The Experience of Participants in the South African Fintech Ecosystem

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ABSTRACT

The overall aim of the study was to determine the experiences of participants in the South African fintech ecosystem. The key participants in the fintech ecosystem were start-ups, government, financial institutions, customers and technology developers. Theories relating to the study were discussed in this research. The dissertation was based on qualitative research techniques, and the phenomenological methodology was used in the study. The target population was the players in the South African fintech ecosystem. A sample size of fourteen participants was drawn from the target population using purposive non-probability sampling. Interviews were used for data collection. Data were analysed using thematic data analysis. The research findings showed that poor governmental support, innovation, restrictive regulations weakening the ecosystem cohesion, poor coordination among stakeholders, the ability to scale the business, local culture, market competition and internal conflicts or disagreements between business partners were the key factors that affected the success of financial technologies in the South African ecosystem. In terms of policy recommendations, it was suggested that there was a need for increased collaboration between players in the fintech ecosystem, workshops and training programmes as well as improved financial inclusion.

KEYWORDS

Key Concepts	Financial Inclusion	Digital Financial Solutions	Mobile Commerce	Payment Systems
Related Search Terms	I. Unbanked II. Access to Financial Products III. Affordable Transactions IV. Responsible Credit V. Make Payments VI. Attain Economic Services VII. Participate In Economy	I. Digital Insurance Products II. Digital Credit III. Digital Payments IV. Digital Savings V. Digital Trans-actions VI. Digital Banking VII. Virtual and Digital Currencies	I. Wallets II. Mobile Money III. P2P Transfer IV. B2P Transfer V. P2P Payment VI. Smartphone VII. Feature Phone	I. Mobile Platforms II. Online Platforms III. Cloud-based Systems IV. 3rd Party Systems

DECLARATION

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

Lemuel Brandon Mncube _____

Signature

Signed at Lonehill, Johannesburg on the 11th day of May 2021.

DEDICATION

I dedicate this dissertation to my father who passed away, my daughter Amahle and all those who have believed and supported me throughout.

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I want to thank God for all he has done for me during this academic tenure. Thanks to Ayanda Magida for the unwavering support she rendered to me.

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To my loving, beautiful, humble and courageous wife, I am forever grateful for your support during this arduous journey.

Lastly, l thank my family, colleagues and friends at large who have supported me during my academic journey.

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FAIS Financial Advisory and Intermediary Services Act, 37 of 2002

FICA Financial Intelligence Centre Act, 38 of 2001

NCA National Credit Act, 34 of 2005

TCF Treating Customers Fairly Act, January of 2014

RICA Regulation of Interception of Communications and Provision of Communication-related Information Act, 70 of 2002

CHAPTER ONE

INTRODUCTION

1.1 Purpose of the Study

Tswamuno, Pardee, and Wunnava (2007) found that the finance industry in South Africa has long been lauded as a robust and sound ecosystem based on the foundational structures of good economic policies and financial frameworks. From this foundation rose an array of financial services industries. These financial services include but are not limited to:

- Banking
- Advisory services
- Wealth management
- Mutual funds
- Insurance
- Commercial banks (banking)
- Investment banks (wealth management)
- Insurance companies (insurance)
- Brokerage firms (advisory services)
- Planning firms (wealth management, advisory services)

In the early years of the South African financial system, the above services were originally formed to cater mainly for the white minority of European descent upon which the apartheid system based its economic and social policy (Falkena, 2001).

Research has shown that the race-based policies of the then government marginalised a lot of people. The affected people were the African, Indian and

coloured populations. The benefits were enjoyed by the minority Caucasian populous, further alluding that the apartheid system in South Africa was established to favour the Caucasian minority inhabitants, catering for their financial needs and behaviours with the majority of the population (Indian, coloured and African) largely unconsidered or not catered for (Mariotti & Fourie, 2014).

The purpose of this research was to explore the experiences of participants within the macro environment that form an ecosystem in which the financial technology companies (fintechs) operate, pitted within the unique backdrop of the South African landscape. This can be phrased as the experience of participants within the South African fintech ecosystem and the factors that affect the success of financial technologies in the South African context.

1.2 Context of the Study

The study looks in detail at the experience of the participants in the South African fintech ecosystem. Legacy government policies and regimes have shaped the framework in which the fintech now needs to operate. The one key post-apartheid policy, which has helped frame the environment, has been the growth, employment and redistribution (GEAR) programme (Mathe, 2002). The GEAR programme has been subject to numerous debates with regard to its successes and failures. Streak 1, Bhorat, Leibbrandt, Mazayi, Van den Berg, & Woolard (2001) note how the key point of the programme has been how it has shaped the South African economic policy post-apartheid. This has, in turn, ultimately influenced the fintech environment of the current industry.

In addition to post-apartheid economic policies such as GEAR, it has been widely noted as well and in particular by Chatterjee (2019) who notes that race-based pre-apartheid economic policy, based on marginalisation of people of colour, has created a large financially excluded population. This population in the post-apartheid era now needs access to financial products which can only be accessed if realised and scaled rapidly enough through digital transformation and digital financial platforms.

The uniqueness of the South African context was chosen because of the country being in the position of having had the majority of its population subjected to one of the harshest forms of racial marginalisation the world has known, apartheid, which, in turn, has created a sharply contrasting population demographic with differing economic needs and consumer behaviours (Seekings, 2008).

Seekings (2008) found that the legacy of systematic racial ordering and discrimination under apartheid in South Africa has resulted in a society that still remains deeply racialised in cultural and social terms, as well as deeply unequal in the distribution of income and opportunities (Kaggwa, 2020). The vast differences in the distribution of wealth amongst the population is so stark that the South African population is unique to the world. The measuring instrument of these vast differences and inequality of wealth distribution and the well-being among differing social classes is called the Gini coefficient (Ganjoei, Akbarifard, Mashinchi, & Esfandabadi, 2020). It is used as a global yardstick to gauge inequality among social classes within a country. South Africa ranks as one of the most unequal countries in the world (Bowles & Carlin, 2020).

The inequality among social classes meant access to basic economic and technology-enabling tools were restricted in the previously disadvantaged groups. It could be argued that the apartheid policies created the varied digital adoption landscape of the country (Kreutzer, 2009). Kreutzer (2009) alluded to digital adoption as being a state where a user gained the ability to use digital tools to their fullest capability and intent. Dasgupta, Lall, and Wheeler (2005) also found that the gap between internet users and non-users was associated with income and age, and no longer with gender and race. This development resulted in a clear segmentation of the population according to their ability to use digital technology and to what extent, based on their socio-economic situation. The two distinct segments resulted in two distinct kinds of users, namely digitally mature users and late adopters.

In a digitally mature scenario, consumers are using their devices to their full potential. They use applications to access the internet and conduct business

through online and mobile platforms on their devices. Van der Zande, Gorter, & Wismeijer (2013, p.14) defines *late adopters* as the “lagging population due to a number of issues such as illiteracy or poverty, with age that has made the uptake of digital technologies to full potential slower”. All these factors influence the success and experiences of participants within the fintech ecosystem.

Lastly, one study has found that the South African financial services sector, backed by a sound regulatory and legal framework, is sophisticated, boasting dozens of domestic and foreign institutions which provide a full range of financial services that range from banking to lending, insurance and investments (Lawack, 2013). This creates a perfect melting pot to analyse the factors critical to digitally led financial services and solutions (fintechs) within an environment that is predominantly Third World but has the sound financial instruments, platforms and environments to rival developed nations. However, the varying needs of the majority of the previously marginalised population now require financial services at speed and scale to help solve the issues of financial inclusion.

1.3 Research Problem

When South Africa attained equality and liberation from the apartheid regime in April 1994 upon conclusion of the first democratic and inclusive elections, the financial sector still stayed strong; however, one could argue that, to this day, the perceived economic emancipation of the majority of the population is still not achieved post-1994 (Sarkodie & Adams, 2020). Lack of perceived economic emancipation has caused a situation where the financial services industry has not evolved to cater for the majority of the population. Christopher (2005) refers and alludes to the perceived slow pace of economic emancipation and of the evolution of the financial services sector in his research.

The majority of the population in South Africa can be described as previously racially discriminated against and marginalised groups which include Blacks, Coloureds and Indians. These groups have varied financial service needs and

desires that are different from those of the minority white population due to their income and social standing (Berg & Louw, 2005). These needs can range from basic banking services to intermediary financial needs such as payments and insurance.

The lack of access to basic financial services has been grouped into one singular term called *financial inclusion*. Tu, Li, Minh Phi, Tuan, Yoshino, and Taghizadeh-Hesary (2021, p.136) define this term as “the state of availability and equality of opportunities to access to diverse financial services”. Financial exclusion, according to Leyshon and Thrift (1996, p.43), is “a process whereby people encounter difficulties accessing and/or using financial services and products in the mainstream market that are appropriate to their needs and enable them to lead a normal social life in the society to which they belong”. Financial exclusion forms part of a much wider social exclusion in South Africa whereby previously marginalised groups lack access to quality essential services such as jobs, housing, education and healthcare.

Thus, through the years and due to legacy issues such as the pre-apartheid economic policy and post-apartheid economic policies such as GEAR, the financial sector has not addressed the gap in the market place with regard to the overall financial needs of the population, and in particular, the financial needs and services of previously marginalised groups. This train of thought is supported by Carelse (2018) who connotes to the need for financial inclusion of previously marginalised groups and the impact of past and present economic policies on them.

At the same pace, the technological advancement of South Africa post-1994 has been rapid in relation to the rest of Sub-Saharan Africa. It has led to technologies and platforms such as mobile phones and digital applications infiltrating and filtering through all population groups at an exponential rate, just as the technology itself has developed. Kliber and Swierczynska (2018) have found that South Africa’s leap in technology has resulted in corporate strategies, consumer engagement and business revenue streams, all focused on a digital-first approach. *Digital-first* is a term used to “denote creating products and

services for the consumer with the first point of engagement being digital channels" (McKinsey & Company, 2018, p. 1). Perzanowski and Schultz (2011, p.27) define the digital-first approach as "approaching any new opportunity or problem with the assumption that the solution should be as digital as possible".

Another study has found that the blossoming of the financial and technological industries in South Africa is and has been a phenomenon reflected globally in markets that have similar technology adoption levels and advancement in financial institutions such as in Asia (Perzanowski & Schultz, 2011). It is only inevitable that the intersection of these industries would create a new platform and industry to service consumers based on the ever-evolving world of consumer behaviours and needs. The newly created hybrid industry would be the fintech industry. This is the combination of the financial services industry that offers traditional financial services such as banking, insurance, payments and savings, and the technology industry that creates applications, platforms and technologies that enable a better life for consumers.

Combining these two terms resulted in the newly coined industry called *fintech*. From the above, the deduction of the term *fintech* can be denoted as an industry that combines traditional financial services such as insurance and payments with technology or the use of technology to produce a new end product of a digital financial services nature. This new product is based on the original concept of a traditional financial product service using technology as the conduit. This, in turn, has resulted in the spouting of a new fintech industry. As a fintech industry, the most common and prevailing definition can be the one suggested by Schueffel (2017, p.15) that "the fintech industry is predominantly made up of companies or representatives of companies that combine financial services with modern, innovative technologies". This newly created industry lives within a macro environment that is enabled by macro factors, all of which contribute to the success of any product, service or offering of a fintech.

