam	March, 2018
36	Senior Taxation Expert Taxation Systems Officer	TRA	TRA Headquarters, Dar-es-Salaam	March, 2018
37	Political Scientist and Senior Lecturer	University of Dar-es-Salaam/Mwalimu Nyerere Foundation	Mwalimu Nyerere Foundation Offices (Science and Technology Building), Dar-es-Salaam	April, 2018
38	Political Scientist and Senior Lecturer	University of Dar-es-Salaam	University of Dar-es-Salaam, Dar-es-Salaam	April, 2018
39	Senior Manager in Cash Management and Transactional Banking	CBA	CBA Headquarter, Dar-es-Salaam	April, 2018
40	Senior Switch Expert	BCX	BCX Headquarters, Dar-es-Salaam	April, 2018
41	Political Scientist and Professor	University of Dar-es-Salaam	Kunduchi Beach Hotel, Dar-es-Salaam	April, 2018
42	Senior Diplomat DANIDA Economist	DANIDA	Danish Embassy, Dar-es-Salaam	April, 2014

43	Senior Financial Specialist	World Bank	World Bank Offices, Dar-es-Salaam	April, 2018
44	The Executive Banking Sector Official	TBA	TBA Offices, Sukari House, Dar-es-Salaam	April, 2018
45	The Former BOT Governor	Former employee of BOT	Kunduchi Beach Hotel, Dar-es-Salaam	April, 2018
46	Insurance and Microinsurance Expert	TIRA	TIRA Headquarters, Dar-es-Salaam	April, 2018
47	Alternative Channels Specialist Mobile Banking Expert	ACCESS Bank	ACCESS Bank Headquarters, Dar-es-Salaam	April, 2018
48	Insurance Expert	G-Star	G-Star Office, Dar es Salaam	April, 2018
49	Insurance and Microinsurance Expert Insurance Expert	Resolution	Resolution Headquarters, Dar es Salaam	April, 2018
50	Corporate Communications Senior Officer	NMB	Communicated Through Emails	April, 2018
51	Senior Insurance Policy Official 1	MO Insurance	MO Insurance Office, Dar es Salaam	April, 2018
52	Senior Insurance Policy Official 2	Alliance Insurance	Communicated Through Emails	April, 2018
53	The Executive Banking Sector Official	TBA	TBA Headquarters, Sukari House, Dar-es-Salaam	April, 2018
54	Senior Consumer Protection Officer	Department of Consumer Protection, FCC	FCC Headquarters, Dar-es-Salaam	April, 2018
55	Senior Microloans and Mobile Money Expert	Milvik	Milvik Office, Dar-es-Salaam	April, 2018
56	Senior TIA Official 1 Senior TIA Official 2	Tanzania Insurers' Association	Kitega Uchumi Building, Dar es Salaam	April, 2018
57	Emmanuel - Boda Boda Driver	Self-Employed	Kinondoni B, Dar-es-Salaam	April, 2018
58	Fisher - Low-Income Boda Boda Driver	Self-Employed	Kinondoni B, Dar-es-Salaam	April, 2018
59	Seki - Low-Income Boda Boda Driver	Self-Employed	Kinondoni B, Dar-es-Salaam	April, 2018
60	Said - Low-Income Boda Boda Driver	Self-Employed	Kinondoni B, Dar-es-Salaam	April, 2018
61	Gratius - Low-Income Tailor	Self-Employed	Moroko, Dar-es-Salaam	April, 2018
62	ASPIRES and Financial Inclusion Expert ENGINE and Financial Inclusion Expert	USAID	USAID Offices, Dar-es-Salaam	April, 2018
63	John - Low-Income Shop Seller	Employed in a Shop	Moroko, Dar-es-Salaam	April, 2018
64	Thomas - Low-Income Barber/Hairdresser	Self-Employed	Moroko, Dar-es-Salaam	April, 2018
65	Paolo - Low-Income Charcoal Seller	Self-Employed	Moroko, Dar-es-Salaam	April, 2018
66	Karin - 'Mama' (Street Food Cook and Seller)	Self-Employed	Moroko, Dar-es-Salaam	April, 2018
67	Robert - Small Trader/Machinga	Self-Employed	Moroko, Dar-es-Salaam	April, 2018
68	Financial Sector Official	FSDT	Over-the-Phone	April, 2018

69	Executive Financial Sector Official	FSDT	Over-the-Phone	April, 2018
70	Former BOT Governor	Former employee of BOT	Over-the-Phone	April, 2018
71	Author, Economist and Financial Specialist	BOT	Over-the-Phone	April, 2018
72	Financial Inclusion Specialist	United Nations Capital Development Fund	Over Skype	April, 2018

Appendix 4.11: At Macro Level: Extracts from Interview Transcript 1

Researcher: I am trying to understand the process that initiated mobile money, as banks objected to its arrival in other countries. They thought the MNOs would be their competitors. In Tanzania, the government allowed the advent of mobile money. It took off. Was there opposition from the banking sector? I want to understand why banks allowed mobile service providers to start mobile money services. Was it like a government intervention to push innovation and financial inclusion, or banks saw the benefits of mobile money services and allowed it to take off?

Former BOT Governor: Eh, you know, the central bank is an authority. It has authority over banking and payment systems. Eh, the MNOs which provide mobile money services use the payment system and become part of the payment system. They are not doing banking business. And we made it clear from the very beginning about these two different roles, as the banks objected, of course. They objected from the very beginning, arguing that the MNOs were entering the money business. They argued that MNOs use the payment system. They complained that the MNOs did not have appropriate supervision and requirements while using the payment system. The banks had strict supervision and requirements. In which case, they saw it clearly, that lack of strict supervision and requirements created conditions for unfair competition. And as they learned from elsewhere, mobile money services could be under the banks. Likewise, of course, eh, whether one proceeds with innovation or otherwise, is a willingness to take risks to let innovation lead. At the same time, you monitor, and then appropriately, you manage the risks. We call this system ‘test, monitor and regulate’. And, this was the concept. I had that clear, clear commitment on this one. Second, we had meetings. Every two years in this financial sector, if you want, eh, it was like a symposium. In that symposium, of course, the banks were also clear about the same issue. I understood it clearly that, look, firstly, mobile money providers were purely creating a transfer system. It is a platform. They don’t issue money because a unit is sitting in a bank transfer account for every unit that a customer buys through mobile money. So, there is no creation of money. Eh, then it is true that they are not taking deposits. This is clear. They are not doing credit business. This was clear. What distinguishes a bank from other institutions is deposit-taking. Per regulations, regulations are essential in terms of supervision to manage the risk in relation to the protection of deposit interests. That was the main principle. So, those are not taking deposits. There is no risk of exposure to the depositors. They are involved in the payment system, and that is purely a platform. Yeah, purely a platform. And we told them that it was also true that for every shilling of the electronic money balance sitting in the e-wallet of anybody, they were the custodians in the trust account of the equivalent given to it. Yeah, so we told them that there was no competition. There is no competition in relation to the core business of the banks. Eh, of course, since banks also make transfer payments, maybe with regard to transfer payments, but, they know that since they have limited reach, that was the problem we were trying to solve. Brick-and-mortar branches wouldn't be cut, ATMs were very few, and we needed to reach everyone in a cost-effective way. And we told them, look, if you used this platform well, you could grow your business in a very cost-effective way. Fortunately, they started talking about agent banking. And they started seeing that actually, they could widen their net and network without going through branches. Yeah, so they started having agents. Big banks like CRDB and NMB were the first to embrace that, and they could see that that was what was there. Secondly, I think they also noticed that it made banking much more efficient and convenient, eh, for their customers, because now they do it through the mobile banking platform. Eh. Once you had these integrators, operators such as MaxMalipo and others, which were platforms for them, allowed them to connect with their customers through mobile devices. These platforms act as the aggregators, and essentially you are going through them when you are doing mobile banking. Except for one, which wanted to create its platform which became very expensive, because eh …

Researcher: Which one was that?

Former BOT Governor: NMB wanted to do so, but, eh, even those who did so, eh, Standard Chartered and CRDB, they had to adapt their platforms to connect and sync with other platforms run by the integrators, which made it very expensive. So, it was the cost, and I told them that anyone, eh, including me as a customer with several banks, that they had to look at their mobile money operations, and that without thinking about a switch, their operations would be costly because of their investment costs and the costs of overheads they are spreading across very few customers of theirs. Whereas if they have a switch, everybody goes through that system. And the costs will go down. Yeah. So, we have come to the level of understanding that this could be in their favour. So, now they are thinking about creating a switch, yeah, a collective switch for the same purpose. This clarified the issue they had initially, which was how you know peace was ultimately brought about through all these steps. Finally, eh, indeed, a few, at least one bank to start with, and other banks may start using the platforms for saving and credit. That was CBA. By looking at the example of M-Pawa, other non-bank financial institutions also started using the same platform for credit only because they were not allowed to take deposits except for banks. That also made a distinction. It became obvious who the bank was. It was CBA. Even if they used a platform called M-Pesa for transactions. So, whoever was offering the M-Pawa services was actually a client or a customer of the bank. Over time, their own coverage, meaning the growth of their customer base, was enhanced with agent banking lending a helping hand and services like M-Pawa. Everybody saw that. They agreed very clearly that mobile money services acted complementary to banking. They were not a competition. And fortunately, during my time, we had meetings every two months. The MPS meetings with the banks' CEOs let them know about the new decisions we had made etc. They also gave us an opportunity to always talk about these things. We also had what we called the 'quarterly' meetings with banks, where we dedicated about two to three hours once a quarter whenever we did it, to discuss issues with them that would require joint solutions. And we used those opportunities to deal with these issues. Yeah, and we made it very clear that if there were questions about these issues, put them on the table. We would work together on them, and we would find solutions. It was also confirmed that we had a national financial inclusion council where banks were represented, so were other stakeholders, where we talked about various innovations and various actions for promoting financial inclusion. That was another platform to resolve any potential conflict across multiple stakeholders. The central bank was in the council's chair, so that was another opportunity to talk about these issues. Not only talks between the central bank and banks in a bilateral fashion as we did bi-monthly or quarterly that I spoke of earlier, but also the national financial inclusion council meeting involved all essential stakeholders. Everybody could get a chance to discuss the issues. We were able to ultimately, I think everybody now knows, and I am pleased that this has been extremely useful to banks. Yeah.

Researcher: When it comes to the regulations, mobile money started without a robust regulatory system.

Former BOT Governor: Yeah.

Researcher: Mobile money started through the 'test and learn'.

Former BOT Governor: This was exactly what I was telling you.

Researcher: Yeah.

Former BOT Governor: At the onset, we decided we gave the guidelines. It was not that they could just start. Eh!

Researcher: Right.

Former BOT Governor: We had to permit them to operate. We told them that mobile money companies should separate from the telecommunications side. So, we did have simple initial rules, but in terms of setting regulations, we introduced the National Payment System Act after we had learned the risks, in terms of what was risky, and what was not risky, and how risks could be mitigated.

Researcher: Right.

Former BOT Governor: We did that after making this important decision that informed mobile money companies that the customer money in trust accounts was not the MNO money. It belonged to their customers. It is like they have deposits with the banks in one basket, but one can actually tell based on the average deposit or average balances in each wallet, the customer's balance. So, when the MNOs earn an income from a trust account, they have to redistribute it and give the profit share to the customers. It is the shared profit on a pro-rata basis of the average balances in the e-wallet that each one has.

Researcher: Right.

Former BOT Governor: Eh, and this we did before we established that Act, therefore the Act itself was part of what we did. And now, this has actually helped to create an evident sense, eh, of who their customers are, and those customers understand that, look, you can save money in your phone and actually get remunerated from it.

Researcher: Right.

Former BOT Governor: Maybe, one could argue that this comes close to the competition if you want, but it is not competition because that money is being remunerated from trust accounts in banks. The bank is just a conduit, and I was interested in visiting the villages, having a couple of sessions with people just to know why they opt to put their money in a bank account instead of keeping it in their phone. Do you know what their answer was? One of the villagers said that if you save through the banks at every end of the month when you check your balance, even when you have not used your account for that month, your balance has reduced, because you know ledger costs, etc. Eh, if you saved through mobile money, that was what they said, even before they started paying the dividends/profit, your money was still intact, nothing had reduced the balance if you did not use your account. Eh, and that is a big difference. These days I am told, I am sure if you asked him again, and on top of that he will say “I also still earn some profits on this side”.

Researcher: Right.

Former BOT Governor: So that was a clear expression of why, eh, you know, the clientele were happy with the system as it was. Therefore, this National Payment System Act, eh, came after we have gone through all these experiences and the NPSA provided the legal space for mobile money activities.

Researcher: From your experience, how could my research issues be analysed?

