

# FinTech Regulation in South Africa

A Dissertation Proposal

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**Table of Contents**

- 1.0 INTRODUCTION ..... 4
  - 1.1 Background of the study ..... 4
  - 1.2 The Problem Statement ..... 6
  - 1.3. The aim and objectives of the study ..... 7
  - 1.4. Research questions and scope ..... 7
  - 1.5 The significance of this research ..... 8
  - 1.6 Research assumptions and limitations ..... 9
  - 1.9 Ethical considerations ..... 9
- 2.0 THE LITERATURE REVIEW ..... 10
  - 2.0 Introduction ..... 10
  - 2.1 Fintech and the concept of e-money ..... 11
  - 2.2 Financial Inclusion ..... 16
  - 2.3 Systemic Risk ..... 22
  - 2.4 Financial Regulation ..... 22
    - 2.4.1 Developments in FinTech Regulation ..... 24
    - 2.4.2 Conflicting motives on FinTech regulation ..... 25
    - 2.4.3 The current approaches to FinTech regulation ..... 27
    - 2.4.4 The regulation of mobile money in South Africa ..... 30
    - 2.4.5 The NPS Act and Review of the NPS Act 78 ..... 32
  - 2.5 Benefit-Risk Framework to explain regulation ..... 33
  - 2.6 Summary of the Literature Review ..... 35
- 3.0 THE RESEARCH METHODOLOGY ..... 37
  - 3.1 Research Approach and Strategy ..... 37
  - 3.2 Population and Sampling ..... 38
  - 3.3 The data Collection ..... 40
  - 3.4 The data-analytical methods ..... 40
  - 3.5 The Research Criteria ..... 41
- 4.0 THE RESEARCH FINDINGS, PRESENTATION AND ANALYSIS ..... 44
  - 4.1 Introduction ..... 44
  - 4.2 The Research Findings ..... 44
- 5.0 A DISCUSSION OF THE FINDINGS AND THE CONCLUSION ..... 69
  - 5.1 Introduction ..... 69

5.2 Discussion .....	69
5.3 Research Conclusion of the Study .....	72
5.4 Future Research Directions .....	75
Appendix .....	76
6.0 REFERENCES .....	79

## 1.0 INTRODUCTION<sup>1</sup>

### 1.1 Background of the study

The rise of FinTech has been an interesting development globally; and South Africa is no exception. With an increase in computer processing, the availability of this technology on simple handheld machines like tablets and cell phones, FinTech has taken advantage of this development to create a new industry.<sup>2</sup> The financial sector has seen significant growth in the use innovative technologies; and it has made financial services accessible to untapped markets, especially in Africa (KPMG, 2018). However, the growth of FinTech has outpaced the growth of the necessary regulations that regulate such financial services (Didenko, 2018).

FinTech can be defined as “technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on the financial markets and institutions and the provision of financial services” (FSB, 2017). FinTech has seen growth in transaction execution (e.g., payment) for processing, clearing and settlement; funds management, including financial intermediation services and risk sharing through insurance products, amongst others. The success of digital financial services (DFS) has brought in new providers, such as mobile money, or e-money issuers, who have been instrumental in reaching the previously financially excluded markets. Numerous FinTech start-ups, have entered into the banking and financial services sector, including the payments sector in the peer to peer lending, crowd-funding, as well as the account aggregation and trade finance threatening traditional financial institutions, some of which have resorted to adopting a hybrid model, whereby the incumbents are now interacting with FinTech players through partnerships, or direct take-over strategies (Central Bank of India, 2020). There is therefore an opportunity for central banks, through their monetary-policy systems, to facilitate the adoption of FinTech.

A monetary policy is a macro-economic policy that central banks of various governments use to serve governments’ macro-economic objectives, which include inflation, consumption, growth and liquidity. Monetary policies consist of payment systems that are used for liquidity, consumption and growth. A payment system is a set of instruments, rules and procedures designed to facilitate the transfer of funds between participants. Wholesale payment systems are payments between financial institutions for large value transactions; whilst retail payment systems are low value high volume transactions between consumers and businesses. The major shortcoming of the traditional payment system is the lack of access to these payment systems, especially in developing and emerging economies (Carstens, 2020).

It is in the retail payment system that non-traditional finance actors have entered the market, offering better chances for accessibility at lower costs. In India, the digital payment system accounts for 97% of daily payment systems in terms of volume; and the Central Bank of India has started ascribing to the retail payment system on a 24/7 basis, thereby utilizing their fast payment system (UPI) (Central Bank of India, 2020). However, the growth and success of the non-traditional domestic payments in South Africa has had some mixed results. In the SADC region, upper-middle-income countries like Mauritius, South Africa and Namibia, have the highest numbers of financial inclusion with the main channel being formal banking channels.

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<sup>1</sup> This chapter heavily borrows from the thesis proposal by the Simbarashe Takundwa (the author) submitted to the UCT in 2020 in preparation for this paper. The proposal is unpublished at the time of writing (Takundwa, 2020)

<sup>2</sup> Whether FINTECH has created a new industry, or it is just an enhancement of the current industries, is a subject for debate

On the other hand, in countries, like Tanzania and Zimbabwe financial inclusion is accessible through other non-banking channels like mobile banking (Finmark Trust, 2017).

It can be argued that the creation of these new services and products, such as e-money, presents benefits and risks for regulators, financial firms and individual consumers; and as a result, the issue of regulation is fundamental for accruing these benefits whilst minimizing the risks associated with FinTech. The availability of the risks attached to FinTech services is a major reason behind the creation of effective enforceable regulations updated at a speed proportional to the technological advances implemented in the FinTech sector.

As the national regulator, the government and its institutions hold the advantage of applying self-protection by implementing laws that minimize the level of exposure. However, should the government decide to utilize FinTech services for transactional operations, such as investment funds, its level of risk might increase the individual consumers' level of risk. Added to the benefits of financial inclusion for the individual consumer, traditional banks opting to utilize FinTech application services, either as their own, or through collaboration, save on the costs incurred by cash-in-transit operations. It can be argued that information technology can reduce transaction costs and reduce risks when applied holistically. Transaction costs are the result of information asymmetries among economic participants involved in the transaction; and they are mostly represented by search costs, negotiation costs and enforcement costs – usually through disintermediation (Cordella, 2014). However, if implemented in isolation, without considering the environmental and societal contexts, disintermediation itself can lead to the creation of additional transaction costs, such as the flooding of information to an already financially illiterate population; and this can lead to the creation of other intermediaries, who have to process and translate this information into much easier and more understandable language.

According to (GSMA, 2019) by the end of 2018, there were 456 million unique mobile subscribers in Sub-Saharan Africa – an increase of 20 million over the previous year and representing a subscriber-penetration rate of 44%. The authors also estimate that the mobile economy, which includes mobile money, has contributed about 8.6% of SSA's GDP. These numbers are staggering and the mobile economy merits serious analysis, since it is a tool for economic growth in Africa. Furthermore, the authors also estimate that half of SSA's population will be subscribing to mobile services; and there will be an additional 167 million new subscribers by 2025. However, South Africa does not feature among the top ten nations expected to gain from this mobile money economy. This conundrum is amplified by the fact that South Africa is the second largest economy in Africa, with a sophisticated and vibrant financial service industry. The question is then: why is South Africa lagging?

This study is based on the benefit and risk framework, guided by the technology-acceptance model in assessing the adoption of e-money, based on the perspectives of the regulatory authorities, in this case in the South African Reserve Bank (SARB). The Efficient Market Hypothesis is also tested on why there is a need for regulation, when the markets are efficient? Behavioural theory on the rationality of individuals, when it comes to financial decision-making, availability and the cost of obtaining information, is also the key to analyzing how and why FinTech technologies are accepted and adopted. The hypothesis is that regulation does influence the adoption of FinTech technologies, such as crypto-currency and mobile money. However, this paper's aim is also to find out what influences regulation, as well as the mitigating factors thereof. This paper also discusses some of the key features of FinTech regulations in the UK, Mexico, Singapore, along with the theoretical opinions from well-versed

researchers, in order to comparatively address the implementation method of FinTech regulation in South Africa. Regulators play a key role in increasing financial inclusion; and the key challenge is in ensuring new innovations in banking that serve the customer by reducing transaction costs in a manner that is safe to both the client and the financial system (Central Bank of India, 2020).

For example, in India, legislation has been put in place, which recognizes the role played by FinTech, and how regulation and compliance have been tailor-made to accommodate the additional risks, whilst at the same time recognizing the need for flexibility, in order to encourage the flourishing of this industry. The Monetary Authority of Singapore (MAS) implements the four guiding principles of financial supervision; Risk-focused, Disclosure-based, Stakeholder-reliant and supportive of Enterprise (Fan, 2018). The financial risks posed by the weak regulations cannot be over-emphasized after the 2008–2009 financial crisis that was mostly driven by the poor regulatory regime that failed to move with the times, in order to take account of the new sophisticated financial products. On the other hand, the economic and developmental benefits that FinTech can provide are undisputed. Therefore, there is a need for a balance between risk-management and creating a competitive space for FinTech to flourish.

Considering the critical success factors of e-money in other countries, the South African Reserve Bank states, in its September 2018 policy-review paper, that in developing the regulatory and legislative framework, the National Payment System Department (NPSD) endeavors to align the domestic framework with international standards and best practices, as set by organizations, such as the International Monetary Fund (IMF) and the World Bank, to name but a few (SARB, 2018b). While examining the success of e-money and its regulation in other countries, this study also draws lessons from regulations in advanced and more sophisticated economies, by comparing them with the South African NPSD regulations. In his contribution to the BIS quarterly review, (Carstens, 2020) advocates the creation of central-bank digital-currency systems (CBDC) that can ensure scalability, accessibility, convenience and resilience, as well as privacy and a transformative way whereby central banks can reduce transaction costs in the retail payments, by reducing the number of intermediaries through peer-to-peer arrangements that link payers and payees directly.

This study aims to provide a general framework, for which FinTech regulations can be tailored to the South African context, in order to increase financial inclusion and to reduce transaction costs. The study could assist regulators like the SARB on what policy to pursue, when it comes to the regulation of FinTechs that fall within the jurisdiction of the SARB. The research identifies five approaches, which include: the introduction of specific legislation, the use of some innovative regulatory initiatives, such as innovation offices, the use of RegTech, regulatory sandboxes, and finally a wait-and-see approach.

## **1.2 The Problem Statement**

In order to provide informed and relevant recommendations to the national financial regulators, researchers need to evaluate the benefits and risks posed by FinTech, and how these could, in turn, can influence how FinTech should be regulated. Regulators play a key role in increasing financial inclusion; and the key challenge is in ensuring new innovations in banking that serve the customer by reducing transaction costs in a manner that is safe to both the client and the financial system (Central Bank of India, 2020). The less-than-enthusiastic uptake of mobile money in South Africa, a sub-industry, which according to the GSMA, is expected to contribute

8,6% to the GDPs of SSA countries, in which mobile money is expected to contribute in no significant way to South Africa's GDP. A study that seeks to explore whether regulation is a key enabler in the uptake of e-money, by making cross-country comparisons with countries where e-money has been successful, and to provide guidance on the regulatory approaches that could increase financial inclusion, whilst minimizing the risks to the financial system and the economy, was therefore necessary.

The South African regulatory environment is viewed as a constraining factor by Perlman (2012) and a neutral factor by the World Economic forum (Finmark Trust, 2017). This lack of consensus consequently requires further study of the nexus between regulation and the adoption of FinTech in the South African context. This can then be used as a guide to the SARB and other policy-makers, thereby providing explanations on why e-money systems like MPESA have been such a failure in South Africa, and on how the SARB could act as an enabler of financial inclusion by evaluating the adequacy of the current regulatory environment and the proposed changes to the NPS Act.

The SARB's NPS has admitted that there is a need to rethink the adequacy and relevance of the existing national payments regulatory framework, in order to take into account global policy developments relating to financial inclusion, access, financial stability, effectiveness, integrity and competition, as well as the international best standards, practices and recommendations from global policy and standard-setting bodies (South African Reserve Bank, 2016).

### **1.3. The aim and objectives of the study**

The study aims to determine whether regulation is a key enabler in the uptake of e-money; and by making cross-country comparisons with countries, to determine where e-money has been successful, and also to provide guidance on the regulatory approaches that should increase financial inclusion, whilst minimizing the risks to the South African financial system.

This research seeks to achieve the following study objectives:

- 1) To determine whether the Regulation of FinTech is a key enabler of FinTech transactions, such as e-money.
- 2) To analyze the key considerations of the perceived risks and benefits of FinTech; and how they influence FinTech regulation and adoption.
- 3) To assess the impact of regulation of FinTech in the South African context.

### **1.4. Research questions and scope**

The main research question of this study is: How can FinTech Regulations be tailored for the South African context? In order to help answer this question, the following sub-questions will be reviewed:

1. Is the Regulation of FinTech as a key enabler of transactions, such as e-money and crypto necessary?
2. What are the perceived risks and benefits of FinTech; and how do they influence FinTech regulation and adoption?
3. In the light of the revised NPS Act, what would be the impact of the regulation of FinTech in the South African context?

In answering the above research questions, the following preliminary theoretical statements apply to this paper:

1. Regulation is a form of government intervention to reduce market failures; and it is influenced by the desire to reduce market failures. In this paper, two of the significant market failures are financial exclusion and systemic risk. The concepts of free market vs other types of government systems, which involve some sort of government interventions, will also be discussed.
2. The World Bank defines financial inclusion, as the ability of individuals and businesses to have access to useful and affordable financial services that meet their needs, such as transactions, payments, savings, credit and insurance.
3. Systemic risk can be defined as the risk that might cause collapse or significant damage to the financial system, or a risk which results in adverse public perception, possibly leading to a lack of confidence; and in a worst-case scenario, a run on the system (Lake, 2013).
4. The study is based on the TAM, which is intended to provide a conceptual model featuring a theoretic foundation, to explain and predict users' acceptance and use of IT (Tang, 2009).

### **1.5 The significance of this research**

The role of FinTech in facilitating the development agenda for Africa cannot be over-emphasized, according to the (World Bank, 2016) FinTechs, especially e-payments, have the potential to directly address seven of the Strategic-Development Goals and the GSMA (2019) believes that the mobile-money economy is growing exponentially; and it could be an economic industry on its own. This study builds and contributes to technology-adoption theories, such as TAM, the benefit-and-risk framework and the transaction-cost theories to explain FinTech regulation in the South African context.

Since national policies aimed at governing FinTech payment systems are already implemented, one may conclude that financial services, such as e-money and other electronic forms of payments are currently an accepted technology in South Africa by consumers; however, the level and breadth of acceptance has been significantly different from those of other SSA countries. South Africa represents a platform different from most high-adoption countries, in which research on FinTech services have been conducted. Furthermore, the context of this study brings additional knowledge on the adoption of e-money and other FinTech services by a medium-adopter country like South Africa. Furthermore, the study contributes to the understanding on the impact that regulation has on the type of operating model for FinTech companies, which offers a choice of having to go for an collaborate model, or an independent model. The model chosen is further interrogated, on whether it is a function of the level of sophistication of the financial industry. How each of these models can lead to the creation of Bank-led MNOs, independent MNOs and the block-chain technology will be further discussed in this paper.

In addition to contributing to the current body of literature, this study will also be useful to the traditional financial institutions and the FinTechs in navigating the issue of regulations and an understanding of the risks and benefits inherent in FinTechs. The South African governmental

agencies that are interested in promoting the growth of FinTechs and extending the FinTech driven benefits, such as financial inclusion, job creation and access to finance, should also find this study useful. Finally, the role of financial literacy as a mitigating factor in the adoption of FinTech technologies, such as block-chain and e-money, will also be discussed in this paper; and recommendations will be made for policy-makers and operators.

## **1.6 Research assumptions and limitations**

This study operates under the following assumptions:

- a) That there is scope to increase FinTech adoption; and there are current bottlenecks leading to the low maximization of FinTech services.
- b) That FinTechs can help to increase financial inclusion; and mobile money could be the driving source for economic growth in certain communities.
- c) That the mobile economy is the next big thing that can fuel growth in Africa.
- d) That there is a causal relationship between financial inclusion and economic growth.
- e) That an increase in perceived risk leads to an increase in regulation; and
- f) That an increase in perceived benefits leads to less-stringent regulations; and
- g) That markets are efficient to facilitate the reduction in transaction costs.

The following limitations apply to this study

- a) That FinTech is fairly new financial field and there is a limitation of empirical evidence
- b) That the paper as result had to rely on some literature which is over five years, however, these remain relevant

## **1.7 Ethical considerations**

This study was conducted on the basis of the University of Cape Town's code of research ethics handbook for the faculty of Commerce (University of Cape Town, 2016). Participants were duly informed of the purposes of this study; and they were free to withdraw from participation; and they were also informed of the voluntary nature of their participation. The report will be made available to all participants, and to anyone that has expressed an interest in this research paper; and this report will be made available to the public. Additionally, the questionnaire utilized for the interview will be free from discriminatory content; the data collected will be kept confidential; and no physical or psychological harm will be incurred by the participants. The ethical relevance of the questionnaire matters, with the view to create an interviewing platform that encourages truth and excludes fear; and the identity protection of the interviewees will guarantee their confidentiality; and it will allow the participants to reveal certain secret information freely.

In order to abide by the university rules, this study will not rely on any coercive method to extract information or answers from participants; and it will stand as an academic model that respects individuals' rights of freedom and expression. The participants were also informed that they were free to withdraw from the study at any time, without facing any consequences; and furthermore, that they could stop the interview of their own will. These approaches gave the researcher direct personal contact with the participants; and their commitment to the study and the interviews was thereby secured.

Finally, the participants were also informed that this report will be made available to the public.

## 2.0 THE LITERATURE REVIEW<sup>3</sup>

### 2.0 Introduction

Financial development can be defined as the factors, policies, and institutions that lead to effective financial intermediation and markets, as well as to the deep and broad access to capital and financial markets (Reuttner, 2012). Financial development is mainly concerned with overcoming the costs incurred in the financial system and ensuring financial inclusion, with the aim of improving the standards of living by way of economic growth. The main functions of a financial institution are to provide mobilization, financial intermediation, maturity transformation and risk transfer. Financial mobilization and intermediation involve transferring surplus funds from savers to borrowers. The crowd-funding space is a good example of where the FinTech industry has grown, where borrowers and savers are matched through the use of big data for credit scoring and matching.

This has significantly lowered transaction costs and the moral hazard. Traditional banks do perform this function through accepting customer deposits, and then turning them into loans for borrowers. However, compliance costs, and human resources costs are higher for incumbents than for FinTechs (Navaretti et al., 2017). Maturity transformation involves the ability of banks to transform short-term deposits from savers into long-term loans for borrowers. This is achieved through the law of large numbers, i.e., the banking on the belief that there will not be bank runs. Central banks also provide liquidity back-stops to finance this activity. Most FinTech companies avoid this type of service; since it entails more risk; and it would, in most cases, require them to get banking licenses (Navaretti et al., 2017).

The authors seem to infer that the cost of compliance is one of the major reasons why FinTechs would not want to get a banking license. Regulations like the Basel III on capital adequacy, provides assurance to depositors of traditional financial institutions that their funds are safe. Through insurance, financial institutions can perform risk transfer, i.e., they assume the risk from which the insured want to be protected can be given in return for a premium. InsurTechs, as they are popularly known, have entered the realms of insurance by offering innovative products, providing clients with friendly claiming processes, and the use of big data to analyze clients' profiles, and to reduce any moral hazards.

The World Bank defines financial inclusion as the ability of individuals and businesses to have access to useful and affordable financial services that meet their needs, such as transactions, payments, savings, credit and insurance. However, the World Bank also notes that about a third of the adult population is unbanked; and most of these people include women and households in the rural areas. The main reason for this is the issue of accessibility of financial services and products (Carstens, 2020). Regulators play a key role in increasing financial inclusion; and the key challenge is in ensuring new innovations in banking that serve the customer by reducing transaction costs in a manner that is safe to both the client and the financial system (Central Bank of India, 2020).

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<sup>3</sup> This chapter heavily borrows from the thesis proposal by the Simbarashe Takundwa (the author) submitted to the UCT in 2020 in preparation for this paper. The proposal is unpublished at the time of writing (Takundwa, 2020)

Through their monetary policy systems, central banks can enable the adoption of FinTech. A monetary policy is a macro-economic policy by the central banks of various governments that is used to achieve their serving governments' macro-economic objectives, such as inflation, consumption, growth and liquidity. Within these policies are payment systems that are used for liquidity, consumption and growth. A payment system is a set of instruments, rules and procedures designed to facilitate the transfer of funds between the participants. Wholesale payment systems are payments between financial institutions for large-value transactions; whilst retail payments systems are low-value high-volume transactions between consumers and businesses.