Lee and Shin (2018) found that the fintech ecosystem is predominantly made up of five areas, namely i) startups, ii) government, iii) financial institutions, iv) customers and v) technology developers. Startups can be defined as

companies or individuals with a business idea that combines a financial product with a digital platform addressing a particular need (Olokundun et al, 2018). Government relates to the economic and monetary policies and frameworks from which the fintech will operate within that government. Financial institutions connote to traditional large institutions who have for a long time, dominated the environment with their own products and offerings (De Abreu & Kimura, 2020). These are, for example, banks, insurance houses and established credit lenders. Customers could be described as the consumers of financial services. To note in particular, South Africa, with its desperate levels of poverty and unemployment, combined with the middle- and upper-class target markets. Technology developers are described as the back-end service providers who build and design the platforms and technology that form the fundamental basis of a fintech. These developers are the engine behind the solutions.

The five components of this ecosystem can be considered as levers for success for the survival and market adoption of the fintech. These five components have varied experiences of the ecosystem dependent on their key activity within the ecosystem. Looking at these five levers, one can start to correlate their interdependency, and appreciate why it is necessary to analyse and understand their significance and experiences. In particular, from a South African perspective where legacy regime policies and an environment have created a different playing field of the fintech environment unique to South Africa compared to other countries, these unique legacy factors have shaped the interdependence of each lever in the ecosystem.

The study looks to generate new insights into and knowledge about the five key areas that form the ecosystem and their experience within the ecosystem, delving into whether the five areas need to exist in a symbiotic manner or merely need to exist as factors needed in an environment. Given the unique identity of South Africa as noted above, one could ask whether the unique macro environmental factors of South Africa would create a fintech industry which is geared to address the needs of previously marginalised groups. It

encompasses the overall population, given past and present economic policies that have now shaped the new environment.

1.4 Research Objectives

The overall aim of the study was to determine the experiences of participants in the South African fintech ecosystem. The participants in the fintech ecosystem were startups, government, financial institutions, customers and technology developers. To achieve this goal, the following objectives were used in the study:

- To determine if factors affecting the adoption of fintech need to be in a symbiotic ecosystem.
- To determine the factors that affect the success of financial technologies in the South African context.
- To ascertain if these five factors occurring in the macro environment contribute independently to the success of a fintech.
- To establish if these five factors influence the type of fintech solutions produced.
- To offer policy recommendations to diverse stakeholders in the South African fintech ecosystem.

1.4.1 Research questions

To determine the effect of the five participants in the fintech ecosystem, the research had to first answer a number of important questions as to provide his hypotheses. These questions were the following:

- Do the factors affecting the adoption of the need of fintech to be in a symbiotic ecosystem?
- What are the factors that affect the success of financial technologies in the South African context?
- Do the five factors occurring in the macro environment contribute independently to the success of a fintech?

- Do the five factors influence the type of fintech solutions produced?
- What policy recommendations can be offered to diverse stakeholders in the South African fintech ecosystem?

1.5 Significance of the Study

This study aimed at conducting empirical research based on observations and evidence in addition to exploring the experiences of participants within the ecosystem forming the five key factors influencing fintech success and determining whether the ecosystem needs to exist as a symbiotic ecosystem or merely be present as individual factors within the South African environment.

The theoretical framework provides a clear representation of the relationships among the five ecosystem factors that are key determinants to the development and growth of fintechs within South Africa relative to the population dynamics and legacy issues pre- and post-apartheid. Ideally, this will lead to understanding the five environmental factors that have caused the rise and some shortcomings of fintechs within South Africa and the influence they have had on the creation of various solutions for the diverse population groups post-apartheid. The five ecosystem factors are discussed below.

1.5.1 Startups

Startups can be essentially referred to as organisations created by one or more individuals with the express purpose of creating a viable business by using non-traditional business acceleration methods to create exponential organisations based on technology to maximise profits. An exponential organisation is an organisation that uses limited resources and usually does not own many assets to generate profits disproportionate to the level of capital outlay. An example would be an uber or airbnb who does not own physical real estate or assets but generates large disproportionate revenues compared to its capital outlay. According to Ismail, Malone, and Geest (2014, p.204), an exponential organisation “is one whose impact or output is disproportionately large – at least ten times larger – compared to its peers because of new organizational

techniques that leverage accelerating technologies". Startups thus are an important lever in the fintech ecosystem, as they bring the technology and finance products together and to life.

1.5.2 Government

As this is a new and ever-evolving industry and market place, governments across the globe, including that of South Africa, are on the backfoot in terms of keeping pace with the required regulatory and governing frameworks needed to ensure the legitimate and above-board operation of these emerging technologies and solutions. According to Didenko (2018, p.13), "fintechs are disrupting not only the existing players in the market but also bring a challenge to the existing regulatory frameworks in the country".

One study has found that the South African financial services sector is a highly regulated industry (Didenko, 2018). Financial regulations such as the Financial Intelligence Centre Act, 38 of 2001 (FICA), the Financial Advisory and Intermediary Services Act, 37 of 2002 (FAIS), the National Credit Act, 34 of 2005 (NCA), the Treating Customers Fairly Act of January 2014 (TCF) and the Regulation of Interception of Communications and Provision of Communication-related Information Act, 70 of 2002 (RICA) all affect this industry and they make processing financial transactions challenging. The fintech ecosystem strives for new, lean processes that can comply with the legislative environment, yet function without restrictions.

1.5.3 Financial institutions

These institutions can be described as traditional banks, insurance houses, lending and credit organisations, and investment and savings firms, all offering financial services to consumers through traditional analogue channels. According to one researcher, the South African financial sector as a whole stands in good stead globally as competitive and well-regulated and enabling financial institutional development (Daniels, 2004). South Africa's ranking

evidences this as a financial centre in the Global Financial Centres Index (GFCI) which ranks the competitiveness of financial centres based on over 29 000 financial centre assessments from an online questionnaire, together with over 100 indices from organisations such as the World Bank, the Organisation for Economic Cooperation and Development (OECD) and the Economist Intelligence Unit. These traditional institutions hold the key to the digital transformation of the industries they represent. Fintechs are seen as competitors and have slowly been accepted as potential partners. However, there is still great scepticism and very slow integration.

1.5.4 Financial customers

These are the proposed end-users of the fintech solution. They comprise ordinary consumers across all demographics and more importantly, across all psychographics. The South African study takes these two factors into account, as the country is distinctly split into affluent, middle-class and poor communities (Visagie, 2013).

Consumers can also be studied from a business-to-business point of view; however, in the context to this research, the prime consumer will be the ordinary man on the street who requires digital financial services. Direct requirements for any startup are to know who its consumers are and their behavioural and psychographic requirements, based on variables such as their levels of income and living standard measurements (LSMs).

One researcher notes that South Africa is well-noted and known globally as being the most unequal society in the world due to the effects of apartheid (Southall, 2018). This inequality is measured through an index called the Gini coefficient. The Gini coefficient is a statistic which quantifies the amount of inequality that exists within a population. The Gini coefficient is made up of a number between 0 and 1, with 0 representing perfect equality and 1 representing perfect inequality.

Crouch (2005) notes that South Africa is one of the world's most unequal countries as per the Gini coefficient, with a coefficient of 0.625. In South Africa, researchers such as Rossouw, Claassens, and Du Plessis (2010, p.33) note that "the richest 10% hold 71% of the wealth, while the poorest 60% hold just 7% of the wealth. Additionally, more than half of South Africa's population, about 55.5%, live in poverty, earning less than $83 per month." This means that there is a diverse needs-based consumer landscape from the affluent to the previously disadvantaged poor that requires varying and different forms of digital financial solutions (fintech solutions) in the ever-evolving Fourth Industrial Revolution.

1.5.5 Technology developers

Technology developers build digital platforms needed to do digital business. Digital business can be referred to as the use of technology to create value in business models (Ranta, Aarikka-Stenroos, & Väisänen, 2021). Platforms provide an advantage in terms of added reach to consumers, operational efficiencies to existing businesses and routes to new markets. These platforms include social media, big data analytics platforms, cloud computing, artificial intelligence, smartphones and mobile services (Kanimozhi & Jacob, 2019). These technologies enable innovative delivery by creating an environment for startups to launch their solutions quickly. Ferdiana and Darma (2019) have found that over the last few years technology developers have made a big contribution to fintechs through the development of e-wallets, blockchain technologies, mobile banking and peer-to-peer payments.

The significance of this study thus highlights the experiences of participants within this ecosystem as the five key components, highlighting the success factors within each component that have an overall bearing and influence on the growth and success of the fintech industry in South Africa.

1.6 Delimitations of the Study

The proposed study will analyse the experience of participants within the five components of the fintech ecosystem within the South African context, and more specifically, to explore these five factors in relation to fintechs that take into account financially excluded groups but digitally savvy consumers.

The concept of financially excluded groups is derived from the term *financial exclusion* which is defined by Group (2006, p.57) as “a process whereby people encounter difficulties accessing and/or using financial services and products in the mainstream market that are appropriate to their needs and enable them to lead a normal social life in the society in which they belong”. Thus, financially excluded groups are groupings of individuals who fall within the definition of *financial exclusion*. Juxtaposed to this would be digitally savvy consumers whom Teo and Yeong (2003) found that these are “consumers who are more likely to own high-tech items like DVRs, satellite radios, and VoIP phones and are more likely to engage in Internet activities that include blogging, downloading music, and other web 2.0 activities” (p.85).

The five key factors in a fintech ecosystem that will be studied are the following:

1. *Startups* – either new startups or existing fintech enterprises
2. *Government* – the state and/or a state organ
3. *Financial institutions* – companies engaged in the business of dealing with financial and monetary transactions such as deposits, loans, investments and currency exchange
4. *Financial consumers* – in the context of this research persons who are the users of fintech products/goods/services
5. *Technology developers* – specialised technical specialists who build digital platform

1.7 Definition of Terms

Technology adopters – “an individual or business who uses a new product, innovation, or technology before others” (Adanu, Gbedemah, & Attah, 2020).

Digitally savvy – “consumers who are more likely to own high-tech items like DVRs, satellite radios, and VoIP phones and are more likely to engage in Internet activities that include blogging, downloading music, and other web 2.0 activities” (Cohen, 2010).

Digital maturity – “Digital maturity draws on a psychological definition of ‘maturity’ that is based upon a learned ability to respond to the environment in an appropriate manner. Digital maturity is about adapting the organization to compete effectively in an increasingly digital environment” (Kane, Gerald, Palmer, Doug, Phillips, & Anh Nguyen, 2017).

Digital transformation – “the use of new, fast and frequently changing digital technology to solve problems” (Matt, 2015).

Financial inclusion – “the availability and equality of opportunities to access financial services. It refers to a process by which individuals and businesses can access appropriate, affordable, and timely financial products and services” (Sarma & Pais, 2008).