Former BOT Governor: First, the financial system, eh, is what you have to look at. Prior, during, and in the most recent time. So, the financial system serves the basic, eh, functionality of the system with the government at any point in time and is never separate from it. So it is true that before 1966 the whole commercial system was external oriented, and it meant in essence one paid a lot more attention to working with the major marketing agencies, and companies that collected primary commodities for export. You also had a few major supplying entities of imports, eh, for use, eh, in the rural areas. But, even if that system had mobile money from there, it would have worked better than without it. Because what mobile money has come to solve, as I said, is really those three or four, eh, if you want, challenges. One of distance, one of scale, we talked about affordability, and one of managing risks. This is the technical solution part of these issues. So, you have to look at mobile money, eh, as a means to an end. It is not by itself as an end. It is always serving the system. It is also true that even when these changes took place, in 1966, it was a lot more about who owned the system. And it wasn’t so much focused on how we got services and where they are supposed to get. Otherwise, you would have seen a whole range of, maybe, microfinance institutions. And you know that the instrument that was used was cooperatives, Yeah. Eh, to try and reach wherever that one could. Eh, of course, cooperatives also build their own ranks in there, and whoever that was in charge of those ranks virtually bankrupted the cooperatives as a system. So, cooperatives were one set of chances to get finances down to the people as they tried to replace the old system. The banks, eh, the big changing banks, but it was the state that took over ownership to align with this new operational framework, which in essence, as I’ve said, was built around cooperatives and villages. Eh, but the fundamental constraints of space, of affordability, eh, and of risk remained. Their solutions were not sought, even though those solutions intended to bring about a major change. This continued even in a more liberalised state. The early effects were again that doors were open to private ownership of banks. Government partly retained some participation, but certainly, the doors were open. A whole range of these banks came back. Still, as I said, until 2006, 9% of the adult population could be included. So, neither the shift to state ownership nor the cooperative system nor the liberalisation stage succeeded in breaking these constraints. That's why it is essential to go into the fundamentals of what helped break the constraints to do this. So, I think your story can be told, but alongside it, keep in mind the constraints, and that is more on the technical constraints that needed solutions. Indeed, without these solutions, it would be challenging to increase financial inclusion. We had the intentions to include people, and we stated clearly how we wanted to use microfinance solutions, eh, building these so that we could. You remember, even before we embarked on liberalisation, during the time of Nsekela, read his era, he introduced frontline banking which in essence was an effort to try to reach precisely the frontline. Eh, but until liberalisation started several branches, ministries and others created systems such as the cooperatives were included and all these had issues. And one of the theses you may want to take a look at, I don't know if you have read it, is Ndalinshau's thesis. Michael Ndalinshau.

Researcher: What is it called?

Former BOT Governor: The essay is on the informal financial system in Tanzania. He went through the history, eh, whether it is rotating savings or neo-credit issues.

Researcher: Is it a book?

Former BOT Governor: This was a Ph.D. dissertation that I supervised.

Researcher: Ok, from the University of Dar es Salaam?

Former BOT Governor: Eh, the University of Dar es Salaam. He might have written a few papers on that from his dissertation. Still, it is fairly rigorous; I mean a careful record of the evolution of these systems, including the role of different kinds of players in the financial system. Eh, be it cooperatives, be it ROSCAs, Rotating Savings Associations, be it … all these and the state's role trying to get there, eh, is described. As I said after 2006, you will see how far we had got, from independence from 1961 to 2006. How many years? 45 years. Eh, that was how far we got. I think after independence we were somewhere around 2% or 3% of inclusion. After that, it climbed to 9% in 45 years and then there is this huge jump from 9% to 65%. It can't just be the will to proceed. The will, in the sense of embracing financial inclusion.

That as a concept was embraced a long time ago. And we have seen cooperatives and the other instruments; the government tried all these instruments. Yeah, it was their approach.

Researcher: This time, technology is the critical factor.

Former BOT Governor: Yeah, technology has helped.

Researcher: I see that, that is fine. I see you have helped learn many things, including the things I was looking for in those processes. When writing my Ph.D. I should also consider some recommendations in the future as an integral part of my Ph.D. For instance, things that have been done and those other things that need to be corrected. Maybe they should have been done better than they have been done. For instance, what I get from other bankers, they mentioned that one thing they would like to see changed was the KYCs, in terms of the different tiers of verification. They feel like sometimes they have been fined simply because they have miswritten the records. When the regulator comes to inspect and identifies some mistakes, the FSPs are fined heavily. So, they felt like there should be different verification systems from tier 1 of verification, it then goes to tier 2, then tier 3 to ensure that everything is in order. And then, there are so many other issues … for instance, the banks would like to work using one switch because the existing switches, including the BCX or Umoja, do not include every bank. They would like the use of one switch, and we heard that the government is encouraging the creation of that switch, and they are in the process of launching it. I think that will be taken care of within a short period. Yeah.

Former BOT Governor: Who is launching this main switch?

Researcher: I think it is e-government … there is one switch that the government is considering launching, and it will replace some of these other switches.

Former BOT Governor: I am not sure. You see, a switch can be taken from very different perspectives. I know for sure the Bankers' Association itself discussed in a tautology that it would like to set up a national switch. Eh, it does not need just to be a government switch because a switch must have members, eh, as a part of it. Otherwise, you don't have a switch. Yeah, you can't just say that everybody will use the same highway because there is a highway. Not necessarily! You could have many other highways. So, that commitment, I am not sure where they are with that project. Talk to Kimei. He is still the chairman of the TBA. His deputy is the Standard Chartered CEO. They will tell you where they are with the switch project. This might be different from the one that the government has emphasised, more from the tax base perspective through which the tax base is captured well. It is different from the other switches in the sense that this switch must have an international component as well. Just ask them, and they will have the answers because a number of these banks are already part of the global switches anyway. So it is not like they were waiting for this other one. No. They are used to it. Then, there is an initiative to connect national switches across East Africa as a cross -border initiative. There is even more, eh, there is the East African if you want, 'EPS' payment system, which is operational. And it is a multi-currency switch; we use our currencies to settle transaction across borders. There are many initiatives, including in the SADC area, where we have another switch, which uses Rand. However, they want to use all the currencies in the future. So, all these initiatives are there. Where do we place the government switch and what will it replace is a different issue. However, the KYC issue is something that we have been working on, and we were required to conduct a national risk assessment to connect to the global standard-setting bodies. They also need to agree. And one of the major constraints to financial inclusion, which requires a global initiative, Africa attended the conference; I remember we represented Africa during the Global Standard Basel Conference. We discussed the global standard-setting issues, and we agreed on cleared KYCs, which were based on the assessment of risk for the different levels of transactions. In essence, that was what we had used as far as mobile money is concerned. Eh, it is because you have a limit on the transactions side. You want those transactions not to exceed a specific limit to reduce the risk exposure. So, as a condition of moving to tiers, they want you to do a national risk assessment, which will give comfort for the first time. The use of tiered, if you want, KYCs which we have used so far to run mobile money as opposed to banks, is different. Mobile money KYCs are different from the banks' KYCs. Whether that system has not been problematic, that is another issue. That people have not misused the use of that tiered KYC to transact that is another issue. The misuse of the tiered KYCs is also illegal. Eh, so that consent is there, is known, solutions are being sought with tiered KYCs, but there is a requirement that you do this so that you get a green light from the standard-setting bodies which oversee the KYCs globally. We cannot set our own KYCs standards. If you do this all banks and correspondence banks, they will refuse to okay the transactions. For example, the US will be concerned with terrorism, as the new KYCs can be regarded as a conduit of terrorism. This will mean the death of banking as far as the cross-border banking is concerned. And we are a country that depends on export and imports to do our business. Hence, we have to adhere to those standards. At least we have put enough pressure for them to actually open this door. Before we did this, the US asked for another requirement known as KYCC (Know Your Customers' Customer) and not only Know Your

Customer, which is the KYC. So, there was the requirement of the KYCC. We also sought the support of FATF who are the responsible standard-setting body. They supported us. They dropped off the KYCC. So now, the challenge is to move from KYC as a single monolithic system to tiered KYC, and I think we would succeed in that. So, it's true that that is one of the constraints. I think it is not enough just to have access; there are three steps. First, you improve access. Access doesn't mean utilisation, you can have access, but you are not utilising it. Access levels based on the 2017 FinScope survey for our country were close to 88%, but utilisation is at 65%. So, some have access but are not using it adequately. The next big drive is to increase utilisation, eh, which means you have to have the right products responsive to the previously unbanked group's needs, and particularly microcredit is fundamental. Yeah, the savings side is also moving pretty well, and you must invest in capabilities, and the central part of that is financial literacy. This country has already set up, if you want, a foundation that will deal with this. The central bank has resourced its initiation. However, FSDT and other stakeholders will follow. Those who are ready to provide financial literacy can be funded to help people use financial services. One thing is to know that you have access and the other thing is to understand what the products are and what products are available, what's the cost, how do you use them? Also, to improve utilisation, you need customer protection, so that people continue to have confidence in that system. Be it from fear that technology can be an issue, or worry that you cannot resolve the dispute you may have with the service provider. This is very important, which is the third leg in terms of getting utilisation. Once you have increased utilisation, then we have to look at the impact, ultimately financial inclusion is not an end in itself but a means to an end. You want to help the previously unbanked, the poor, to get microcredit to SMEs and poor households, but how that makes a difference in their livelihood is another issue. The latter is about the outcome, eh, and it has an impact on financial inclusion. The other things are the means only, but an outcome and that outcome should cause an impact. So, when we speak of utilisation, what we want is utilising previously unbanked, utilisation by the poor people. For instance, the TASAF programme has become part of that system. They are getting paid through that system. It allows people to manage their savings and investments better. They are people who are making an impact assessment. What difference is it making to their livelihood and the way they manage this? Suppose the government decides that all teachers and all health workers in the villages can be paid through this system. In that case, they will reduce teachers' absenteeism because they will no longer be required to go to the districts at the end of the month to receive their salaries. Surprisingly, they could spend that money on the booze, the same I also think for health workers, so these ultimate impacts are things that we hope will actually materialise.

Researcher: What was the role of development donors in this financial inclusion era? Were they supportive and did they get involved?

Former BOT Governor: Of course, if you look at history, in Kenya, for instance, the whole mobile money concept started here, and the youth were actively involved. It got the DFID support to materialise operationally. Those youngsters who created that system were Tanzanians and were not Kenyans. They were called the E-Fulusi and so their first role was to back up innovation with risk and risk that the private sector itself couldn't take. Subsequently, since many development partners were interested in, if you want, poverty and fighting exclusion anyway, from whatever services, this innovation was picked up quite quickly by many foundations. And not so much by the traditional development partners to start with. Foundations are typically money that can bear the risk of innovation and proceed. Traditional donors usually do not do innovation. They want proven systems that they can use to support delivery. However, with FSDT, a nucleus around which several supporters/development partners actually congregated, eh, as, if you want, a coordinator, a coordination of that kind of support. I think that was quite important. Eh, from the data and surveys, and the interoperable activities, almost along the work step. The fundamental principle is that their money can bear that type of risk and play a significant role in terms of innovation, but the traditional aid money does not. When you see some results, they can, and they came very late into this. Yeah.

Appendix 4.12: At Meso Level: Extracts from Interview Transcript 2

Researcher: We can start with the infrastructural issues. Are you dealing with the issues of infrastructure? And what does the infrastructure mean when dealing with mobile money?

Platform and Infrastructure Expert: It is an underlying technology that creates these systems, the way these systems run, platforms, whether they are interconnecting between, as you know there is interoperability, so how does it connect between mobile money service providers and the banks, on the one hand, and other solutions-providers on the other.

Researcher: How do you define a platform?

Platform and Infrastructure Expert: So, basically, a platform is an engine that runs either the wallet or parts of the mobile wallets system. This could be something like a ledger that does the debiting and crediting, reconciliation of revenue assurance, or reporting. So many are depending on whoever the provider is, for that particular mobile money ecosystem.

Researcher: Is it a language?

Platform and Infrastructure Expert: No, no, no. It is basically a system, so it could be a system or an entire ecosystem.

Researcher: By language, I mean things like html and whatever else.

Platform and Infrastructure Expert: So, in one system, they could be multiple; for example, the underlying technology could be DINAS. It could be a hostel or tomcat webserver that connects the Oracle or Myschio database that operates on the reporting with web platforms. So, it is multiple systems all in one.

Researcher: Are there any security issues with these systems?

Platform and Infrastructure Expert: So, it depends. I mean every system has a way of controlling IT, so, multiple admins. For instance, there is a segregation of duties; it can be a database administrator, where you only deal with the database. If you are dealing with malware issues, you only deal with malware, so that if it needs to collude, you need to talk to three or five people, unless you steal the password(s) together. Systems are segregated, and they operate individually. So you could be an admin, but you don't have every password. You may have one password, but you may not have the super password. You may not have it. So, what tends to happen is you have the first part of the password the other person has the second part. For you to control the system, we must all use our passwords.

Researcher: When it comes to mobile money, how does it work?

Platform and Infrastructure Expert: So, it depends. Mobile money is a vast term. So the basic essence of operating a mobile wallet in a feature phone, you have a feature phone that connects to a mobile network, so these are the MNOs (Mobile Network Operators). And then plus the connection they have configured something known as the USSD. With USSD, it allows you to request multiple services and exchange responses and interact with systems using shortcodes in terms of numbers. For example, in Tanzania, it has been standardised. All the financial services are under *105*xx#. Right?

Researcher: Right.

Platform and Infrastructure Expert: So, when you do that, your mobile phone would tell the network, I am trying to reach this mobile money service. The other mobile money service would respond either with the menu or with indications. Right? The majority of banks take you to one of the indications before they take you to the menu. However, MNOs would like to give you the menus and only validate you at the end of the transactions. You select the choices on the menu once your account has been selected. If I want to take you back to the old days, the first thing you do is walk to the shop. You buy a sim card. They ask you for an ID. There you do the KYCs. You register. The registration helps the providers to know their customers. Once they know who you are, your account is activated. You are by default owning a mobile money account on your phone, but you need to activate it. How do you activate it? By dialling the menu, and then entering what is called as a ‘default code’, that might be provided or by default there is nothing there. You enter your pin to confirm that the account is yours, and that account is activated. The next step is to reload, to put money in your mobile wallet. Right? You go to either a ‘wakala’ (agent) to put the money on your phone, or you can use your bank account, if you gave one, to send money to your mobile wallet. You can also ask someone to send it to you so that you receive it. Once you receive it, you have a virtual token wallet on your phone.

Researcher: The value now.

Platform and Infrastructure Expert: The value, so, with the value, there are multiple things you can do. Either withdraw it, pay for goods, pay for services, or transfer it to another mobile number, or to a bank account. So now it gets even easier to transfer it abroad. All these features plus additional information services in your account like balance request, mini statement request, change of pin, and all that, they are all under one menu. Right. You dial that menu, you start walking in the bank hall, you say, oh I am here to see my statement. I am here to send money. I am here to withdraw money. I am here to pay for these goods. This is the invoice. I am here to transfer money to someone. It is the same thing, but you have it on the mobile phone - USSD.