However, the major shortcoming of the traditional payment system is the lack of access to these payment systems, especially in developing and emerging economies (Carstens, 2020). The author then posits that the most transformative way in which central banks can reduce transaction costs in the retail payments is to do so by reducing the number of intermediaries through peer-to-peer arrangements that link payers and payees directly. The author further advocates the creation of central bank digital-currency systems (CBDC) that can ensure scalability, accessibility, convenience, as well as resilience and privacy. The focus of this paper is on the role of FinTech in the retail payments space, thereby enabling financial inclusion through the reduction of transaction costs, and how Central Bank policies and regulations could help to achieve such reductions.

This chapter will first discuss the FinTech phenomenon, with a specific focus on mobile money; financial-inclusion concepts are then discussed, and how e-money can help to achieve financial inclusion; financial regulation is then discussed in detail, and finally, theoretical models are discussed that could help to answer the research questions.

## 2.1 FinTech and the concept of e-money

There are various definitions of what a FinTech is, however, the FSB defines FinTech as “technologically enabled financial innovation that could result in new business models, applications, processes or products with an associated material effect on financial markets and institutions and the provision of financial services” (FSB, 2017). The US National Economic Council defines FinTech, as “encompassing a wide spectrum of technological innovations, which impact a broad range of financial activities, including payments, investment management, capital raising, deposits and lending, insurance, regulatory compliance, and other activities in the financial services space” (National Economic Council and the White House, 2017).

The European Parliament defines FinTech, as “finance enabled by, or provided via new technologies, affecting the whole financial sector in all its components, from banking to insurance, pension funds, investment advice, payment services and market infrastructures.” From the above definitions, one can conclude that the FinTech sector is an ‘economic baby’ of the ever-evolving fourth industrial revolution. Since it originates from the progress made in the technological sector, this research assumes that more futuristic progress should be expected from the FinTech sector in the years to come.

Common terms can be discerned from the above definitions, technological innovations that impact financial services and products. The author argues that the use of technology in financial services is not new, in fact, it is technological innovation that has been driving financial innovation. From the use of manual ledger accounts, to computing power that could store and analyze multitudes of data, the advent of the internet age has also brought banking to the customer's fingertips through online transactions. The term disruptive finance has also been

thrown around and the digitalization of the financial systems is touted to be the next big thing that will revolutionize the financial industry (Finmark Trust, 2017).

One of the reasons why the FinTech industry is touted as being the next big thing lies in the manner in which they have influenced the traditional banking world, which has also adopted new technologies to process its operations – to the detriment of a human workforce being retrenched increasingly every year. Financial innovation has led to the provision of new products and services, new production processes and new organizational forms (Zavolokina et al., 2016); and this then leads to the observation that traditional banks in South Africa have used the gains from the adoption of FinTech by significantly reducing their staff numbers.

The creation of these new services and products has come with both benefits and risks, and the issue of regulation is fundamental in terms of accruing these benefits, whilst minimizing the risks associated with FinTech. Numerous FinTech startups, have entered into the banking and financial services sector, including the payments sector in the peer-to-peer lending, crowd-funding and account aggregation and trade finance, thereby threatening traditional financial institution, some of which have resorted to adopting a hybrid model, whereby the incumbents are now interacting with FinTech players via partnerships, or direct take-over strategies (Central Bank of India, 2020).

One of the major categories of FinTech is e-money, which is basically a payment system that has had varying success in Africa. It has received considerable attention for its potential to increase financial inclusion in Africa. However, it does come with its challenges that regulators from different countries have approached differently, with varying degrees of success. This paper will focus on e-money, its potential of increasing financial inclusion and its potential to increase financial and systemic risk and offer ways in which mobile money can be regulated to maximize the benefits, whilst minimizing the downside.

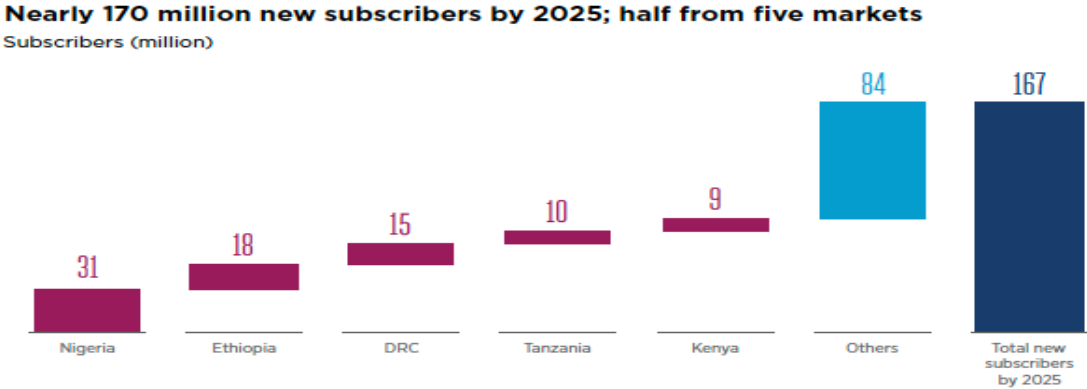
### **The concept of mobile money**

Mobile money comprises stored value accounts that allow for mobile-based transactional services, usually via the use of mobile phones. Mobile money is also synonymous with the concept of e-money; and it is also used interchangeably with electronic-payment systems. Some jurisdictions categorize mobile money under payments systems; for example, the SARB through the NPS Act categorizes mobile money under the NPS Act; but it differentiates between domestic and international remittances. The rapid adoption of mobile-phone technologies has led to the creation of applications that seek to maximize the capabilities of these communication devices, and one these applications being mobile money (Tobbin, 2012).

According to (GSMA, 2019), by the end of 2018, there were 456 million unique mobile subscribers in Sub-Saharan Africa – an increase of 20 million over the previous year, and representing a subscriber penetration rate of 44%. The authors also estimate that the mobile economy, which includes mobile money, has contributed about 8.6% of SSA's GDP. These numbers are staggering; and the mobile economy merits serious analysis, as it is a tool for economic growth in Africa. Furthermore, the authors also estimate that half of SSA's population will be subscribing to mobile services; and there will be an additional 167 million new subscribers by 2025: In a futuristic context, "167 million new subscribers by 2025" also means that FinTech companies hold the potential to increase financial inclusion in SSA and especially on two levels: primarily for new customers who live in areas deprived of traditional banking

services, and for the unemployed, who could use the demand for mobile money services, as an opportunity to become astute entrepreneurs. Furthermore, based on the above-mentioned prediction, this study suggests that NPS regulation will need further updating in terms of the inclusion of informal entrepreneurs operating in the spheres of mobile money.

Figure 1: Mobile-money economy 2025



Source: (GSMA, 2019)

The absence of South Africa from the table is quite striking. However, this can be explained by the fact that South Africa already possesses a high mobile penetration rate of 89%. However, this high penetration rate is not translated into significant mobile money usage. Again, this raises the question of whether it is the current mobile money regulation, or some other unique South African circumstances that are restricting mobile-money usage in South Africa, and in particular, the abject failure of MPESA?

**Mobile money and banking**

FinTech has considerably grown in the areas of transactional processing, and mostly in facilitating transactions between third parties. Where you needed to go to the bank and make a deposit into another third party as a transaction, one can simply do that over the phone or at a Spaza shop. Companies like Paypal, GooglePay, and Applepay are the global leaders in this space. In Zimbabwe, the Ecocash payment system is the most-used payment platform (ahead of cash!); and this demonstrates the uptake of FinTech in Africa. However, in most cases, the payment systems do not operate independently; for example, the Apple pay system is linked to one’s bank account. South Africa has a high bank-penetration rate of more than 50%; and most South African banks do offer mobile payment systems, which are called mobile banking. Mobile financial services usually take the following models:

- 1) the bank-led MNO model, and/or
- 2) the mobile network operator model (MNO), and
- 3) the big-tech model.

The bank model (or through any other licensed deposit-taking institution) holds the customer’s funds, either through a normal transaction account, and/or a mobile wallet. Access is provided through mobile USSD, mobile applications, or the internet; and this sort of convenience saves both the clients and the bank money. This is the most common method in South Africa, where the bank-penetration rates are high; and all the big four banks offer this service. It can be argued that the bank model is a product of regulation, where MNOs are forced to partner with banks, in order to get banking licenses. And this is mostly found in more sophisticated markets. The

Independent MNO model on the other hand is usually through a cellular phone company that uses the SMS and USSD functionalities provide payment services that enable customers to transact over the wireless communication for making remittances, settling bills.

The Kenya MPESA model stands as a good example, along with the Zimbabwe Ecocash model, where these big telecom organizations use their existing market share (these two were dominant players in the telecoms in their respective countries) to leverage their product. This is mostly found in less-sophisticated markets, in which the MNOs would be filling the gaps of an inefficient traditional financial market. The Big-tech model refers to big technology companies also entering into the payment systems, like Alipay, which is a sister company of Alibaba, Applepay and GooglePay. Like MNOs, these organizations again leverage their existing customer base, in order to add these new mobile-payment services. Given their size and reach, Big-techs have the potential to increase access and to reduce transaction costs, especially search and negotiation costs (Central Bank of India, 2020).

Big-techs have the ability to assess the riskiness of borrowers, by using the massive troves of data at their disposal, thereby reducing the need for collateral, and offering a lower cost-structure, the savings of which can then be passed on to the user.

For mobile banking to work, the sender must have a South African bank account, from which s/he can send funds to the receiver via their mobile account. In this case, the receiver would not need to have a bank account. Contrasting this to the MPESA system in Kenya, both the sender and the receiver can transact without the need of any bank intermediary. The Kenya MPESA model is a good example of a peer-to-peer payment system that reduces the need for intermediaries, which in effect improves accessibility and reduces transaction costs (Carstens, 2020). On the other hand, the stringent licensing requirements by the SARB on domestic payments, in which operators are required to have a banking license; and they have made it difficult for non-bank mobile money issuers to break into the market.

In contrast, Chigada and Hirschfelder (2017) postulate that the high bank-penetration rate in South Africa might be the reason why there is such a slow uptake of mobile banking, coupled with the fact that traditional banks also offer mobile-banking solutions. However, South Africa has seen the success of most international remittance providers, such as Mama Money, Mukuru and Hello Paisa, due to lesser stringent licensing requirements by the SARB on international remittances. Such observation poses the question to know whether domestic remittances should be less regulated, in order to facilitate economic growth; and whether regulation has affected the adoption of mobile money in South Africa.

## **2.2 Financial Inclusion**

The World Bank defines financial inclusion, as the ability of individuals and businesses to have access to useful and affordable financial services that meet their needs, such as transactions, payments, savings, credit and insurance. However, the World Bank also notes that about a third of the adult population is unbanked; and most of these people include women and households in the rural areas. Access is one of the major shortcomings in payments systems, as identified by (Carstens, 2020), who further painted a bleak picture in Africa, in which more than 50% of the population do not have any access to such options. As of 2014, about 35.7% of South Africa's population live in the rural areas, compared to more than 70% in Kenya.

The World Bank also postulates that countries with high mobile money-account ownership have less gender inequality. It further states that countries that have made inroads towards financial inclusion have put in place policies that have allowed mobile financial services to thrive. This poses the question on whether the SARB regulations have been restrictive, or not? However, we first need to understand the theories underpinning financial inclusion.

### **2.2.1 Financial Inclusion – the Concepts and Theories**

To better understand the concept of financial inclusion, it is necessary to first understand the theories underpinning financial exclusion. Modern financial theory postulates that capital market imperfections lead to financial exclusion. These capital market imperfections include information asymmetry, and transaction costs. For example, it is costly to operate a bank in the rural areas, where people are more sparsely populated than in an urban area, where most people lack the means to access credit, due to a lack of banking history and other financial history issues (World Bank, 2004). Similarly Kempson and Whyley (1999) came up with five factors that explain financial exclusion: 1) access exclusion, due to geography and risk management of the financial system; 2) conditional exclusion, due to conditions that are inappropriate for some people; 3) price exclusion, due to non-affordability; 4) marketing exclusion, due to the unattractiveness of a certain market; and 5) self-exclusion, due to fear, or refusal, or some psychological barrier. Points 1, 3 and 4 agree with the theory of transaction costs; while points 2 and 5 relate more to information asymmetry. In confirmation, and as an addition (Oyelami et al., 2017) posit that the level of education, population and interest rate, mobile banking and GDP per capita could positively influence financial inclusion. Thus, the role of mobile banking in increasing financial inclusion cannot be understated.

Considering those views, this research notes that despite the South African high level of inequality, the regulations on FinTech services are capped by the requirements of banking linkage imposed on FinTechs. Although, mobile banking can facilitate financial inclusion, one should not overlook the loopholes that could open ways for risks, such as popularized fraudulent activities; and consequently, this could explain the reluctance of the SARB to grant a full banking license to FinTechs. By forcing FinTechs to work with traditional banks, the SARB places itself in a role that could better monitor financial risks, and prevent financial rogue activities.

The work done by Finmark (2016) shows the three dimensions of financial inclusion: 1) access 2) usage and 3) quality; and the manner in which these three dimensions are interlinked.

Table 1: Financial Inclusion dimensions and observations

Dimension	Description	Indicator	Key Observations
Access	The availability of affordable and appropriate financial products and services	<p><b>Availability:</b> access to various services and products, including:  <i>Formal:</i> number of ATMS and bank branches per user  <i>Semi-formal:</i> number of micro-financial institutions, credit unions or  <i>Informal:</i> number of village savings and loan associations (VSLAs)  <b>Appropriateness:</b> products and services that meet the needs of the client, for example, a VSLA, as opposed to an ATM, may be the best instrument in a community with a high number of self-employed individuals</p>	Without access, uptake of financial products and services is limited.
Usage	The uptake or utilization of financial products and services	The frequency of use, i.e. interactions the client has with the product. For example, a client with a dormant bank account cannot be viewed as financially included	Usage is often used as a proxy to determine access and uptake of financial products and thus the depth of financial inclusion
Quality	Refers to product design and functionality that enhance the value of services to clients	<p>Quality includes:</p> <ol style="list-style-type: none"> <li>1) Product fit – well-suited and tailored to the needs of the client</li> <li>2) Value Add – ability to add value to a client’s financial situation</li> <li>3) Convenience: easily accessible and user-friendly</li> <li>4) Risk – should not increase financial risk to consumers, e.g., over-indebtedness</li> </ol>	Quality has a direct influence on usage, i.e. poor-quality products will result in low usage

Source: (Finmark, 2016)

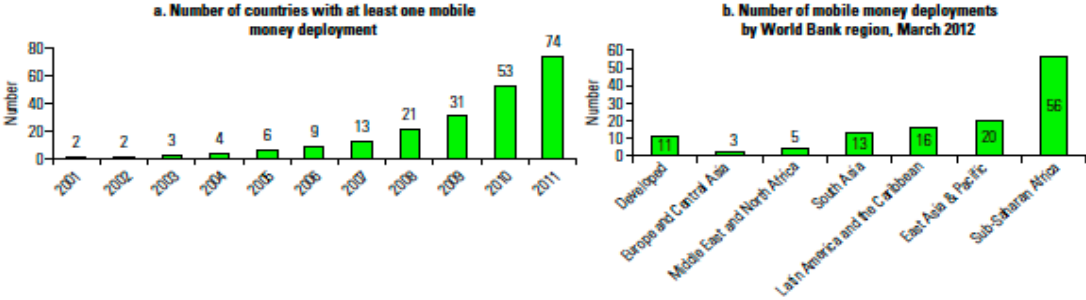
The researcher, therefore, does argue that the regulation of the mobile banking system does play a major role in facilitating financial inclusion because traditional banking cannot eliminate information asymmetry, nor will it reduce transaction costs; however, there is empirical evidence to suggest that mobile banking does facilitate financial inclusion; nevertheless, the issue of risk needs to be addressed. It would be interesting to know the real benefits of financial inclusion, and how these are facilitated by mobile banking.



**2.2.3 Mobile Money and Financial Inclusion**

According to the CGAP, more than a billion people have access to a mobile – but without a bank account; consequently, the platform offered by mobile technology is enormous, considering the ease of access to mobile money in some jurisdictions, such as in Kenya. SSA has the highest uptake of mobile money technology than any other region in the world.

Figure 2: Global Money deployments



Source: GSMA Mobile Money Tracker 2012.

The World further states that mobile money has the ability to extend financial services to the poor, to help to reduce transaction costs, thereby improving financial security, generating new employment opportunities and creating new platforms, on which other businesses can grow (Donovan, 2011). Chigada and Hirschfelder (2017) further posit that mobile banking also leads to the improvement of banking skills by its users. One of the major success stories out of Africa is the MPESA in Kenya, launched in 2007 by Safaricom. MPESA allows users to deposit, save and withdraw money via their mobile phones. Lately, the service has been used to facilitate normal day-to-day payment transactions, like paying for a taxi fare, paying bills, and taking out loans. These financial services were previously non-existent or costly for more than 70% of the rural population of Kenya.

MPESA has also been credited with reducing the financial risk associated with carrying large sums of cash; and it can also be useful in hyperinflationary countries like Zimbabwe, where one might have to be forced to carry large sums of cash (Chigada & Hirschfelder, 2017). Although Chigada and Hirschfelder (2019) present a positive picture of the mobile money success in Kenya, the researcher is concerned with the regulation contents that would describe the use of phones as bank accounts. Should South Africa pursue the same model, the SARB would have to implement a regulation incorporating both FinTech and Telecom industries.

The World Bank believes that financial inclusion through mobile banking can directly address seven (7) of the 17 SDGs; and the following cases in Africa help to illustrate this:

Table 3: FinTech as a means of meeting SDGs

SDG	Case
	mAgri <sup>4</sup> is a USSD mobile application in Botswana that allows all farmers to market their products and services across the country; the application also allows for farmers to connect fully with the value chain (customers and suppliers); and also, to connect with financial-service providers in getting short-term loans, for example.
	Hello, Doctor <sup>5</sup> is currently a service offered in 10 African countries; and it provides free essential healthcare information. It allows for confidential interactions between a patient and a medical practitioner; and it also uses chat forums for general medical advice. Services are also offered in the local languages.
	MobiLiteracy <sup>6</sup> is a Uganda-based 91 day program that delivers short audio and native language lessons to parents through sms in a downloadable attachment. Parents, teachers and students can dial into this service, and receive the lessons on demand.
	Kasha is an e-commerce platform in Rwanda that sells health products and personal products. Customers can access the service via USSD or mobile application.
	mWater <sup>7</sup> service is popular in West Africa; and it allows water-service operators to share information with the authorities, users and financial institutions via mobile phone. Text messages are used to share information, such as eater levels, disruptions and account balances.

#### 2.2.4 Financial Inclusion in South Africa

The South African National Treasury defines financial inclusion, as the provision and use of appropriate financial services from regulated financial service providers by those sections of society, in which a need exists that has not been adequately met (National Treasury, 2018). The researcher notes two key issues here: 1) from regulated financial service providers; and 2) the issue of the under-served market. For the protection of the consumer, it seems that the National Treasury was at pains to ensure that only regulated financial service providers would be able to serve the under-served markets. However, it must be noted that the financial or banking services, to be specific, in South Africa, are dominated by four key players: FNB, ABSA, Standard Bank and Nedbank; and the barriers of entry are quite high for small-time financial service providers. As alluded to earlier by Kempson and Whyley (1999) most of these big institutions can exclude certain markets because of their low profitability and perceived high risk.

It therefore questions the National treasury's intent to increase financial inclusion, whilst using the traditional licensed financial institutions. Using (Finmark, 2016) framework of access, usage and quality, the researcher agrees that the tools to financial inclusion need not only be the formal channels like regulated financial services, as envisaged by the National Treasury. On a point of view that extensively supports strong regulations that minimize risks, the

<sup>4</sup> <http://www.magri.co.bw/>

<sup>5</sup> <https://www.hello doctor.co.za/>

<sup>6</sup> <https://www.globalinnovationexchange.org/innovation/mobiliteracy-uganda-testing-and-proving-the-efficacy-of-sms-with-audio-in-developing-literacy-rich-home-environments-in-western-uganda>

<sup>7</sup> <https://www.mwater.co/>

researcher points at the VBS bank saga, in which several unsuspecting customers were defrauded of their financial assets by the VBS bank, which was perceived as a black reformist bank promoting financial inclusion. Such unfortunate banking tragedies create additional reasons for the SARB to tighten the lid on licenses granted to FinTechs in South Africa.