Financial consumers – this refers to people who use fintech products, goods or services (Bialowolski, Weziak-bialowolska, & Mcneely, 2021).

Fintech ecosystems refers to the community of diverse stakeholders such as business, investors, traders and consumers who operate in the financial sector using technological innovation. (Leong, Tan, Xiao, Tan, & Sun, 2017)

1.8 Assumptions

The key assumptions are based on the quality of the proposed interviews with individuals within each aspect of the ecosystem. As this is a new and ever-evolving industry with new players, opinions by participants could be misinterpreted as facts or the norm because of the environment and fast-paced nature of the industry. Each participant may or may not have knowledge of the ecosystem and the interdependency thereof. The list below details the one key assumption within each factor research audience.

1. *Startups* – theory is not grounded, as this is uncharted waters for South Africa and only now gaining momentum globally
2. *Government* – unfamiliar territory and knowledge for government institutions meant to facilitate fintech developments
3. *Financial institutions* – biased position based on old or established systems that have been tried and tested before the rise of fintechs
4. *Financial customers* – financially excluded groups may have the need but not the knowledge of what could possibly be done
5. *Technology developers* – deeply imbedded in the technology-built aspects with not enough knowledge in consumer behaviour, wants and needs

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

In Chapter One, the tone was set to identify the overall fintech ecosystem and its component factors, and how the role of these participants within the ecosystem translated to functional factors. These factors in the fintech ecosystem were noted as:

1. Startups
2. Government
3. Financial institutions
4. Financial customers
5. Technology developers

This led to the discussion of whether the ecosystem in the South African context needs to be symbiotic or whether the factors can exist in one ecosystem but not be symbiotic. Relative to this ecosystem framework is the current South African macro environment that has been created as a result of pre-apartheid and post-apartheid economic policy.

This in turn has shaped the development of the fintech environment in South Africa in terms of the conduciveness of the environment as well as the output of the solutions required to service previously disadvantaged groups that have been marginalised by the apartheid system.

With the advent of the fintech industry and the ever-evolving digital industry, scholars have been seeking to understand the prime factors that define and influence the successful establishment of a fintech ecosystem. One study touted fintech as “a game-changing industry shaking up traditional financial sectors” (Boratyńska, 2019, p.11).

Most leading researchers in this field have developed specific fintech ecosystem models that seek to define the parameters in which fintechs operate, are governed and succeed. One such study describes and alludes to the five-factor fintech ecosystem (Lee & Shin, 2018). Various models have been developed to correlate evidence to support the five key factors needed in the macro environment for success. Each factor in the macro environment, namely startups, government, financial institutions, financial consumers and technology developers have been shown to influence the overall ecosystem and success of any venture within the industry.

Neumann da Rosa (2016) argues that the potential impact of fintech on the finance industry is directly influenced by the stability and access to services within the macro environment. Thus, the review follows the insight into each of the five factors to establish knowledge of the ecosystem and the macro factors in the South African landscape that either co-exist or exist independently to aid in the success of fintechs.

Against this backdrop would be the resultant solutions that arise and understanding whether the macro environment has enabled or disabled potential solutions for previously marginalised individuals and groups. This would be where potential knowledge gaps exist in the ecosystem dynamics for South Africa.

2.2 Definition of topic or background discussion

The broad school of thought has identified five factors in a fintech ecosystem. Moro Visconti (2020) has found that, in order to translate into a symbiotic network of interdependence, the five factors being startups, government, financial institutions, financial consumers and technology developers need to work together to form an ecosystem.

One study implies that the term *ecosystem* would mean a balanced and symbiotic relationship where all aspects co-exist (Peltoniemi & Vuori, 2008). Peltoniemi and Vuori (2008) further used an analogy of biological terms to

create a meaning for the business context, concluding that an ecosystem would have to be just as harmonious in the business sense as in the biological sense.

However, each factor in the ecosystem has its own interests at the core for survival, as digital disruption has caused the emergence of the fintech industry (Halpern, Mwesiumo, Budd, Suau-Sanchez, & Bråthen 2021). This makes the adoption of fintech solutions in a country reliant on the harmonious relationship of the ecosystem factors crucial.

Yamick (2018) notes that in the sub-Saharan context, finance industries have traditionally dominated the landscape and are threatened by new fintech payment system entrants instead of seeing them as partners in an ecosystem. He found that governments tend to be on the side of traditional financial institutions due to the long-standing relationships and the feared inability to regulate new fintech entrants.

One study defined digital disruption as “an effect that changes the fundamental expectations and behaviours in a culture, market, industry or process that is caused by, or expressed through, digital capabilities, channels or assets” (Karimi & Walter, 2015, p.44).

Researchers have found that from the consumers’ perspective, and as a participant in the ecosystem, there has been an increased acceptance of new technologies and this has helped fuel adoption (Venkatesh & Bala, 2008). Venkatesh and Bala (2008), through their technology acceptance and readiness model, indicate that consumer use and adoption of technologies for everyday life tasks are on the rise. However, one would note that in the previously disadvantaged communities of South Africa, there has been scepticism especially around technology innovation in the financial space with the advent of the Fourth Industrial Revolution (Sobrosa Neto, Sobrosa Maia, De Silva Neiva, Scalia, & De Andrade Guerra 2020). Adams, Fourie, Marivate, and Plantinga (2020) have shown that South Africans are worried about losing their jobs to automation and that many are uncomfortable with the benefits and modernisation of technology and artificial intelligence (AI).

Ultimately, the fintech industry ends up being a world of people with the financial expertise needed to inform fintech projects and those with the technological abilities to make those suggestions come to life. This in turn makes the environment self-serving for each stakeholder and achieving a symbiotic balance in the environment difficult. The ecosystem exists but is this a grouping of factors or an actual symbiotic environment?

2.3 First Research Question / Objective

The first research question the researcher had to answer was the following:

> *Do the factors affecting the adoption of fintechs need to be in a symbiotic ecosystem?*

2.3.1 Sub-heading 1 – Do the five factors occurring in the macro environment contribute independently to the success of a fintech?

Research has been done by numerous scholars debating the critical success factors needed by a fintech, with most schools of thought distilling the factors into five main fields (Lee & Shin, 2018). Werth et al (2019) expand and create six more factors to include technological advantage, regulatory knowledge, business-to-business (B2B) focus, incumbent partnerships, growth potential and exit options for venture capitalists. They suggest that perhaps the five factors occurring in the macro environment contribute independently to the success of a fintech, given the additional factors.

2.3.2 Sub-heading 2 – Do the factors need to be a symbiotic ecosystem?

One researcher notes that financial institutions are known to struggle with regard to integration with the high-paced, unstructured fintech world (Ntwiga, 2020). This research highlights the struggle to integrate as a result of the different processes and business models in which the fintech and financial institutions operate. This brings to light an example of two components in the fintech ecosystem that exist together but function independently for their own

benefit. Hence, the question posed is whether the factors in the fintech ecosystem need to be symbiotic in nature.

2.3.3 Proposition 1

Based on the literature reviewed, the factors affecting the success of fintechs seem to exist separately in the ecosystem. However, the more each factor/industry understands the other, the more symbiotic the ecosystem becomes with the resultant interdependency augmenting each factor. Moreover, this proposition requires further investigation which will be carried out in this research.

2.4 Second Research Question / Objective

The second research question the researcher had to answer was the following:

Do the five factors influence the types of fintech solutions produced?

2.4.1 Sub-heading 1 – What influences the e-type solution?

One study found that “overall, fintech start-up formation need not be left to chance, but active policies can influence the emergence of this new sector” (Haddad & Hornuf, 2019, p.33). This alludes to the perception that the macro-economic policies determine fintech solutions.

Ryu (2018) speaks to consumer demand and states that, although technology leaders hail the fintech industry as changing the face of financial services positively into the future, consumers, on the other hand, are sceptical of the platforms. As such, this affects their way of conduct within the fintech ecosystem. Ryu (2018) further points to the main adoption barriers being risk issues such as financial loss, legal risk, uncertainty and privacy. Based on consumer attitudes and the macro environment, the question can be asked whether the development of a fintech product solution is solely due to the five

factors of the macro environment or whether consumers' social, economic and psychographic behaviours play a major role.

2.4.2 Sub-heading 2 – Is the ecosystem in South Africa conducive to producing fintech solutions for previously marginalised groups?

Allen, Demirguc-Kunt, Klapper, and Martinez (2016) reflect that effective and inclusive financial systems are likely to benefit poor people and other disadvantaged groups because, without inclusive financial systems, poor people must rely on their own to access basic financial services.

Does the South African macro environment / fintech ecosystem make it more profitable to develop solutions for middle-class and affluent consumers than for the disadvantaged?

2.4.3 Proposition 2

Given that the five factors play a pivotal role in determining the fintech ecosystem when looking at the South African context, the financial disparity between high-income earners and low-income earners may not necessarily determine the solution, as the penetration of technology allows enough critical mass to ensure a volume-based product succeeds just as well as a value-based product. Thus, further research is required to ascertain this position. This would mean a fintech solution would be determined based on the ease of implementing and adopting that solution into the chosen target market.

2.5 Theoretical Literature Review

This section seeks to present the key theories that support the current study. These theories are the Technology Acceptance Model (TAM) and the ABC Model.

2.5.1 Technology Acceptance Model

The TAM was developed in 1986 and explained how people used technology for diverse reasons (Tarkpah & Enow, 2019). Thus, the model is hinged on the two key assumptions of usefulness and ease of use. This theory is germane in this study, as it helps to explain how the financial sector has adopted technological inventions for ensuring that financial activities are carried out efficiently (Sukendro et al, 2020). In the current era, due to technology, diverse players in the fintech ecosystem can transact and monitor financial transactions using modern technology (Nunes, Portela, & Santos 2018). Thus, the benefits of technological factors in the fintech ecosystem are huge to all the key players.

2.5.2 ABC Model

The model explains more about the attitude and the three components of attitude, namely behaviour, affect and cognition (Tarkpah & Enow, 2019). This model is used to explain how financial technologies are accepted. Affection deals with how people feel towards technology in this context (Supardianto, Ferdiana, & Sulistyo, 2019). Thus, all stakeholders in the fintech ecosystem who perceive technology as a key ingredient for fintech success embrace such technology (Supardianto et al, 2019). In terms of behaviour, the behaviour of consumers in the fintech ecosystem determines the extent of the use of the associated technology. Lastly, cognition deals with one's knowledge with regard to an object or a product (Hong, Thakuriah, Vonu, Mason, & Lido, 2020). Thus, in this case, this model is important, as it helps to unearth more of the experiences of the diverse participants in the South African fintech ecosystem.

2.6 Conclusion of Literature Review

The literature review looks into research regarding the five key factors that make up the ecosystem, the point of which is to determine and establish whether these five factors exist independently or need to be symbiotic for fintechs to succeed.

These factors are assessed in relation to the South African context determining whether fintech solutions addressing the financial inclusion of previously marginalised groups are affected by a symbiotic relationship of the factors or not.