Researcher: So, that is the USSD which is commonly used in Tanzania?

Platform and Infrastructure Expert: Yes, that's the basic access.

Researcher: What is the other one?

Platform and Infrastructure Expert: I thought we had seen mobile apps ageing; these are smartphones applications.

Researcher: So mobile apps, do they use the USSD or not?

Platform and Infrastructure Expert: No, so there are two parts. There are those of third parties that indirectly resemble the USSD, like the app called MULA. Secondly, there are those used by either mobile money operators or aggregators. These use something called API, Application Programmable Interfaces. This is a machine talking to another machine. So, the API is an app in your phone talking to a server directly without using USSD.

Researcher: Ok. That is another model. Completely different.

Platform and Infrastructure Expert: That's entirely another model. It is relatively new. Maybe the first app has been in Tanzania for the past two and a half years. And yes, they evolved faster ever since, yeah, Tigo Pesa started, AirtelMoney followed, and then, Vodacom launched. They started with 100, and now they are also available on Apple products' IOS. The technology has attracted many businesses in terms of its suitability for payments for goods and services. You can imagine that paying for goods and services was not comfortable using the USSD. The USSD is limited in terms of the characters, and it is also limited in terms of the sessions and time, but an app is easy because you can even scan what you are trying to pay for.

Researcher: Ah, ok. I assume that the tendency in Tanzania is that they still use the USSD a lot?

Platform and Infrastructure Expert: The majority still uses the USSD. However, the emerging trend is such that the middle-class people and the businessmen tend to use apps for shopping.

Researcher: So this is the same system that is used for mobile banking?

Platform and Infrastructure Expert: No. Mobile banking is still the same. It comes with both options. One is USSD, and the other is an App. So, it is almost the same thing. They are using the two methodologies to get the services.

Researcher: Oh. Ok. Yeah. As an infrastructure provider, then how do you connect with mobile businesses?

Platform and Infrastructure Expert: Yeah! Do you mean mobile operators?

Researcher: Yes, the MNOs.

Platform and Infrastructure Expert: So, we have to differentiate between MNOs and MMOs. You can be a mobile money operator without mobile money services.

Researcher: So, there are mobile money providers?

Platform and Infrastructure Expert: There are mobile money operators and mobile money network operators. So, how do you connect mobile money operators is first by establishing that business relationship. That I am Mhella and I want to either send or receive funds through your network. Right, so with those business arrangements, say if you receive 1,000, how much should we charge either you or whoever is paying you? Or when you send 1,000, how much should we charge you whenever you are sending to anybody? That is out of the way. The business arrangements are out of the way. What is left is the technical part. And that is where we come in. So previously we used to rely a lot on what we call 'flat files', or 'web calling' meaning the system goes on a web and then tries to get transactions, but lately there have been a lot of APIs. There is an organisation called 'GSMA", Global Association for, is called GSMA Association so basically is an association.

Researcher: I know it.

Platform and Infrastructure Expert: So GSMA tries very hard to work with the operators first to get APIs, but they realised it is too cumbersome for every operator to have their own APIs. What they have done, they have worked on a project to harmonise the APIs.

Researcher: Through interoperability?

Platform and Infrastructure Expert: No, these are different things. So, this is, you can operate with an API without interoperability. Interoperability doesn't necessarily require an API. It is another way of communicating and doing reconciliation. That's a separate topic.

Researcher: Right.

Platform and Infrastructure Expert: But the APIs as they are, they are just one of the ways interoperability can be done. With the harmonised API, it means as long as you have agreed on a business case, the way you connect to one mobile money operator is the same way you connect to the other operator. If you agree with Vodacom, then the technology you use, the codes you use will be the same: connecting Tigo Pesa, or Airtel Money. So, your question was, how do you engage? To answer in short is a business arrangement, that is, you agree on the structure of fees, limits, transfers, how your actual money be handled after it has been received or sent, which account they deduct, you also need to deposit some money before you start sending money out, and then secondly is the technical part. That means you are connected to the API.

Researcher: So, that's it. Who is controlling you? Who is giving you the license, I mean that process of being operational, who is regulating you?

Platform and Infrastructure Expert: Previously, it used to be TCRA. The Tanzania Communications Regulatory Authority. Slowly, we are entering the financial sector, and we are increasingly seeing the Bank of Tanzania's involvement.

Researcher: So, who is who now?

Platform and Infrastructure Expert: Both regulate them because for you to operate a shortcode you need TCRA's license, at the same time to hold somebody's funds depending on what you are trying to do if you are paying, BOT wants to know who you are. However, if you are going to hold somebody's deposit at any time, even if it sits at the bank, you need a license from the BOT.

Researcher: How do you go through that process?

Platform and Infrastructure Expert: So that question I am reserving for the banks and the MNOs.

Researcher: Because the thing is, one of the questions is, I am trying to understand that process that allows the emergence of mobile money services.

Platform and Infrastructure Expert: So, at a very high level, there are so many licenses depending on where you fit that question. However, at the basics of it, if you are not a bank, you probably ask for the license from the NPS (National Payment System), which is a

Directorate at the Central Bank. They have different licenses and schemes. If you are a mobile wallet, you have a different license. If you are a bank, you fall under banking supervision for which later you still have to go to the NPS. You need to be regulated as a bank. The majority of the system aggregators and integrators, and wallet providers go for a license at NPS.

Researcher: NPS! Is that through the BOT?

Platform and Infrastructure Expert: Yes, that's through the BOT.

Researcher: Your platform, what is its name?

Platform and Infrastructure Expert: So, we don't have a platform. We are providing. We are working with companies on infrastructures.

Researcher: On infrastructures.

Platform and Infrastructure Expert: Yes, that means they can buy a platform from anyone they want. It could be 'Conviva'. It could be 'Teno'. It could be … you name it. That system needs to be hosted on an infrastructure. Our competence is to understand how companies meet the requirements provided by software providers. Also, to help them utilise the full potential of the infrastructure to scale in the market. Because software providers can give you whatever they think may work, but it may not work in the market as well.

Researcher: So, working with these people, what are the challenges that you face?

Platform and Infrastructure Expert: Technology evolves very fast. Super fast. And the adaption rate depends on how you attract potential customers. You can't use somebody's past data to plan for your future because by the time it gets into the market, that data may no longer be relevant. So, I think the ever-changing business environment impacts a lot on how technology is supporting innovations.

Researcher: Innovations?

Platform and Infrastructure Expert: Yeah. So that is a challenge.

Researcher: So, do you have anything or some of the platform's things to facilitate how the users engage with mobile money? Maybe it is hard for them to understand how the transactions are made because they are not technology savvy. Do you get any complaints about the complications of the system?

Platform and Infrastructure Expert: No. Not really.

Researcher: Do you make them user-friendly in other words?

Platform and Infrastructure Expert: The guys who work there, they are already in the business, and they understand. The customers are mostly at the enterprise level; those do not; there is not much of the education needed to be offered. Also from the front, a lot has been done to educate people what mobile money is; today you go in the market, the mama will tell you how mobile money works, and she can cross-sell that to the next mama, so the customers understand. Of course, there are small issues here and there due to wrong transmissions, or fraud cases here and there. Still, collectively mobile money operators and banks are doing a fantastic job taking initiatives to educate how to use mobile money services. That is not our biggest concern. I think adoption is very high, people may not understand anything about banking, but they know mobile money. Yeah.

Researcher: Are there any legal issues that limit your businesses?

Platform and Infrastructure Expert: Like?

Researcher: Any legal issues? The conditions? Issues?

Platform and Infrastructure Expert: For us specifically, less adoption when it comes to businesses connecting to mobile money, cause the barrier to entry, so are the requirements one has to fulfil to connect with mobile money operators. They are not easy to achieve for a start-up company that is trying to facilitate payments for small scale merchants, right, so that being said, I think the regulators can assist in terms of understanding what ways can they use to lower that entry point, for let's say, start-up companies that want to facilitate either payments or other value-added services.

Researcher: So, you are saying that it is not a very competitive environment?

Platform and Infrastructure Expert: No, it is a super-competitive environment.

Researcher: What about the entry? It sounds like it is a monopoly.

Platform and Infrastructure Expert: There are those who cannot afford to enter the markets due to their financial positions, but that doesn’t necessarily mean that they are the most innovative or have the best customer care.

Researcher: Yeah. So, the playground is not levelled?

Platform and Infrastructure Expert: It is. However, the business is not levelled. And we don't expect for it to be levelled, but the entry level should be at the reach of the majority, not in the way that now anybody can be a service provider, for example, no. It should be in a way that if you were proven, then it should be easy.

Researcher: So how many platforms do you have in Tanzania? Do you have big platforms?

Platform and Infrastructure Expert: How many? The well-known are the MNOs.

Researcher: MN?

Platform and Infrastructure Expert: MNOs. Mobile Money Operators

Researcher: Yeah, ok.

Platform and Infrastructure Expert: We have Vodacom MPesa, TigoPesa, Airtel Money, EzyPESA, HaloPesa, TTCLPesa and ehee. Yeah, those are the six which are the ones that you may see. They have 'Wakalas' (agents) all over. Second, to that, you have the system aggregators and integrators. Maxicom and Selcom are the biggest. And now and then you see: mobile wallets popping up, maybe either to facilitate payments or I don't know what else, they keep on coming and going, coming and going.

Researcher: So, what do you think is the role of the government here?

Platform and Infrastructure Expert: It's tricky. So far, I feel like a good job has been done in the way that they haven't been very relaxed and haven't been over-regulating. Sometimes regulations kill innovations. So, the mere fact that the regulation is playing a catch-up game with mobile money services allowing innovation to occur is a good thing. Right. So, so far, so good. But the way things are now, I feel like they are going to put a lot of regulations that may slow down innovation. So far, to be honest, I have no complaints. The previous governor professor was key to the success of mobile money.

Researcher: That is one of the people I would like to interview. If I get him, it will be nice. He developed the two financial inclusion frameworks, which is why he is one of the people I need to interview. When it comes to the operators, for instance, I want to talk to some of them. How do I get them, and who are they?

Platform and Infrastructure Expert: The big six are well known. Right? If you write to Vodacom, TigoPesa, AirtelMoney, EzyPesa – Zantel, and Halopesa and TTCLPesa, yap, it is simple making requests, connections here and there, and then you get the majority of answers.

Mobile money has taken on a life of its own. It is no longer sitting under operations, no, no, no. Either you will have to call the mobile commerce directors or mobile money department heads and directors. These are the guys that are at the forefront to tell you what's happening and if you find them on a good day, they may even give you some critical data, and all that. When it comes to the aggregators, the best people to meet are the CEOs. Most of them are very much approachable. See how that works.

Researcher: For platform experts like you, how do you get involved in this financial inclusion policy and framework?

Platform and Infrastructure Expert: Our exposure to the policy is minimal, because, by the time the policy gets to us, it is mainly about implementing what has been designed, planned, tested and now is ready to be deployed. Right? So, there isn't much, to be honest. We don't deal with policy paper work.

Researcher: You are just implementing.

Platform and Infrastructure Expert: We are just implementing what other guys have agreed on, but I can tell you for sure that sometimes these polices lead to overkill in terms of what it takes to run such kinds of services. The tasks are enormous. If somebody was able to achieve, let's say, 100 worth of infrastructure to run, but the policies demand for 300 worth, it becomes a little bit tricky, in terms of, at what cost should I invest? Initially, jump in and throw your money. You play it like in a casino, and hopefully, you get something. Or gradually you get there. If you ask anyone who is building the infrastructure: should I do it in one go or do it slowly as I progress? The best-case scenario is to do it in one shot. Then you plan better—the sustainability at foresight. Let me test the water, and then I will increase my investments, it leads to a topology that looks like you are building a road from here to Mbezi. First, you say, let us build a road to Mwenge to see how the traffic jam disturbs me and then I will continue afterwards. Before you are even done with Mbezi, you realise, oh, the traffic isn't that much, but the contract was only from here and Mwenge. So, that again, you either get somebody else, and you have to go through negotiations again. If there is any area that policy could help, it is where regulations are more assuring to keep on investing.

Researcher: So, ah, do you have a voice to kind of change things if things don't favour your initiatives?

Platform and Infrastructure Expert: Well, we have been invited by the previous government. The Ministry of Science and Technology through its deputy minister used to invite a lot of stakeholders. The majority of those meetings were just informal talks to provide the basis for creating the regulatory frameworks. They were involved in committees. The steering committee looked after mobile money and other issues. Again, we spent most of the time to validate what others have written in technical terms. We contributed to the draft in that way.

Researcher: In that sense, the platforms themselves are developing and the sector, let me call it this way, the industry of platforms isn't big, so it is still developing …

Platform and Infrastructure Expert: It is vast. Let's not make mistakes about it. It is huge. However, it is like a giant baby. It is taking on a life of its own. It is at a different stage, but it is significant. So, it takes its path, like, who might have thought that you would be able to get a loan without even stepping into a building? I don't know who you are, but now you can get loans, right? So, by the time you are done with regulating mobile money, send and transfer, saving and withdrawing, another baby comes out, and you are like, oh! Now, I am doing the lending. You know. When I am giving loans, do you have a regulatory framework to regulate mobile money operators' loans? So, it is moving very fast like it may not look like normally. We proliferate with time, and in this case, time doesn't matter. The adaption could be within seconds, and a new product evolves, and it is equally liked in the market.

Researcher: So, if I get it right, during this phase, the mobile money provider or operator thinks he needs a specific product, and then you can help him develop this product?

Platform and Infrastructure Expert: So, what they do, we have the standards for the provision of the wallet. However, the big companies bid for it, and they come forth for consultations because you can't go and ask a small provider for such a significant investment. If you get a deal, you need to ask your friends or someone you trust, is this good enough for me? Or are they asking for too much? So, once they have the quotations, we look at the size of that infrastructure. If it fits with the original scope and what's in the market, then it is a good deal. That is what we do, and then once there is an agreement, we create the infrastructure, deploy it, or look at what has been deployed.