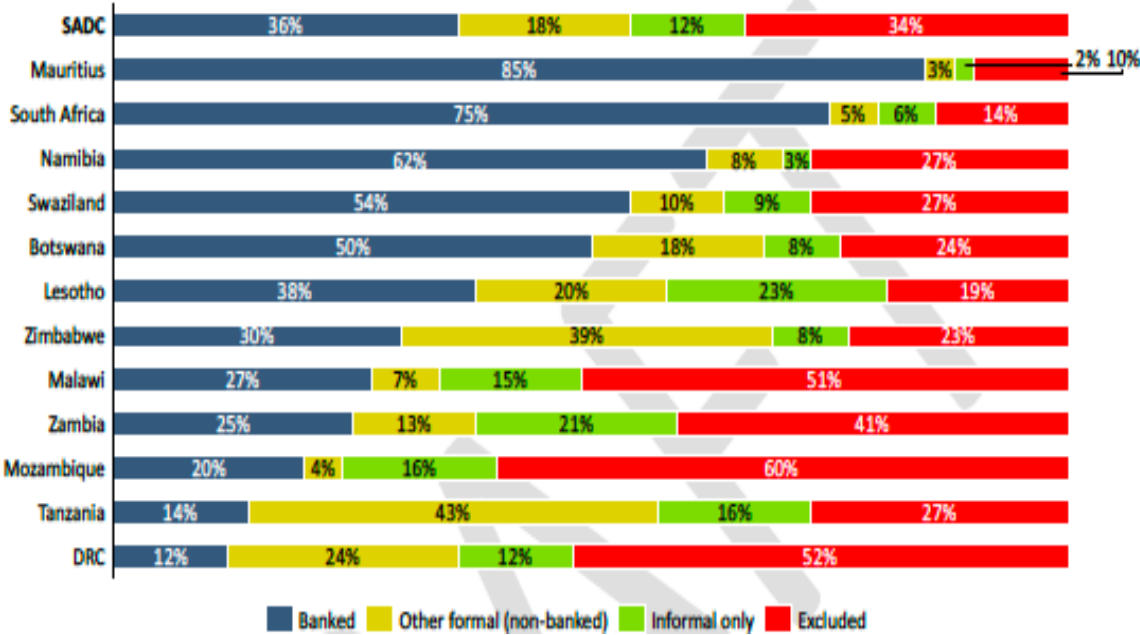
The National Treasury considers five essential financial service needs: 1) remitting money, 2) transacting, i.e. making payments and receiving money, 3) saving, 4) borrowing, and 5) insurance (National Treasury, 2018). In agreement, the (World Bank, 2016) report believes that the financial inclusion efforts taken from a payment-angle could contribute to all these essential financial service needs. On the other hand, (Finmark, 2016) posits that whether through informal or formal channels, financial inclusion encompasses four main products: 1) transaction products, 2) savings and investment products, 3) credit, and 4) insurance.

It seems that the two institutions do agree on the products and services; but the major disagreement is on the channels whereby these products or services are provided. The National treasury only recognizes formally regulated channels; whilst Finmark recognizes both formal and informal channels. The National treasury's narrow definition is problematic; because it ignores issues like user-accessibility, product-fit and the appropriateness of the product. The views of Finmark would definitely work to the advantage of the unbanked and entrepreneurs trying to break into the financial market; but on a point of criticism, the researcher states that an informal FinTech provider may not have undergone the necessary regulatory checks; and they might even lack the necessary expertise to ensure customer protection, self-risk monitoring and business continuity.

### **2.2.5 A comparative analysis of South Africa vs peers**

Account ownership among South Africans is significantly higher than peers in the SSA region; and 70.3% of adults in South Africa have access to a transaction account (including mobile money accounts) compared to the SSA average of 34.5% and 70.5% of the upper middle-income countries (Findex, 2017). South Africa's account ownership compares favourably with that of other BRICS nations; and it is even way ahead of India's figures.

Figure 3: Bank Account ownership comparative analysis of South Africa vs peers



Source: (Finmark, 2016)

In the SADC region, upper-middle-income countries like Mauritius, South Africa and Namibia, have the highest numbers of financial inclusion, with the main channel being formal banking channels. On the other hand, in countries, like Tanzania and Zimbabwe, financial inclusion is through other non-banking channels, such as mobile banking. On average, in the SADC region, rural households’ higher levels of financial exclusion reaches 45% compared to urban areas 23% (Finmark, 2016). One of the reasons why, for example, South Africa has such a high usage of the formal channels of banking, as compared with Zimbabwe, is that in the case of Zimbabwe, confidence levels in the formal financial institution is very low (Chigada & Hirschfelder, 2017).

This observation made by Chigada and Hirschfelder on ‘trust’ in the banking sector leads the researcher to point to those past and current regulations of the SARB, which may not have eased the entrance of new players into the financial sector; but it has surely inspired most of the current institutions (except VBS) into displaying a level of trust in their operations. Financial services are best paired with trust; and beyond the simple claim to enter the financial markets, new FinTech entrants will have to prove themselves worthy of earned trust, by submitting themselves to regular checks before operating in South Africa.

**2.3 Financial Literacy and FinTech adoption**

Financial literacy is defined by the World Bank as the ability to use one’s knowledge and skills, in order to effectively manage one’s financial resources. This entails having the knowledge to distil financial terms and to understand their implications on one’s financial health. The definition of what constitutes financial literacy is not standard (Leibbrandt & Nanziri, 2020). These two authors proceeded to construct a financial literacy index for South Africa, based on two composite domains: financial knowledge and financial capability. Their findings concluded that the national average for South Africa is 48,4%, with the highest levels of financial illiteracy

to be found amongst black South Africans, especially women and those people living in low-income areas.

The work done by the World Bank shows that, in comparison, Thailand has a financial literacy index of 61% (Moenjak et al., 2020). This study further shows that there is a correlation between financial literacy and financial inclusion (Moenjak et al., 2020); while in Japan there is a correlation between financial literacy and FinTech adoption (Yoshino et al., 2020). The latter study, however, does concede that there has not been a lot of study on this topic; and the results are yet to be tested in different geographical areas. The key finding from Yoshino et al. (2020) is that people who are financially literate are the most likely to adopt FinTech technologies; since the cost of sourcing, assessing and analyzing information about the technology, or on the FinTech product is considerably less than that done on the financially illiterate. The authors' work is based on the Transaction Cost theory.

## **2.4 Financial Regulation**

Even though governments provide public insurance to banks, in terms of having a banker of last resort in the form of the South African Reserve Bank, for example, they would want to reduce the moral hazard in terms of excessive risk-taking by the banks by imposing stringent regulations on banks. The concept of too-big-to fail may apply to large banks, but does the government have an appetite for mopping up risks and disasters caused by FinTech?

The main regulators for South African Banks are the SARB, the Financial Intelligence Centre supported by other regulations, including the National Credit Act and the Basel III regulations. Some of the regulations are quite onerous; and they will require the setting up of monitoring reporting systems and manpower, which most FinTechs might not be able to afford. The financial industry is heavily regulated because of its effect on the key infrastructure and market economies (Bofondi & Gobbi, 2017). The effects of the financial industry on the various spheres of society extend themselves via well-reported incidents or systemic disasters, such as the PIC investments crisis linked to an investment made within Steinhoff, or the VBS crisis that saw thousands of account owners financially stranded.

Another painful example is the recent 2008 – 2009 financial crises, which many have attributed to weak regulation of the financial industry, and especially of the new sophisticated financial products. The mandate of the European Banking Authority (EBA) is to contribute to enhancing consumer protection, promoting sound, effective and consistent levels of regulation and supervision, ensuring the integrity, transparency, efficiency and orderly functioning of financial markets, preventing regulatory arbitrage and promoting equal competition (European Banking Authority, 2017). The researcher believes that this mandate is comprehensive; and it should be used as a guide by any financial regulatory authorities. However, the issue of equal competition needs further investigation. It is the researcher's view that not all participants should be treated equally; and that there should be special and differential treatment offered to start-ups and FinTechs, thereby promoting economic growth and developmental aspects like increasing financial inclusion

The key takeaways from the EBA's definition are: the orderly functioning of markets, consumer protection, and fair competition. The EBA goes as far as mentioning regulatory arbitrage, which the researcher will discuss later in this paper. From the EBA's mandate, one can find out the reasons why regulation is needed in the financial markets.

However, the question is whether financial regulation does achieve what it is supposed to achieve. A simple question would be: if financial regulations did work, then why haven't they stopped financial crises from happening? The naivety of the question cannot be understated; and the spirit of the question cannot be ignored. The table below summaries the arguments for and against Financial Regulation:

Table 4: For regulation vs anti-regulation

For Regulation	Against Regulation
Without financial regulations, there would be problems associated with consumer exploitation, market inefficiencies, and financial instabilities	Regulation is costly in the form of compliance costs on either side of the spectrum; it is typically a tax; however, a tax that does not directly benefit the populace
To avoid cases of adverse selection, as well as moral hazards. In cases of adverse selection, if there are no financial regulations, bad lemons will prevail.	Regulation creates barriers to entry; only the big entities who can afford the costs and licences can survive.
Regulations help to reduce negative externalities to society. If banks could make profits at the expense of society, and get away with it, then society would bear the costs in terms of financial losses and job losses.	Regulation discourages innovation. It would be difficult for companies to bring in new innovative products.
Nobel Laureate Paul Krugman puts forward a simple rule: "Anything that does what a bank does, anything that has to be rescued in crises, as way banks are, should be regulated, like a bank".	Financial regulation creates rent-seeking behaviour by the incumbents.
Financial regulations ensure that all operators play on a level playing field	Free market systems should be able to self-regulate the market; and market failures would be avoided or be accepted as part of the cost of the free-market system.
Financial regulation forces the regulators to innovate and move on with the times in terms of creating risk-monitoring tools	If regulations did work, then how did they fail to uncover the Bernie Madoff scam, even with the help of whistle-blower?

Source: Adapted from Moosa, Immad – Good regulation, bad regulation

The discussion on regulation is as old as the financial markets themselves. Regulation is a form of government intervention to reduce market failures. It is critical to keep in mind the key risks faced by traditional financial institutions: excessive credit growth and leverage, excessive maturity and liquidity mismatches, bad governance, misaligned incentives; all of which are an example of the moral hazard that these institutions have to face. However, proponents of the free-market system would argue that regulations are a form of government tax, and government taxes are inefficient; and that free-market systems should be able to self-regulate the market; and market failures could be avoided, or be accepted, as part of the cost of the free-market system. Therefore, with free-market systems, capital is allocated efficiently; and companies are free to invest in products that offer them the maximum returns; and that it is not the duty of firms to provide services to the financially excluded, if the return on such services is low.

The researcher therefore believes that for financial inclusion to work there must be some sort of regulation; since free markets are less likely to meet the financial-inclusion goals of

governments. How much regulation, the purpose of the regulation, and what needs to be regulated – that is the purpose of this study.

#### **2.4.1 Developments in FinTech Regulation**

Specific FinTech legislation is still at its infancy at the time of this report; and some countries are using existing legislation to regulate FinTech (Zetzsche et al., 2017). With the exception of a few countries, including Mexico, UK, Singapore, Malaysia and China, most countries are still to come up with concrete plans and/ or policies on how they are going to regulate FinTech. At worst, some seem to be adopting a wait-and-see attitude; or they are just using the existing legislation. Mexico has adopted the FinTech law and adapting existing laws to assist in the regulation of FinTech. The main objective of the law is to regulate providers of some FinTech services, such as crowd-funding and e-money issuers, giving them legal recognition as “Financial Technology Institutions” (FTIs), and given them authorization, however, under supervision and regulation from local authorities” (OECD, 2018).

The researcher notes that the Mexican existing legislation might not be suitable to regulate the rise of the FinTech industry due to its ever-evolving technology, requiring adapted and reviewed laws. The UK, on the other hand, has taken a regulatory sandbox approach, the aim of which is to encourage innovation, to increase financial inclusion, while ensuring that products are fully tested before they are extended to the market. The (OECD, 2018) believes that both these laws aim to provide a regulatory framework that encourages innovation and fosters competition, whilst ensuring consumer protection and financial stability.

However, the excitement and trust seem to be somewhat misplaced; since by nature, most of the FinTech products are usually opaque, for example, in the case of a company providing lending, are they deposit-taking institutions? The faceless nature of the transactions still provides significant risks and mistrust. The fluid nature of the industry itself also makes regulation too much of a challenge. The question is: do the regulators themselves have the appropriate skills to understand these different FinTech products and the risk that they present?

The South African Reserve Bank, on the other hand, has issued a few statements and created steering committees on FinTechs, which is the right thing to do. They first need to understand the issue at hand; however, it seems that the SARB has adopted the following approaches: a) using current regulations to regulate FinTech; and b) issuing statements to encourage the growth of FinTechs. This is after considering perhaps, the economic prospects that FinTech can bring about in a positive light, especially job-creation and financial-inclusion.

#### **2.4.2 Conflicting motives on FinTech regulation**

At this point it is not clear which policy regulators should assume. Is it financial stability, financial inclusion, growth, or fairness and equity, or all? of the three? However, it is difficult to achieve financial stability, whilst leaving one end of the market unregulated, although the barriers to entry and increased competition could have been improved. It is, therefore, difficult for regulators to pursue a policy that all the stakeholders would deem to be fair.

The researcher will bring out the following conflicting statements.

*“The EBA’s mandate is to contribute to enhancing consumer protection, promoting sound, effective and consistent levels of regulation and supervision, ensuring the integrity, transparency, efficiency and orderly functioning of financial markets, preventing regulatory arbitrage and promoting equal competition (European Banking Authority, 2017).” “The UK’s*

*regulatory sandbox approach aims to encourage innovation, and to increase financial inclusion; but however, ensuring that products are fully tested before they are extended to the market.”*

*“The main objective of Mexico’s FinTech law is to regulate the providers of some FinTech services, such as crowd-funding and e-money issuers, giving them legal recognition, as “Financial Technology Institutions” FTIs, and giving them authorization; however, under the supervision and regulation from local authorities” (OECD, 2018).” “The statement noted that no specific legislation or regulation existed on the use of crypto assets. Therefore, no legal protection or recourse was offered to the users of, or investors in crypto assets.*

*This approach to reviewing FinTech innovation is a balanced one, considering both its benefits, as well as taking cognizance of the associated risks (SARB, 2018b).”*

It seems on the South African side, that the approach is a “buyer/customer beware” clause and with the use of some sort of benefit-and-risk framework in considering the regulation of certain aspects of FinTechs. This study will also use the framework to determine the effect of regulation on mobile money; and also in determining the regulatory approach to take thereto. Empirical evidence, on the other hand, suggests that markets that are highly regulated are inefficient. However, unregulated markets can degenerate into a free-for-all, thereby causing market failures and financial crises. FinTech start-up formation need not be left to chance; but active policies could influence the emergence of this sector (Haddad & Hornuf, 2018). The government policy towards regulation, tax and sector-growth initiatives is a major driver of FinTech growth.

It is interesting that the keyword ‘tax’ is mentioned; since one of the benefits of regulating FinTechs is found in the ability of a governmental institution to tax a financial-service provider. Krugman (2009) suggests that anything that does what a bank does, anything that has to be rescued in crises the way banks are, should be regulated like a bank, but a middle-of-the-road approach, where they find that a more pragmatic approach to FinTech regulation is the best option (Bofondi & Gobbi, 2017). Krugman’s views on financial service providers point to FinTechs offering cryptocurrencies services, as well as, and by regulating all financial service providers, a layer of protection is thereby added for the benefit of all the consumers.

The Monetary Authority of Singapore (MAS) implements four guiding principles of financial supervision; Risk-focused, Disclosure-based, Stakeholder-reliant and supportive of Enterprise (Fan, 2018). Within the South African context, the fourth guiding principle of the MAS, and which focus on enterprise support should serve as a model for the South African regulations on FinTechs. The MAS believes that a one-size-fits-all approach, in terms of regulation would not be appropriate; instead the risk-focused approach would add more focus on those firms posing much risk and give greater business latitude to less risky firms.

Firms are only required to disclose material information to the authorities. The researcher does agree in principle, but also acknowledges the major weakness of this voluntary disclosure approach; since it is susceptible to the agency theory, in that in pursuance of high returns, firms maybe motivated to hide negative information. Stakeholder-reliance reinforces the responsibility of the financial firms, as well as the board and management in self-regulation and self-supervision. Here again, the researcher believes that this approach is problematic, since it ignores the agency theory. Supportive of enterprise means that the MAS does not want to interfere with innovation; but rather its aim is to encourage innovation, growth and competition.

The benefits of FinTech cannot be overstated on the South African landscape; this is seen as having increased financial inclusion, reduced the costs of remittances for low-income earners and created jobs and opportunities. Certainly, this is a market that needs protection. Traditional Trade Theory suggests that countries should specialize and export in areas where they have a comparative advantage; however, heterodox theory suggests that there are some instances where countries must protect their infant industries – even when they are not yet competitive in those industries. Comparatively, South Africa, just like the rest of Africa, is still miles behind some European countries, USA and other Asian countries.

However, South Africa does have a competitive advantage on the African continent, as one of the biggest financial hubs in the world; and there are a lot of cross-pollination opportunities between FinTech and traditional financial institutions. The failure of the MPESA project in South Africa has led to various studies on why this is the case; however, a few studies have concentrated on the role that regulation has played in this situation.

### **2.4.3 The current approaches to FinTech regulation**

The lack of a coherent definition of what FinTech is, as well as the dynamic nature of the industry itself, makes it difficult to regulate. Generally, the motivations of a country are a major driver of how the industry will be regulated, as explained above in the case of the Monetary Authority of Singapore. Regulation can act as a control tool, focusing on the risks and threats to the economy and protecting the consumers; while on the other hand, regulation can be used to actively promote the FinTech industry (Didenko, 2018). The author's assertions are true to a certain extent; but this approach critically ignores the issue of fair competition.

Various other countries have instituted different approaches to regulation, fueled by different motives. China's major banking regulators, the PBOC and CBRC, have issued many statements and rules aimed at encouraging the use of technology; since they believed that FinTech offered the following benefits; 1) promoting inclusive finance; 2) promoting the development of private capital; 3) reduction in transaction costs among other things (Zhou et al., 2015). Regulation can also be rule-based, or principle-based, with the Chinese preferring the principle-based approach (Zhou et al., 2015).

This is more consistent with the risk-based approach by MAS, which recognizes that a one-size-fits-all approach might not be effective in a dynamic industry, such as FinTech. The timing of regulation is as important as the approach taken; and pre-emptive regulation would only increase the workload of regulatory authorities and tend to stifle innovation (Arner et al., 2015). Within the South African context, the researcher agrees with the authors concerning the burden of regulations that might stifle innovation; since the South African administrations are characterized as institutions with several red tapes that hinder entrepreneurial progress.

The researcher identifies five approaches, which include the introduction of specific legislation, to various innovative regulatory initiatives, such as innovation offices, the use of RegTech, regulatory sandboxes and the use of current regulations.

### **Legislation**

The FSB concludes that whilst many FinTech activities are covered within the existing regulatory frameworks, they however, find that most jurisdictions have already taken, or plan

to take, regulatory measures to respond to FinTech, and that these approaches vary (Zetzsche et al., 2017). Most countries have made specific legislation to mobile banking, crowd-funding and crypto-currencies, because of the high risk that falls on customers.

The main objective of Mexico's FinTech law is to regulate the providers of some FinTech services, such as crowd-funding and e-money issuers, giving them legal recognition, as "Financial Technological Institutions," FTIs, and given them authorization, however, under supervision and regulation from local authorities" (OECD, 2018). This approach is problematic; since the bureaucracy that comes with legislation and the compliance costs of such, can end up stifling the growth of FinTech.

However, the law does come with the benefits of ensuring a level playing field, eliminating regulation arbitrage and ensuring that risk is controlled, so that those customers have a legal recourse, should anything fail. The Chinese also tend to fall in this category; since their major banking regulators, the PBOC and CBRC, have issued many statements and rules aimed at encouraging the use of technology. However the regulatory efforts of the Chinese government have not yet led to a comprehensive FinTech regulatory framework, as some DFS are still either under-regulated or unregulated (Zhou et al., 2015). Be that is it may, the authors still contend that China's regulatory environment has fueled the growth of FinTechs; and this was achieved by the creation of principle-based legislation that recognized the dynamic nature of FinTech, and also by proper planning; since the increase in financial inclusion through the growth of FinTech was included in the government's Five-Year Plan.

### **Innovation Offices**

Innovation offices are platforms for providing regulatory clarification to financial-service providers that seek to provide innovative products and services. They can be in various shapes and forms in different jurisdictions; but they aim to provide information and advice on how to traverse the regulatory challenges (UNSGSA FinTech Working Group and CCAF, 2019). Regulators are part and parcel of the system; and this provides immediate feedback to policy makers on the challenges, weaknesses and strengths of certain regulatory initiatives. Innovation offices are based on some sort of eligibility criteria, in order for innovators to enter into these offices, for example, an innovation office for digital insurance, or InsureTech. This helps to ensure that these offices are more focused.

The key advantage of innovation offices is that they are cheaper to implement and can be quite useful for less financially endowed countries (UNSGSA FinTech Working Group and CCAF, 2019). However, in the case of South Africa, implementing innovation offices would also necessitate hiring new labour employees, working as advisors; and the key question would remain on finding ways to financially support such innovation offices. The immediate feedback process between regulators and innovators also ensures that issues are recognized at an earlier stage. Some of these issues include the risks involved with the technology, the cost of regulation, and the effect of regulation on entrenching or loosening barriers to entry.