The two main propositions that have resulted from a review of the relevant literature are:

- Proposition 1 – factors affecting the adoption of fintechs exist separately in the ecosystem. However, the more each factor / industry understands the other, the more symbiotic the ecosystem becomes with the resultant interdependency augmenting each factor, thus affecting the adoption and success of fintechs.

- Proposition 2 – the five factors play a role in determining the fintech solution. When looking at the South African context, the financial disparity between high-income earners and low-income earners does not necessarily determine the success of the solution, as the penetration of technology allows enough critical mass to ensure a volume-based product succeeds just as well as a value-based product. This would mean a fintech solution would be determined based on the ease of implementation and technology adoption of the target market which is in a particular economic group.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

The previous chapter focused on the literature review pertinent to this study, highlighting the five factors of the fintech ecosystem against the background of the uniqueness of the South African environment while also exploring the experiences of participants in this ecosystem as functioning factors looking at the symbiotic nature of the ecosystem or the lack thereof.

This chapter gives an outline of the research methods followed in the study. It provides the criteria for inclusion of participants in the study, who the participants were and how they were sampled. Included is the description of the research design chosen for the study and the reasons for this choice. The instrument used for data collection is also described and the procedures used to carry out the study are included as well. The methods used in analysing the data are described and discussed. Lastly, the ethical issues followed in the process are also highlighted.

3.2 Research Approach

This research focused on non-numeric aspects of the fintech ecosystem that are in a way more intangible, but nonetheless affect the functioning of the fintech ecosystem, and ultimately, the experience of participants within the fintech environment. Thus, the qualitative research approach was selected to provide an in-depth understanding of participants' experience within the fintech ecosystem in South Africa.

Mason (2006) describes qualitative research approaches as being concerned with how interests are interpreted, understood, experienced and produced. It is also believed that a qualitative approach produces large volumes of quality data from a limited number of people. It aims to understand the world of participants

from their frames of reference (Finch, 1986). This approach was selected for this study because it allowed high-quality data to be gathered (Ludvigsen, Hall, Westergren, Aagaard, Uhrenfeldt, & Fegran, 2021). This approach is justified by the fact that the researcher had to ask probing questions during the interviews. It would have been difficult to make a quantitative evaluation on this study because it is based on the perception of people.

3.3 Research Design

A research design is defined as a system of the methods and techniques chosen by a researcher to integrate the different components of analysis in a fairly logical manner so that the research problem can be dealt with efficiently (Bielicki, 2020). Qualitative research is exploratory in nature, as it attempts to explore the experiences and learnings from the participants in the fintech ecosystem. Marvasti (2018) explains that qualitative research is based on the belief that first-hand experience provides the most meaningful data. The subjective perceptions formed the core data of the study; hence, the need for a method that was able to deal with the topic in an exploratory nature.

The qualitative approach required in-depth interviews with key individuals representative of the five factors of the fintech ecosystem. These factors are startups, government, financial institutions, financial customers and technology developers.

The chosen methodology is based on the phenomenological methodology. Phenomenology is an approach to qualitative research that focuses on the commonality of a lived experience within a particular group (Creswell & Miller, 2000). The fundamental goal of the approach is to arrive at a description of the nature of the particular phenomenon.

In this study, the focus falls on the fintech ecosystem relative to the South African environment and the experience of fintechs within this realm. In context to this study, the research methodology thus sought to describe the perception that the participants in the ecosystem are experiencing and have experienced

pre- and post-apartheid principles with regard to financial technology solutions for the South African market.

The chosen sampling technique that lent itself to the exploratory nature of the study and the need for specific rich data was purposive non-probability sampling. Showkat and Parveen (2017) describe purposive non-probability sampling as “the use of a subset of the population to represent the whole population or to inform about processes that are meaningful beyond the particular cases, individuals or sites studied” (p.109).

There are five types of non-probability sampling techniques that could have been used. These are i) quota sampling, ii) convenience sampling, iii) purposive sampling, iv) self-selection sampling and v) snowball sampling. Adanu et al (2020) further state that, in purposive non-probability sampling, the sample is based on whom from the population is deemed appropriate for the study. As the fintech ecosystem is a relatively new industry in South Africa, study populations and participants were specifically selected to generate the valuable and rich data needed.

One key advantage of purposive non-probability sampling is that it is easier to make generalisations about the sample compared to a random sample where not all participants have the characteristic being studied. On the other hand, one key disadvantage is that it is relatively hard to ascertain how well the sample represents the overall population.

Another major advantage with purposive non-probability sampling is that, compared to probability sampling, it is very cost- and time-effective (Smith, Colombi, & Wirthlin , 2013). The relative ease of use is clear when one has a very small population to work with compared to probability sampling. This is evident and true for the startup industry, as well as the technology developer segment within the fintech ecosystem. A significant benefit of purposive sampling is that it enables researchers to extract as much information as possible from the data that has been collected. This allows researchers to describe the major impact their findings have on the population.

The data for this study were extracted from the sample by using semi-structured one-on-one interviews. The primary advantage of semi-structured interviews is that they encourage two-way communication (Robinson, Shin, & Gangadharan, 2020). This gave the researcher the opportunity to dig deeper into answers and to find the reasons behind the answers. This then allowed participants time to open up about sensitive issues. Ultimately, this kind of interview provided qualitative data to compare to previous and future data.

The data were then analysed, using the thematic content analysis method. Thematic content analysis is a method of analysing qualitative data that are usually applied to a set of texts, such as interview transcripts (Aljerf, 2018). The researcher closely examined the data to identify common themes – topics, ideas and patterns of meaning that come up repeatedly.

3.4 Data Collection Methods

Data collection is the process of generating and evaluating information in an existing framework on specified variables which then helps one to answer the research questions. Teixeira Vinci, Lopes Rijo, De Azevedo Marques, and Alves (2017) state that using a semi-structured interview allows the researcher some flexibility in the way questions are worded for each participant. It gave the researcher the opportunity to probe for more information and clarification where necessary.

Neuman (2000) has found that the researcher needs to be skilled in matching the research questions to an appropriate technique. This author has further stated that open-ended questions are the most effective method of data collection for exploratory research. Riessman (2005) points out that “it is useful to ask questions that open up the topic and allow participants to construct answers in collaboration with the listeners, in ways they find meaningful” (p.45).

The above-mentioned data collection methods helped answer the two research questions by providing much needed rich data to answer these questions. Firstly, it entailed answering whether the five factors within the fintech

ecosystem needed to be in a symbiotic ecosystem or only needed to exist within the overall macro environment as factors needed for the success of fintechs and secondly, whether the five factors influenced the type of fintech solutions within the South African environment.

3.5 Population and Sample

A target population can be defined as the total number of people from which a statistical sample for use in scientific analysis can be drawn (Allen et al, 2020). The data were gathered from the key participants in the fintech ecosystem, namely:

i. Startups
ii. Government
iii. Financial institutions
iv. Financial customers
v. Technology developers

The population for the study is defined as the current fintech ecosystem which is comprised of the five sectors mentioned above. To gain an understanding of the ecosystem, the sample was extracted from the five sector populations, taking into account representation from each contributing sector.

3.6 Sample and Sampling Method

Sampling is the statistical screening method for representative findings from a target population (Clifton et al, 2019). Non-probability sampling was the selected method of which purposive sampling is a subset. The sampling method was expert sampling. Lavrakas (2008) describes it as “a type of purposive sampling technique that is used when research needs to glean knowledge from individuals that have particular expertise” (p.31). This expertise was required during the qualitative research exploratory phase, highlighting potential new areas of interest or opening doors to other participants. Alternatively, the

particular expertise being investigated may form the basis of the research, requiring a focus only on individuals with such specific expertise. Expert sampling is particularly useful where there is a lack of empirical evidence in an area and high levels of uncertainty. Lavrakas (2008) further describes the situations where it may take a long time before the research findings can be uncovered.

A major advantage of non-probability sampling is that, compared to probability sampling, it is cost- and time-effective (Cusher et al, 2018). It is because it is easy to use and can also be used when it is impossible to conduct probability sampling; for example, when there is a very small population to work with such as with the startup and technology developer environments.

A major disadvantage of non-probability sampling is that it is impossible to know how well the population is represented. Calculation of confidence intervals and margins of error cannot be done as well.

The planned number of interviews were fifteen. This sample size was influenced by the scientific paradigm employed in the study (Boddy, 2016). However, due to COVID-19 and government lockdowns, only fourteen interviews were conducted. These were split according to the five factors contributing to the ecosystem, with each factor represented by three experts each. This was done to ensure that a balanced view could be obtained that met the needs of the research. The list of potential participants is indicated in Table 3.1 below.

Table 3.1: Profile of participants by context

Description of Participants Type	**Area of Speciality**	**Number of Participants to be Interviewed**
Founder of business	Startup	3
Financial regulatory manager	Government	3

Financial institution product head	Financial institutions	3
End-user – LSM1 10	Financial customers	2
Developer managerial level	Technology developers and builders	3

1.3 Research Instrument

A research instrument can be defined as a tool used for data collection (Cusher et al, 2018). In unstructured one-on-one interviews, every interview requires a different approach; however, certain principles and techniques are applicable to all interviews. Dipboye (1994) has found that an interview schedule will need to be formulated as a platform for the conversation to extract the necessary rich data. The interview schedule ensures uniformity and consistency (Lievens & De Paepe, 2004). This results in each interview schedule consisting of the following three major contextual parts:

i. The opening – it is constructed in such a way that the participants or interviewees feel welcomed and relaxed. In addition, the opening will indicate the objectives of the interview and clarify the topic areas to be addressed. The researcher provided research augmenting information to keep the participants motivated to answer the questions thoroughly. The opening indicated the expected length of the interview.

ii. The body of the interview schedule – topics were listed covering potential questions. The interview was scheduled moderately to contain major questions and possible probing questions under each section. The researcher did this to allow some freedom to probe answers and adapt to the situation. The unstructured one-on-one interview allowed the recording of answers and was easier to conduct. The researcher used the moderately scheduled interview format for all interviews.

iii. The closing – maintained the tone set throughout the interview and was brief but not abrupt. The researcher summarised the main issues discussed during the interview as well as the next course of action to be taken, and thanked the participants for their time.

3.7 Procedure for Data Collection

Data collection is the process of collecting and evaluating information in an existing framework on specified variables which then helps one to answer specific questions and analyse results (Feng et al, 2021). The procedure for data collection would have been a mixture of face-to-face interviews as well as telephonic interviews. This would have meant approaching participants directly to engage in the study for face-to-face interviews. Face-to-face interviews was the primarily preferred method, as they were more of a conversational data-gathering exercise format where richer data would come from it. However, due to the global challenge equally affecting South Africa, namely the COVID-19 pandemic, social distancing laws meant that only interviews through digital means were possible. These included but were not limited to voice telephone calls, digital communication platforms such as Skype, Zoom, Microsoft Teams and open-ended emailed questionnaires.