Researcher: In terms of the location, I assume that most of you are in Dar es Salaam?

Platform and Infrastructure Expert: Yeah. The beauty of the infrastructure is that anybody can be anywhere. I mean, just five years ago, the Vodacom infrastructure was sitting in

Germany. The government ordered it to be relocated to Dar. They brought it here. If you are to transact through M-Pesa, the transactions first went to Germany.

Researcher: Comparing the mobile money operators and the banks as they all now offer financial services, do you see the banking sector transformed or what do you think is the banks' future?

Platform and Infrastructure Expert: Banks will be banks. Definitely, there have been disruptions. Some severe disruptions and people used to fear because it was unknown territory. Banks thought mobile operators wanted to be banks. Mobile operators thought the banks wanted to be mobile operators. Some banks have mobile money licenses. You have operators that were looking for banking licenses. But from what I see at the moment, they are still complementing each other. So, banks can now reach the deposit desks run by agents in the remote areas of Tanzania, where they do not have a branch. At the same time, mobile money cannot keep money in their pockets. They need to have trust accounts with the banks. So, it is a win-win situation with the banks too. Right? So, we are complementing each other. We are yet to come to a point where they are competitors. Slowly, it is coming, in terms of payments, you know, with the banks you can go somewhere and swipe your card and pay. Gradually, it is getting there. We are not there yet. They are not competing, they are complementing each other.

Researcher: What I think is that over time mobile money will influence the transformation of the banking sector.

Platform and Infrastructure Expert: That is done. Banks used to close at 5 pm. You did not get banking services after 5pm. Right? Right now, you can bank through your phone. So, the transformation of services has already been done. And the banking sector continues to be transformed. Right now, people enjoy banking services the same way they want mobile money. Hence, people have 24-hour access to their banking services. And that is a challenge because banks were set to run for a day and close their books. They do that at the end of the day, and they open them at the beginning of the next day. But transacting 24/7, what does that mean? Do I ever close my books or not? So, banks now are forced to never sleep. They are open online all the time without the operators. They still offer services through mobile banking.

Researcher: It was part of your definition when you said a platform was like a ledger book.

Platform and Infrastructure Expert: It is a ledger.

Researcher: I never thought of it that way.

Platform and Infrastructure Expert: It is a ledger. You have your number, and it says your balance is zero. If you add money to your number, you get this much credit. You deduct it when you withdraw it or when you send it to another number. And whatever is debited is stored, debit Deo's number, credit the agent's wallet. Or send money to Johnny debit Deo, credit Johnny's number. It's a simple entry like a ledger. There is no, as the foundations of it, they are all into the banking just that the accessibility has changed.

Researcher: Talking about politics, is there any politics affecting anything around here?

Platform and Infrastructure Expert: To be honest, I am not a huge fan of politics, and innovation always beats politics.

Appendix 4.13: At Micro Level: Extracts from Interview Transcript 3

Researcher: I am researching mobile money and how the banks facilitate financial inclusion, enabling middle- and low-income people to access formal financial services. We want to know what your experience has been with the MNOs and banks. You could also tell us if the services have empowered you in financial terms. You can tell us what good things you remember from these services. For instance, some other people said to me that they have been health insurance beneficiaries through mobile money services and have received 40,000 shillings per day for the days they were hospitalised. This insurance helped them cover medical costs and prevented income loss due to not working while being hospitalised. Therefore, they did not worry much about their jobs and income. They reduced the stress they would otherwise have because of the financial losses incurred during their hospitalisation time. Others said they were able to take care of their mothers and families. When they work and send them money through mobile money, and they receive the money instantly. Before mobile money services, I had to wait until someone goes to the village. At times, I had to wait longer. You see things like that. Do you have something or any stories you could tell about mobile money and how it facilitates your daily life?

Fisher: For me, Tigo services, especially 'Tigo Timiza'. Therefore, 'Timiza' has helped me and has facilitated in smoothing my financial shocks and issues. I remember I had problems with paying rent. I had no money. I got a loan from them. I was able to pay my rents. Now I live better with my kids. Airtel is the MNO that has helped me to meet my financial needs.

Researcher: So, they help you pay your bills and smoothen your consumption?

Fisher: Yes, they do. They help meet my financial needs.

Researcher: Paying your rent?

Fisher: Rent and other expenses such as tuition fees and school uniforms for my children and school shoes. When I have financial needs, I use my mobile money services. They give me small loans. I go to the agents to cash out. I use the money and life goes on.

Researcher: So you get the small loans from them?

Fisher: Yes, the small loans - 'Timiza'.

Researcher: ‘Timiza'. It seems like you have good experience with it.

Fisher: Airtel.

Researcher: Excellent. If I want to understand this better, what would you say to remember your experience with TigoPesa?

Fisher: In a few words, I would say "Timiza is the saviour and the future".

Researcher: "Timiza is the saviour and the future". I can understand this. Timiza has helped you improve your life through its small scheme loans. You have been able to meet some of your expenses through them.

Fisher: Yes. House rent and children's school uniforms, yeah.

Researcher: Who is helping you the most? The MNO or the banks?

Fisher: Airtel Money. Airtel Money.

Researcher: It seems like you don’t often use bank services.

Fisher: I have never used the bank services.

Researcher: That is fine. It seems like mobile money, and this Airtel M,oney serves low-income people better.

Fisher: Yes. If you follow their conditions and take loans and pay on time, you get money and finance your small business, then yes, they serve us better.

Researcher: What I get from you is that the MNOs serve the low-income people and low-income people like to use them. This is real. It is not a fabrication of publicity from them. Isn’t it?

Fisher: That is very true.

Researcher: You confirm this.

Fisher: Yes, and for me, Airtel have been so helpful.

Researcher: Do you think that some issues or factors create barriers to accessing financial services? For instance, some people suggest things like the banks ask you for many documents before opening an account with them. You must have a certain amount of money to access their services, and a lot of people may not have the amount requested.

Fisher: Yes. That is true.

Researcher: On top of that, what do you think makes low-income people unsure of opening an account with a bank or an MNO? What are the deterrents/barriers?

Fisher: I can revert to the same issue that bank services for us are not timely services. You can go to a bank branch and ask for a loan. It will take days before you get a loan. They also place a lot of conditions with those loans. We either cannot meet those conditions, or we are discouraged by those conditions. However, for Airtel, I congratulate them. They serve us on time and without many conditions. For low-income people like me, they save our lives. Mobile money and the improvement of its services are essential to the low-income people. The MNOs provides me with financial services. I do not have a bank account, so I don't depend on the banks to get financial services.

Researcher: Why does mobile money succeed?

Fisher: It succeeds because the MNOs have improved access to financial services. People like me can access formal financial services; without the MNOs, we would be excluded or have difficulty accessing formal financial services.

Researcher: If I may ask, you are given two choices. One, you are asked to support the government efforts to improve bank services. Two, you are asked to support the government efforts to improve mobile money services. Of the two choices, which one would you choose?

Fisher: I will ask the government to favour the MNOs because I benefit from their services. I have been using mobile money for ten years now. I like the services, and I will stay with mobile money.

Researcher: Why did you choose mobile money services if there are also other financial services available?

Fisher: It is straightforward. You store value and use it whenever you want. You ask for a small loan; you get it immediately. You pay back the loan, and you build a credit history with small amounts of money. That makes sense to me. Mobile money services have succeeded in changing people's lives. They also provide a little working capital for some of us. These small loans change lives.

Researcher: Thanks very much for your time. I appreciate that you have given important mobile money details.

Fisher: Yes, please, any time.

Appendix 4.14: At Micro Level: Extracts from Interview Transcript 4

Assistant Researcher: My name is xx. I live at North Azimio. I know this neighbourhood. My colleague here is ZZ. What is your name?

Bus Driver: Mr. Mbwana ...

Assistant Researcher: You must be from Tanga.

Bus Driver: Ah, I am not. I am from Kilwa. Ngido to be specific.

Assistant Researcher: Many who are called Mbwana are from Tanga, isn't it?

Bus Driver: Those coming from Tanga are called Kibwana.

Assistant Researcher: Kibwana! That it is good to know. Those Mbwanas are all over the coast regions!

Bus Driver: Yes, that's true.

Assistant Researcher: There is no Mbwana in the northern part of the country. You find them in the coastal regions and maybe Morogoro.

Bus Driver: Mobile money helps sometimes. They will ask if you have any forms of identification before serving you. If you have lost your identity card, it could have some challenges.

Assistant Researcher: That is a good starting point where you outline the challenges. It seems like this is one of the difficulties that bothers you a lot. You have remembered it.

Bus Driver: That is one of the critical challenges.

Assistance Researcher: What is your occupation?

Bus Driver: I am a daladala commuter bus driver.

Assistant Researcher: Which route?

Bus Driver: I drive the Tandika-Makumbusho route. It is also known as Temeke. The line is also known as Temeke-Makumbusho.

Assistant Researcher: How is work?

Bus Driver: Work is fine. We work hard. That's what we do.

Researcher: Do you use mobile money services?

Bus Driver: I use TigoPesa and Airtel Money. I have two lines and use both.

Assistant Researcher: When did you start using mobile money?

Bus Driver: I started using TigoPesa a while ago. I also started to use Airtel Money. I lost the Airtel phone, and I got it back.

Assistant Researcher: That happens when you move a lot.

Bus Driver: Eh! Yes, That's why I had to get the line back. But I had two different lines.

Assistant Researcher: How do you use mobile money? Do you send money to your mother or children while they are at school?

Bus Driver: I use it for my expenses. When I need money, I use mobile money services.

Assistant Researcher: Do you use an agent to get those services?

Bus Driver: Yes, I do. They charge a small service charge for their services. Although the charges are small and fair, they could be expensive for low-income people.

Assistant Researcher: Do you have a bank account?

Bus Driver: I do not have one. I have never opened a bank account in my life.

Assistant Researcher: Why?

Bus Driver: I am a low-income person, and I do not have much money to keep it in a bank account.

Assistant Researcher: Is it an inconvenience or your low income is an issue?

Bus Driver: It is not about being inconvenienced due to strict regulations or reserve requirements. I get one thousand shillings from my gigs, then, I go home, and my wife is waiting for me to provide for the family. She wants our children to have a meal. You save two thousand, and from nowhere, a family member is sick. I have to pay for hospital bills and medicines. From what I earn, where will I get enough money to save in a bank account?

Assistant Researcher: So, the reserve requirements are also high. You can't afford them.

Bus Driver: Yes, that's true.

Assistant Researcher: I see that the costs of running and maintaining that account can be an issue here.

Researcher: Do you want to say that mobile money services have helped bring financial services to low-income and financially-excluded people?

Bus Driver: For low-income people like me, it has helped. The ‘have-nots’ like me, we send and receive small amounts of money. If I want two thousand shillings, I can quickly get it from my friends via mobile money services.

Assistant Researcher: I can see in this case, mobile money services have an advantage over bank services. When you go to the bank, you cannot open an account with two thousand or five thousand shillings. Maybe community banks.

Bus Driver: With mobile money services, they have managed to reach out to financially-excluded and low-income people and small businessmen and women. They (the MNOs) have started to cater to low-income people to meet their financial needs.

Assistant Researcher: Yes, they want to reach to as many financially-excluded and low-income people as soon as they can, and the government should help them. The majority of the population in this country are either low-income or financially-excluded people. The average and ordinary citizens. Have you met any challenges as a mobile money customer? Any challenges with e-wallets? In the past, every wallet was in the pocket of your trousers; now you have these electronic wallets.

Bus Driver: Yes.

Assistant Driver: What are the challenges?

Bus Driver: There are not significant challenges there. The e-wallets are fine. I remember before them, I was selling plastic bags since a was a kid. I got involved in Rambo plastic bags business. One day, I struggled to get on to a commuter daladala bus; they stole my wallet. Nobody has stolen my e-wallets.

Assistant Researcher: A lot of us got robbed like that at one point. You board on a commuter daladala bus, then you realise your wallet is not there. Someone has stolen it. You start patting yourself everywhere. The wallet is not there. It's gone. Stolen! The bus conductor lets you go without paying for the bus ticket as he understands that this happens so often. The good thing is we know each other.

Researcher: What if a government policy official walks in here and asks you what should the government change in terms of mobile money that you think does not work?

Assistant Researcher: Or whatever needs to improve.

Bus Driver: I think the agent services could be improved. For instance, when I send 10,000 shillings the commission and taxes are also charged. So I have to send 11,500 for the receiver to receive 10,000. These expenses can be a challenge to those living in villages.

Researcher: Do you think that the taxes have increased?

Bus Driver: Here in Dar es Salaam the charges are not an issue. I am not sure about those living in the villages. Based on the low-incomes, I assume that any increase in charges affects them somehow.

Researcher: Do you think there are different rates for urban and rural areas?

Bus Driver: I don't think so. It is just me thinking about the economic activities in these two areas and the residents' income levels in these two areas with different development levels.

Researcher: I think the rates are the same, but the living conditions may not be the same. This might make it seem like the agents are an issue while the agents only do their jobs by doing precisely what they are required to do.

Bus Driver: Most of the low-income customers might think that the agents are an issue. Like you said, the agents were provided with those rates and they have to charge those rates. Those who do not know these politics may blame them while the government could be the one to blame. Regardless, these are affordable rates and low-income and financially-excluded people afford them even though they would like to pay no taxes.

Researcher: The taxes and charges are legal. Remember that the agents have to be paid as well. So, the little charges from the eyes of the government cover those costs.

Bus Driver: Those affordable charges have facilitated financial inclusion anyway.

Researcher: So you can afford the financial services.

Bus Driver: Yes. I can afford it. I am no longer challenged to access formal financial services through mobile money. We are no longer excluded. We send and receive money in a timely fashion. This has helped us to meet our financial needs.

Researcher: If we had very few and sparsely allocated agents, imagine how would this be?

Bus Driver: Terrible! With traffic jams in every corner of this city, that would have been terrible! The agents have helped us receive timely financial services. It is a good thing that they are everywhere.