However, there is no empirical evidence on the impact of innovation offices on the increase in financial inclusion or on their effect on the growth and success of FinTech companies (UNSGSA FinTech Working Group and CCAF, 2019). Brazil is one of the countries that have implemented innovation offices, with varying degrees of success (IMF, 2019). On a note of comparison, the South African FinTech market and the SARB can learn from this innovation office the initiative, especially in view of the need to prevent business-failure rates for new entrants into the FinTech market.

## **Regulatory Sandboxes**

These are more formal regulatory programs that allow participants to test new financial service products; however, in a more controlled environment before introduction to the general market. This approach was made common by the UK's FCA, and its main objective is to encourage innovation, to increase financial inclusion, and to ensure that products are fully tested before they are extended to the market. If the product is found to be viable, it is then released to the market, under the existing legislation, or under preferential treatment. The key advantage with regulatory sandboxes is that products are fully tested before they are released to the general market, thereby ensuring that key risks and the impact of such risks is fully addressed, and the commercial viability of these products has been assessed as well. Regulation sandboxes also ensure that the costs of compliance are also kept to a minimum during the testing period; and that there is proper feedback between regulators and innovators.

Consequently, regulatory sandboxes are seen to be maximizing the benefits of increased competition, financial inclusion, economic growth, reduced transaction cost, whilst still minimizing key risks, such as security risk and financial risks.

However, as with innovation offices, there is no empirical evidence of the impact of regulatory sandboxes on the increase in financial inclusion or their effect on the growth and success of FinTech companies (UNSGSA FinTech Working Group and CCAF, 2019). The issue of barriers to entry is not fully addressed; since some products will be regulated under current regimes, which would not help innovators; as they will be fighting with well-established players. However, there are possible preferential arrangements that can be given to FinTechs, but the policies are not transparent, on the basis of when FinTechs are given preferential treatment, when it comes to regulation.

The cost and the time spent on monitoring these sandboxes, makes them difficult to scale up; and authority sandboxes are insignificant relative to the 56 000 licensed market participants in the UK (Zetsche et al., 2017). Regulation sandboxes are the most popular approach taken by most countries; and key among them is the UK, Singapore and Mexico. The Monetary Authority of Singapore (MAS) implements four guiding principles of financial supervision: Risk-focused, Disclosure-based, Stakeholder-reliant and supportive of Enterprise (Fan, 2018).

The MAS believes that a one-size-fits-all approach, in terms of regulation would not be appropriate; instead, the risk-focused approach will put more focus on those firms posing much risk and give greater business latitude to less risky firms. Firms are only required to disclose material information to the authorities. The researcher does agree in principle, but also acknowledges the major weakness of this voluntary disclosure approach; as it is susceptible to the Agency theory, in that in pursuance of high returns, firms maybe motivated to hide negative information. Stakeholder-reliance reinforces the responsibility of the financial firms, and of the board and management in self-regulating and self-supervising situations. Again, the researcher believes that this approach is problematic as it ignores the Agency theory.

Supportive of enterprise means that the MAS does not want to interfere with innovation, but its aim is to encourage innovation, growth and competition.–On a more positive note, using regulatory sandboxes for FinTech services in South Africa would promote and conserve financial standards; but on a negative note, regulatory sandboxes would put them on the long list of red tape, thereby impeding the work of entrepreneurs.

### **The use of RegTech by regulators and current regulation**

RegTech refers to all new technology that helps to reduce compliance costs; and initially, it was introduced to help large financial service companies reduce their compliance costs. The same could, therefore, apply to FinTechs as Regulators attempt to use RegTech to reduce their compliance costs for FinTech. However, this approach is problematic, in that it assumes that the cost of compliance is the only major concern for FinTech; and ignores the fact that sometimes regulation can favour incumbents, due to the size of their operations; and they would help to protect their markets. This approach helps to address the issues of risk and regulation arbitrage; but it fails to address the issue of competition and economic development.

The use of current regulation seems to be the most cautious approach that some regulators, including the SARB, are taking. The idea is not to regulate the FinTech industry, but to let the market forces determine the outcome. The idea is to have dynamic legislation that is able to encompass and cater for all payment systems. This approach is also cognizant of the fact that, the FinTech industry is relatively an unknown quantity, when it comes to regulation, due the complexity and dynamism of the industry; and that any pre-mature legislation could cause more harm than good (Didenko, 2018). Sometimes it is difficult to implement regulation for each new scenario that comes up. The national payment system is principle-based; however, regulation is fragmented between the NPSD, FSB and self-regulatory organizations responsible for the regulation and supervision of FMI.

This revelation by the SARB itself is a concern however the NPS is quite dynamic enough to cater for the changes in technology. The SARB itself does review some of these new technologies by using the benefit-and-risk framework. As noted earlier, the timing of regulation is as important as the approach taken; pre-emptive regulation would only increase the workload of regulatory authorities and tend to stifle innovation (Arner et al., 2015). The first approach should be to do nothing, and to use the existing legislation.

#### **2.4.4 The regulation of mobile money in South Africa**

The digital-payment systems are dominated by ADLAs, such as Mama Money, Mukuru and the Hello group. These entities focus mainly on the remittance industry; and they assist migrants to send money back to their countries of origin. The market is much more established now; and most of these entities do not have full licenses; and therefore, they have to rely on partnering with banks and other more established MTOs like Moneygram and Western Union. Empirical evidence suggests that ADLAs have increased financial inclusion, especially to the low income earning segment of the market; since they do not penalize low-value transactions, as do the incumbents (Mela et al., 2017).

Such an example displays financial inclusion as a significant benefit that should influence the manner in which the regulation of mobile money should be implemented, as well as the lack of penalties imposed on low-value transactions that contribute to a 'saving culture' among consumers. The authors also found out that ADLAs are more efficient in terms of time-processing payments than are banks and MTOs, because of the reduced need for paperwork. South Africa and Kenya have the largest FinTech markets in Africa, with Johannesburg and Nairobi featuring in the Deloitte FinTech Cities.<sup>8</sup>

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<sup>8</sup> A Tale of 44 Cities, by Deloitte which featured selected FinTechs from different cities.

However, the commonalities end there. Kenya is dominated by the mobile-money payment systems (MPESA), which was a huge failure in South Africa, due to the different markets and their economic structures (Didenko, 2018). South Africa has a better banking infrastructure than Kenya, and the levels of financial inclusion are much better; since the essence of mobile money-payment systems is to reach the unbanked members of the population. However, mobile money-adoption rates in South Africa are not as good as in Kenya. There is no consensus as to why MPESA was successful in Kenya, but an abject failure in South Africa. Some of the possible key reasons given include: 1) Kenya had higher rates of financial exclusion, with most of the population in the rural areas where banks cannot penetrate; 2) The MPESA implementation in South Africa was hurriedly done, without any specific plan; 3) Environmental and demographical factors should also include regulation.

The South African regulatory environment is viewed as a constraining factor by Perlman and as a neutral factor by the World Economic forum (Finmark Trust, 2017). The authors further note that: Vodacom and MTN, which operated the MPESA and MTN Mobile Money respectively, all gave the reason that the failure of their products was due to the high levels of financial inclusion in South Africa. It is, therefore, not clear whether mobile-money regulation has any impact on the adoption of mobile money. The following table gives a comparative analysis of the different regulatory environments amongst different regulatory regimes. This will be expanded on further in the discussion of the findings.

Table 5: MNO regulatory environments a comparative analysis

Country	Institutions that may issue mobile money	Banks: requirements for mobile money authorization	MNOs (non-banks); further requirements	Operational Model
Kenya	Banks, PSPs (MNOs etc.), and other financial institutions authorized to issue mobile money.	None	MNOs must present telecom license. PSPs to keep records and accounts for mobile money transactions	Independent Operations from Traditional Financial institutions
Uganda	Non-banks can become MNOs partners of bank. Regulator approves partner banks; and mobile money is a product of the bank	Partner banks must apply for approval to issue mobile money on behalf of the MNO.	Limited company, submit financials, risk management, IT systems	Collaborative model
South Africa	MNOs can partner with banks; however, it is banks that can offer e-money. A non-banking entity is prohibited from accepting deposits or issuing e-money unless a specific venture is approved	The NPS Act only allows for e-money to be stored a Store Value when payment is due to a third party. If nothing is due, it is considered as deposit taking	Non-banking entities are prohibited from accepting deposits or issuing e-money unless a specific venture is approved. The SARB only deals with the partner bank; and it has no relationship with the non-banks.	Collaborative Model

Source: Adapted from the IFWG

#### 2.4.5 The NPS Act and Review of the NPS Act 78

A payment system is a set of instruments, rules and procedures designed to facilitate the transfer of funds between the participants. Wholesale payment systems are payments between financial institutions for large-value transactions, whilst retail payments systems are low value high volume transactions between consumers and businesses. In terms of the South African Reserve Bank Act 90 of 1989, the SARB is the regulator of all payments for South Africa, the National Payment System Act 78 of 1998 (NPS Act) provides for the management, administration, operation, regulation and supervision of payment, clearing and settlement systems (SARB, 2018a).

The current policy on mobile money regulation is that MNOs can partner with banks; however, it is banks that can offer e-money. A non-banking entity is prohibited from accepting deposits or issuing e-money, unless a specific venture is approved. However, the SARB noted that this policy was very restrictive; and they agreed that it was one of the main contributors to the collapse of mobile-money products like MPESA and MTN products in South Africa. The

SARB then instituted a Standing Committee for the Review of the NPS Act, which issued a policy statement in September 2018. The Standing Committee is made up of regulatory authorities, the Prudential Authority (PA), Financial Surveillance Department, the Financial Stability Department, the Currency-Management Department, external stakeholders, such as the FSCA, NCR, Financial Intelligence Centre (FIC) and the National Treasury.

Supporting the Standing Committee is the Expert group, made up of industrial experts and the Working Group, which is responsible for providing technical research to the Standing Committee. The remit of the Standing Committee was to review the adequacy and sufficiency of the current NPS Act in the light of changes in the payments system with new developments, new technology, and also the need to increase financial inclusion. The observation made by the South African regulation bodies leans towards the possible significant benefits of financial inclusion, with the view to enhance entrepreneurship, to attract foreign investments and to tackle unemployment.

The review found out that the payments legislation was restrictive with regard to the participation of non-banks; and it was not in line with the spirit of increasing financial inclusion, competition and innovation in the service-payment industry. The review came up with the following recommendations (SARB, 2018a):

- 1) The provision of retail payments services, including e-money and mobile money, where money is not due to a third party, should be allowed, and that such entities should be excluded from the definition of the business of the bank. However, they should be subject to a risk-based and proportional regulatory, supervisory and oversight framework.
- 2) Any entity, including non-banks, should be allowed to provide clearing services, either through another participant, or by settling in their own name.
- 3) Any entity (bank or non-bank) should be allowed to settle in the SARB settlement system, provided the applicable requirements (i.e., risk-reduction measures, including capital, liquidity and collateral or pre-funding requirements) are met by such an entity.
- 4) The NPS Act must contain empowering provisions, in order to designate non-banks in settlement.

The above recommendations are indeed ground-shaking; and they represent a major shift of the SARB from a one-size-fits-all regulatory environment to a more specific risk-based and proportional regulatory environment in the payment systems. The researcher also notes that the SARB recommendations have considered that the significant benefits of financial inclusion outweigh the possible systemic risk within a properly regulated environment. Such recommendations should definitely increase competition in the industry; however, at the expense of smaller firms in the industry and other risk-management shortcomings. The researcher would want to research further on how the proportional regulation would be instituted, whether through innovation offices, or through regulatory sandboxes.

However, the researcher would also be interested in knowing the risk-reduction measures, including capital, liquidity and collateral or pre-funding requirements; and whether this might not end up favouring larger entities that would most probably meet the capital and liquidity requirements. The researcher also notes with concern, that there is no consideration for a creation of peer-to-peer arrangements via the use of a distributed ledger system that would help in reducing transaction costs and increasing the security of transactions. A central bank's digital currency (CBDC) could also be an instrument that the SARB might consider in using to manage payments.

Due to the rapid changes in the FinTech industry, central banks need to step up and play a role in improving the security and the efficiency of the systems; since FinTech is also likely to improve universal access to, and the frequent usage of transaction accounts (Carstens, 2020). In India, the digital payment system accounts for 97% of daily payment systems in terms of volume; and the Central Bank of India has started a retail-payment system on a 24/7 basis, utilizing their fast payment system (UPI) (Central Bank of India, 2020). The author then further explains that the Central Bank of India will augment the identification of systemic and idiosyncratic risk from a supervisory perspective.

The reliance on off-site supervisory, and the reliance on risk-based assessments would reduce both compliance cost for both regulators and FinTechs, a saving which could then be passed on to the end-users. Lastly, the researcher would want to know the role of informal mobile money operators in increasing financial inclusion.

**2.5 Benefit-Risk Framework to explain regulation of FinTech in South Africa**

The Technology Acceptance Model (TAM) is the most common and accepted model in testing the adoption of the technology on e-money (Tang, 2009), see table below:  
SSA literature on mobile-money technology-acceptance theories:

Table 6: Application of the Technology Acceptance Model (TAM)

Main Theory	Content	Research design	Author(s) and year
TAM	Explores the motivations of the unbanked to adopt mobile banking in Africa	Qualitative research	Tobbin, 2012
TAM	Examines the factors that influence the adoption om mobile banking in Kenya	Quantitative research	Lule, Omwansa and Waema 2012
TAM	Investigates the key factors that influence the Ghanaian consumers; acceptance of mobile money transfer technology	Quantitative research	Tobbin, 2012
TAM	Investigates the success factors attributable to the use of mobile payments by micro-business operators in Kenya	Quantitative research	Mbogo 2010

Source: Chigada & Hirschfelder (2017)

The TAM is intended to provide a conceptual model, featuring a theoretical foundation, in order to explain and predict users’ acceptance and the use of IT (Tang, 2009). This is similar to the Theory of Reasoned Action (TRA); as both are based on evaluating an individual’s behaviour and intention towards a certain instrument. The basic hypothesis of TAM is that the impact of external features on an intention to use is facilitated by the perceived ease-of-use and the perceived usefulness. The authors conclude that when using TAM, the perceived usefulness and perceived ease, as the critical determinants to examine behavioural intentions concerning the use of technology and its acceptance.

The findings were crucial in understanding people’s behaviour in the acceptance of technology. The model’s strength lies in its ease-of-use; and it is great at explaining the attitude towards technology, which is very useful in this study in gaining knowledge about users, regulators and implementer’s perceptions towards the adoption of FinTech. The major weakness is that it only provides very general information about the ease-of-usefulness (Assegaff, 2014). However,

since the researcher is more concerned by the attitude of regulators towards the perceived risks and benefits of FinTech, specifically e-money, a much more simplified Benefit-and-Risk framework was seen as being appropriate, and also considering the time constraints.

The Benefit-and-Risk framework is a more simplified version of TAM, if not a subset of TAM. The researcher builds on the work of (Ryu, 2018), who used the Benefit-and-Risk framework to understand the adoption of FinTech between early adopters and late adopters, who concluded that perceived benefit is more influential than perceived risk. The researcher will use the same framework, but with the focus on the perceived risks and benefits of regulators on the adoption of e-money, in measuring the impact of the regulation on financial inclusion. Compared to other SSA countries and BRICS countries, South Africa should be considered to be a mid-adopter of FinTech; however, in the area of mobile money, it is a late adopter when compared to countries like Uganda, Kenya and Zimbabwe.

The author's focus would be on the effects of benefit and risk on the behavioral intention between FinTech early adopters and late adopters. The main hypothesis of this study was that; perceived benefit is positively related to FinTech adoption intention, and that perceived risk is negatively related to FinTech service intention. The researcher will use the same framework, but with the main focus on the perceived risks and benefits of regulators in the adoption of e-money, in measuring the impact of the regulation on financial inclusion; however, the effect perceptions of early adopters and late adopters would also help in answering questions 1 and 3 of this research paper. The model is extended by digging deeper into the conclusions of Chigada and Hirschfelder (2017), whose work using the TAM came to the conclusion that mobile-money systems influence the adoption of ICT in South Africa with the help of: 1) organizational changes, 2) environmental changes, and 3) individual changes.

The researcher will intentionally focus on one of the elements of environmental changes, which comprise regulation and the key benefit of financial inclusion, as well as the key risk of market instability.

The application of the Transaction cost theory further solidifies the model, by arguing that the adoption of FinTech can lead to a reduction in transaction costs, and that it is, therefore, in everyone's best interest to then adopt FinTech. Transaction costs are the result of information asymmetries among the economic participants involved in the transaction; and they are mostly represented by search costs, negotiation costs and enforcement costs. Search costs can be eliminated by increasing the amount of information and the speed with which information is processed (Cordella, 2014); and one of the biggest advantages of FinTech is their ability to data mine huge quantities of data and make these available. FinTech companies can also make it easier for buyers and sellers to meet virtually on different platforms; and in achieving disintermediation in the exchange process.

Negotiation costs include the costs of drawing up contracts, commission fees and the costs physically of negotiating the contracts. Disintermediation usually eliminates most of these contracts; as the users are directly matched with the providers. For example, crowd-funding eliminates commission fees to banks for raising the capital. Enforcement costs are those costs to ensure that both buyers and sellers fulfil their contractual obligations, either through payment or delivery. This is the most difficult cost to eliminate, because of the anonymous and specialized nature of most FinTech transactions.

The main assumption of the Transaction cost theory is that markets are perfect; and all information asymmetries are eliminated. However, empirical evidence suggests otherwise; and that disintermediation itself can lead to the creation of information asymmetries; as information providers have an advantage over the users in what kind of information to provide and in what form and this often leads to the creation of additional intermediaries, who would then charge a fee for processing and dissecting the information (Cordella, 2014). Notwithstanding this limitation, the transaction cost model is useful in addressing the challenge of accessibility in achieving financial inclusion and also in answering research questions 1 and 2.

The SARB explained that they the approach to reviewing FinTech innovation is a balanced one, considering both its benefits, as well as taking cognizance of the associated risks (SARB, 2018b). In the same vein, the researcher will use the benefit-and-risk framework to attempt to answer the following research questions: 1) Is financial inclusion a significant benefit; and is systemic risk a significant risk that can affect how mobile money is regulated? 2) What are the tangible results of the updated South African national payment-system policy for the inclusion of entrepreneurs and the unbanked in the FinTech sector; and is there any room for improvement? How did the past and current banking regulations influence the successes and failures of the adoption of mobile money in South Africa?

The perceived benefits and risks are from the standpoint of the regulators. The researcher will attempt to answer the first question by interviewing the regulators and other participants, with the aim of deciphering their perceived benefits and risks and their impact on mobile-money regulation.

## **2.6 Summary of the Literature Review**

The following are the key summaries from the literature review section:

Various definitions of FinTech exist, with the most common one being from the FSB: “technologically enabled financial innovation that could result in new business models, applications, processes or products, with an associated material effect on financial markets and institutions and the provision of financial services.” (FSB, 2017) The concept of mobile money means different things to various jurisdictions, the regulation of which can also be varied; however, the main themes are that mobile money comprises mobile-based transaction services that encompass e-money and electronic-payment systems. Three key players are identified: Banks, MNOs and Bigtech; and that the difference between South Africa and other SSA countries is that the mobile-money platform has been extensively used by banks in South Africa, whereas in other SSA countries like Tanzania and Zimbabwe, non-bank institutions, especially MNOs, control the largest portion of the mobile-money market.

The concept of financial regulation was discussed first by having to understand the need for financial regulation, which is mainly intended for the consumer and the market protection. The researcher further provides arguments for and against regulation. Most of the proponents against regulation are supporters of the free-market system, who argue that regulation is essentially an additional tax; and they discourage innovation, and they encourage bad behaviour like rent-seeking. On the other hand, supporters of regulation argue that regulation provides a level playing field, it reduces risks to the consumers and the market; and it reduces market failures.

The researcher identifies five approaches to FinTech regulation, which include: the introduction of specific legislation, innovative regulatory initiatives, such as innovation offices, the use of

RegTech, regulatory sandboxes and the use of current regulations. It was noted that the SARB, as the regulator of payments, prefers using the current set of robust dynamic regulations to regulate FinTech. However, the SARB has made some pronouncements that it may need to re-evaluate how it regulates some aspects of FinTech, in order to encourage financial inclusion and innovation.

Finally, the Benefit-Risk framework was discussed as being a subset of TAM; and the fact that the SARB uses the same framework to evaluate the risks and benefits posed by FinTech in determining its position on regulation was one of the main reasons why the researcher chose the framework. The researcher will use this framework to attempt to answer the first research question.

## 3.0 THE RESEARCH METHODOLOGY<sup>9</sup>

### 3.1 Research Approach and Strategy

The research methodology refers to the methods, techniques and procedures that are used in the process of implementing a research plan (Bless & Higson-Smith, 2013). This paper is based on a qualitative approach, as a means of capturing and understanding the unique perceptions of regulators on mobile money, and the effect of such on the regulatory approach taken. Qualitative research is defined as “an inquiry process of understanding, based on the distinct methodological traditions of inquiry that explore a social or human problem,” wherein “the researcher builds a complex, holistic picture, analyses words, reports detailed views of informants, and conducts the study in the natural setting” (Creswell, 1998:15).