The following steps were used to gather data:

i. Identification of the population of interest

ii. Following a qualitative sampling method or strategy

iii. Selection of the sample of interest aligned to the research desire such as technology developers, startup entrepreneurs, consumers of fintech products, government legislative agents and financial industry professionals

iv. Analysing and interpreting the gathered data using thematic analysis to locate patterns of meaning within the qualitative interviews conducted in order to deduce learnings and findings

3.8 Data Analysis

Data analysis could be defined as the process of analysing or transforming the raw data obtained in order to produce valuable information for qualitative or quantitative research use (Aljerf, 2018). Analysis of qualitative data involves interpretation in an attempt to understand the subjects' world (Heyink & Tymstra, 1993).

The data gathered during the interview process were organised in such a way that particular themes, stories and information were easily identified. This approach was needed, as the fintech ecosystem participants had varied perspectives of the fintech environment and they also had common insights and knowledge that shed light on their experiences within the fintech ecosystem in South Africa.

Liu, Nikitas, and Parkinson (2020), exploring expert perceptions, note that the thematic approach closely examines data to identify common themes, topics, ideas and patterns of meaning that are mentioned repeatedly. Braun and Clarke (2012) describe a thematic analysis as a method for systematically identifying, organising and offering insight into patterns of meaning (themes) across a data set. The data set relative to this study included categories of information that pertained to for example, government restrictions or enablement, collaboration between industries or the lack thereof, etcetera. This allowed the researcher to see and make sense of collective or shared meanings and experiences.

3.9 Limitations of the Study

Limitations of qualitative research in the context of this study were threefold. The research was carried out, using qualitative research techniques. As such, some of the inherent limitations of the methods employed may not have been escaped. Apart from that, qualitative research is open-ended; therefore, participants presumably had more control over the content of the data collected. Lastly, the research focused on the South African fintech ecosystem and as such, the research findings apply to the specific case study in question.

3.10 Validity, Transferability, Trustworthiness and Conformability

The validity of qualitative research depends on its transferability. Transferability means the ability to generalise or the extent to which the results of the research apply to other contexts or settings (Maxwell, 1992). Thus, validity in qualitative research indicates consistency and trustworthiness regarding activities and events associated with the phenomenon as signified by the study results explored in the research (De Vries et al, 2021). In this study, transferability was maximised through its relation to other digital fields such as payment systems where a merger of two existing industries has created a new industry with factors in the macro environment contributing to their success.

The researcher utilised the triangulation strategy to ensure that the data represented both validity and reliability (Creswell, 2018). The researcher also established four aspects of trustworthiness, namely credibility, dependability, transferability and conformability (Polit & Beck, 2014). Trustworthiness or rigour of a study refers to the degree of confidence in the data, data interpretation and the methods used to ensure the quality of the study (Pilot & Beck, 2014). The rigour in finding representation from all five factors within the fintech ecosystem to contribute to this research ensured the credibility of the study through the rigour of the sample selected from the population.

The researcher enforced conformability which refers to the objectivity of research during data collection and data analysis (Elo, Kääriäinen, Kanste, Pölkki, Utriainen, & Kyngäs, 2014). The researcher ensured a non-biased approach to interviewing and recording the data throughout the research process. The researcher also ensured dependability by having proper documentation of data, research methods and appropriate research decisions.

3.11 Demographic Profile of Participants

This study is based on determining the factors that affect the success of financial technologies in the South African context, namely

i. Startups
ii. Government
iii. Financial institutions
iv. Financial customers
v. Technology developers

These factors are perceived to have an influence on the success of fintechs. Thus, demographic variables such as age, gender, marital status, family size, occupation, income, purchasing capacity, educational level and religion are not the most decisive factors when exploring data. The data received from participants were not influenced by demographics.

3.12 Ethical Considerations

To ensure that the research was done in an ethical manner, the researcher adhered to strict academic conduct and was authorised through the ethical clearance certificate. Ethical clearance is inherently based on the six principles of ethics comprising beneficence, non-maleficence, autonomy, justice, truth-telling and promise-keeping (Chiumento et al, 2020). Thus, the key ethical considerations ensured the following:

i. Voluntary participation of participants in the research, ensuring participants had the right to withdraw from the study at any stage if they wished to do so
ii. Participants participated on the basis of informed consent (O'Sullivan, Crowley, McAuliffe, & Doran, 2020). This involved providing sufficient information and assurances about taking part to allow participants to understand the implications of participation and freely given a decision

about whether or not to do so without the exercise of any pressure or coercion.

iii. The questions were formulated to preserve the privacy and anonymity of the participants (Wang, Cai, Chi, Tong, & Li, 2018). No personal details such as names or contact details were asked.

3.13 Conclusion

The chapter brought to light the research method followed in the study and provided the criteria for inclusion in the study. This included systemic explanation for a desired sample of participants. The chapter further described the research design chosen for the study and the reasons for the respective instrument. The instrument focused on data collection and the procedures that were followed to carry out the overall study. The procedures included methods used in analysing the data as well as related ethical issues practised and observed.

CHAPTER FOUR

PRESENTATION OF FINDINGS

1.4 Introduction

The previous chapter gave the generic context regarding how the overall research had been conducted to reinforce the qualitative presentation of findings. The chapter also explained how the field research had been conducted by the researcher in order to allow readers to evaluate the reliability and validity of the research. The chapter included details with regard to:

i. The type of research
ii. Data collection
iii. Data analysis
iv. Tools and materials used in the research
v. Rationale for choosing these methods

In this chapter, the results of the field research using the methodologies detailed in Chapter Three are presented.

Qualitative interviews were conducted with fourteen fintech ecosystem participants and stakeholders. The interviews were recorded and transcribed, and the transcripts were imported into NVivo12 for coding and analysis purposes.

NVivo12 is a software program used for qualitative and mixed-methods research. Specifically, it is used for the analysis of unstructured text as well as audio, video and image data, including (but not limited to) interviews, focus groups, surveys, social media and journal articles. It is produced by QSR International.

Thematic analysis methods were used which broadly followed the approach set out by Braun and Clarke (2012). This qualitative data analysis method is mainly inductive, with themes and sub-themes in the data being developed from the data itself in a bottom-up approach. However, these are organised within broad top-level categories derived from the theoretical or conceptual framework of the study and relevant to its research questions.

The coding process involved reading through each transcript within NVivo12, extracting comments or phrases and grouping those that were similar within nodes which were given descriptive labels. As the coding progressed, these were grouped into higher level nodes which were also given descriptive labels. Once all relevant data from the transcripts had been allocated to nodes, second and third stages of coding were carried out in which the initial allocation of data to nodes. The labelling of them was reviewed and revised until it was felt that this was the most accurate distribution, categorisation and interpretation of the interview data.

The resulting categorisation was used to identify key themes and sub-themes relevant to the research questions as presented below. The next section presents the findings pertaining to the first proposition of the study.

4.2 Results Pertaining to Proposition 1: Ecosystem of Fintech Adoption

Based on the literature reviewed, the factors affecting the success of fintechs exist separately in the ecosystem. However, the more each factor/industry understands the other, the more symbiotic the ecosystem becomes with the resultant interdependency augmenting each factor. Thus, the participants noted that this had affected the adoption and success of fintech positively.

4.2.1 Perceived nature of the fintech ecosystem in South Africa

The perceived nature of the fintech ecosystem in South Africa was reinforced by 80% of the participants. They agreed that startups, government, financial institutions, financial customers and technology developers formed the five main elements of the fintech ecosystem in South Africa. The participants also

highlighted that additional fintech elements were the distribution systems, innovation laboratories and private investors. All 14 participants stressed the importance of a symbiotic, cohesive ecosystem with perceived benefits including improved speed to market, improved funding opportunities and reduced regulatory barriers. However, 80% of the participants expressed the view that the South African fintech ecosystem is only partially cohesive at present, largely because it is still at an early stage of development.

Participant 1 provided context regarding the perceived nature of the fintech ecosystem in South Africa by stating:

> *I would say in South Africa we have seen an attempt for it to work in synergy but we not there yet.*

Participant 3 said:

> *In different silos there is success, but I think as a sum of the whole I think we have still got a lot of ground to cover.*

4.2.2 Reasons for lack of cohesion in the ecosystem

Several reasons were identified for the current lack of cohesion in the fintech ecosystem, with the main ones being differences in levels of development or maturity of players, a lack of government support, restrictive regulations and inadequate communications or coordination among stakeholders.

Some participants explained that the various component players in this system were at different levels of development or maturity and this had resulted in their misalignment within the system. Participant 4 said:

> *If you think about where government is in relation to where the start-up ecosystem is, in relation to where customers are, in relation to where financial institutions are etcetera, etcetera those are all at various different stages of maturity and understanding, and I think that's the core reason why it's very difficult for them to get alignment and for them to work.*

Additional identified reasons included a lack of adequate government support for the fintech sector as well as restrictive policies or regulations. Participant 4 said:

> *A lot of people don't even know that we have so many policies that actually can help us, the information is not out there. So it's like for us, for me when you see a Minister opening tech hub … it's about "hey look!", but when you go in to actually try to get, take advantage of the resources that they have there is nothing, like there is no process, you end up actually going back and doing it by yourself but then it's going to take you forever.*

Participant 5 stated the following:

> *The banking industry is highly adverse to fintechs … the cost of regulation is high and with Legacy Systems it's harder for them to reinvent themselves or innovate as quickly."*

Other participants cited a lack of adequate communication or coordination among stakeholders in the sector and market competition which meant that fintech startups were typically viewed as disruptors rather than collaborators. Participant 6 said the following in this regard:

> *The very nature of the fintech is such that you going to displace people or businesses that have been in the industry. And by very nature you are seen as a disruptor, so whilst you might want to, or you might recognise certain players as collaborators, they might not necessarily see you that way at first, because it's like "okay, you're trying to take a piece of my pie", which is not untrue.*

4.2.3 Fintech success in South Africa

4.2.3.1 Successful fintechs

Overall, the research participants gave examples of fifteen successful fintechs or e-Commerce companies in South Africa, but only Yoko was mentioned by multiple individuals, namely a total of five times. This suggested that few leading fintech companies in South Africa were present but a considerable number of startups were present.

4.2.3.2 Success drivers

When asked what was perceived to drive or define fintech success, the interviewees identified five main factors. They were filling a market gap or solving a problem, good relationships with other key players in the fintech ecosystem, the ability to scale the business, expanding into different markets and money/resources.

Filling a gap in the market or solving a specific problem was the most commonly cited driver of fintech success mentioned by six participants. Participant 7 said:

> *I think what defines a successful … digital tech company is … creativity, we are at the forefront of innovation and creativity that touches lives directly through digital platforms.*

Participant 8 wondered:

> *Does it work, do people want to use it and are people able to use it? Because those are the only three things that give you skin in the game and longevity and then you can figure out probability, you can figure out revenue models, you can figure out all of those things … fintech is about saying look how do things work currently and how do I then come in as a player to enable the people on the opposite ends of the stick.*

Several participants highlighted the importance of having the right kinds of relationships or partnerships with other key players, including trust-based

customer relationships that provide return business, relationships or partnerships providing either financial or non-financial forms of support. In this regard participant 9 said:

> *Having trust of consumers and having return consumers, not just one-off consumers that's a really great factor … I think definitely trust, establishing trust and having the trust of your audience, of your consumers and in fact having return consumers. Government support (policies) and investment (funding).*

Another factor seen as important in the success of fintechs is the ability to scale business and expand into new markets within South Africa and further afield. Participant 10 was of the opinion that*:*

> *I think in South Africa if you can scale and you have the ability to capture multiple markets, multiple LSM's then you're definitely going to do well, I think each market is so small in South Africa that you can only scale so much.*

Participant 11 mentioned the following:

> *I always see these wonderful incubators that are taking these start-ups, and my issue has always been that they incubate them for ever, my question is who is measuring throughput? And so we have to be able to measure the start-ups that come into these incubators based on the percentage of how many of them go out of the incubator and become business that are viable, that can scale.*

Others simply defined fintech success in terms of conventional performance measures such as sales and profits.