Researcher: This could be like going to a bank, right?

Bus Driver: Yes. First, you have to deal with the traffic jam before you get to a bank. Second, you do not have banks everywhere. Third, you have a long queue waiting there for you before you are attended. It is an inconvenience to some of us.

Researcher: Would you like to see more big loans instead of small loans offered by mobile money?

Bus Driver: Yes. However, you also have to know that not every low-income person is the right person. We still have conmen round. They need to find ways to stop these conmen from accessing those loans. However, I am aware that a lot of good people get those small loans and repay them. So, it is working so far. However, I always think about what if conmen find a way to disrupt these arrangements. So far, I have not heard a lot of these cases. Everything seems to be okay.

Researcher: Well, the conmen will always be there. From the MNOs themselves, conmen are not a big issue, and these services are safer, which is why over 60% of the population uses mobile money. The small loan default issue is a big problem, according to the MNOs themselves. The loanee has a registered account, and his/her particulars are known. Tracing him and where he/she is isn’t a problem.

Bus Driver: If you want a small loan, for instance, 500 shillings, you get that quickly. I have had 10,000 and 15,000. The more you repay, the more you can get as a loan. It is a sound system. We create a credit history by using mobile money services.

Researcher: What else do you want to be improved?

Bus Driver: We want them to increase the talking time. The vouchers we think are economical, and we want to talk more. Increasing the voucher value will help us have enough time to process data and things like that. That is one thing I would like to be improved.

Researcher: Yes, I have heard that you used to talk a little more with 500 shillings, which has changed over time.

Bus Driver: The use of a phone itself needs money. There are service charges and other charges we incur when we use financial services. These charges have remained stable for quite sometimes. This is good. However, we do not know when will the government change them. This new government charges taxes on everything. So, we do not know when they will start charging high taxes on mobile money services. They have not done so. However, what if they do?

Researcher: That is a good point. With over 60% of the population using mobile money services, charging these people taxes will create revenue to the government. We do not know if they will do this as they want to help low-income and financially-excluded people receive formal financial services which boost economic activities.

Bus Driver: Although there are challenges here and there, mobile money services have provided us with affordable financial services. We can now save and deposit small amounts. It does help because you save a small amount to make it a significant amount. Your savings stay there, and you will use that in the future.

Researcher: Thanks very much for talking to me today.

Bus Driver: The pleasure is mine.

Appendix 6.1 Who are Most Likely to be Financially-Excluded People in Tanzania?

Some literature suggests that DFSs and other services struggle to reach individuals who do not own mobile phones or digital devices (Ozili, 2018; Klapper and Hess, 2016; Lotto, 2018; Firchow and Ginty, 2020). People without phones or reliable signals can be excluded from using formal financial services as they may not have access to other FSPs, and MM services facilitate FI (Hoernig and Bourreau, 2016; Aron, 2015; Gibney et al., 2015; UNCTAD, 2015). Another literature asserts that DFSs depends on internet connectivity which may exclude individuals who do not have connectivity (Ozili, 2018; Sarma and Pais, 2011). Other scholars argue that how MM and DFSs are introduced in a country, whether forced or voluntarily, may lead to self- or voluntary exclusion if the financially-excluded people are not ready to use DFSs or MM (Ozili, 2018). Other views bring up the issue of digital data security. Through digital security, security issues are minimised and any breaches of customer rights are reduced, which reduce lack of trust in digital financial services (Ozili, 2018; Kear, 2017). Some have experienced unfavourable MM incidents or what may be referred to as "systemic black-swan risks" which may have fatal consequences when they occur (Ozili, 2018). Other scholars consider unfavourable policies and regulatory environments that discourage the expansion of MM and other DFSs (Ozili, 2018; Greenacre, 2018; Ondiege, 2015; Singh and Gutierrez, 2013; Tetteh et al., 2020).

The BOT recognises the role of technology in the use of financial services to help unbanked populations receive formal financial services (BOT, 2016). The BOT collects aggregate monthly data from the seven MNOs (Vodacom M-Pesa, AirtelMoney, TigoPesa, Zantel EzyPesa, HaloPesa, TTCLPesa, and Smart). The data include: the number of transactions, the value of transactions (TSh), the number of registered customers, the value of outstanding remittances (TSh), the money balance on customer e-wallets (TSh); and several agents. The number of registered customers in Tanzania was over 55% in 2017 (see Graph 6.11 in Section 6.4.1, and Table 5.1 in Section 5.3.4). The number of registered customers can be misleading as a customer may have more than one account. This multiple counting can be corrected when the MNOs use customers' IDs to identify their MM accounts. The volume and value of transactions in Tanzania increased (see Graph 5.5 in Section 5.3.4). The number of agents has also increased in Tanzania (see Graph 5.6 in Section 5.3.4, and Table 7.2 in Section 7.7.2).

Using the BOT's data, researchers can disaggregate the number of transactions by gender, age, location, income groups, or any other variables as long as the details are made available. According to Lotto (2018):

> “… if you are a man, financially stable, have a good education and are relatively older, you then stand better chances of being financially included. The results show that, as the level of education increases, the individual is more likely to be financially included. The possible reason for this observation may be clearly linked with the financial ability of educated individuals to afford holding bank accounts and presenting personal guarantees when required by the banks during loan application because the level of education goes parallel with the income level. In addition, the results confirm a gender gap informal financial inclusion, and this may be due to the factors such as inability of women to show collateral, their poor financial education awareness and lower business experience. Second … the factors which affect traditional banking services are the same as those affecting mobile banking services (gender, age, income and education), and that there is a negative trend and a clear departure of customers’ usage from banking retail services to mobile financial services. Although this gap has been narrowed recently, the best option with the banking sector is to create more new delivery channels while using mobile financial services as an infrastructure to deepen financial access reaching more un-banked population.”

The FSDT works closely with the BOT to facilitate the availability of these data (FinScope, 2006; FinScope, 2009; FinScope, 2013a; FinScope, 2013b; FinScope, 2018; Ephraim and Mhina, 2019). InterMedia’s and FinScope’s surveys also provide some of these data (InterMedia, 2014; InterMedia, 2016; InterMedia, 2018). The number of active users can be distinguished from the number of inactive MM users (see Table 5.1 in Section 5.3.4). Likewise, the active MM agents can be distinguished from their inactive counterparts (see Graphs 7.2 and 7.4 in Section 7.7.2). The value of transactions can also be disaggregated to provide the different types of transactions such as payments for utility bills, micro-insurance payments, MM transfer payments, retail payments to businesses, etc. (also see Graphs 5.3 and 5.7 in Section 5.3.4).

Researchers tend to acknowledge the limited nature of macro-level data for MM when they study MM and whether it may cause inflation through the increased velocity of circulation caused by MM (Aron, 2017). The monetarist view suggests that the spread of MM increases the velocity of circulation, which increases ‘effective money’ and therefore, inflation (Aron, 2017; Simposa and Gurara, 2012). However, the literature suggests that a link between MM innovation and inflation through the velocity of circulations is doubtful to exist (Aron et al., 2015; Aron, 2017; Kipkemboi and Bahia, 2019; Mawejje and Lakuma, 2019). This finding is important because it encourages customers to save and spend to meet their daily needs through MM. Hence, there is no evidence that MM in Tanzania triggers inflation that helps to exclude low-income or financially-excluded individuals. Moreover, Mawejje and Lakuma (2019) argue that MM has moderate positive effects on monetary aggregates, consumer price index, private sector credit, and aggregate economic activity. They also assert that MM has ameliorating effects for the conduct of monetary policy, and that MM transactional motives have more substantial macroeconomic effects than savings motives.

Mobile phones and MNOs are one of the sources of tax in Tanzania, as explained in Section 5.5 (also see: GSMA, 2017; and GSMA and Deloitte, 2015). Even though MM users have incurred tax expenses, they are still using, although it They would like to see the taxes removed:

> "I use Tigo. TigoPesa helps me. When I want to send money to my village, I do so easily. It has simplified these financial services. The government has increased taxation, so they have increased service charges. At times, I have to use AirtelMoney services. It helps. AirtelMoney charges seem to be lower" (Fisher – Low-Income Respondent).

The respondent Bus Driver: also echoed these views:

> "I think the agent services could be improved. For instance, when I send 10,000 shillings the commission and taxes are also charged. So, I have to send 11,500 for the receiver to received 10,000. These expenses can be a challenge to those living in villages."

There are no statistics available at a macro level to show us how many individuals have been excluded from using MM services because of the taxation issues in Tanzania. Lower tax rates have had efficient implications. However, charges on the use of MM services (including taxes) could make it difficult for some financially-excluded individuals to use MM services. They create barriers to affordability (GSMA and Deloitte, 2015:19). According to Ozili (2018), digital financial platforms, including MM platforms, could benefit from high and middle-income individuals at the expense of financially-excluded individuals who cannot absorb any related transaction costs.

Moreover, the trust accounts, also referred to as 'escrow' accounts, that are held in banks, as explained in Section 6.4.3, have deposits that can be on-lent. Hence, there are possibilities of credit creation. MM, in some cases, has brought informal cash into the banking system (Aron, 2017). According to Aron (2017):

> "The transfer of informal cash will not increase the recorded money supply per se unless the source is unrecorded cash, say in another currency. This shift of informal cash into the banking sector thus has a zero first-round effect on the money supply; but because banks can lend on in a second and further rounds, there is a money multiplier which can expand the money stock. The crucial question is, what exactly are the regulations that govern the on-lending of escrow accounts? … Initially if the electronic 'savings' fluctuate, only a proportion of the escrow accounts could be sustainably on-lent; but as the system grows, the escrow balances could become large and more stable. Even then the money multiplier will surely be less than for the

direct deposit of informal cash in the banking system, since for an escrow account to be safeguarded there must be limits on the degree of extra risk the bank can take on given an expansion of its balance sheet of this type."

As MNOs continue to keep customer money in trust accounts in commercial banks, some banks and MNOs have agreed to provide microloans supported by transaction-based credit ratings via MM. Customer credit scores are expected to improve as MM services grow (GSMA, 2014a; Aron, 2017; Kipkemboi and Bahia, 2019: 4-6; Aron, 2018; Aron and Muellbauer, 2019). The microloans are also expected to evolve in the aggregate to a sizable sum to provide credit to small businesses and low-income individuals to ease credit barriers on them which may expand the money supply. This will help low-income and financially-excluded individuals who do not have collateral to obtain loans in some cases (Aron, 2017). These arrangements started as depicted in Sections 7.7.1 and 6.4.3. Yet, there is no creation of money through MM services:

"mobile money providers were purely creating a transfer system. It is a platform. They don't issue money because a unit is sitting in a bank transfer account for every unit that a customer buys through mobile money. So, there is no creation of money. Eh, then it is true that they are not taking deposits. This is clear. They are not doing credit business. This was clear. What distinguishes a bank from other institutions is deposit-taking. Per regulations, regulations are essential in terms of supervision to manage the risk in relation to the protection of deposit interests. That was the main principle. So, those are not taking deposits" (Former BOT Governor).

As there is no creation of money through MM, some people argue that MM does not include the financially excluded in terms of loan provision. However, MNOs and banks have partnered in some instances to provide microloans to financially-excluded individuals as demonstrated above and in Sections 7.7.1 an 6.4.3. The MNOs offer microloans on behalf of banks.

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Appendix 6.2: Meso-Level Data and Its Limitations

Miller and Chatterji (2013) identify the following issues at the meso level: financial infrastructure and their supporting services. They argue that several aggregate data at meso level explain the difficulty that financially-excluded people have in accessing formal financial services. Those who do not have formal jobs and contracts, and do not own properties or land, pose difficulties in being accessed or monitored. Sometimes the FSPs do not understand how they will manage credit risks. This information asymmetry makes credit assessment difficult for financially-excluded individuals. Collateral, any forms of immovable property, expected future income and other data, which the poor do not have, are forms of security used by FSPs to assess credit risks. These forms of security could pose limitations to ways through which DFSs provide credit to financially excluded people.

Payments as a Platform Model

GSMA (2019) reports a milestone of over one billion for the number of globally registered MM accounts. MM is increasingly integral to the financial ecosystem. As MM grows and starts to depend less on service user's fees, different revenue models have also emerged to facilitate MM's contributions to FI and socioeconomic benefits. They include a shift to the 'payments as a platform' approach. According to GSMA (2019:21):

> "The 'payments as a platform' model represents a five-pillar shift that encompasses both global trends and industry needs. It involves lowering barriers for partnerships or creating a more accessible environment for third parties and moving away from one-on-one negotiations and one-off third-party integrations. It also enables a diversified revenue model supplemented by monetization from adjacent services, businesses and governments. All this ultimately unlocks more targeted services for individuals, businesses and communities, and creates a more engaged user base for providers."

As various payment models emerge, regulatory issues also arise. MNOs must have significant resources and must take time to not only create strategies to help reach financially-excluded individuals but also to create strong agent networks. They must gain customers and should educate them to help them use MM services as reaching out to financially-excluded individuals is not a guaranteed process.

Affordable Connectivity, Service Development and ICT Infrastructure

According to UNCTAD (2019), most financially-excluded individuals live in rural and remote areas where connectivity is the main issue. To facilitate FI, access to connectivity helps financially-excluded people to receive fast, affordable and reliable ICT services, internet and MM connection. Some countries have created PPPIs to reinforce national backbone infrastructure and increase access to national and international bandwidth. Tanzania has good connectivity as MNOs have invested heavily in towers and new technologies. Mobile phones can be used anywhere in the country. Most data do not specify areas with connectivity issues. We do not know which areas have high rates of FE due to mobile phone connectivity issues. What we know is that mobile subscription penetration has increased:

> "The International Telecommunications Union (ITU) estimates that mobile subscription penetration was 103 per 100 people in developing economies in 2018 – thought there were significant differences by region compared with an average of 128 per 100 people in developed countries. In LDCs, penetration surged from 5 mobile subscriptions per 100 in 2005 to 72 in 2018 … In 2018, the landmark of half (51.2 percent) the global population using internet was reached, with 3.9 billion people going online … this represents significant progress towards inclusiveness in the digital economy" (UNCTAD, 2019:12-13).