Qualitative research is suitable for a study where the research topic requires exploration, because theories to explain the topic do not exist; the variables are not easily identifiable; where there exists a need to give a detailed account of the topic; and where the researcher also needs to learn for the purposes of providing a narration, as well as the views of the participants (Creswell, 1998). Given the infancy of the FinTech industry and the regulation of the industry itself, some level of flexibility was therefore necessary, and the exploration of this idea called for a qualitative approach, in which the intention is to code and analyze the information gathered from this research through thematic analysis.

Braun and Clarke (2006) define thematic analysis as a method of identifying, analyzing, and reporting patterns within data; and they further state that the main advantage of thematic analysis is its flexibility. The use and review of case studies also calls for a qualitative approach that would determine and explain the impact of the SARB regulation on the adoption of FinTech in South Africa. A comparative case-studies approach will be used to develop an understanding of the different strategies that have been employed in other countries compared to South Africa, as well as the differences and similarities of their outcomes.

Multiple perspectives had to be investigated to facilitate a robust and thorough theory-building exercise (Eisenhardt & Graebner, 2007). As such, the researcher sought the opinions, beliefs and feelings of the regulators, the MNO operators and the FinTech researchers.

An inductive approach was used to investigate and then generate new ideas on FinTech regulations, of its effects on mobile-money adoption and how best it could be regulated. The research also reviewed and contextualized a lot of text data from current sources on FinTech regulation, with the focus on mobile-money regulation, its effects on adoption, as well as the associated risks. Using the Benefit-Risk framework, based on the perceptions of the regulators, the researcher sought how these perceptions affected the way the regulators viewed FinTech regulation. This was later analyzed against the data from the interviewee responses, which called for an inductive approach.

The inductive approach was used to formulate the key themes and structures from those that could help formulate a conceptual framework for FinTech-regulation. This approach can also be used in extending institutional theory and the ability of qualitative data to analyze the

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<sup>9</sup> This chapter heavily borrows from the thesis proposal by the Simbarashe Takundwa (the author) submitted to the UCT in 2020 in preparation for this paper. The proposal is unpublished at the time of writing (Takundwa, 2020)

complex social processes involved. The table below summarizes the various research designs used in the social and business sciences:

Table 7: Research designs and characteristics

Design	Description/Characteristics
Exploratory Research	<ol style="list-style-type: none"> <li>1) Research into an area that has not been studied and in which a researcher wants to develop initial ideas and rarely yields definitive answers</li> <li>2) Involves conducting research in an area that has not been adequately researched or studied before, and makes use of qualitative research (Bless &amp; Higson-Smith, 2013)</li> <li>3) Aimed at answering questions like ‘what is the nature’</li> </ol>
Descriptive research	<ol style="list-style-type: none"> <li>1) Aimed at describing a phenomenon</li> <li>2) Is also used to test factual hypotheses that do not relate to two or more variables, but express facts about the world (Bless &amp; Higson-Smith, 2013)</li> <li>3) Uses case studies and statistical methods to collect data</li> </ol>
Explanatory research	<ol style="list-style-type: none"> <li>1) Seeks to explain the relationship between variables and offers an explanation for the variation</li> <li>2) Seeks to answer the ‘why and how’ questions</li> </ol>

Source: Adapted from Bless and Higson-Smith (2013) and UCT lecture notes and slides

### 3.2 Population and Sampling

The target research population consisted of people working in the banking and financial services sector. Within the qualitative research discipline, sampling is defined as the selection of participants and documents that are relevant to the research study (Polkinghorne, 2005). When it comes to selecting participants, this selection must be made based on their ability to contribute to the understanding of the phenomenon. The author further posits that the sampling process should be made up of a “series of intense, full and saturated descriptions of the experience under investigation.” Given that a qualitative research method contributes to the understanding of the phenomenon being studied, it therefore follows that a “purposeful selection of the participants represents a key decision point in a qualitative study” (Creswell, 1998:118).

This study, therefore, made use of purposive sampling to select those participants who are key informants, that is, those participants with the ability to provide useful insights into the subject matter of the study, and who can also identify others that can provide useful information for possible contact. Purposive sampling or judgmental sampling is the deliberate selection of participant(s) due to the qualities that the participant(s) possess, such as their expertise (Etikan, 2016). The author further explains that this technique is used in information-rich cases for the best utilization of the resources and the time; and this involves the identification and selection of individuals and groups that are well informed and experienced in the phenomenon of interest.

The researcher is of the view that the regulators, operators and researchers should represent varying interests and relevant experiences. The Outline of the Sampling strategy is as follows:

Table 8: List of targeted participants

Sampling Group	Target respondent	Sampling technique	Research Instrument	Expected number of respondents
Regulators	Senior personnel in charge of policy development with regard to FinTech	Purposive	Interview	3
MNOs	Senior Personnel	Purposive	Interview	3
Research Institutes	Independent Researchers in the FinTech space	Purposive	Interview	3

With purposive sampling, one can pick a small sample size, provided the sample is homogeneous, and a much larger sample size if the sample is heterogeneous. The above sample does possess both the qualities of being homogeneous (these are individuals representing a workgroup, all with an interest in mobile money) and heterogeneous in that these are individuals from different industries; and they represent different interests within the mobile-money sphere. Smaller sample sizes of between 6 to 10 individuals are enough for a homogeneous sample; and larger sample sizes of between 20 and 30, are more appropriate for a heterogeneous sample (Palinkas et al., 2015).

Due to the choice of instrument, i.e. interviews that are time-consuming and the difficulty in setting up appointments, the interview schedule was therefore limited to only 15 questions; and a response rate of 75% from the above target sample would be considered appropriate and successful. For the comparative study, the following countries were selected as comparators to South Africa: Kenya, Uganda and Zimbabwe; as these countries fall within the SSA countries and they have some demographic commonalities.

### 3.2.1. The sample size

A sample size of 9 participants was proposed to guide the study. Given that in a qualitative study, the determinant factor for the study sample size is the nature of the research questions and the “potential yield of findings” (Wertz, 2005), it is not possible to pre-determine the real or actual sample size from the onset of the research study. According to Wertz (2005), the interview participants should be identified and recruited for the study, until the goal of the study has been achieved.

The researcher will use code meaning as an approach to test for saturation. This approach does not focus on counting codes for determining saturation, however, it involves reviewing an interview and noting each issue and or code identified and then checking for any new issues (codes) in subsequent interviews until nothing new is identified (Hennink & Kaiser, 2022). By generalising some of the findings the researcher will attempt to reach saturation. In order to reach saturation, the interviewer considered those respondents who were responsible for policy formulation, and therefore, are considered authoritative sources, and realise the fact that junior employees will most probably be scared to talk about and criticize policy.

However, the researcher acknowledges that the sample size might be too small to ensure full saturation and duly notes this as a limitation of this study.

### **3.3 The data Collection**

Interviews were used to collect the data for this study. Survey interviews are one of the main data-collection sources in a qualitative study (Creswell, 1998). The researcher undertook face-to-face semi-structured interviews with representatives from MNOs, Research Institutes and Regulators (as detailed on the attached annexure). The face-to-face interviews enabled the researcher to solicit in-depth, detailed information on the phenomenon being studied. Furthermore, the face-to-face intensive interviewing gave the researcher control over the interview process, ensuring that the questions were answered in a sequence, and it gave some form of flexibility for probing for details, in order to clarify some ambiguities and to collect supplementary information.

The target respondents for the face-to-face interviews via virtual platforms (Zoom, Microsoft teams, Skype and WhatsApp) are individuals whose time and attention are at a premium; and therefore, they require some flexibility in the research tools implemented.

The researcher attempted to answer the first question by interviewing the regulators, operators and researchers, with the aim of deciphering whether regulation was an enabler of FinTech adoption, with operators and researchers dominating the views. The literature review was also used to complement the research and the data were collected from the existing literature from the period 2009 to 2019. This 10-year period provides recent data; and therefore, they are applicable to today's situation. The literature reviewed included published journals, textbooks, published articles, newspapers, magazines, working papers by international organizations like the World Bank and the internet.

For the primary research, the questionnaire was designed as follows: The basic questions will be used to get the perceptions of regulators on assessing whether regulation is a key enabler of FinTech adoption. The basic questions will also be used to test the epistemology; and that the ontological assumptions of the respondents are knowledgeable of the subject matter. This can then give an opportunity to probe further. Comparative questions seek to answer Questions two and three of the research in helping to identify the role that the current regulations have played into the successes and failures of FinTech companies in South Africa. The impact questions seek to answer Questions 2 and 3 of the research questions.

The interviews were recorded with a recorder for keeping the information for retrieval and transcribing at a later stage via virtual platforms and recording instruments. A pilot study will be conducted with a random selection of two members of the sample, in order to test the appropriateness of the questions, to ensure that there is no ambiguity, and finally to verify whether the questions fully address all the research objectives.

### **3.4 The data-analytical methods**

The study is based on the qualitative approach, which involves the process of collecting the data (primary and secondary) through face-to-face interviews, a thorough study of past research, the collection of previously recorded data; and to ensure that it is an iterative process of picking out patterns, themes, and further critically analyzing the outcomes in the process of theory-building. The use of a case-study process through interviews and the use of primary and secondary data are used to test the theories; since this is a critical tool in this process. Data-analytical methods

include data management, analysis and presentation. According to (Goulding, 2002), the data analysis begins with the commencement of the data collection within the qualitative-research approach. Creswell (1998) recommends the following procedures for data analysis: data management, reading and memorizing, description, classification and interpretation, in addition to representation.

Firstly, the researcher needs to manage the data, and given the large volumes of data collected, a list of all the data collected will be developed, that is, primary and secondary data through face-to-face interviews, a thorough study of past research, including the collection of previously recorded data. The collected data will then be organized into files, according to subjects, and then placed into folders. Systematic codes will have to be developed, using letters and numbers to represent the subjects, for easy locating, retrieval and analysis.

Secondly, the researcher reads all the material generated and collected for the study, which includes the transcripts from the interviews, the documents and any other secondary sources. The researcher makes reflective notes, as he reads, and he will document the preliminary findings of the study from reading in the form of a memo comprising “short phrases, ideas or key concepts that occur to the reader” (Creswell, 1998). Through an iterative process of picking out patterns, themes and further critically analyzing the outcomes in the process of theory-building, the initial codes were further put in groups and regrouped; and similar ideas were categorized and coded, compared and contrasted, forming new codes until the data become saturated.

The third stage is one of data analysis, which involves description, classification and interpretation of the data collected. The researcher followed a systematic procedure to describe the findings of the study from the data collected; and he then develops categories and themes, interpreting the emerging themes and constructs, and making assertions and conclusions, based on his insights, intuitive knowledge and personal views, amongst other social constructs (Creswell, 1998). The findings from the data-collection stage are then tabulated and summarized with a list of repeating themes and concepts from the questionnaires and the case studies prepared and analyzed further – using the Microsoft word. To answer the first question, two units of measurement were established; regulation enables FinTech adoption; and that regulation impedes FinTech adoption.

For the measurement model, two units of analysis are used; perceived benefits and perceived risks; and these are to be tested and discerned from the respondents and the case studies. A causal-comparative and descriptive research design will be used to help address the relationships between the perceived benefits and risks to the type of regulatory approach undertaken; and the same designs will be used to also explain the relationship between regulation and mobile-banking adoption in South Africa.

Lastly, the data analysis will also require the packaging and presentation of the study findings in the form of a matrix, or a figure.

### **3.5 The Research Criteria**

The data were collected within a five-week period, in order to avoid data maturation. The respondents were given an opportunity to review the findings; and they were also given an opportunity to comment, thereby ensuring that the perceptions and the experiences of the

individuals were accurately captured. In order to validate the results of this study, the researcher presented internal validity within the context of this study, by bringing evidence that can ensure the cause and effect between the variables, namely the regulation and its effects. Additionally, external validity was applied to the conclusions of this study, by attempting to generalize the results' validity across platforms that are external to the South African context. The external validity will confirm whether the conclusion to the study on regulation in South African and its effects could be generalized in other countries. Validity focuses on the accuracy with which the measuring tools are applied to the unit of measurement; and reliability is concerned with the consistency of the findings against the raw data.

The validity of the data was tested throughout the process, by questioning the inter-relationships within categories and returning to the data again to confirm, or not to confirm the supposed relationships (Berry & Maliski, 2006). However, due to the non-random nature of the sampling used, internal validity was strengthened by ensuring that the questionnaires measured real-world events that the study intended to measure. The interview process was done in a semi-structured manner; and it involves an iterative process to ensure that theoretical saturation occurs. Observed themes and patterns were then tested against the published literature. Finally, outside reviewers' time was used to test the validity of the findings; and this entails the use of individuals, who have experienced this phenomenon.

The main critique of qualitative research is its lack of scientific results, given its research findings, which consist mainly of participants' opinions that are also subject to the researcher's bias (Noble & Smith, 2015). To address these shortfalls, the trustworthiness (validity and reliability) of the qualitative data-collection methods and the data collected should be established. The authors define validity as the integrity and application of the research methods applied in the research study, and the accuracy with which the study's findings reflect the nature of the data collected. Reliability, on the other hand, refers to the consistency applied in the data-analytical process (Noble & Smith, 2015).

These authors offer suggestions that qualitative research must incorporate strategies to improve the trustworthiness of the research findings, the techniques of which include accurate and complete record-keeping, showing a clear decision trail, and ensuring that the data interpretation is clear and consistent; including rich and detailed verbatim descriptions of the respondents' accounts to support the study findings; and data triangulation, whereby different methods and perspectives help to produce a more comprehensive set of findings. Merriam (2016) recommends that to ensure the validity and the reliability of the qualitative research study, triangulation in which multiple investigators, sources of data, or data-collection methods should be used to confirm emerging study's findings; member checks and respondent validation, in which the findings of the study are taken back to the people from whom they were derived, and asking them whether the findings are plausible; peer review or examinations, whereby the researcher discusses the study process, the congruency of the emerging study findings, the raw data and the tentative interpretations with colleagues; and providing enough description (rich, thick descriptions given by respondents during the interview process) to contextualise the study, in such a way that the readers would be able to determine the extent to which their situation matches the research context, and further, whether the research findings can be transferred.

Nowell et al. (2017) describe trustworthiness as a way in which researchers can convince the readers of the authenticity of the study, by ensuring the credibility thereof, as well as the transferability, the dependability and the confirmability thereof. This is confirmed by work done

by Noble and Smith on validity and reliability criteria for qualitative research. Techniques, such as data-collection triangulation, researcher triangulation and rigorous observation, are frequently used to address the credibility of qualitative research findings. This study used data-collection triangulation, whereby the research findings of the study were supported and analysed against the literature review on each of the research objectives and the interview questions. Transferability is concerned with the generalisability of the study findings, notwithstanding the researcher's lack of knowledge or lack of coverage of all the sites that require applying the research findings; thick descriptions of the study findings can be provided to enable those who desire to transfer findings to their site (or to a different site), in order to achieve transferability (Nowell et al., 2017).

The study provided thick descriptions of the findings, including first-hand reflections and narratives from the respondents in the form of direct quotes of what they had said. While the proposed sample size is 9 participants, the researcher will continue to interview participants, including those referred by key informants, until the information reaches "saturation" point, thereby rendering any additional information and findings redundant. In order to reach saturation, the interviewer considered respondents that are responsible for policy formulation; and therefore, they are authoritative sources, and realising the fact that junior employees will most likely be scared to talk about and criticize policy.

It is possible to reach saturation before the researcher interviews all of the 9 participants, when the researcher is no longer learning anything new from the interview participants; and when this happens, the data collection should be discontinued. However, there is a risk that nine (9) interviews might not lead to full saturation.

## **4.0 THE RESEARCH FINDINGS, PRESENTATION AND ANALYSIS**

### **4.1 Introduction**

This chapter lays out the research findings in response to the research questions in chapter 1 and chapter 3. The findings are laid out in a tabular format using the following codes: Finding, details of the finding and the representative quote that supports the finding. Descriptive paragraphs and inferences are subsequently provided, in order to outline some of the findings.

### **4.2 The Research Findings**

The study found that both regulators and FinTech operators do agree that the regulation of FinTech is an enabler of mobile-money adoption. The current regulation was seen as an impediment by some, and to some extent, the regulators agreed with this opinion. Proposed changes to FinTech regulation have generated some positive interest, however; there is a general sense that all this effort can be undone by weak product offerings, their lack interoperability; and that some of these are not suitable for the South African landscape. The preceding paragraphs present some of these findings.

#### **4.2.1. Assessing whether Regulation of FinTech is a key enabler of FinTech transactions, such as e-money**

In answering this question, interview respondents first opined on the role of regulators. MNOs and Researchers dominated this space as they could provide clear independent opinions on mobile-money regulation and crypto-currency regulation. The primary data showed that regulators have the mandate of increasing financial inclusion; and FinTech is one of the tools to increase financial inclusion. Financial inclusion entails making financial products and services accessible and affordable to all; and by extension thereof, an increase in financial transactions. Strict regulation was also seen as an impediment to the proliferation of FinTech transactions and a balance between enabling for innovation and consumer protection was proposed by some of the respondents. The participants have varied opinions on the impact of financial regulation in South Africa; constraining, neutral, while others found it enabling. The sample representative quotes in the Table 9 below summarize some of these views.

Table 9: Regulation as an enabler of FinTech adoption

<b>Regulation</b>	<b>Application</b>	<b>Respondent's Quote</b>	<b>Inferences, Regulation and Impact</b>
<b>General Comment on regulation</b>	<i>Applied to MNOs, Banks and crypto</i>	<p>“Regulators have a role of creating policies that allow innovation, but not so open that exploitation can occur for the average consumer. So, I think part of the part of the role is to make sure that they regulate the system in such a way that consumers can be protected” - Respondent 9 - Researcher</p> <p>“But they have to ensure that the rights of the consumer are still safeguarded” Respondent 5 – Researcher</p> <p>“I think the role of the regulator at the end of the day is not to stifle innovation. It's to encourage and promote innovation, so as to increase financial inclusion, but also being mindful of the regulatory issues like consumer protection ” Respondent 8 - Researcher</p>	<i>The dual role of regulation, as an enabler and security. Mobile money regulation, particularly the requirement for MNOs to partner with banks for security and allowing MNOs to innovate using existing platforms. Impact - Neutral</i>
<b>General Comment on regulation</b>	<i>Applied to MNOs, ADLAS</i>	“Regulators really have a strong desire for financial inclusion. They understand the migrant market and the difficulties that people face in trying to get their money back home and are looking at FinTechs to fill this gap” Respondent 3 - MNO	<i>Regulators are driven by the desire to increase financial inclusion, thus the incentive to create enabling regulations. Impact - Enabler</i>
<b>Crypto-currency regulation</b>	<i>Applied to crypto-currency</i>	“When it comes to crypto-currency, some countries are friendly and progressive, whereas some are indifferent. They are neither for nor against blockchain and crypto-currencies. The	<i>Tight regulation can be an impediment to competition and FinTech innovation and adoption. The banning of crypto</i>

		<p>latter being the stance taken by South African regulators” <i>Respondent 7- MNO</i></p> <p>“And you do have countries that outrightly banned crypto currencies.” <i>Respondent 7- MNO</i></p> <p>“As a result, I think, with most of FinTech companies, including ours, are going ahead creating products and services, while we wait for the regulator to catch up.” <i>Respondent 7- MNO</i></p>	<p><i>currency is a constraint on FinTech transactions and lack of regulation for crypto currencies has created both challenges and opportunities. Impact - Constraining</i></p>
<p><b><i>The requirement for MNOs to partner with Banks to offer deposit taking services and clearing and settlement</i></b></p>	<p><i>Applied to MNOs</i></p>	<p>“Banking legislation in South Africa doesn't allow anyone who doesn't have a banking licence to take and accept deposits from members of the public. So, if you want to run a mobile money business, obviously people have to have ways that they're going to be able to give you the money so that they keep it for them and facilitate transactions. So that is one of the challenges that you are going to encounter” - <i>Respondent 6 MNO</i></p> <p>“If you don't have a banking licence and you want to have a mobile money business, so, there are regulatory challenges, in the sense that this creates high barriers to entry.” <i>Respondent 6 MNO</i></p> <p>“So most of these businesses, in order to get around that, either they then work with holders of banking licences, which is going to be a bank, so you'll typically then partner with a bank and the bank will then accept the deposits on your behalf</p>	<p><i>Tight regulations can be an impediment to competition and FinTech innovation and adoption. The requirement for MNOs to partner with Banks is seen as a serious impediment. Impact - Constraining</i></p>

		or you then register your own bank, which in itself comes with other challenges, such as unfair competition.” <i>Respondent 6 MNO</i>	
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The need to counterbalance innovation and protection ends with regulation being neutral in terms of facilitating FinTech transactions. South African regulators are very much aware that regulation can play a key role in creating an enabling environment for FinTech companies to operate; but this needs to be counterbalanced by ensuring that the risks associated with FinTech products, especially consumer protection and data-protection risks are strongly monitored; and a regulatory regime that can counterbalance both aspects is thus required. This applies to mobile money, crypto and payment systems.