4.2.4 Challenges and success barriers

4.2.4.1 Failed fintechs

The interviews also explored why fintechs fail in South Africa as well as the perceived main challenges and barriers they faced in this market. Eight specific examples were mentioned of failed fintech companies but more than one participant cited none.

4.2.4.2 Reasons for fintech failure

Five main types of reasons were identified for the failure of fintechs in South Africa. They were not being innovative or strategic enough, a lack of understanding of the local culture or environment, lack of customer trust, market competition and internal relationships.

Not being sufficiently innovative or strategic enough was mentioned by several participants and it was clearly the reverse side of the innovation success driver discussed earlier. Participant 5 stated the following in this regard:

> *I think the owners of that business tried to be everything to everyone, and they were very good salesmen, when essentially all they had was a point of sale device that accepted payment, yet they tried to sell it as something that solves for ERP and line of business and has a fantastic platform that can be reached here, there and the other. And that probably wasn't the case.*

Participant 6 added:

> *I would assume that if you are a fintech but you not really know what it is that you trying to solve for, that probably would be the reason why you do not become successful.*

Others referred to a lack of understanding on the part of fintechs concerning aspects of the local culture or environment, or an inability to sufficiently tailor their products to these aspects. Participant 7 mentioned the following:

> *(That) was such a brilliant idea - it had investors, it had people backing it. But because of South Africa, I can only allow someone in my house that has been referred to by someone that I know … I think sweepstakes did not get to where I would have wanted it to be because of that element of South African crime and how societal issues are.*

Participant 8 added his perspective:

> *Fintech fails because companies and start-ups alike fail to understand their market and their financial conditions. South Africa is not a cash society - lots of assets and day to day living is sustained on credit. You need to understand that the solutions provided to the problems faced by SANs incorporates responsible lending too and the concept of stokvel: save now buy later.*

Some participants highlighted ways in which certain fintechs had undermined or been unable to build the types of trust-based relationships which customers state are so important in this sector. Participant 9 thought:

> *That's where the bulk of them are getting it wrong, for example one simple thing as having no consistency across pricing which they do not open or disclose to consumers … I mean no consumer wants to ask and send a message or ask and enquire about pricing … you could be asking someone else a higher price or a lower price, Automatically that puts me off, even from wanting to support the business because I cannot trust that, it removes the trust factor.*

Participant 10 said the following:

> *Know your Client which we actually piloted, and the reason that it failed, it failed to acknowledge the relationship between the customer and the*

institution, and in this instance it was a bank, and obviously the banks biggest asset is trust from the customer. So, where it failed is that it used a different, it used a different branding to be in touch with the customer, and as such the customer became wary as it was not dealing with the trusted brand.

Other cited reasons for fintech failures included highly competitive markets and internal organisational conflicts or disagreements between business stakeholders.

4.3 Results Pertaining to Proposition 2: Factors Determining Fintech Solutions

4.3.1 Proposition 2

The five factors mentioned play a role in determining fintech solutions. When looking at the South African context, the financial disparity between high-income earners and low-income earners does not necessarily determine the success of the solution, as the penetration of technology allows enough critical mass to ensure a volume-based product succeeds just as well as a value-based product. This would mean a fintech solution would be determined based on ease of implementation and technology adoption of the target market which is in a particular economic group.

4.3.2 Potential of fintech for serving low-end markets

The majority of participants concurred that fintechs have potential for serving disadvantaged communities and low-end markets in South Africa. Several specific examples of fintechs already achieving this goal were mentioned.

4.3.3 Perceived opportunities

The participants identified three types of opportunities that fintechs might exploit to succeed in this area of business. These were providing mobile payment systems, providing products and services at volume but with low profit margins,

and using digital data to identify and target the needs of disadvantaged communities.

It was pointed out that, although many people in South Africa do not have a bank account, most do have mobile phones, and this creates an opportunity for low-cost mobile payment systems. Participant 3 alluded the following:

> *There is a huge opportunity to focus on the underbanked which is the mass market and make the banking convenient, make it affordable remove all the red tape … Everyone has a phone I mean we're talking about 99% of the population that has an access to your mobile device … If people are using their mobile devices to transact simple things like a taxi fare, buying apples, buying a plate, quarter at a taxi rank, and they're using the payment solution QR codes you shouldn't be charging them for transactions, I think the merchant is the one that's supposed to incur those costs. So, if we could really remove these barriers and really focus on this mobile payment solution, I think we could have a much more dynamic ecosystem as far as banking is concerned, and … we could solve the problem with the unexclusive and exclusive nature of the banking in this country at the moment.*

Other participants stressed that fintechs may be uniquely placed to meet the needs of lower end markets in South Africa, since major banks and brands tend to target more affluent markets. They explained that, due to the vast numbers of people in under-served communities, targeting large numbers of consumers but selling at low cost can be a profitable business model for fintechs. Participant 4 explained it like this:

> *There is a huge customer base in my opinion … Banks will always chase after the most profitable customers, right? But as a Fintech if you could go for lower margins, but you have the necessary volumes … within the context of sub-Sahara Africa if you're going to only go for the higher end … you leave out 80% of the market which is kind of stupid. I mean if you consider yourself to be a mass brand, for me you should be at least be*

covering about 70% to 80% of the market. So, I definitely think there is a huge opportunity for Fintech to build products for the lower end of the market.

Finally, some participants explained that by viewing value in non-traditional ways fintechs might be able to develop profitable businesses targeted at the needs of disadvantaged communities. For example, products and services might be sold at low cost or free to consumers in exchange for the collection of digital data about their characteristics and purchasing patterns that might be sold to other companies for a profit. Participant 5 declared:

I think with fintech's such as Astute that has created data they could actually really use this data that they're collecting to show how, or what are the pain points for the lower end group in South Africa, and they actually be part of innovation that could come with proper solutions for this area.

4.3.4 Financial inclusion

When asked specifically whether financial inclusion could be a sufficient reason for starting up as a fintech with potential for profitability, some participants agreed that this is the case, but they mostly also acknowledged that little progress has yet been made in this area. Participant 6 remarked:

... it's a market reality right, so because we have got such a phenomenally unbanked population in Africa, and in South Africa financial inclusion is the motive that can liberate a really great fintech solution."

Participant 7 indicated his view as follows:

Most definitely financial inclusion could be a big enough driver to start a Fintech and be profitable. It could but at the moment it's not, in actual fact what I have seen is other disruptors such as COVID really drove innovation in South Africa. Financial inclusion it's a problem that has

been there for quite a while, and I think it should be a driver but it was not really moving us as quick as something like COVID.

One participant highlighted that one of the current main barriers to financial inclusion consists of restrictive regulations requiring address data which many in disadvantaged communities may not be able to provide. In this regard participant 8 said:

In South Africa the biggest barrier to fintech's is regulation … I mean I will go back to Know your Client, and the requirement for an institution to have an address and when you start thinking of those things how do you have an address in the squatter camps, or what is that address? And if you think of the people who live in the squatter camps they're not all of them are unemployed, some of them do wake up, they work as waiters and that type of thing. So, they are still adding to their economy in their small way, so I think in that regard sometimes the fintech ecosystem fails.

The interviewees identified a number of conditions seen to be necessary if fintechs were to achieve financial inclusion. These were effective partnerships with government or big brands, financial and non-financial support, a legislative environment more conducive to fintech, acknowledging different forms of value, educating particular segments of the population to use the products and finally, use of data to understand the exclusion problems that need to be solved.

Since profit margins are likely to be small, deriving revenue from other sources such as investors and the sale of consumer data is seen as one of the most effective ways of developing fintech services that promote financial inclusion. Participant 9 stated as follows:

I only see this working in the event that you probably forge good partnerships with the government, big brands etc. to somehow drive your revenue from the partnerships as opposed to the direct offerings to the end user.

According to participant 10,

> *It's hard for a company to try to fix the social ills if it's not going to make any profit. But … the thing about tech is that you need a data base and you need people to use that, even if it's not profitable … When Facebook bought WhatsApp at the time, it did not make any money, but they understood the value of the data of the people that are there.*

It was also highlighted that education and awareness raising among disadvantaged communities, especially older populations will be important if they are to accept new fintech services. Participant 11 had a strong opinion about the matter when he said the following:

> *If it's a tech system like Time Bank, like I feel like there is a space for that market, and I feel like for me probably the biggest, biggest thing especially when you go back to the social ill element is teaching our grandparents in the townships and the villages that you don't have to go stand on a queue the whole day to get your pension … You know you can just swipe … They don't trust the bank system … people wants to see their money in their hands, and they are willing to suffer and waste that like my time is so important it's not available, and like for me if you can just make that shift for them … Imagine if we found a system that our elders could understand that you don't have to be standing in a queue, at the same time they make money out of it … They do need government to support them and tell these people to have like maybe a data base because the government has a data base on these people, they know their numbers and all that. They can just send them a message with their own languages and tell them, hey tomorrow, because … you find that our people still trust what the government says."*

Some participants stressed the need for legislative changes in order to create a business environment that is more conducive to the successful operation of fintechs. To underline this need, participant 12 said:

The partnerships and laws should favour the innovators rather than the establishments with funds and the SMEs will be able to be motivated and contribute immensely to the reduction of the unemployment and grow the GDP.

Finally, the importance of working collaboratively with other players in the ecosystem such as government and financial institutions was stressed, since these often already held the data that was necessary for understanding the characteristics and needs of disadvantaged communities in South Africa. Therefore, participant 13 opined as follows:

It could be far better informed if the entrepreneurs understood the extent of the problems they were solving for, and this could be derived through data of which if you are start-up you generally don't have data and your bigger financial institutions are the ones with the data, and they could provide more input into the extent of the problem, into how many people will be affected.

4.4 Summary of the findings

The qualitative findings suggest that there has been some growth of a fintech sector in South Africa, but that the lack of a symbiotic ecosystem is hindering its progress. Overall, this suggests that the five factors are to some extent contributing independently to the success of the sector, but that this could be significantly more rapid and efficient with improved cohesion and collaboration between them.

The findings also suggest that other elements may play a role in the South African fintech ecosystem, including innovation laboratories, the distribution/logistics system and private investors. These may influence the relationships among the five factors identified in the literature.

Aspects of the five factors that are currently believed to be hindering the success of fintechs include restrictive banking regulations, insufficient

government support for the sector and a general misalignment that results from players being at different levels of maturity.