As far as Tanzania is concerned, and according to GSMA (2016), Tanzania is committed to connecting the unconnected, especially those living in rural areas, as it seeks to help them gain access to the internet and mobile phone services. Over 17 million individual active mobile subscribers were identified in 2016 (BOT, 2017). Tanzania has a population of 50 million people, with about 70 percent of the population living in rural areas. Individuals living in rural areas are more likely to be financially excluded when compared to their urban counterparts.

> "As population density in rural wards varies significantly, operators have so far been able to deploy their 2G networks to up to 85 percent of the population, while 3G network deployment is mostly limited to urban areas, resulting in only 35 percent of the population being covered and able to access the mobile internet" (GSMA, 2016).

Data Ownership Policies

From available data, it is not clear who self-exclude due to risks involving personal data management. First, given the strategic importance of personal data, more FSPs buy or share their data with other institutions or digital platforms. This problem brings up the issue of who controls data and who has access to client data (UNCTAD, 2019; Maina, 2019). Second, personal data markets have emerged (Larnier, 2014; UNCTAD, 2019; Arrieta-Ibarra et al., 2018). Through these markets, institutions can sell or keep the data they have. At times, it is ambiguous to predispose who owns or controls personal data. Hence, it raises privacy issues (UNCTAD, 2019). Third, privacy issues create trust issues. Financially-excluded individuals may have trust issues over who controls their data and may not use MM services. We do not have macro or meso data that specify how many individuals have this issue. The MNOs have sought to protect personal data and build customer trust. Some scholars see data as a public resource (Turnoff, 2018; UNDP, 2019; Lawrence and Laybourn-Langton, 2018; Singh, 2018; and Mazzucato, 2018). There is a need to continue building trust (Hall and Pesenti, 2017, UNCTAD, 2019) to clear data trust issues as the expansion of the digital economy is also driven by digital data (UNCTAD, 2019).

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Appendix 6.3: Macro Data Limitations

To explain the macro data limitations, I will start by distinguishing the macro-level perspectives from the micro-level perspectives. The micro-level perspectives deal with individual and firm details and their daily interactions. These are views that reckon the elements of individual and firm practices which contribute to the investigated issues (also see: Vock et al., 2014; Bozzoli and Brück, 2009; Johnson, 2016). When you track an individual's financial difficulties and examine the interaction between that individual and the FIs, you are examining micro-level issues. There are empirical studies that explain the determinants of FI through micro-economic perspectives to describe the effects of different factors on access to formal financial services (Allen et al., 2012; Cámara et al., 2014; Hoyos et al., 2014; Tuesta et al., 2015). The macro-level perspective, on the other hand, provides a panoramic view of these issues (e.g. systems theory of FI, see Ozili (2020:9); Alter et al.,2018; Zachosova et al., 2018; Aggarwal and Klapper, 2013; Chakrabarty, 2012; Gabor and Brooks, 2017). It considers different smaller micro-level issues. When a researcher realises that FE levels have dwindled and that MM facilitates increased levels of FI in Tanzania, and that the government created a supportive environment to support the MNOs, the researcher, therefore, takes a macro-level perspective. One of the issues with macro-level analyses is that they study issues at the broadest level, and therefore tend to be less specific and more philosophical and may also include data and statistics (see examples: Jiang et al., 2019; Adil and Jalil, 2020; Arun and Kamath, 2015; Abiona and Koppensteiner, 2020). This is one of the macrodata analysis limitations (also see Section 6.5).

Chakrabarty (2012) discusses the measurement challenges at a macro level by reckoning that FI concepts, policies, delivery models and implementation processes were new and continue to evolve. Hence, FI policies and the macro-level analyses used to evaluate FI's outcomes will continue to change. As policymakers, FSPs and other FI stakeholders continue to adapt to the evolving changes; there will always be challenges in terms of how we measure the success of FI policies and activities while considering their aggregation across policies, countries, activities, and institutions etc.:

> "Statistical analysis performance of financial inclusion initiatives and development of benchmarking standards can be quite complex. Second, while existing initiatives in measuring financial inclusion initiatives in measuring financial inclusion are commendable, there is a need for greater focus on the micro and distributional dimensions. Third, we should explore the need to change the focus of present information systems of banking business from traditional accounting model to customer centric business model. This

would call for expanding the scope of the currently used measures of financial inclusion" (Chakrabarty, 2012).

Hypothetically, macro-level issues could result from a building up of micro-level problems. Moreover, analysing macro-level issues may also require the researcher to use micro-level data and statistics, depending on the topics investigated by the researcher. For instance, to understand how MM moderated the factors of FE in Tanzania, I also had to take into consideration both micro and macro explanations, as demonstrated in this chapter by the various respondents.

To understand the researched issues presented in this dissertation, I understood the limitations of macro data, and I sometimes used the micro data to explain the transformation from FE to FI in Tanzania. For instance, see data in Section 2.6.1, where FI data by demographics is provided. In Section 2.8, I define who is financially-excluded and who is a financially-included person. In Section 6.3.3, Graph 6.5a demonstrates a FinScope survey where individuals explained how and where they kept their savings in 2006. Most of the financially-excluded individuals use MM. Graph 6.5b recorded responses from individuals to demonstrate their savings between 2013 and 2017. From these two graphs, it is clear that nobody saved using MM in 2006. However, in 2017 about 35% of the population saved using MM. This is one of the ways to demonstrate how people on low income are benefiting from MM. Graph 6.6a showed the sources people used to borrow money in Tanzania in 2006, and nobody borrowed through MM in 2006. However, in 2017 about 4% of the population borrowed through MM. This is another way to demonstrate how individuals on low income benefit from MM. When individuals were asked when they last used MM services, 64% of the adult population responded within the past 30 days, while 82% responded within the past 90 days. This is another way to illustrate how individuals on low incomes benefit from MM and how it provides them with access to formal financial services. In Section 6.4.3, InterMedia (2016) reported that 22% of the adult population in 2015 mentioned that MM was their saving channel. In Section 5.3.4, Strand 5.1 demonstrates that MM had a 60% uptake of formal financial services. All these micro data helped build the MM picture at the macro level. The data examined individuals and created the macro aggregate behaviour of FIs and individuals or households. These aggregate behaviours helped the government and policymakers formulate the NFIFs as demonstrated in Section 5.5. The NFIFs were critical at a macro level as they helped policymakers to develop national MM and FI strategies.

At times, macro data may not be in a position to tell us who might be excluded. However, the researcher uses microdata to build macro data scenarios to explain what might be justified. For example, Strand 2.1 in Section 2.6.1 shows that people aged between 16 and 24 years and those aged above 65 are likely to be financially excluded. Moreover, females are more likely to be excluded financially than their male counterparts. Also, individuals living in rural areas experience FE more than those individuals living in urban centres. Those working in informal sectors have higher rates of exclusion than those working in formal sectors. There are also other datasets from various sources with various microdata that could explain who is likely to be excluded (see Sections 4.8.3.1 and 4.8.3.2 of the methodology chapters to find various documents that may be used to describe the financially-excluded individuals).

Also, issues arise when identifying the FI data landscape at macro and meso levels (also see: IFC and GPFI, 2011). As FI inclusion research is new, in some cases it lacks the standardisation of data collection methodologies and indicators to define research variables. These scenarios can make the coordination of data within and across countries very challenging. According to IFC and GPFI (2011), data standardisation facilitates compatibility, consistency, and transparency of data. It also enhances data quality and availability and therefore minimises misinterpretation of data and statistics which helps policymakers to make informed policy decisions (also see: Chakrabarty, 2012; Garralda and Tissot, 2016; Loufield et al., 2018). In Tanzania, different frameworks for FI data collection and compilation have been created as demonstrated by NFIFs and the various documents described in Sections 4.8.3.1 and 4.8.3.2 of the methodology chapter (also see: TNCFI, 2014; TNCFI, 2016; TNCFI, 2017a; TNCFI, 2017b; TNCFI, 2018). Broadly analysed, data collection frameworks are grouped into supply-side and demand-side data collection tools. The supply-side data consists of data from FSPs and regulators through their surveys (also see: TNCFI, 2017b). The demand-side data are collected from the users of financial services through households' and firms' surveys (also see: FinScope, 2006; FinScope, 2009; FinScope, 2013; FinScope, 2018). There are also other attempts to compile other data from legislative and other expert surveys (IFC and GPFI, 2011). The limitations of gathering these data include high costs of collecting national representative data, and less frequency in data collection as FinScope surveys are conducted every three years, while InterMedia surveys are conducted every year (FinScope, 2006; FinScope, 2009; FinScope, 2013; FinScope, 2018; InterMedia, 2014; InterMedia, 2016; InterMedia, 2017; InterMedia, 2018). Data collection frameworks also use the following key data determinants grouped as follows: 'output metrics' (access and usage that explains the standard dimensions of FI including current accounts, customer credit, savings account and insurance), ‘input metrics’ (public-sector enablers such as policy and regulations, infrastructure and other initiatives), and accepted country macroeconomic descriptors could be used to examine the relationship between FI, macroeconomic factors and MM (IFI and GPFI, 2011; Korynski and Pytkowska, n.d.).

There are also data gaps in the FI data landscape at national and international levels (Garralda and Tissot, 2016:7-8; Ardic et al., 2012; Demirguc-Kunt and Klapper, 2012; Demirguc-Kunt et al., 2015; Demirguc-Kunt et al., 2018). They involve two categories of data, depending on their generic statistical capacity and specific dimensions of FI. The generic statistical capacity has limitations and gaps related to how FI statistics get measured, collected and disseminated. Some demand-side data may not be available for confidentiality purposes. Moreover, access to financial data and measurement are more developed for individuals but less designed for firms. Also, data on informal financial providers are not available in some cases, as the informal sector data are too hard to collect. Lack of IDs to identify financial service users also slackens the reliability of supply-side data on usage. Users, therefore, may sometimes not be identified while creating country-level aggregates as lack of financial identity impacts on supply-side indicators of use as some users may be counted twice. Tanzania strives to solve these issues by offering national identity cards (IFC and GPFI, 2011).

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Appendix 6.4: Macro-Level Data and its Links to Growth, Inequality and Financial Stability

Macro-Level Data on Growth

According to Sahay et al. (2015) and Masha (2018), empirical data demonstrates that expanded financial services are positively associated with growth and employment. Further empirical evidence suggests that affordable transaction costs and sound distribution of risk and capital across the economy facilitate the reaching of financially-excluded people, as it allows the emergence of new models to enable running of the private sector which enhances a variety of development priorities. Moreover, FI enhances government-to-person payments such as pension payments, which ameliorate the efficacy of government spending. All this could help the inclusion of low-income and financially-excluded people in mainstream financial systems (Masha, 2016). Empirical evidence provided by other scholars demonstrates that the positive impact on growth is not universal (Rosseau and Wachtel, 2002; Loayza and Ranciere, 2006; Ceccheti and Kharroubi, 2012; Masha, 2016). Tanzania has registered positive economic growth for more than the past 16 years, and the efforts to increase FI levels have not triggered any forms of negative economic growth.

Macro-Level Data on Inequality

Credit liberalisation, the term I use for broadened access to financial services, loosens up the credit barriers to financially-excluded individuals. They lack collateral, credit history, and connections. According to Masha (2016):

> "At the macro level, the impact should, all things being equal, be a reduction in aggregate income inequality."

Beck et al. (2007) conducted a cross-country study and concluded that about 30% in a variation of poverty reduction rates is due to cross-country variation in financial development. Jahan and McDonald (2011) also explained inequality using the Gini coefficient. They concluded that countries improve at the earliest stages of financial development when bank branch growth and private credit are taken into consideration. However, they asserted that inequality reduces rapidly when countries reach the intermediate and advanced stages of financial development. Clarke et al. (2006) also found evidence associating financial depth with the increasing income share of the poorest of the poor across countries between 1960 and 2005. They also found that high-income countries also experienced an increase in the income share of the poor with $1 a day between the 1980s and 1990s (also see Masha, 2016). In Tanzania, ‘credit liberalisation’ has reduced inequality in terms of access to formal financial services whereby most low-income and poor people can now access MM financial services,

Macro-Level Data on Financial Stability

From micro and macro aggregate data, one can analyse the different perspectives of the financial system's risks. By analysing the financial institutions’ resolution, profitability, supervisory monitoring, macroprudential policy frameworks, instruments and indicators, researchers can determine two key dimensions of systemic risks, namely: cross-sectional dimension, which includes the distribution of financial risks within the system at a given time; and time dimension which provides for how financial fragilities progressively build up over time (Jayaram and Tissot, 2015). The NFIF and its micro, meso and macro aggregate data, for instance, helps to design, calibrate and implement FI strategies to strengthen the resilience and stability of the financial system (also see: TNCFI, 2014; TNCFI, 2018; Jayaram and Tissot, 2015).

The advent and spread of MM services, as well as its usage, have several effects on the financial system. Sahay et al. (2015) also argue that access to financial services that do not offer credit does not generate risks. Most MM services provide non-credit access to financial services and do not usually cause systemic financial risks (also see Masha, 2016). According to Kipkemboi and Bahia (2019), MM is unlikely to pose any financial instability or risks. It cannot do so because most countries require the 100% protection of MM customers. Furthermore, MM is a 'huge-volume, low-value' payment solution and does not pose any risks to the country's financial system (Sahay et al., 2015; Kipkemboi and Bahia, 2019). Moreover, studies from four African countries (Zimbabwe, Kenya, Ghana, and Rwanda) demonstrate that the expansion of MM played a role in facilitating payments and reducing specific economic and social pressures by letting financially-excluded people access formal financial services through MM. The studies also suggested that MM does not threaten financial stability because the aggregate MM financial services are relatively small compared to the total value of transactions in an economy. Hence, it is unlikely that MM disrupts the country's financial systems to trigger financial instability (Kipkemboi and Bahia, 2019). For banks, Han and Melecky (2013) underline the importance of access to bank deposits to support financial needs during financial crises, which facilitates FI and stability.