MNOs, on the other hand, were not unanimous in their views on whether regulation of FinTechs as an enabler of FinTech transactions in South Africa. Respondents 6 and 7 were of the opinion that the current regulatory framework is not an enabler of FinTech. Respondent 6 cited the banking legislation and specifically the requirement that MNOs partner with traditional banks as being an impediment to non-banks seeking to bridge the financial exclusion gap through FinTech solutions. This has led to issues, such as high barriers to entry for FinTech start-ups and the lack of competition (to an extent unfair competition). Most FinTechs do not have the capital and human resources to be able to get banking licenses. This regulation implicitly implies that a collaborative model between MNOs and traditional financial institutions mostly leads to the creation of a bank-led model of mobile-money operations.

Respondent 7 cited the lack of regulation on Bitcoin, which they thought was a neutral stance on FinTech adoption. Although this stance may be neutral at the beginning, it allows regulators enough time to understand a product before promulgating regulations. However, the respondent went further and gave examples of countries where Bitcoin was banned, i.e. in regulatory regimes that promulgate regulation with the specific purpose of impeding or outrightly disabling crypto-currency adoption; and this unfortunately is usually done quite early in the product life cycle of the FinTech product. Respondent 3 was the dissenting voice, opining that regulators are interested in increasing financial inclusion; and they have recently loosened regulations in terms of remittances, by implementing a principle-based approach instead of the previous rule-based approach. The principle-based regulations are a form of risk-based approach type of regulation; and this is not as stringent as a rule-based approach, which is mostly constraining and unadaptable.

Research institute respondents were not fully convinced that regulation is an enabler of FinTechs in South Africa. They alluded to the competing objectives enabling FinTech to increase financial inclusion, and the protection of consumers leading to a consensus that the current regulations are neutral.

#### **4.2.2. Analyzing the key considerations of perceived risks and benefits of FinTech, and how they influence FinTech regulation and the adoption thereof**

##### **Perceived benefits**

On the benefits of FinTech, the study revealed a variety of perceived benefits from the interviewed respondents. Amongst these, respondents highlighted the benefits of accessibility and the usability of FinTech products. The financial inclusion of previously excluded groups, including amongst others, the unemployed, the youths and the migrants who mostly make up the unbanked sector. Respondents also pointed out that FinTechs help to reduce transaction costs, and especially search costs, contract costs and monitoring costs. Another benefit of FinTechs highlighted by the respondents is the security and safety of transacting by using mobile money, which eliminates cash-handling threats and losses. The findings will be further

disaggregated below, according to the findings of regulators, FinTechs and research institutions.

Regulators cited such benefits of financial inclusion of the non-banked sector, low transaction costs, innovation and efficiency in transacting processes. The sample representative quotes in the Table 10 below summarize some of these views:

Table 10: The Perceived Benefits of FinTech

<b>Benefit</b>	<b>Application</b>	<b>Respondent Quote</b>	<b>Finding, Regulation and Impact</b>
<b>Reduction in transaction costs, security risks and increased reliability and accessibility</b>	<i>Use of simple but available technologies like sms, WhatsApp technologies. Applied to MNOs</i>	<p>“Needless to emphasize the issue of costs, because if we go back to the underserved or the bottom of the pyramid, they're very cost-sensitive. So really ensuring that something is affordable is a number one priority which FinTechs are covering.” Respondent 5 – Researcher</p> <p>“Some MNOs use secure sms systems and protocols; and that is cheaper and more secure than sending your money via your bus driver.” Respondent 5 – Researcher</p> <p>“And based on that, we talk about issues to do with reliability and safety.” Respondent 5 – Researcher</p> <p>“FinTech is helping to really expand financial inclusion. Foreigners can now send their money home by using our Mukuru platform rather than using the traditional route – by bus or by taxi, which is very risky, or the more expensive traditional remittance agents like Western Union and Moneygram.” Respondent 3 - MNO</p>	<p><i>Reduction in transaction costs ; agency costs, search costs and contract costs</i></p> <p><i>Risk reduction; safety, security</i></p> <p><i>Increased reliability and accessibility</i></p>
	<i>Distributed Ledger and Artificial Intelligence technologies</i>	<p>“FinTechs decrease the costs of conducting minor transactions, and monitoring account movements and balances.” Respondent 8 - Researcher</p> <p>“Technologies underpinning FinTech like DLT and AI can really help with improving collateral management, fraud detection, credit-risk</p>	

	<p><i>Use of digital wallets</i></p>	<p>management and compliance with regulations.” <i>Respondent 8 – Researcher</i></p> <p>“It is expensive to handle cash in South Africa; although it is easy to draw the money from the ATM, you pay very high fees. Carrying a lot of cash on you is a security issue in South Africa, people get mugged and so forth. So the moment to digitize it and then you put good solid security measures in place, in order to secure the wallets and so forth, I think you will be bringing a lot of security into the system.” <i>Respondent 6 – MNO</i></p> <p>“In terms of transaction costs whether FinTechs are too costly, or they are too cheap. It is a bit of a tricky one because more and more also these FinTechs are struggling to break even, because it’s a volume game, the larger the volume of transactions you have, the more flexibility you have in terms of pricing.” <i>Respondent 2 - Regulator</i></p>	<p><i>Reduction in transaction costs and ensuring reliability and safety</i></p> <p><i>However, it might be difficult to reduce transaction costs as most FinTechs are too small to operate in large volumes that can help reduce transaction costs</i></p>
<p><b>Increased efficiency, competition</b></p>	<p><i>Distributed Ledger and Artificial Intelligence technologies</i></p>	<p>“FinTech improves and automates the use of financial services, so as to increase efficiency, expand the scope of financial services, increase competition, and most importantly, to encourage financial inclusion.” <i>Respondent 7 – MNO</i></p> <p>“FinTechs bring about more efficient and effective payment systems through increased competition.</p>	<p><i>Increased efficiency, accessibility and competition will lead to increase in financial inclusion and reduction in transaction costs.</i></p>

		<p>They are also driving the overall digitalization of the economy, where for example, innovative payment systems are now available in previously marginalized communities.” <i>Respondent 2 – Regulator</i></p> <p>“Innovative tools that come into the space, which are quick to access, and which have low transaction costs, people then jump on them. I think FinTech for me, it's basically a tool, which is able to close financial exclusion much more quickly than when using traditional channels.” <i>Respondent 1– Regulator</i></p> <p>“It brings competition and increasing competition, you are solving information asymmetry, you are solving your transaction costs” <i>Respondent 1– Regulator</i></p>	<p><i>Increased efficiency, competition will lead to increase in financial inclusion and reduction in transaction costs.</i></p> <p><i>Increased accessibility and financial inclusion</i></p> <p><i>Increased efficiency, competition will lead to a reduction in transaction costs.</i></p>
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According to MNOs, reduction in transaction costs, risks and increased reliability are some of the major benefits that FinTech products bring. The type of products and services included the use of digital wallets, artificial technologies, distributed ledger systems and simple mobile text systems, such as WhatsApp messages as channels, through which these MNOs are able to deliver products, reduce the risks to the consumer; and they are less costly to the consumer. Respondent 6, another MNO, pointed out the benefit of physical security and secure platforms of transacting that are cost-effective and much faster.

This represents an opportunity for MNOs to exploit and deliver these benefits, and thereby creating unique products that can increase the uptake of FinTech products. Having independent MNOs is probably going to unlock some of these benefits; as this model is less encumbered by the red tape found in traditional financial institutions which operate the bank-led MNO model.

Respondent 7 opines that FinTechs help to increase the automation, efficiency of financial transactions and to increase financial inclusion. *The main instrument here would be the use of distributed ledger technologies. The accessibility of FinTech products, such as MNOs and crypto, increases financial inclusion and efficiency in the system.* Interestingly regulators and research institutions also alluded to the same benefits mentioned above and regulators in particular alluded to the fact that FinTechs can help to improve the competition in the financial services space, by bringing about cheap, efficient and innovative financial service-solutions that can also help to reduce information asymmetry and bring about increased financial inclusion

*The participants were cognisant of the fact that increased efficiency, accessibility and competition will lead to an increase in financial inclusion and to a reduction in transaction costs. Again, this creates an opportunity for MNOs, block chain and payment systems to increase the uptake of FinTech technologies and products. The efficiency and reach of FinTech technologies have led to the buy-out of some MNOs by traditional financial institutions creating bank-led MNOs that helped these institutions to unlock these benefits.*

Respondent 2, a regulator however, questioned the notion that FinTechs reduce transaction costs; “In terms of transaction costs whether FinTechs are too costly, or they are too cheap. It is a bit of a tricky one; since more and more these FinTechs are struggling to break even, because it’s a volume game, the larger the volume of transactions you have, the more flexibility you have in terms of pricing.” He further posits that the lack of transparency of some of the FinTech products can lead to disintermediation costs.

## **The Perceived Risks**

The study revealed that this is the key risk that drives regulators to regulate, that is, to protect consumers through the imposition of stricter regulations. From the regulators point-of-view, the study interviews revealed that market-conduct risk and the risk of contaminating the financial markets are the major drivers of whether a technology is acceptable, or not to the regulators. This finding is summed up by Respondent 4, a regulator, who adamantly pointed out that regulators will not lower the regulatory standards, just to accommodate FinTechs at the expense of consumer protection and the upholding of consumer rights by saying the following:

*... our point of departure should be that we have an enabling Act. That’s regulation, right? Something that we will not hesitate to do is to lower the standards, simply because we’re to*

*accept somebody that won't meet the standards. We are not going to introduce risk by saying shame these guys can come in, let's lower the standard so that they come in; we're not going to do that. But I can review whether our requirements are unnecessarily onerous that we can do...we should not lower the standard, because we want more people in; and then we have more risk coming in.*

Data security and privacy is another key perceived risk that was raised by the respondents across the board, but mainly by the MNO respondents, which they highlighted. This is further compounded by the apparent lack of transparency on how data are gathered and are intended to be used. The study interviews highlighted data protection, as a key issue in South Africa, and how some of these organizations get hold of personal data, which they later use for tele-marketing purposes. The robustness of the systems offered by FinTechs is also a key consideration from users, giving rise to the question; “Is my money safe?” If customers do not believe that their funds are safe, then this drives them not to accept that technology.

The sample representative quotes in the Table 11 below summarize some of these views:

Table 11: Perceived Risks of FinTech

<b>Risk</b>	<b>Application</b>	<b>Respondent Quote</b>	<b>Finding, Regulation and Impact</b>
<b>Reduction in Market conduct risk. Financial risk Destruction of trust in the financial system</b>	<i>Crypto currency</i>	“Cryptocurrency brought some really high risks and challenges within the financial markets, and it was spilling over into Ponzi schemes; and at the end of the day, that whole thing causes people not to trust the financial system as a whole.” <i>Respondent 5 - Researcher</i>	<i>Market conduct risk. Financial risk Destruction of trust in the financial system</i>
	<i>Mobile payments systems</i>	“Integrity is very important in the mobile payment space. If any information should get compromised, people could lose their funds” <i>Respondent 6 – MNO</i>	<i>Mitigation; Regulation</i>
		“And the moment you have a system that's vulnerable to such leakages, you're as good as not having a system; and you're not going to have credibility.” <i>Respondent 6 – MNO</i>	<i>Market conduct risk. Financial risk Destruction of trust in the financial system</i>
	<i>General FinTech technologies</i>	“We do see harmful manipulation of consumer behaviour. We also see some tech firms themselves lacking adequate knowledge about the space that they occupy in terms of operational effectiveness and stability.” <i>Respondent 7- MNO</i>	<i>Mitigation; Regulation</i>
		“The reason why we are actually participating in the IFWG is because of market conduct and consumer protection. We are saying let’s introduce these FinTechs; but we don't want our customers to be abused.” <i>Respondent 1 – Regulator</i>	<i>Data Protection risk. Mitigation: Regulation</i>
	“Because of the high illiteracy levels, some business-market products are specifically targeted to take advantage of these people.” <i>Respondent 1 - Regulator</i>	<i>Market conduct risk. Mitigation: Regulation &amp; Education</i>	



Interestingly, respondents have found that market-conduct risk, financial risk and destruction of trust in the financial system were some of the common risks associated with all FinTech technologies, including, mobile-payment systems, crypto-currency and other general FinTech technologies. Regulators, MNOs and Research institutions were unanimous in pointing out this finding; and they all agreed that regulation can be a mitigating factor, in that commensurate regulation can help reduce and mitigate some of these risks. High levels of financial illiteracy in South Africa make it a haven for unscrupulous financial service operators, who are there to take advantage of the population; and financial education is therefore required.

Crypto currencies have been a hot bed of unscrupulous operators, whose motivation is to defraud the general public. A record \$14 billion was taken by crypto scammers in 2021 only, up from \$7,8 billion from 2020, according to Time magazine. For mobile payments, data integrity is very important, if any information is lost, people could end up losing their funds. Regulators found a direct need to intervene in the general FinTech market to help reduce market-conduct risk and financial risk and watchdogs, such as the Financial Sector Conduct Authority (FSCA) were created to ensure market conduct regulation and supervision, and to ensure the integrity of financial markets and to ensure that customers are protected.

Data-protection risk is another important risk identified by the participants. The issue of how customers' data are used and stored is a matter of great concern. Recently, this has been addressed by regulation, such as the POPI Act. The faceless nature of most FinTech transactions poses a lot of risk, in that no one really knows who owns and who has access to people's personal data. Crypto currencies are known for their secrecy and because of this, most governments are not crypto-friendly, because of the potential national security risks that they pose. Finally, respondents alluded to risks, such as the lack of transparency and money laundering risks associated with FinTech products. Crypto-currencies and InsureTech and micro-lending technologies are some of the products that are susceptible to these kinds of risk. Respondent 2 was worried that some of the methodologies for credit scoring of customers are vague at best.

Again, some of these risks are better addressed by increased financial education and commensurate legislation and regulation. In terms of regulation, the South African regulators seem to prefer a collaborative model between FinTech operators and traditional financial institutions, in order to ensure ease of regulation and compliance and monitoring.

#### **4.2.3 Assessing the impact of regulation of FinTech in the South African context**

##### **4.2.3.1 Analysis of the current regulatory environment**

In describing the current regulatory environment for FinTechs in South Africa, the interviewed respondents highlighted divergent views on this issue, ranging from cautious, strict, fragmented, rule-based, lack of clarity, favouring traditional players, forced marriages and high barriers to entry for non-banks. Regulator respondents opined they are taking a cautious approach to FinTechs, in the absence of any regulations for these transactions. Respondent 1, a regulator, said the following to this effect, *"We are cautious but open to it...our approach has always been as though, we're going to introduce this; but we also need to be cautious and sensitive and know certain things... and also the issue of market conduct and consumer protection should be at the forefront."*

The creation of regulatory sandboxes by the regulators, which were designed to test new business models and solutions, such as FinTechs, in a controlled regulatory environment, were cited by Respondents 1 and 2 as evidence of the regulators' cautious but open approach to FinTechs in South Africa. Respondent 2 specifically made reference to the proactive steps taken by regulators in South Africa in monitoring FinTechs and their impacts on the South African economic activities, stating the following to this effect:

*As regulators, we have been proactive in this area, for example, the Reserve Bank established a FinTech program to try and understand the rise of FinTechs and figure out the implications for their regulation within the current regulatory environment. Under this program, the Reserve Bank investigates possible innovative facilitation mechanisms that are being used out there by other countries, which could be useful in the South African context, such as innovation hubs, regulatory sandboxes and accelerators. There is also the launch of project KHOKHA under the FinTech program – have you heard of it? It is meant to assess application and South Africa's use of Distributed Ledger Technology.*

The fact that regulators are aware of the impact that regulation has on the adoption of FinTech products, is quite reassuring for MNOs, crypto and mobile-payment systems in general, and the recommendation for the use of innovation hubs and regulatory sandboxes is a step in the right direction. The lack of regulation, as alluded to earlier, in the crypto industry is seen as an impediment and also an opportunity, however, for regulators coming to the fore and making a stance, it becomes easier for market participants as they know the rules of the game. The realization that a one-size-fits-all approach to regulation is not appropriate to mobile-money payments systems in South Africa. This creates opportunities and a fairer playing field, when operators are regulated on the basis of risk; and then the need for a forced collaborative model would fall away.

Interestingly, MNOs and research institute respondents, while alluding to the cautious approach, have also pointed out that the current regulatory environment is quite strict, forcing FinTechs to enter into partnerships with banks and other big players with licenses, in order to operate, and that it is more rule-based. Respondent 3, a FinTech company representative lamented that the current environment “*was more rule-based; and it had the one-size-fits-all approach and told you what IDs you could accept, what kind of an address declaration proof you could accept... it made things very challenging for the consumer and for the business, as well.*” This requirement led to an onerous regulatory environment, which increased compliance costs and also made the ease of transactions a bit difficult for customers, who had to go through the whole rigmarole. Respondent 6, another MNO, explained the strict regulatory environment and how it forced FinTechs into “marriages” or partnerships with banks, such as the example below:

*...Banking legislation in South Africa doesn't allow anyone who doesn't have a banking license to take or accept deposits from members of the public. So, if you want to run a mobile-money business, obviously people have to have ways that they're going to be able to give you the money so that you can keep it for them, and facilitate the transactions. So that is one of the challenges that you are going to encounter. If you don't have a banking license and you want to have a mobile-money business, so, there are regulatory challenges in that sense. So, most of these businesses, in order to get around to that, either they work with holders of banking licenses, which is going to be a bank, so you'll typically then partner with them with a bank, which will then accept the deposits on your behalf, or you then register your own bank, which in itself comes with other challenges. When partnering with banks, the bankers are going to filter these*

*regulatory obligations and costs to their partners. I call these forced marriages. So, that is the one side of the challenge. The other one is a settlement. In order to basically get money from the formal banking system into your mobile-money environment, you also need someone who participates in the national payment system, which doesn't allow you to participate, unless you are a PASSA member. So, you will then typically need to have partners who would be able to link you up the banking system. That can also be a bank, or it can be the likes of MasterCard and so forth, depending on what you want. So, yes, those I would say are the main challenges that one faces. These could be called barriers of entry into that space.*

Respondent 5, a research institute respondent, surmised that the tight regulations favour the big players, such as the established banks, which dominate the markets. He stated the following to this effect:

*I think South Africa may be more tightly regulated; and the financial institutions are pretty much dominating. So, you then realize that it favours much of your bigger players. There is lack of clarity on regulations around who can do what and who cannot. And that then defaults to favour of your bigger players who are already dominating the market.*

Forced marriages are alluded to above; and these can only lead to an uneven playing field that is not competition-friendly; and this can stifle innovation and reduce the benefits that FinTech products provides to the market, such as increased efficiencies, lower transaction costs, increased accessibility and reduction of personal risks to consumers, as well as increased financial inclusion. This has been especially true in the mobile payments sphere, where the bank-led MNO model became the only way to enter the market.

#### **4.2.3.2 A comparative analysis of country regulatory regimes**

During the interviews, the respondents made reference to the FinTech regulatory regimes of other countries in Africa and beyond. The respondents made reference to countries including Rwanda, Malawi, Zimbabwe and Kenya in Africa, as well as China, India and the United Kingdom. Respondents 1, 3 and 5 highlighted that FinTechs, especially e-money services, have flourished in countries like Kenya, Tanzania, Rwanda and Zimbabwe, due to the high levels of the unbanked, lack of trust in the formal banking channels, operating environments and better FinTech product offerings suited to the markets.

The most common FinTech systems mentioned by the respondents were mobile-money and crypto-currency and how these were regulated in various jurisdictions other than South Africa. The question posed to respondents was how South Africa was doing in the FinTech space, compared to other countries from Africa, Europe and Asia. Some of the findings were that some of the products offered in South Africa failed to take off because they were not suited to the environment and demographics and an example was the failure of MPESA a mobile money payment system in South Africa, compared to the roaring success of the same in Tanzania and in Kenya.

The forced marriages between banks and MNOs were also noted, where there was a lack of trust between the two partners compared to the Singapore system where these two have seamlessly integrated. South Africa has one of the highest concentrations of traditional financial institutions, and this coupled with the regulation that MNOs need to partner with banks, has created an uneven playing field.