The findings relating to perceived success drivers indicate that customers play a very important role in the success of fintechs in this environment. Successful fintechs are those who have been able to understand and address a clear customer need or problem and generate an innovative solution tailored to the local culture and environment. They have also been able to generate and maintain customer trust. Failed fintechs often fail to understand the needs and characteristics of the market and to build customer trust. Customers and trust should therefore be key elements of a theoretical model.

Another important finding is the importance of understanding and defining value in non-traditional ways when targeting disadvantaged communities. Business models based on sales volume but low product profit margins are likely to be most appropriate and exchange free products and services for high-value customer data.

CHAPTER FIVE

DISCUSSION OF THE FINDINGS

5.1 Introduction

Chapter Four presented the findings of the research, including the thematic analysis which grouped common recurring themes and sentiments from the interviews. The results were plainly presented with a brief introductory analysis to give context with regard to the data. These themes were categorised into thematic groups which helped to form the analysis and discussion to follow with regard to the factors determining the success of fintechs in South Africa.

This chapter will go into insightful details concerning the results of the research tested against the literature review, seeking to find commonalities and an analysis between existing bodies of research versus the findings of the field research conducted in this study.

Currently in South Africa, there is an accelerated need to understand and assess the key factors that influence the success of fintechs. This study included the deep analysis of fourteen participants' interviews detailing their South African fintech ecosystem experiences.

Many themes have been identified, and the aim of this section now is to draw a comparison between current study results and previous literature reviews. The discussion will be separated into subsections according to the results of the respective theme.

5.2 Discussion Pertaining to Objective 1 – Symbiotic Nature of the South African Fintech Ecosystem

The first research objective of the study aimed to determine if factors affecting the adoption of fintechs needed to be in a symbiotic ecosystem.

Over 80% of the current study participants mentioned the five main elements of the fintech ecosystem. This is similar to results from the study done by Lee and Shin (2018) in which there were also five factors identified. These factors were startups, government, financial institutions, financial customers and technology developers.

However, some participants added three more components. These were identified as the distribution system, innovation laboratories and private investors. This indicated that there were different views on the components of the fintech ecosystem and, depending on each particular participant's area of expertise, the environment became wider and broader.

In the study of Werth et al (2019), the factors were widened to include six more factors. These factors were technological advantage, regulatory knowledge, business-tobusiness (B2B) focus, incumbent partnerships, growth potential and exit options for venture capitalists. These findings correlated with the school of thought in the literature review that the factors and elements were not only limited to five factors and that they were flexible, dependant on each particular environment or country.

Participants added that the additional factors, innovation laboratories and technologies could be seen as disadvantageous additions to the fintech ecosystem, as they were seen to stifle innovation and exploit the startups.

5.3 Discussion pertaining to Objective 2

The second research objective of this empirical study aimed to determine the factors that affect the success of financial technologies in South Africa.

There were several factors identified by both the participants and within the literature review as determinants of the success within the fintech ecosystem. These factors were mentioned as the need for them to be symbiotic for a cohesive system to succeed. Although the participants within this study addressed the importance of a symbiotic ecosystem, they also expressed views

that the current fintech ecosystem was only partially cohesive in South Africa. They attributed this situation to the fact that the industry is currently at an early stage of development in South Africa. Additional reasons were raised by participants to paraphrase the lack of cohesion in the South African fintech ecosystem. However, the outstanding call-out by all participants was the lack of governmental support. The participants connoted to restrictive regulations weakening the ecosystem cohesion. The lack of coordination among stakeholders was strongly highlighted as negatively affecting the cohesion of the fintech ecosystem in South Africa.

This observation alluded to one study within the literature review that highlighted the need for a cohesive ecosystem for greater success. Ntwiga (2020) reiterated that there should be a symbiotic relationship between the components of fintech ecosystems for greater return on ideas and the overall success of the fintech environment. The consensus from the review and interviews was that factors should co-exist and function together.

In the literature review, the spotlight shone on the factors that affected the success in the fintech ecosystem. From the literature review it could be strongly assumed that the factors should be more symbiotic for success. In this study, participants were given fifteen examples of successful fintech companies in South Africa, but only Yoco online payments was cited by more than one participant. This could lead the researcher to assume that there are a few companies considered to be successful within the fintech space in South Africa.

Participants mentioned several factors that would lead to successful fintech. The most prevalent factor was filling the market gap and solving a particular problem. Each participant looked at the factor from their own position within the ecosystem and this, in turn, created a wider range of factors needed for the success and establishment of fintech ecosystems. Other factors mentioned by participants were good relationships with other players in the fintech ecosystem and the ability to scale the business. This was, however, highlighted as not being enough for success alone, but needed to be combined with also knowing the right relationships within the ecosystem as being crucial.

However, the current literature studies highlighted an important factor mentioned by all the participants. It was found that fintech startups needed important policies to influence the emergence of new sectors (Haddad & Hornuf, 2019, p.33). This study corroborated the previous assumptions and assertions by researchers that the key factor within the five factors influencing fintech ecosystem success is the macroeconomic policy level.

5.4 **Discussion pertaining to Objective 2**

The second research objective aimed to ascertain if the five factors occurring in the macro environment contributed independently to the success of a fintech.

The participants gave varied views with regard to challenges and barriers to success within the fintech ecosystem. Their views varied significantly, with multiple examples mentioned during the interview process. However, from the multiple examples given by the participants, the key outstanding reasons culminated into five main points. The first reason was the lack of innovation or strategic intent. Innovation was noted by the participants as an essential trait of any successful fintech ecosystem. This is similar to the results obtained by Carelse (2018) in which the author reported the importance of innovation as a key factor in any successful fintech ecosystem.

Secondly, all participants noted that the local culture was very important for fintechs to succeed. Participants noted the lack of understanding of the local culture or the environment as a struggle and a big barrier to success.

Thirdly, the understanding with regard to how the local target audience uses and trusts technology is key to success within the fintech ecosystem. Therefore, fintech solutions will mainly benefit the previously disadvantaged by giving them access to financial products and services that traditional brick and mortar could not provide or be accessed. It was found in the literature review that financial systems were likely to benefit poor people and other disadvantaged groups because without inclusive financial systems, poor people had to rely on their own ability to access basic financial services (Allen et al, 2016).

The fourth and fifth points mentioned by participants were market competition and internal conflicts or disagreements between business partners. The participants mentioned a myriad of companies that had key examples relating to failures from either market conditions or non-strategic alignment between founders. Only one company was mentioned as a successful example, namely Yoco with regard to its market adaption, strategic direction and the diversity of its founding members and board.

Many additional barriers have been mentioned in the literature review that differed from this study; however, the barriers are additional and dependent on the specific financial service industry of the particular fintech.

5.5 Discussion pertaining to Objective 2

The fourth research objective aimed to establish if five factors influenced the type of fintech solutions produced.

When looking at the South African context, several factors were considered in terms of fintech success for products focused on previously disadvantaged groups. Participants noted that the disparity between the high-income and low-income populations did not necessarily determine the level of success of fintechs. However, the feasible implementation of fintech solutions is determined by the adoption of technology by the target market. Thus, the five factors influence the type of fintech solutions produced, although some variables may have a bearing on the types of solutions.

Technology adoption led by mobile telephone penetration levels in South Africa has driven the growth and need for technology-based financial solutions (Kreutzer, 2009). In the literature review, the author further states that cell phones have introduced a range of new possibilities for the use and production of financial platforms, social networking and communication.

Participants noted that, although many people in South Africa do not have a bank account, most do have mobile phones and this creates an opportunity for

low-cost mobile fintech payment systems enabled by technology adoption brought about by the mobile device.

A key theme when discussing fintech solutions for low-end markets was data. Using data to identify and target the needs of disadvantaged communities, digital innovation or the utilisation of digital technology to identify problems and solutions were key notes with all participants when the question pertaining to developing fintech solutions for the mass underprivileged market was raised.

Moreover, digital innovation has spawned a myriad of digital solutions however some without the data insight and knowledge into the needed solutions. This correlates to the literature review where one researcher explains that more recently, there has been an expansion into identifying and articulating unique aspects technology solutions using consumer centric data points to create platforms based on consumer needs and not business priorities (Boratyńska, 2019).

5.6 Financial Inclusion

When the participants were asked specifically whether financial inclusion could be sufficient reason for starting up as a fintech with potential for profitability, 70% of the participants agreed that this was the case, but they mostly also acknowledged that little progress had been made in this area, as most fintechs, according to their knowledge, were focused on revenue-generating projects and not necessarily on solving issues of financial inclusion.

The participants identified a number of conditions seen to be necessary for fintechs to aid in financial inclusion. These entail effective partnerships with government or big brands, financial and non-financial support, a legislative environment more conducive to fintechs, acknowledging different forms of value, educating particular segments of the population to use the products and the use of data to understand the exclusion problems that need to be solved.

The key take out from the participants was that government assistance was needed to reach the masses and this cannot be left to the fintech community alone. This perspective correlates with a study conducted by Sarma (2008) who highlights how governments need to be enablers when developing financial inclusion technology solutions for previously marginalised groups. In the United Kingdom, a Financial Inclusion Task Force was constituted by the government in 2005 in order to monitor the development of financial inclusion (Sarma, 2008).

Participants noted that, since profit margins were likely to be small, deriving revenue from other sources such as investors and the sale of consumer data was seen as one of the most effective ways of developing fintech services that promoted financial inclusion. It was also highlighted that education and raising awareness in disadvantaged communities, especially older populations, would be important if they were to accept new fintech services that would benefit them, as they made up the core of the marginalised and previously disadvantaged groups.

All participants stressed the need for legislative changes in order to create a business environment that was more conducive to the successful operation of fintechs. The importance of working collaboratively with other players in the ecosystem such as the government and financial institutions was stressed, since these often already held the data necessary for understanding the characteristics and needs of disadvantaged communities in South Africa.

5.7 Conclusion

This discussion identified many aspects of the fintech ecosystem, bringing to light the components of a fintech ecosystem, barriers to entry into that ecosystem, collaboration and cohesion with potential solutions. The analysis attempted a cross-sectional study on factors associated with the fintech ecosystem in South Africa and the experience of participants within this system.

The research looked into the five key factors that made up the ecosystem, the point of which was to determine and establish whether these five factors existed independently or needed to be symbiotic for fintechs to succeed, and ultimately, to document the experience of the participants within this ecosystem.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Introduction

Chapters Four and Five stated the results of the qualitative field interviews as well as the analysis, interpretation and insights respectively. This final chapter concludes the findings from these chapters as well as preceding chapters to reach final conclusions and make recommendations resulting from the research.

The purpose of this research was to examine the experience of the study participants in the South African fintech ecosystem in which the need for financial technology (fintech) is to succeed against the unique backdrop of the South African landscape. This was phrased as the factors that affected the success of financial technologies in the South African context by researching the experience of participants within the fintech ecosystem.

The research looked in detail at the ecosystem factors that influenced the experience fintech participants in a unique country such as South Africa had, taking into account legacy government policies and regimes that had shaped the framework within which the fintechs now operate.