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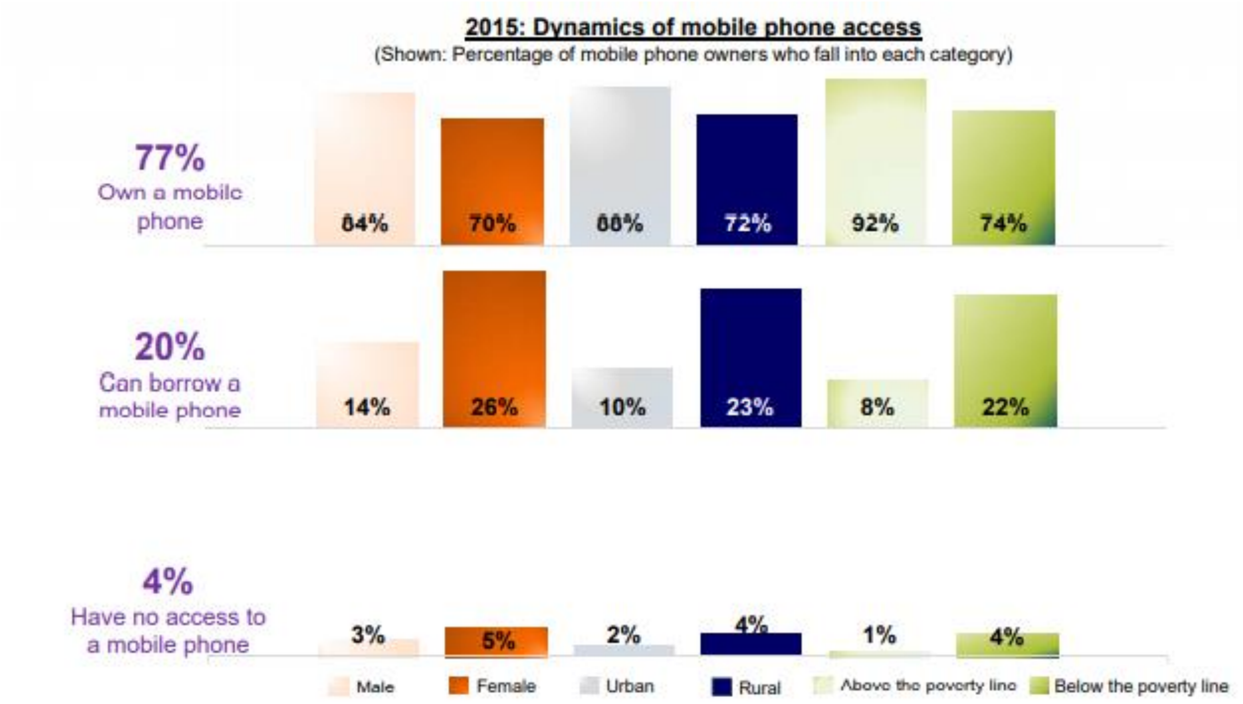
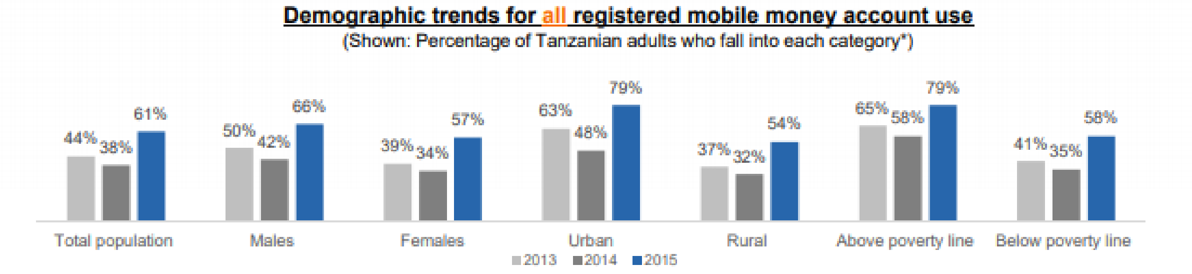
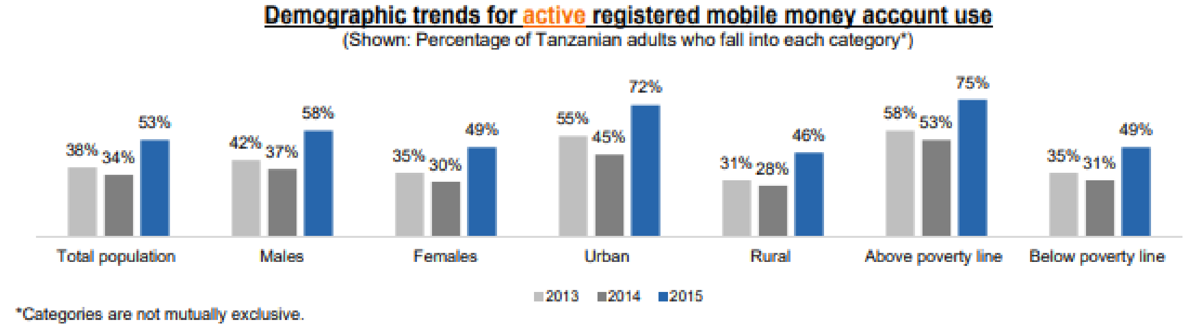
Appendix 6.5 Dynamics of Mobile Phone Access



Source: InterMedia Tanzania FII Tracker surveys ; Wave 3 (N=3,001, 15+), September-October 2015.

Appendix 6.6 Demographic Trends for Registered Mobile Money Account Use





*Categories are not mutually exclusive.

Source: InterMedia Tanzania FII Tracker surveys Wave 1 (N=2,997, 15+), November 2013-March 2014; Wave 2 (N=3,000 15+), August-October 2014; Wave 3 (N=3,001, 15+), September-October 2015.

Appendix 8.1 The CLF

The CLF defines: (i) market structure; (ii) level of competition; (iii) pace of infrastructure and expansion; (iv) affordability and range of services available to customers (see: Mfungahema, 2006; and Section 3.7.3). Quiñones (2015) argues that the CLF seeks to implement clear and precise policies and rules that consider innovations, technologies and globalisation issues to provide all people with ICTs. The governments designed those rules to apply and develop strategies and policies to make economic sectors competitive either through neoliberal rolling-back or rolling-out initiatives. The rolling-back is when a government refrains from interfering and allowing economic sectors to be led by free-market principles. The rolling-out of neoliberal policies takes place when independent regulators develop regulations to guide innovation across various economic sectors. Gunze (2014) acknowledges the CLF regulatory flexibility in addressing market and technological development, while Nkoma (2010) also acknowledges the role of the CLF in supporting market entry of various service operators and efficient utilisation of network resources. Mfungahema (2006) reckons that all this has been possible through service and technological neutrality (also see Section 3.7.2). Thus, the CLF allows various service providers to enter and leave the telecommunications market easily (also see: van Gorp and Maitland, 2009; Boshe, 2013; Moshiro, n.d.).

Convergence is the term that has been used to describe digitisation and the capability to alter any information, data or content into a dataset that could be stored, processed and disseminated digitally (also see: Quandt and Singer, 2009). According to Minehane (2015), there is no universally accepted definition of convergence. However, the term describes recent technological developments, merger, and acquisition strategies and new service application types. Institutions seek to define 'convergence' for the legislature and regulatory reform (Minehane, 2015). Regulatory convergence was considered necessary for tackling converging ICT services across different sectors (Garcia-Murillo, 2005). Technological evolution, as well as sectors' liberalisation, have allowed services to be offered by players outside respective sectors or to let them establish inter-sectoral collaborations with other players from the different sectors (e.g. MNOs and banks). As convergence continues to evolve, more neoliberal rolling-out policies and reforms of the telecommunications sector that cut across other economic sectors will be introduced to help regulate innovations and services (Eclles, 2001). Digital convergence has benefits to customers and service providers; however, it also has created regulatory challenges (Eisenach and Soria, 2016). As the CLF assisted the advent of MM, issues regarding the regulation of MM also emerged (see Sections 3.7.3 and 5.4.3).

However, policymakers have focused more on reducing regulations to encourage innovations which is a neoliberal rolling-back approach. Existing research sees convergence as a means to facilitate technological integration or the detachment of regulatory boundaries across sectors (Chon et al., 2003). Honskins et al. (1997) also underline the role of convergence in supporting various services in different markets. Agreeing with the reasons we have provided in terms of how the CLF fits in with rolling-back neoliberalism, Garcia-Murillo (2005) asserts:

> "… Because of the belief that previous liberalisation efforts were generating intermodal competition. Some of these governments believed that they did not need to have such stringent regulations. The process that took place to establish a converged regulator also provided an opportunity to simplify and eliminate rules. This investigation, thus, shows that the main reason for the merger of ICT related regulators was to simplify regulatory procedures, change obsolete laws, and provide greater liberties and flexibility to the companies. All of these intended to reduce transaction costs, which before the merger were increasing and potentially leading to an uncertain and unpredictable environment."

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Appendix 8.2: The NPS

Bossone and Girasino (2001) refer to the payment system as a facility that warrants the circulation of money. It involves payment instruments, banking and money transfer procedures and inter-bank fund transfers (also see: Masoy, 2017). The NPS is the economy-wide payment system or the entire web of payment instruments in an economy (Heinrich, 2003; Sekantsi and Lechesa, 2018; Uddin and Akhi, 2014). The NPS, therefore, provides a common platform that commercial banks and other financial service providers, including the MNOs and other stakeholders, use to facilitate all transaction costs and activities. The NPS provides easy access to funds. It also facilitates tax revenue collections as well as eases the flow of money in the economy. The NPS also enables FI (Uddin and Akhi, 2014). At the time of my field research in Tanzania, negotiations were underway to create a national payment switch that would act as a collective electronic payment platform to aid banks, MNOs and their clients to make transactions efficiently and cost-effectively.

MM entered the NPS as a new technology and a platform. The absence of transaction standards for MM posed security issues (Hassien et al., 2008; Sekanntsi and Lechesa, 2018; Uddin and Akhi, 2014). There was a need for NPS reform and FI to reduce the financial risks posed by the new digital and fintech technologies. This required making the NPS more friendly to MM as well as enacting transparency and legal requirements in line with global standard-setting bodies (as discussed in Chapter 8), such as the CPSS and IOSCO Principles of Financial Markets Infrastructures (PFMIs) (also see: Sekantsi and Lechesa, 2018; Linck et al., 2006). Firstly, the BOT in 2012 created the MPRs, which acted as guidelines that helped the development of MM services. These guidelines include the NPS guidelines for retail payments, rules and regulations for retail payments, and the guidelines introducing electronic payments. Parkes (2014) argues that the 2012 MPRs established a licensing regime for non-banks, including the MNOs as discussed in Chapter 5, Section 5.4.4. The MPRs were an example of rolling-out neoliberalisation, and it tried to fill the regulatory gaps that emerged as a result of the deployment of MM in Tanzania. Secondly, the 2015 NPSA, in conjunction with other legislation, empowered the BOT to oversee, inspect, and monitor the payment and settlement systems in Tanzania to ensure their safety and efficiency. The BOT introduced additional regulations to support the 2015 NPSA. They included the 2015 PSEMRs and the 2015 PSLARs (see the following sections where the NPSA issues have been discussed: 2.4.1.1; 2.6.1; 3.6.5; 3.7.3; 3.8; 5.4.4; 5.4.5; 5.5; 7.6). These new regulations were another example of the neoliberal roll-out practices that set laws to oversee licensing, compliance, enforcement, and matters of liability for breach of the law. It allowed institutions other than banks and financial institutions, such as the MNOs, to operate payment systems in Tanzania.

Taking an example of the e-wallet that MM uses, it is a digital wallet that allows users to make electronic transactions quickly and securely (Uddin and Akhi, 2014). Issues with electronic payment systems include authentication which identifies those involved in electronic transactions. Authentication mistakes cause issues in payment systems. Hence, digital signatures, fingerprints, two-step verification etc. are used to solve authentication issues (Uddin and Akhi, 2014; Sekantsi and Lechesa, 2018; Dahlberg et al., 2008). Also, see Sections 5.4.4 and 7.5. Hence, the NPSA was introduced to resolve these issues. Modern NPSs support different payment systems in the country; which enhances payments; fosters financial stability; and FI; and provides other economic and financial benefits (Senkatsi and Lechesa, 2018; Uddin and Akhi, 2014; Xu, 2000; Zhang, 2006; de Sousa, 2010; Hassien et al., 2008; Delic and Vukasinovic, 2006). Providing the solution of integrating banks, application service providers, and MNOs also provided end-to-end mobile payment solution to their ordinary users (also see: Delic and Vukasinovic, 2006). The NPS works effectively and efficiently when barriers to its smooth functioning are removed.

Literature to discuss the financially-excluded people has broadened, as discussed in Chapters 2, 5, and 6. It is not surprising that FSPs and payment systems have increasingly been dependent on technology. Given that the majority of people in developing countries are unbanked and financially-excluded, the use of technology and MM services to reach them is justified. This situation has created a blurred line between banking and payment systems (de Souza, 2010). MM services that are outside of the conventional banking system, also use the NPS to reach financially-excluded individuals.

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Appendix 8.3: More Details to Help Explain the Theoretical Contributions

This Appendix briefly mentions a few selected theoretical approaches used to study FI, FE, and MM issues Through the understanding of these theoretical approaches, other researchers can appreciate the contribution of this Ph.D. research and its classical and neoclassical theoretical perspectives.