The sample representative quotes in the Table 12 below summarize some of these views:

Table 12: A comparative analysis of country-regulatory regimes

<b>Key driver</b>	<b>Application</b>	<b>Respondent Quote</b>	<b>Inferences/Findings</b>
<b>Interoperability of systems especially mobile money being accepted widely</b>	Mobile payments systems	<p>“I’ve noticed that a lot of the FinTechs outside of South Africa have hinged or placed their innovations to strongly leverage on mobile money” Respondent 5 - Researcher</p> <p>“In Rwanda the AC group, I think their focus has been on tap and pay on the transport system. And yet again, strongly leveraging on mobile money. Essentially what they have managed to do is to ensure that the public transport system is cashless. They’ve redefined the transport sector in Rwanda” Respondent 5 – Researcher</p>	<p><i>Mobile money operating on its own without the requirement to partner with a bank</i></p> <p><i>Mitigation – a trusted mobile money payment system that allows for interoperability and acceptance</i></p> <p><i>Data Protection risk.</i></p>
<b>Operating Environment Lack of trust in traditional financial systems</b>	Mobile payments systems	<p>“The MPESA model failed to take off in South Africa due the model not being suited to the demographics and operating environment” Respondent 3 - MNO</p> <p>“The tough operating environment where there are chronic cash shortages in Zimbabwe created a fertile ground for mobile money to flourish as this was the only available and reliable means of transacting” Respondent 3 - MNO</p>	<p><i>Mitigation: The model must fit the operating environment and demographics</i></p>
<b>Seamless integration of FinTechs and traditional financial institutions</b>	General FinTech technologies	<p>“Singapore FinTech sector has benefited from the collaborative attitude and active involvement of the local banks and insurers and has about 200 FinTechs dominated by payments and the wealthiest investors. Singapore FinTechs benefit from accelerators and corporate venture funds that have been set up by financial institutions for investing in FinTechs.” Respondent 9 – Researcher</p> <p>“FinTech is said to be UK’s strongest start-up sector, with more investment channelled into it than any other industry; and thus, it is the second-biggest FinTech market in the world after the US, when it</p>	<p><i>Mitigation: an enabling regulatory environment, use of accelerators, innovation hubs, regulatory sandboxes and opening up of the banking sector</i></p>

		<p>comes to VC investment. This is due to their regulatory support for open banking, and the growing number of consumers giving up on incumbent banks.” <i>Respondent 4 - Regulator</i></p> <p>“India is also another fastest-growing FinTech start-up hub. The Indian government has supported the development of the FinTech sector through setting up FinTech hubs and developing a FinTech policy. All these have been good for FinTechs; and they have led to the rise of FinTech start-ups to service the unbanked sector.” <i>Respondent 4 – Regulator</i></p> <p>“The banking concentration is quite high in South Africa as compared to other developed nations, so there's not a lot of competition in the financial sector and the space needs to be opened up.” <i>Respondent 1 – Regulator</i></p> <p>“When it comes to crypto-currencies, some countries like the UK are friendly and progressive, whereas some are indifferent. They are neither for nor against blockchain and crypto-currencies. The latter is the stance taken by South African regulators.” <i>Respondent 7- MNO</i></p> <p>“I believe South Africa regulated mobile money too early without having understood the risks and the benefits.” <i>Respondent 7- MNO</i></p>	
	<i>Crypto currency</i>		
	<i>Mobile Money</i>		
<b>Consumer trust Financial literacy</b>	<i>General FinTech technologies</i>	<p>“Another good example is China. China has a very big tech savvy population and is leading FinTech adoption around the world.” <i>Respondent 9 – Researcher</i></p> <p>“Because of the high illiteracy levels in South Africa some unscrupulous businesses market products specifically targeted to take advantage of these people” <i>Respondent 1 - Regulator</i></p>	<i>Mitigation: increase financial literacy and technological literacy</i>

Interestingly, the respondents agreed that the interoperability of systems, especially mobile money being accepted widely by consumers, was one of the reasons why mobile money payments were successful in other countries, except in South Africa. This was facilitated by a regulatory environment that allowed mobile money to operate on its own, without the requirement to partner with a bank. The operating environment and the lack of trust in traditional financial systems in certain countries was also a key driver in the acceptance of mobile-money payment systems, especially in countries, such as Kenya and Zimbabwe.

Respondent 3 also expounded on the success of M-PESA in Kenya, attributing this success to the fact that Kenyans experienced *“limited access to credit and had a real social need to transfer money from the urban population to the rural population, in ways that are faster, secure, private and cheap”*, and added that M-PESA in Kenya is *“an interesting example showing how an enabling regulatory framework can create opportunities for innovation.”* Respondent 3 opined that although traditional banks are regulated by the Central Bank in Kenya, Safari Telecom sought approval from Kenyan Telecommunications Authority; since the Central Bank chose not to get involved and referred M-PESA to the telecommunications domain, a factor that Respondent 3 opined, *“was the saving grace for M-PESA, leading to its success”*.

The seamless integration of FinTechs and traditional financial institutions is another key driver of the success of FinTech products, especially in countries like Singapore, India, Malaysia and the UK. This was achieved by establishing an enabling regulatory environment, the use of accelerators, innovation hubs, regulatory sandboxes and the opening up of the banking sector. For example, the UK regulators are considering opening up the payment systems to all players. Respondent 8, a research institute respondent, highlighted that *“some countries like China and India have almost done away with cash and cards; and their consumers pay for literally almost everything and anything from anywhere by using their phones through apps”*, adding that *“this is a possibility too in South Africa, we just need banks, retailers and regulators to come on board and buy into cash-less and card-less transactions, thereby making it easier for FinTechs to operate.”*

*The UK system shows how successful collaboration can be. This will probably see a more competitive and fair operating environment, in which the FinTech operators can bring their competitive advantages and share this seamlessly with traditional financial institutions. The integration of crypto currencies with the traditional financial systems has not been as successful, because of the belief that crypto seeks to replace the current monetary system. One of the mottos for the respondent is that their customers need to dispose of the weak Zimbabwean currency, but rather using their crypto-currency.*

Finally, consumer trust and confidence in the FinTech products, and financial literacy, were also identified as some of the key drivers of FinTech products acceptance in jurisdictions, such as those of China and India. Whereas the high financial illiteracy in South Africa was seen as being a hindrance. However, this can be addressed by increasing financial and technological literacy in South Africa. Secondary research established that the UK is the international leader in FinTech regulation with Kenya being the regional leader in Africa (IFWG, 2019).

The UK has been a leader in the creation of regulatory sandboxes and innovation hubs. Kenya was one of the first African countries to implement regulatory sandboxes.

#### **4.2.3.3 An exploratory analysis of the impact of proposed changes to the NPS**

Overall, the proposed changes to the NPS Act were well received by the respondents; and with most of them expecting a favourable impact; however, some expressed mixed views that the new changes might introduce risk into the system. A summary of some of the respondents' quotes:

*...The proposed changes by the NPS department, the Reserve Bank will increase some risks. Data-privacy risks, security risks and protection for consumers will still be the biggest risks that we have to address. Financial services regulators need to rethink data privacy, security and protection; and they need to bring on board data-protection authorities in this matter. I think regulators have to debate or brainstorm around it; they need to find the risk-mitigation ways on how to mitigate that risk. But at the same time, you cannot say you're going to let the status quo remain; you have to create a more enabling environment. That's one thing which they are looking at: having a diversified distribution base for financial services. That's where we have dedicated our priority for us regulators, having FinTech coming in because we need to increase competition. However, issues of inter-operability are complicated; and they need to be addressed from a product perspective. - Respondent 2*

Respondent 4, another regulator, noted that the proposed changes are in line with SARB's Vision 2025, which is aimed at *"balancing the interests of all participants in the market; and providing a framework that allows participants to innovate, develop and implement financial services that would benefit the larger South African population."* However, adding the following, *"through these initiatives, SARB is acknowledging the need to change...we need to be open to change, and this requires that we develop policy transparency and regulations, which allow flexibility and better clarity on who can have access to what information.*

Respondent 4, however, erred on the side of caution, by failing to ask whether these changes would work, pointing out that they will only work if the current offerings are not weak, signalling that the market demand will dictate the success or failure of these recommendations when implemented, stating the following to this effect:

*I believe FinTechs are aware of the proposed changes to the NPS Act but the issue that you see here is that in my mind I believe the NPS Act should be enabling, and once enabled, the market demand will dictate. And I feel that all these new developments will work if the current offerings are not weak. If people believe the current offerings are not satisfying their requirements, it's a huge struggle for these new services to take off that easily. If they can come and offer convenience, that is at the least cost as possible, with the right speed, and the right transparency. These are my views, that convenience, transparency and cost are more important.*

Respondent 2, another regulator, pointed out that the proposed changes will lead to increased innovation in the investment space, explaining this point further by stating the following:

*...In terms of recommendation 13 of the NPS Review Act where there is proposed separation between the banks and MNOs where when MMOs want to offer payment services, they don't need to partner with banks. I think the proposals as they stand, will definitely lead to more innovation in the investment space. We believe those innovators are going to come; they will come up with products and services that are going to meet customers' needs; because as it stands at the moment, one problem with the banks is that they are more profit-margin driven. And that's why it's even difficult for them to come up with products that cater for the lower*

*segment. Most products which the banks are catering, essentially to medium-income, and naturally the high-income products. When you look at this, most FinTechs probably won't hesitate to go to the LSM segment market to come and innovate, and to come with the products that would enable customers, and the sort of benefits those people need. Most of these MNO's already have the data of those people who normally have a side view of what those people need, because already most of them are using their services. In a way, I believe this will lead to more innovation, and also some FinTechs will also jump in and take advantage of that. And I think it will lead to more innovation that will lead to more financial inclusion and digitalization of the whole space.*

MNOs were optimistic and found the proposed changes to the NPS more favourable, resulting in reduced costs and eliminating the forced marriages or partnerships with banks. Respondent 6 had the following to say to this effect:

*If more mobile operators could form part of the national payment system and integrate into the grid, it would certainly go a long way; because then it would reduce cost, it would actually further reduce the operating and compliance costs; and the MNOs would no longer have to share their revenues with these partners that they were going to work with. I'm going to call these forced marriages. There is now a possibility of MNOs going to immediately share those cost savings with their consumers. This, in turn, will also help increase competition; as it brings about a much fairer playing field.*

Another MNO, Respondent 3, highlighted that these changes are a step in the right direction; as *“they level the playing field for FinTechs and MNOs,”* adding that *“regulations that allow non-banks to process e-money are necessary.”* The research institutes echoed Respondent 4's mention of SARB's Vision 2025, reiterating that the proposed NPS changes stem from Vision 2025, which according to Respondent 8, is aimed at *“increasing safety, efficiency and access to the NPS by non-banks, such as FinTechs, which would also, in turn, increase competition in the payment-system value chain.”*

Respondent 9 pointed out that the NPS changes are also supported by the *“FSCA Regulatory Strategy, which focuses on financial inclusion and FinTechs for the next few years... and will strike a balance between innovation and risk management for consumer protection.”*

#### **4.2.3.4 Recommendations from interviewees of an ideal regulatory environment and approaches, as well as the role of education**

Interviewed respondents provided several recommendations on an ideal regulatory environment and the approaches for South Africa. All the respondents were unanimous in proposing the regulation of FinTechs in South Africa; and specific proposals were made on what type of regulation and how the regulation could be implemented. FinTechs opined that those regulations that allow non-banks to process e-money are needed. The recommendations also included a risk-based regulation approach; activity-based regulation, the use of regulatory sandboxes, and the issuance of guidelines. The recommendations will be discussed further below:

### ***The risk-based regulation approach***

Respondent 3 recommended the risk-based approach and acknowledged that there has been a shift by regulators, from a rule-based approach to the risk-based approach; and they added the following to this effect:

*Once the FIC started moving away from rules based to the risk-based approach, and let each company determine what was right for them, it also helped the consumer; because then they could also look at the companies that are out there, what they offer, and what fits them, as well as what fits their needs. And you know, no matter what company you have, no matter what business you're in, you're always going to have risk. And it's just about identifying it, and then figuring out how to reduce that risk.*

A risk-based approach is probably going to increase competitiveness; and from the prior sentiments shared by respondents, especially from MNOs in that the regulatory environment, it is one-size-fits-all, which has led to an uneven playing field. A risk-based approach is more appropriate, when regulating crypto-currency because of the potential market conduct risk, and the financial risks it poses. This would also increase the trust in crypto by consumers. This would most likely result in a more independent FinTech industry.

### ***The activity-based approach to regulating FinTechs***

Respondent 2, a regulator, aptly summed up this recommendation in this way:

*I would say if we have to regulate them, then we would apply what we call an activity-based regulation, in order to regulate them, based on what they are doing. Meaning that if I am a payment-service provider, don't try and regulate me, as one does a bank. But if my job is a payment-service provider; then it is just for me to do the let's say the third-party payment-provider function, or the system operator function; let me be regulated, based on that. In such a way if we regulate them based on the activities they are doing, we sort of reduce the burden on them or the regulatory burden on them; because some of these organizations are still too young; so you don't want to kill them with too much compliance-cost and all such things.*

Respondent 4 echoed the same sentiments of the need for an activity-based approach to the regulation of FinTechs; and he made his point by stating the following: “*We should start having our regulation focused on what you do; currently, we don't even care whether you are a bank or a non-bank; and we want you to meet XYZ; and if you meet it, whether you are a bank or a non-bank, then you are regulated similarly.*” Respondent 4 further pointed out that the SARB is engaging with the regulator of banks to address deposit-taking; and he is considering a regulatory framework aligned with India's Payments Banks for those participants who only wish to provide payment services, stating that, “*this is a consideration by the Reserve Bank of an activity-based regulations approach, which would exclude lending and restrict mobile money to any future payments due.*”

An activity-based approach is probably going to increase competitiveness and fairness; and it will reduce the high barriers to entry for both MNOs and Crypto operators. This would, however, reduce the advantage that Bank-led MNOs have had over their non-bank-led counterparts. This would most likely result in a more independent FinTech industry.

### ***The use of regulatory sandboxes to test FinTech solutions in the absence of a regulatory framework***

Respondents, especially regulators, recommended the continued use of regulatory sandboxes as an “open to FinTechs but cautious” approach to FinTech transactions, in the absence of a FinTech regulatory framework in South Africa. The regulatory sandboxes should enable FinTechs to test out new products and services in a controlled environment. As respondents 1 and 2 put it, this allows a balanced approach, in which regulation continues to be prioritised, with an aim to protect consumers, while at the same time, ensuring that innovation is not stifled but rather encouraged. Respondent 1 stated the following: *“I think regulatory sandboxes, because we need to test innovation and put in place enough controls before a technology is shared and used with the public.”*

And Respondent 2 summed up this point in this way:

*...the reason why we chose the regulatory sandbox is the fact that with a sandbox, it gives you that empirical sort of evidence for you to be able to make a decision, because you are putting the technology in a control environment, meaning that if there are risks that you can see already, then I mean, it's easy for you to just wind the whole thing down; and you would end up not having a negative implication on the financial system. So, the sandbox gives you that luxury that in the control environment, you can control it; and over and above that, it also gives you the luxury that you are able to get any kind of evidence. I mean, this is live evidence that can fast track policy-formulation and public-policy regulation. Because now you're not working on a theoretical basis. You've got to have some empirical evidence before you can use it for whatever you want. I think that such issues are the benefits.*

Regulatory sandbox approaches are probably going to increase the trust that customers have in FinTech products in that they would be more willing to accept a product that has been tested and approved. Bank-led MNOs already do have the benefit of some trust in the financial system, in that customers expect the banks to have conducted their business with due diligence; however, non-bank-led MNOs currently are not going through this; consequently, due diligence and regulatory sandboxes are expected to fill this gap.

### ***The collaborative approach from regulators on regulating FinTechs***

Respondent 2, a regulator recommended a collaborative approach to the regulation of FinTechs in South Africa wherein the regulators centralize their services and regulatory provisions and requirements for FinTechs. To this end, Respondent 2 said the following:

*We need a collaborative approach from regulators on how we should regulate FinTechs. By doing that, it means that we will be in a position in whereby these FinTechs even when they need regulation, they don't have to move from one regulator to the next; they can come to one central place, where regulators could help them and advise them. And we also need, as regulators, we should be on a par in terms of what we are doing in this regard, because we might find that the FinTech is offering payments and the NPS is willing to run them; but NCR are behind; and they cannot grant them operating licenses.”*

Respondent 4, another regulator, also recommended this collaborative approach, calling specifically for a collaborative model, in which the regulator, on the one hand, issues directives on what needs to be done; and the financial institutions, including banks and FinTechs collectively, deliver on those mandates, as stipulated, or outlined for the benefit of the South African general public, without having to compete.

### **The role of education as an enabler of FinTechs**

Interviewed respondents also discussed the important theme of financial education for the general public and consumers, in bridging the lack of knowledge about FinTechs, the services provided and some of the risks attached to FinTech investments. Respondent 2 and Respondent 6 raised the point of education. Respondent 2 recommended a joint educational campaign by regulators and FinTechs, stating the following to this effect:

*I think financial education needs to be done by both regulators and FinTechs. I think it's important that it be done by both. You know, if it's the FinTech company doing the education, it can obviously be quite biased. But if regulators and governments are also involved, it brings about a more overall view and a wider stance.*

Respondent 2 expressed the view that regulators have taken the mantle of providing financial education, with the FSCA having financial education as part of its mandate, opining those regulators must provide financial education to the consumers, putting this point across in this way:

*..I think regulators, they should take it upon themselves, to take financial education and put it as part of their mandate. So, meaning they should have programs that are aimed at reaching out to consumers, educating them about the latest financial products, how they work, educating them about FinTech and how they work. So, this should be in their program, whereby every month every time they went in, they even have provincial programmes, in which province by province is targeted with various media of communication that they make sure that you embark on a mass drive to reach out to educate consumers about FinTech.*

It was clear from the interview with Respondent 4, that although a mandate has been clearly defined and responsibility allocated, most of these educational programmes are yet to be implemented; and further that the current communication channels are not as effective for the population-wide financial education that South African consumers need. Respondent 4 stated the following, highlighting the government and regulators' inactive approach to their financial education mandate:

*We jointly, with the government, produced a virtual currency paper that is on the National Treasury website, okay, followed by the South African Reserve Bank, publishing a position paper on virtual currencies, but it is on our website. Essentially, what it does is warning the public that there are these virtual currencies that we don't mention by name, but one of them could be Bitcoin and they can come with risk. But if you choose to deal with them, you are on your own. That position is being changed to a new position. But we are not active in distributing and disseminating the material, we just put it on our website; and we say people that visit the website will consume it, but we don't go and have any lectures or something like that.*

*An education drive would help to increase the transparency of some of the FinTech transactions and products, especially crypto-currencies, as well as Insuretech and payment systems. If operators are required to disclose certain information on the risks associated with their products, then they should reduce market-conduct risk. There has been a tendency by unscrupulous players to only disclose the upside of their products, and not disclosing the risks at all. Transparency in costs would also help consumers to make informed decisions.*

## 5.0 A DISCUSSION OF THE FINDINGS AND THE CONCLUSION

### 5.1 Introduction

This chapter lays out the research conclusions in response to the research questions. The chapter builds up on the findings in Chapter 4; and it offers a discussion of the findings against the current literature. Following the conclusions, a regulatory framework is proposed that offers a regulatory strategy suitable for the South African environment. The chapter ends with a discussion of future research directions relevant to this area of study.

### 5.2 Discussion

The study revealed that regulation is an enabler of FinTech uptake, with regulators mostly driven by the need to increase financial inclusion. This confirms the work done by (Donovan, 2011) for the World Bank, which states that mobile money has the ability to extend financial services to the poor, to help reduce transaction costs by improving financial security and generating new employment opportunities. Through regulation, the credibility of the FinTech products has increased; this in turn increases the customers' trust in the product. This study also establishes that perceived security and perceived credibility are also key drivers of users in accepting a technology. South African regulators are aware that regulation can play a key role. By creating an enabling environment for FinTech companies to operate, this finding is more in line with the global trends found by the central banks.

Regulators play a key role in increasing financial inclusion; and the key challenge is in ensuring new innovations in banking that serve the customer, by reducing transaction costs in a manner that is safe to both the client and the financial system (Central Bank of India, 2020). Strict regulation was also seen as a deterrent to the uptake of FinTech transactions, as this creates increased compliance costs and forced marriages between MNOs and Banks, which caused distrust between the partners. However, this is driven by the regulator's need to reduce moral hazards in terms of excessive risk-taking by banks and other financial institutions, by imposing stringent regulations (FSB, 2017).

The general findings are that MNOs find the South African regulatory environment equally constraining, Researchers find the environment as neutral; whilst the regulators also admit to taking a cautious approach to regulation, with the main mitigating factor being the need to maintain market conduct and consumer protection. This questions the Efficient Market hypotheses that markets are efficient and that human beings are rational and are able to process information in a rational manner, i.e., they are able to distinguish between bad financial products; and they will invest and trust good companies demonstrating good behaviour. However, the major criticism of this theory is that human beings are seldom rational; and regulators have to step in to protect clients from bad decisions.