Some theorists have considered applying theoretical models to study FI issues (Kabakova and Plaksenkov, 2018; Dabla-Noris et al., 2015; Karpowicz, 2014). Salignac et al. (2016) and Salignac et al. (2019) provide opportunities for reflection in terms of conceptualising and theorising FE and FI. Examining various theoretical positions and conceptualisations, first, some researchers take a market position to engage in social exclusion and policy debates pointing out issues of FE and FI (Fernández-Olit et al., 2018; Ozili, 2020). Pradeep (2011) analyses FE using two theories: 'the free market model' and 'the theory of asymmetric information' (Pradeep, 2011). Pradeep (2011) also acknowledges the following theoretical positions to studying FI issues: 'the redistributive approach to FI', 'the integrationist approach to FI' which 'hovers around the whole dynamics of the labour markets', 'the theory of intertwining financial development', which asserts that 'economic development and economic empowerment of people paves the way for financial development', and 'the theory of active financial development or supply leading financial development', which emphasises the role of financial institutions in spreading financial development and inclusion. Some researchers theorise FI from the beneficiaries angle as they explain the poor, women, economy, and the financial systems (also see: Ghosh and Vinod, 2017; Demirguc-Kunt et al., 2013b; Swamy, 2014; Sarma and Pais, 2011; Ozili, 2018; Mehrota and Yetman, 2015). Other researchers use policy literature to facilitate the theorisation and conceptualisation of FI (see: Ozili, 2020). Likewise, the academic literature may as well focus on the relationship between FI and its effects on the economy, including poverty levels and income inequality (Sarma and Pais, 2011; Cull et al., 2013; Mehrota and Yetman, 2015. Ozili, 2020; Demirguc-Kunt et al., 2013a). This literature provides a basis for theorising issues of FI and FE as well.

Moreover, some researchers study FI and FE issues by using financial geography approaches and are known for their efforts to enhance the 'market exclusion debate' (Fernández-Olit et al., 2020). Their theories emerge from geographical perspectives and can investigate financial access issues. There are also researchers whose theories are based on financial ecologies and who conceptualise FI as a system of interconnected factors. Their frameworks of analysis lay at the juncture of financial geography and sociology (Fernández-Olit et al., 2020; Salignac et al., 2016; Coppock, 2013; Joassart-Marcelli and Stephens, 2010). Some other researchers investigate FI issues from the perspectives of social studies of finance looking at social realities and how society allocates resources (Fernández-Olit et al., 2020; Kear, 2017; Rogers and Clark, 2016; Polillo, 2011; Wainwright, 2011).

Some researchers use financialisation critique theoretical perspectives, and a large number of them criticise FI as 'an imposed requirement to extend financialisation' (also see: Fernández-Olit et al., 2020; Sinclair, 2013; Ronald et al., 2017; Figart, 2013; Berry, 2015; Prakhabar, 2014; Marron, 2013). Some other researchers use economic psychology and financial socialisation perspectives to study FI by broadening an understanding of financial knowledge and literacy as well as individual behaviours towards FI (Friedline, 2012; Fernández-Olit et al., 2020). Other researchers use moral perspectives as an approach to studying FI issues, to overcome poverty and access issues (Fernández-Olit et al., 2020; Bayulgen, 2013; Gomez-Barosso and Marban-Flores, 2013; Hudon, 2009).

In development studies, some theorisations for ICTD research consider the contribution of ICT to development where theorising is done by using progressive transformation perspectives (Lwoga and Sangeda, 2019; Avgerou, 2010). The capability approach is used in some other cases to illustrate the contribution of ICT to development (Lwoga and Sangeda, 2019; Hatakka and De, 2011; Kleine, 2010). Schwartz et al. (2010) supports a capability perspective and uses it to study poverty alleviation through SMEs in South Africa. His framework provides insights on how to alleviate poverty through stakeholders and ICTs in the same SME environment.

In terms of neoliberalism and the financial system, Major (2012) theorises about the new global financial architecture to investigate the second face of neoliberalism which included financial markets re-regulation. His research focused on the role of central banks in overseeing the functioning of financial markets. Building on neoliberal perspectives, Bernado (2019) analysed financial technologies as a means of enabling FI. He interlinked what he called 'neoliberal reason' discussion with the diffusion of market institutions to explain the re-engineering of financial markets to promote the development of financial markets for the poor in developing countries. Neoliberals would argue that the government's interventions prevent development and free-market progress (Kotz, 2000; Tambi, 2016; Harvey, 2005; Ives, 2015). Neoliberal policies sought to remove obstacles holding back free markets and trade, which blocked development in their views. The IMF and World Bank agreed on imposing policies referred to as the 'Washington Consensus', thought to be the best strategies to help achieve development between the 1980s and 2000s (Rodrik, 2006; Williamson, 2003; Williamson, 1989). Other researchers providing essential neoliberal theoretical perspectives include Cahill et al. (2012), Peck et al. (2012), and Edwards et al. (2012). Also see Chapters 1, 2, and 3. Those who advocate classical and neoclassical theories include Fogelberg and Kulkarni (2006), Hurwitz and Manne (2018), Pennington (2011), Thweatt (1988), Kotz (2000), and O'Brien (2004). Also see Chapters 1, 2, and 3.

Mader (2017) also acknowledges 'new theories of change' which outline the benefits that those who engage with finance get. Alampay and Moshi (2018) also use theories of change to study the impact of MFSs in low- and lower-middle-income countries. Moreover, Nan et al. (2020) identified theoretical gaps by examining MM literature reviews and concluded that MM and its impact on socio-economic development are under-theorised (also see: Markus and Nan, 2020). Furthermore, Peruta (2018) uses a macroeconomic approach to the adoption of MM in 2011 and 2014 based on the alternative strategy of cluster analysis. Neoliberal theorising also tends to depend on the implemented reforms and policies.

At the macro level, FI is a prioritised development policy issue (World Bank, 2014:xi; Demirguc-Kunt et al., 2014:3-4; Barclays, 2013:9). Some scholars studied per capita GDP, and their empirical analyses suggest that income, as measured by per capita GDP, is one of the many vital factors that may explain the level of FI in a country (Norris et al., 2015). Also, at the macro level, some other scholars have tried empirical approaches to studying FI and growth. Their main goal was to establish a relationship between long-run growth and FI. However, this relationship has been hard to prove because of the lack of a sufficiently long-term series of FI data (also see: Sahay et al., 2015:26). Also, some other scholars have tried to study FI by looking at financial stability regressions and economic volatility (Sahay et al., 2015: 29-30).

At the micro level, the failures of the financial markets and how they affect the different segments of the population have been investigated. At the micro level, factors that affect FI can also be classified into demand-side and supply-side factors. These factors determine individual decisions when it comes to financial products and services that people have access to. As far as the demand-side is concerned, such information as income, education, gender, and age can be relevant in determining who has access to formal financial services. Likewise, behaviour traits and how people perceive financing could also be important in determining whether someone could have access to formal financial services or not. In other words, the micro-level analysis is in line with neoclassical economic views in the sense that such views are built upon the assumption that people have rational preferences and make the best decisions to support their demands. They also maximise utility while firms maximise profits. Likewise, neoclassical economists argue that people make decisions based on what they know or based on the relevant information they have (Wentraub, 2007).

Micro-level theoretical perspectives have sometimes applied the theory of supply leading financial development to study FI (Kumar, 2014; Fischer, n.d.; Joy et al., 2011; Nielsen, 2014). Other researchers have used the theory of demand following financial development (Kumar, 2014; Fischer, n.d.; Joy et al., 2014; Nielsen, 2014).

According to Levitas (2006a), there are two widely recognised sociological approaches to studying FI, namely: 'integrationist' and 'redistributive'. The integrationist approach considers the labour market's ability to resolve FE issues as far as it provides people with paid jobs helping them to generate their own income. This is the first step towards FI because when people have access to adequate income, they tend to demand financial products and services that meet their needs (Levitas, 2006b: 136-137 and 147-148; Kumar, 2014:64). Likewise, the 'redistributionist' approach assumes that lack of endowments to facilitate participation in the daily life of society is the main cause of exclusion. Therefore, the distribution of resources in such a way that the poor and the underprivileged people get their share appears to be the solution to wipe out any forms of exclusion (see: Kumar, 2014; Hashem and El-Sháer, 2015:415-416).

Other researchers have employed theoretical perspectives based on a market systems approach to studying FI. These theoretical perspectives view the market system as key to the delivery and use of financial services. At the centre of the market system, the poor and low-income people are consumers of financial services and interact with providers to access and use financial services. In some places, the lack of institutional capacity to deliver financial services creates a significant bottleneck of access to finance for the poor. Hence, multiple market functions (backing functions, rules, and norms) are to reinforce the core exchange between supply and demand (also see: DFID, 2005; DFID/SDC, 2009a; and DFID/SDC, 2009b).

Other researchers have used theoretical perspectives based on the financial landscape approach as a way of studying FI (Bouman and Hospes, 1994; Helms, 2006; Claessens et al., 2002). The landscape metaphor depicts what makes the financial landscape. Whereas the physical landscape is made up of "lowlands and mountain ranges, broad rivers and streams, fertile regions, deserts and muddy swamps", the financial landscape is made up of a totality of institutions and social processes (Benda-Beckmann, 1992; as quoted by Bouman and Hospes, 1994:1-1). Other scholars employed the assemblage theoretical perspective to studying FI (Kuriakose and Iyer, 2014; Schwittay, 2011; Collier and Ong, 2005).

The assemblage theory is derived from Deleuze's metaphor theory. The assemblage idea asserts that in the social world, a uniform occurrence of events does not occur, and therefore there is no fixed ontology of the social events. For instance, scientific objects are made up of molecules, and molecules are made up of atoms, and atoms consist of electrons and a nucleus. Hence, the process of creating scientific objects follows this fixed process and ontology. The social world is made up of social objects. Thus, the assemblage theory suggests a different set of metaphors for the second world. In this regard, other metaphors can be used to study FI as one of the social world's issues (see: Delanda, 2006 and Delanda, 2016). FI is, therefore, a global assemblage as it involves the decontextualisation and recontextualisation of things that help to enhance the discourse of FI. The rationalities of "calculations, the political knowledge, and practices of implementation" are what constitutes FI assemblage. Hence, these rationalities may be used to enhance FI (Inda, 2005:2; Rankin, 2008; Miller, 2008; and Schwittay, 2011).

This Ph.D. study draws on the classical and neoclassical perspectives' framework to assess the roll-back and roll-out issues that facilitate the growth of MM which in turn aid the transition from high levels of FE to increasing levels of FI in Tanzania. The other theoretical perspectives used by other MM, FI, and FE researchers, as described in this section, were not used to link the issues as mentioned above, to study them together. The theoretical framework I used, as described in Chapters 1 and 3, facilitated a detailed selective examination of issues that link neoliberalism, MM and the transition from FE to FI. The use of the theoretical framework allowed the study to be set in the political and economic contexts of MM and the transition from FE and FI in Tanzania. It also helped to provide a broader perspective on the issue of roll-back and roll-out neoliberal policies (the framework draws heavily on neoliberal, classical and neoclassical literature and can explain issues of MM, FI, and FE as demonstrated throughout the dissertation). Classical and neoclassical perspectives have been used to study neoliberalism, FE, and FI, and less used to study MM. There was a plethora of theories, theoretical perspectives or approaches I could use to explore MM and the issues of FE and FI, as demonstrated in this section. They include: open systems theory, contingency theory, the theory of change, intermediation theory, demand-side and supply-side theories etc. It turned out that classical and neoclassical theories were the best in this case. As I mentioned earlier, existing theoretical approaches and frameworks tend to shy away from political-economic solutions or explanations of MM and the transition from FE to FI in Tanzania. Some researchers such as Tyce (2019) acknowledged that researchers find it hard to explain the role of neoliberalism in facilitating FI. By using my theoretical framework, I am raising awareness of classical and neoclassical perspectives and how they inform neoliberal roll-back and roll-out policies in facilitating the transformation from FE to FI. I have provided a framework to help researchers theorise the MM successes in a neoliberal era and how FI could be explained using neoliberal policies and MM. The transformations caused by MM are hard to ignore in GPE; my theoretical framework and perspectives provide an excellent start to engage with these issues.

Considering all of the theoretical perspectives discussed in this Appendix and in Sections 8.7.1 and 8.7.2, it is clear that my theoretical perspective as explained in Sections 1.4 and 3.4 and as applied to build and support the arguments presented in this dissertation, is unique. It has contributed to the understanding of FE and FI through MM as supported by classical and neoclassical perspectives to explain the rolling-back and rolling-out of neoliberal policies that aided the growth of MM and therefore facilitated the moderation of some factors of FE in fostering increasing levels of FI in Tanzania. See some more details in Chapter 3. The classical and neoclassical perspectives have revitalised the two essential and often forgotten theories that could be used to understand MM services and policies facilitating MM success and eradication of FE to increase FI in developing countries like Tanzania. The biased use of neoclassical perspectives to drive MM research through market approaches often forgets the role of classical views in facilitating MM operations and increasing FI levels. This research not only brought back the classical perspectives into the discussions on MM, FI, FE, and neoliberal policies, but it also uses both classical and neoclassical theories to enhance the academic knowledge around MM issues, FI and FE realities. This study explored how the liberalisation (rolling-back/deregulation) of both the financial and telecommunications sectors facilitated the advent and survival of MM in Tanzania. It also explored the re-regulation (rolling-out) phase that facilitated MM growth and FI through the NPSA and other regulations and policies. This study found that neoliberal transformations have influenced the advent and development of MM on the one hand, and the moderation of some factors of FE, and increasing levels of FI, on the other hand in Tanzania. As a result, those who believe that neoliberalism has done nothing to support FI, now have to rethink their positions, especially by considering inclusive neoliberal factors. We may differ in how we agree on to what extent the neoliberal policies have facilitated FI, but we can agree on the fact that in some cases inclusive neoliberal agenda has facilitated the conditions that supported MM and that this support raised FI in Tanzania (also see: TNCFI, 2014; TNCFI, 2018; FinScope, 2018).

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