The study revealed a lot of similarities with current existing literature on the key drivers of FinTech adoption using the TAM model, in that, perceived usefulness and perceived ease-of-access as being the critical determinants to examine behavioural intentions concerning the use of technology and its acceptance (Chigada & Hirschfelder, 2017). The study goes further to reveal that transaction costs are also a key perceived benefit; and that users are interested in the uptake of FinTech products; and most respondents agree that FinTech products, such as mobile

money can lead to a reduction in transaction costs. It can be argued that information technology can reduce transaction costs and reduce risks when applied holistically. Transaction costs are the result of information asymmetries among economic participants involved in the transaction; and are mostly represented by search costs, negotiation costs and enforcement costs, usually through disintermediation (Cordella, 2014). The study established that FinTechs can lead to increased competition, which, in turn, leads to a reduction in information asymmetries. The study also confirms the work done by (Donovan, 2011) for the World Bank, which found that mobile-money has the ability to extend financial services to the poor, to help reduce transaction costs, thereby improving financial security, and generating new employment opportunities.

Empirical evidence suggests that ADLAs have increased financial inclusion, especially to the low-income earning segment of the market; as they do not penalize low-value transactions, compared to the incumbents (Mela et al., 2017).

However, some participants questioned the notion that FinTechs help to reduce transaction costs; since most FinTechs lack economies-of-scale to be able to pass on these cost savings to their customers. The lack of transparency by most players was another concern; and this actually led to an increase in transaction costs; as one has to search for the good apple amongst many bad apples, and also to an increase in legal fees for dealing with broken contracts. This finding is corroborated by empirical evidence that if technologies are implemented in isolation, without consideration to environmental and societal needs, this can lead to disintermediation, which itself can lead to the creation of information asymmetries; since information providers have an advantage over the users in what kind of information to provide and in what form; and this often leads to the creation of additional intermediaries, who will then charge a fee for processing and dissecting the information (Cordella, 2014).

The findings further shed light on the motivations for financial regulation. There are the conflicting motives of increasing financial inclusion, whilst protecting consumers. Participants were, however, unanimous in agreeing that mobile money and FinTech in general are tools by which to increase financial inclusion; and all of them were aggregable as to the benefits of financial inclusion corroborating the work done by previous researchers. However, the need for consumer protection is further exacerbated by the high level of financial illiteracy in South Africa, together with a generally unscrupulous industry.

Data security and privacy risks are other perceived risks that were raised by the respondents; and the lack of transparency by some operators has increased this perceived risk; and this would also lead to the reduction of trust in the financial system. Regulators play a key role in increasing financial inclusion; and the key challenge is in ensuring new innovations in banking that serve the customer by reducing transaction costs in a manner that is safe to both the client and the financial system (Central Bank of India, 2020). One way of achieving this would be creating a collaborative model by the regulators, FinTech operators and traditional financial institutions.

Empirical evidence, on the other hand, suggests that markets which are highly regulated are inefficient. However, unregulated markets can degenerate into a free-for-all, thereby causing market failures and financial crises. FinTech start-up formation need not be left to chance; but active policies could influence the emergence of this sector (Haddad & Hornuf, 2018).

Using (Ryu, 2018) Benefits-and-risks framework, which postulates that perceived benefits far outweigh the perceived risk, when it comes to the adoption of technologies, is true for users;

but when it comes to the adoption of technologies by regulators, this theory is refuted since the perceived risks far outweigh the perceived benefits in terms of South African regulations.

The general findings are that MNOs find the South African regulatory environment to be constraining. Researchers find the environment as neutral, whilst the regulators also admit to a cautious approach to regulation, with the main mitigating factor being the need to maintain market conduct and consumer protection. Mobile-money adoption in South Africa has been disappointing, to say the least, given that South Africa is a leader in Africa, when it comes to the use of mobile phones and high mobile coverage rate (GSMA, 2019).

The South African regulatory environment is viewed as a constraining factor by Perlman, and as a neutral factor by the World Economic forum (Finmark Trust, 2017). However, the strict regulations in South Africa are supported by Krugman (2009), who suggests that anything that does what a bank does, anything that has to be rescued in crises the way banks are, should be regulated like a bank. However, this increases the difficulty to entry for new FinTech operators to enter into the financial space; as they are now forced to meet the strict and expensive compliance costs.

The South African Reserve bank's take on crypto-currency was initially neutral, when it issued its position paper on crypto currency that was essentially buyer-beware to downright confusion about the definitions of what an asset is and what capital is. Researchers have noted that the FinTech regulation in South Africa is currently fragmented; and the IFWG also concedes to this situation. However, FinTech, by definition, is very broad; and it is difficult to come up with broad regulations and to regulate something that one does not know. The timing of when to regulate and when to adjust regulation is also very critical, with respondents advocating a risk-based approach and an activity-based approach way for regulations.

Some of the findings were that some of the products offered in South Africa had failed to take off because they were not suited to the environment and to the demographics; and an example was the failure of MPESA as a mobile-money payment system in South Africa, compared to the roaring success of the same in Tanzania and in Kenya. As of 2014, about 35.7% of South Africa's population live in the rural areas, compared to more than 70% in Kenya; and it is costly to operate a bank in the rural areas, where people are sparsely populated than in an urban areas, where most people lack the means to access credit due to a lack of banking history and other financial history (World Bank, 2004).

It seems that the MPESA model managed to exploit and maximize on the high number of the unbanked in Kenya and the lower number of the unbanked in South Africa. This was the reason for the failure of the same model in South Africa. The forced marriages between banks and MNOs were also noted, and a lack of trust between the two partners compared to the Singapore system, where these two have seamlessly integrated. South Africa has one of the highest concentrations of traditional financial institutions; and this, coupled with the regulation that MNOs need to partner with banks, has created an uneven playing field. This is confirmed by empirical evidence which suggests that markets that are highly regulated are inefficient (Haddad & Hornuf, 2018).

The issues of market conduct and financial illiteracy as a motivation for stringent regulation are clearly refuted by the success of the MPESA model in other countries; and this refutes the common theory. Further work also refutes this finding that low illiteracy levels should lead to increase in regulation; but that mobile money and FinTech in general lead to the improvement

of banking skills by the users (Chigada & Hirschfelder, 2017). Some of the mitigating factors from countries that have successfully adopted mobile money include the interoperability of the systems, consumer trust, the lack of available alternatives, and enabling regulations. Empirical evidence also suggests that in less-sophisticated markets, FinTech operators took an independent role and filled in where traditional financial systems had failed and delivered products; whilst in sophisticated markets, where traditional financial institutions are very functional, for FinTechs to be successful they had to go for a more collaborative model with the incumbents.

The high bank penetration rate in South Africa might be the reason why there is such a slow uptake of mobile-banking, coupled with the fact that traditional banks also offer mobile-banking solutions (Chigada & Hirschfelder, 2017). The cannibalization of the mobile-banking sphere by traditional banks, which are, in turn, supposed to partner with MNOs, has created an uneven playing field in South Africa. The author also noted that compared to Kenya, South Africa was quick to regulate the mobile-money sector, without first understanding the product and the risks it posed.

The recommendations also included a risk-based regulation approach; activity-based regulation, the use of regulatory sandboxes and the issuance of guidelines. The study also established that regulatory sandboxes were the most preferred mechanism of regulation, when using an activity-based risk-based approach. Again, this finding is more in line with global trends. For example, in India, legislation has been put in place, which recognizes the role played by FinTechs and how regulation and compliance have been tailor-made to accommodate the additional risks, whilst at the same time recognizing the need for flexibility, in order to encourage the success of this industry. The Monetary Authority of Singapore (MAS) implements the four guiding principles of financial supervision: Risk-focused, Disclosure-based, Stakeholder-reliant and supportive of Enterprise (Fan, 2018).

The study reveals that a risk-based approach supports the theory that the level of risk-exposure caused by FinTechs depends on the business model adopted and this is closely associated with specific areas that financial service providers choose to develop and provide, such as credit lending and the issuing of shares. Flexibility in regulation is facilitated by the creation of regulatory sandboxes and the regulatory guidance unit. It must be noted that in the case of South Africa, these mechanisms are still in their infancy; and the study, therefore, took a more exploratory approach as to the expected impact in South Africa.

### **5.3 Research Conclusion of the Study**

The study revealed that regulation could both be an enabler or a constrainer of the adoption of FinTech transactions, such as e-money. Although regulators are faced by pressures to increase financial inclusion, to reduce transaction costs, to increase employment, the risks of market conduct, financial risks, data protection and exploitation of the financially illiterate far outweigh the benefits, thereby leading to a more stringent regulatory environment that constrains the adoption of e-money. However, blaming regulations for the poor adoption of mobile money in South Africa might be foolhardy; in that some of the products created by operators are not fit for the purpose; since they lack interoperability and scalability.

Using Ryu's (2018) Benefits-and-risks framework, which postulates that the perceived benefits far outweigh the perceived risks, when it comes to the adoption of technologies, this is true for users; but when it comes to the adoption of technologies by regulators this theory is refuted; as the perceived risks far outweigh the perceived benefits in terms of South African regulations.

The issues of market conduct and financial illiteracy as a motivation for stringent regulation are, however, clearly refuted by the success of the MPESA model in other countries; and this refutes the common theory. Some of the mitigating factors from countries that have successfully adopted mobile money include the interoperability of the systems, consumer trust, lack of available alternatives, and enabling regulation.

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Given the findings that perceived risks are the main drivers of how FinTech is regulated, the Researcher proposes a risk-based approach model that is aligned to the unique FinTech product that is being regulated. By extension, the researcher is also discouraging the one-size-fits-all approach of regulating all FinTech offerings in the same way, but to regulate only in certain categories that offer a unique set of characteristics, i.e., stratifying thereby the FinTech landscape.

Table 13: The FinTech regulation model using the risk-based approach, based on the product-life cycle

<b>Stage</b>	<b>Risks</b>	<b>Regulation and Mitigation</b>
<b>Introduction of Unique FinTech product</b>	<ul style="list-style-type: none"> <li>- Transparency Risks</li> <li>- Market conduct risk</li> <li>- Data protection risk</li> <li>- Financial risk</li> <li>- Financial trust risk</li> <li>- Inappropriate product offering</li> <li>- Product failure risk</li> </ul> <p><i>Most of the risks are unquantifiable and unknown</i></p>	<p><i>No regulation available</i></p> <p><i>Mitigation</i></p> <p><i>Use of innovation hubs and regulatory sandboxes</i></p> <p><i>Regulators must try to understand product offering and risks involved</i></p> <p><i>Request operators to provide educational materials to clients</i></p>
<b>Semi – Growth Stage</b>	<ul style="list-style-type: none"> <li>- Transparency Risks</li> <li>- Market conduct risk</li> <li>- Data protection risk</li> <li>- Financial risk</li> <li>- Financial trust risk</li> <li>- Inappropriate product offering</li> <li>- Product failure risk</li> </ul> <p><i>There is little and better understanding of the risks involved</i></p>	<p><i>Risks are still too high, introduce strict regulation to control risks but not tight enough to stifle innovation</i></p> <p><i>Continue to monitor and control risks and educating market participants</i></p>
<b>Growth</b>	<ul style="list-style-type: none"> <li>- Transparency Risks</li> <li>- Market conduct risk</li> <li>- Data protection risk</li> <li>- Financial risk</li> <li>- Financial trust risk</li> <li>- Inappropriate product offering</li> <li>- Product failure risk</li> <li>- Herding Risks</li> </ul> <p><i>The risks are still too high, especially the herding risk because of followers trying to capture a piece of the cake. Clearly, they do not understand.</i></p>	<p><i>Although risks are still high, however, monitoring mechanisms and redress systems are in place. Relax regulation</i></p> <p><i>Continue to monitor and control risks and educating market participants</i></p>
<b>Maturity</b>	<ul style="list-style-type: none"> <li>- Transparency Risks</li> <li>- Market conduct risk</li> <li>- Data protection risk</li> <li>- Financial risk</li> <li>- Financial trust risk</li> <li>- Inappropriate product offering</li> <li>- Product failure risk</li> <li>- Herding Risks</li> </ul> <p><i>Risks are at their lowest; as now all the monitoring mechanisms are in place.</i></p>	<p><i>Relax regulation further</i></p> <p><i>Continue to monitor and control risks and educating market participants</i></p>

Source: Own

**Understanding of FinTech by Regulators:** The creation of the IFWG is very notable; however, the absence of operators from this working group is a matter of concern. The researcher proposes that key players be invited in these policy-creation meetings to create buy-in. The creation of a more collaborative environment amongst regulators and MNOs and traditional financial institutions working as equal partners is a matter of importance. Regulators need to understand the products and the risks that they pose; and this is very critical at the introduction and semi-growth stages of the product's life-cycle.

**An adjusted risk-based regulation:** If it walks and barks like a dog, then it is a dog. This is way of regulation that might not be appropriate all the time. The researcher proposes an adjusted risk-based approach way of regulation. This can be according to size, possible impact on society both positive and negative, skills and the qualifications of the directors. The need to stratify FinTech products is, therefore, critical and the risks evolve as the products move through the various stages; and thus, the need for an evolving regulatory environment is important.

**Innovation hubs and regulatory sandboxes:** The regulatory sandboxes enable FinTechs to test out new products and services in a controlled environment. Innovation hubs will also be used to test products before they go to market; and this ensures that only products that are fit for their intended purpose get taken to the market. That is products that offer ease-of-use, accessibility and affordability. This is critical during the first two stages of the product's life-cycle; since this where most of the risks and the uncertainty lie.

**Increase Interoperability:** For most payment systems to be useful, they must somehow be linked to a bank account, such as Applepay, Uber etc. For e-money to work, it should be able to function outside the banking system, and for the creation of flexible mobile wallets that allow for ease-of-transaction. Inter-operability increases the acceptance of a product; and it also ensures that the market participants self-regulate, for example Apple verifying the security of all apps that are on its Appstore. A collaborative model where FinTech players and traditional players come together to create products for their markets, is advised.

**Increase in financial education:** The MPESA model has clearly demonstrated that one does not need to be that literate, in order to operate a mobile-payment system, provided the product is simple to use. It should be the duty of both regulators and operators to educate the users, when it comes to sophisticated product-offerings. Education is very critical at each and every stage of the product's life cycle.

## 5.4 Future Research Directions

There are three main directions for future research, as a result of this study. These are laid out below:

The first direction to enhance the generalizability of the results would be by conducting research with a larger number of participants. This can be done by extending the study to consumers, consumer groups and focus groups to ensure the robustness of the study and gaining full saturation. The second way is to test the applicability of the product's life cycle risk-based model, as in other countries, particularly sub-Saharan countries sharing the same demographics and economic environment as South Africa. The third way is to test the model's applicability in other fast-growing technology firms like healthcare and educational technology, where

flexibility in regulation is necessary. Finally, a deeper study needs to be explored on the impact of financial literacy on FinTech adoption in South Africa.

## Appendix

### Appendix 3.1 Respondent Institutions

	National Treasury	Reserve Bank -NPS	Financial Sector Conduct Authority	Mukuru
Role	Responsible for coordinating macro-economic policy and promoting national fiscal policy. It is the legislative arm of the SA government via the Minister of Finance	Forms one of the pillars of sound financial stability and is one of the arms of the SARB. It is the regulator of all payment systems in South Africa	Is responsible for regulating the market conduct of licensed financial institutions. One of the mandates is providing financial education	Mukuru is an international remittance operator that operates by using mobile-money functionalities
Legislation	Financial Sector regulation Act	NPS Act	The Conduct of Financial Institutions Bill	N/A
FinTech Involvement	<ol style="list-style-type: none"> <li>1. Consideration of FinTech strategy to increase financial inclusion</li> <li>2. Part of the IFWG</li> </ol>	<ol style="list-style-type: none"> <li>1. NPS Review Act</li> <li>2. Part of the IFWG through the Prudential Authority</li> </ol>	<ol style="list-style-type: none"> <li>1) Consideration of FinTech strategy on financial conduct</li> <li>2) Part of the IFWG</li> </ol>	
Secondary data sources and materials	<ol style="list-style-type: none"> <li>1) COFI bill and Project KHOKHA</li> <li>2) <a href="http://www.treasury.gov.za">http://www.treasury.gov.za</a></li> <li>3) FinTech Scoping (IFWG)</li> <li>4) <a href="https://www.ifwg.co.za/">https://www.ifwg.co.za/</a></li> <li>5) NPS Review Act</li> <li>6) <a href="https://www.fsca.co.za/">https://www.fsca.co.za/</a></li> <li>7) <a href="https://www.resbank.co.za/">https://www.resbank.co.za/</a></li> <li>7) <a href="https://www.mukuru.com/">https://www.mukuru.com/</a></li> </ol>			

Source: Adapted from the IFWG

## Appendix 4.1 Interviewees and Response rate

The table below shows the characteristics of the respondents who participated in the study. Interviews were conducted with senior people from regulator and government, MNOs and research institutes. The following table shows the characteristics of the interviewees:

Institute	Position	Type	Respondent Code
National Treasury	Head of Financial Inclusion	Regulator/Government	Respondent 1
Financial Sector Conduct Authority (FSCA)	Senior Specialist FinTech	Regulator/Government	Respondent 2
Mukuru	Head of Anti-Money Laundering	MNO	Respondent 3
SA Reserve Bank	Head of the NPS	Regulator	Respondent 4
Independent Research Institute	Head of Financial Inclusion	Research Institute	Respondent 5
MTN - MNO	Senior Manager MTN: Commercial Legal FinTech	MNO	Respondent 6
Zimbo-Cash	Co-founder	MNO/Crypto	Respondent 7
Independent Researcher	SARB Prudential Authority (speaking as an individual)	Independent Researcher	Respondent 8
Independent Researcher	Independent Researcher	Independent Researcher	Respondent 9
<b>TOTAL RESPONDENTS</b>			<b>9</b>
<b>TARGET RESPONDENTS</b>			<b>9</b>
<b>RESPONSE RATE</b>			<b>100%</b>

## Appendix 4.2 Overview of the interviewed respondents

Chapter three discussed the research methodology, including the data-collection methods. In this chapter, the data collected through semi-structured interviews, from the interviewed participants is presented. Interviews were conducted with senior people, who were selected through purposive sampling, given their expertise in the subject matter. Nine participants from regulator and government, MNOs and research institutes, were interviewed. Three participants representing the Regulator and government were interviewed, namely, the National Treasury Head of Financial Inclusion, Ms Nontebeko Lubisi (code-named Respondent 1); Financial Sector Conduct Authority's Senior FinTech Specialist, Aluwani Rauwalani (Respondent 2); and the South African Reserve Bank's Head of National Payment System (NPS), Mr Tim Masela (Respondent 4).

Lastly, three participants from the Mobile-Network Operators (MNOs) were also interviewed, namely MTN's senior manager of Commercial Legal FinTech, Mr Kabelo Mohale (Respondent 6); co-founder of ZIMBOCASH, Mr Laswet Savadye (Respondent 7) and Mukuru's Head of Anti-money Laundering, Diane van Eeden (Respondent 3). Lastly, three participants from the

research institutes were also some of the interviewed participants, namely; Independent Research Institute's Head of Financial Inclusion, Dumisani Dube (Respondent 5); South Africa's Reserve Bank's Independent Researcher or investor, Mr McIntosh Mufeleni (Respondent 8); and Delta Partners' Independent researcher or investor, Ms Sandisiwe Yengeni (Respondent 9). Saturation in terms of the targeted number of participants was reached.

As far as possible, the study targeted departments that have the direct responsibility for the application of FinTech regulation, and of other general financial regulations.

Most of the interviewees were directly involved in policy formulation; and therefore, they spoke with authority on the policy of their institutions, providing adequate content-data saturation on the subject matter. The interviews were corroborated by secondary data referenced or shared by the respondents during their interview; and publicly available information and documents from these institutions were also used.

All nine interviewed respondents displayed a sound understanding of FinTech solutions, as evidenced by their responses to the general questions, which focused on what they understood about FinTech. These questions were important; as they determined and gauged interviewees' knowledge and understanding of FinTech, thus further determining whether the researcher was speaking to the right people who could authoritatively respond to the study's research questions and make recommendations, drawing from their expertise and knowledge of FinTech. Most interviewees pointed out that FinTech has to do with leveraging technology to provide financial services to a wider range of consumers; some of whom were previously excluded from accessing financial services by the conventional financial and banking sector.

The most common themes that emerged from the respondents' responses regarding their understanding of FinTech were: "financial inclusion", "financial efficiency" and "financial innovation". One respondent, an owner of a FinTech company summed up FinTech in this way:

*It is the application of new technological advancements to products and services in the finance industry. And the objective is really to improve and automate the use of financial services, in order to increase efficiency, to expand the scope of financial services, to increase competition, and most importantly, to encourage financial inclusion. It is simply financial technology, which is technology which you have in the market to facilitate finance-related transactions and activities. This could be, for example, to facilitate payment, in order to enable the purchase of goods and services.*

Interviewed participants highlighted the issues of cost, functionality and ease-of-use as some of the key drivers of the acceptance of FinTech transactions. The interviewed participants went further to give examples of the FinTech solutions currently available in South Africa and beyond; and these examples included crypto-currency, Mukuru money, M-PESA in Kenya and Eco-cash in Zimbabwe.

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