The research objectives investigated the five key fintech ecosystem factors that needed to be in place for a successful fintech environment and to determine whether they needed to be symbiotic or merely exist. The role these factors played relative to the unique background of South Africa in influencing a conducive environment for the participants of this ecosystem and the success of fintechs.

The study also aimed to conduct empirical research based on observations and the experience of participants within the fintech ecosystem to explore the five

key factors influencing fintech development as a symbiotic ecosystem or as present factors relative to the South African environment.

The thematical analysis provided a clear representation of the relationships among the five ecosystem factors that are key determinants within the development and growth of fintechs within South Africa relative to the population dynamics and legacy issues pre- and post-apartheid. Ideally, this led the researcher to understand the five environmental factors that had caused the rise and some shortcomings of fintechs within South Africa as well as the influence they had in creating various solutions for the diverse population groups post-apartheid.

The research questions which were formulated, together with the resultant propositions and conclusions post-participant research and the literature review are discussed below.

6.2 Conclusions Regarding Research Objective 1

Research Question 1

The question asked to which an answer was needed, was:

> *Do the factors affecting the adoption of fintechs need to be in a symbiotic ecosystem?*

Proposition 1: Factors affecting the adoption of fintechs exist separately in the ecosystem. However, the more each factor/industry understands the other, the more symbiotic the ecosystem becomes, with the resultant interdependency augmenting each factor affecting the adoption and success of fintechs.

The qualitative findings indicate that there has been some growth of a fintech sector in South Africa, but that the lack of a symbiotic ecosystem is hindering its progress. Overall, this suggests that the five factors are to some extent contributing independently to the success of the sector, but that this could be

significantly more rapid and efficient with improved cohesion and collaboration between them.

The findings also suggest that other elements may play a role in the South African fintech ecosystem, including innovation laboratories, the distribution/logistics system and private investors. These may influence the relationships between the five factors identified in the literature.

Aspects of the five factors that are currently believed to be hindering the success of fintechs include restrictive banking regulations, insufficient government support for the sector and a general misalignment that results from players being at different levels of maturity.

Through the literature reviewed for this study, examples have been given of ecosystems and theories where the sum of the ecosystem made up by its parts would be naturally symbiotic. However, in the South African context as detailed in the findings, this is not the case. The current fintechs recognise the need for a symbiotic ecosystem; however, factors mainly led by government involvement through regulation and the lack of government involvement in funding, infrastructure and policies are hampering the development and functioning of the ecosystem as detailed by the participants.

The theory of a symbiotic ecosystem is aligned to and exists within the South African context through various studies and theories of which participants know. However, the reality is that the system overall is to a large extent not symbiotic in South Africa with small pockets of interaction between established organisations as perceived by the current participants.

6.3 Conclusions Regarding Research Objective 2

The question asked to which an answer was needed, was:

Do the five factors influence the type of fintech solutions produced?

- *Is it a combination of the five factors that influence the type of solution or is consumer demand the main catalyst?*

Proposition 2: The five factors play a role in determining the fintech solution. When looking at the South African context, the financial disparity between high-income earners and low-income earners does not necessarily determine the success of the solution, as the penetration of technology allows enough critical mass to ensure a volume-based product succeeds just as well as a value-based product. This would mean a fintech solution would be determined based on ease of implementation and technology adoption of the target market which is in a particular economic group.

The proposition was supported or affirmed in the interviews and literature review. However, within the South African context, the participants stressed the need for government intervention to facilitate financial inclusion through technology and not to leave it to the fintech private sector industry alone to solve. The reason fintechs require government assistance to solve financial inclusion stems mainly from a requirement of a conducive economic environment. This would include correct legislation, laws and funding to provide solutions that generate solutions for previously disadvantaged groups.

The assertion that the profitability of fintechs is not affected by the type of product designed for particular target markets based on income level was validated in both existing studies and in this research. When the participants referred to South Africa, they pointed out that profits could be made in South Africa from both a volume (mass market) and value (affluent market) target base.

An important finding within the South African context was the highlighted importance of understanding and defining value in non-traditional ways when targeting disadvantaged communities. Fintech business models that are based on sales volume but low product profit margins are likely to be most appropriate, and exchange free products and services for high-value customer data. With that in mind, products helping to bridge the financial services divide between the

previously disadvantaged groups in South Africa and the affluent groups can be created for the benefit of all. These products will solve financial inclusion of and profitability for the fintechs.

6.4 Recommendations

The following recommendations are suggested:

6.4.1 Increased collaboration between players in the fintech ecosystem

It is highly recommended that the need for increased collaboration between players in the fintech ecosystem be addressed properly. This will help in ensuring that solutions are found for the challenges faced by the South African fintech ecosystem. Thus, collaboration between the public sector and private sector stakeholders in the fintech ecosystem will go a long way to improve South Africa's fintech ecosystem.

6.4.2 Workshops and training programmes

Workshops and training programmes can help all the interested stakeholders to understand the dynamism faced in the fintech ecosystem. This is crucial, given that modern economies are advancing in technology as well as in their financial services. As such, this will help to further develop the South African fintech sector at large as well as ensuring that previously disadvantaged people benefit.

6.4.3 Improved financial inclusion

The government of South Africa should ensure that it introduces robust policies that promote financial inclusion. This will help in maximising the fintech benefits especially to the disadvantaged populace. To achieve this goal, it may be prolific for the state to further the formation of a governing board for the fintech industry. This will help in ensuring that all related issues in fintech ecosystems are managed efficiently.

6.4.4 Educational programmes for disadvantaged communities

Information dissemination is key, especially in the fintech ecosystem. There is need for the stakeholders in the South African fintech economy to offer education to empower disadvantaged communities. Information asymmetry can affect proper functionality of the fintech ecosystem. Thus, it is highly recommended that communities be empowered with educational information that is centred around financial technology.

6.5 Suggestions for further research

The research investigated the factors affecting the fintech ecosystem in South Africa by looking at the participants' experience within this ecosystem. The gap in literature with regard to the fintech phenomenon in South Africa focused mainly on the current practical experience of participants within the South African environment.

This current body of work adds to filling the gap in studies with regard to experiences of participants within the fintech ecosystem in South Africa. It has also helped to identify further questions specific to South Africa; for example, the additional ecosystem factors unique to the country that play a role within the ecosystem as well as the crucial and distinct role of government intervention, assistance and policies in developing fintech environments in a Third World countriy such as South Africa.

Theoretical studies have been done across the world and within different ecosystems, but not specifically in South Africa. Further research could explore the additional factors in detail mentioned by participants within this study.

The sample size could also be expanded from the current 14 participants to a larger group. A larger sample size would add more weight to the findings within the study and additionally, if the research were longitudinal, it would allow the study of the fintechs over a longer time period, thus allowing the evaluation of the startup fintech interaction with the ecosystem, other elements and factors,

and how the fintechs and ecosystems might evolve to support and sustain each other while creating financial returns and benefits at the same time, solving financial inclusion in South Africa.

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APPENDIX A: Ethical Clearance Letter

UNIVERSITY OF THE WITWATERSRAND JOHANNESBURG

SCHOOL OF GRADUATE SCHOOL OF BUSINESS ADMINISTRATION ETHICS COMMITTEE
CONSTITUTED UNDER THE UNIVERSITY HUMAN RESEARCH ETHICS COMMITTEE (NON-MEDICAL)

CLEARANCE CERTIFICATE **PROTOCOL NUMBER: WBS/BA1562617/441**

PROJECT TITLE	The Experience of Participants in the South African Fintech Ecosystem
INVESTIGATOR	MR Lemuel Mncube
SCHOOL/DEPARTMENT OF INVESTIGATOR	MM (Digital Business)
DATE CONSIDERED	20 July 2020
DECISION OF THE COMMITTEE	Approved unconditionally
RISK LEVEL	MINIMAL RISK
EXPIRY DATE	30 JUNE 2021

ISSUE DATE OF CERTIFICATE 4 August 2020 **CHAIRPERSON** _____
(Dr MDJ Matshabaphala)

cc: Supervisor: Dr Langa

DECLARATION OF INVESTIGATOR

To be completed in duplicate and **ONE COPY** returned to the Chairperson of the School/Department ethics committee.

I fully understand the conditions under which I am are authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I/we undertake to resubmit the protocol to the Committee.

_____ 14 / 08 / 2020
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

APPENDIX (B): Research Instrument

Research Aims	Interview Questions
Introduction	The introduction aims to get to know the participant and break ice, so they feel comfortable to tell their stories.
Getting to know the participant	1. Tell me about yourself and take me through some of your notable fintech interactions or achievements.
Body	The body delves into more in depth questions focussed on the topic at hand
Describe the elements of the fintech ecosystem globally and in relation to the South African experience	2. Take me through a journey in your industry, where you faced your biggest adversity with regards to fintech. 3. Would you say you experienced a cohesive environment with other stakeholders / participants? 4. Government, Start Ups , Customers, Financial Institutions and Developers are considered the 5 factors of a fintech ecosystem according to academic literature. To what extent would say this is true? Tell me about some instances when you concur or differ.
Understand the symbiotic nature of the ecosystem or lack thereof in the South African Context	5. Would you say the ecosystem works together as a sum of each part or each element merely occurs in the environment independently? Please expand on this based on some your experiences in your entrepreneurial journey. 6. According to you, what defines fintech success in South Africa? 7. Tell me about a successful fintech in South Africa and what traits did they take from the ecosystem to make them successful? 8. Tell me about a fintech failure and why that happened.
Explore the relationship between fintech opportunities for previously disadvantaged groups in society versus the more affluent	9. Do you think fintechs can be profitable developing solutions for lower end markets in South Africa? If yes what elements influence this? If no, what elements causes this? 10. In your opinion , would financial inclusion be a big enough driver to start a fintech and be profitable? 11. Tell me about a time when you felt that because of the South African fintech ecosystem, you were able to or not able to achieve success
Conclusion	This concluding section will wrap up and try gauge if the participant would like to anything else.
	12. Do you have any final comments you would like to make about this research?

APPENDIX C: CONSENT LETTER

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School Ethics Committee

2020/06/26

Ethics clearance number: **Not available.**

This letter is only valid with a legitimate ethics clearance number and signed by the Researcher (below).

RE: MR LEMUEL MNCUBE

To whom it may concern

MR LEMUEL MNCUBE (1562617) is currently registered as a MM (Digital Business) student at the Wits Business School, University of the Witwatersrand, Johannesburg.

This letter is to confirm that, at the time of writing, LEMUEL MNCUBE does not need ethical clearance for the study entitled:

Factors influencing the Success of Fintechs : A South African Study

This decision has been reached based upon a description of the project supplied by LEMUEL MNCUBE to the Wits Business School Ethics Committee, constituted as a subcommittee of the University Human Research Ethics Committee (Non-Medical), which has been evaluated by the subcommittee chair. This decision has then been ratified by the University Human Research Ethics Committee (Non-Medical).

If, however, LEMUEL MNCUBE changes the methods of data collection and analysis for this project, this decision may no longer be valid. If such changes take place, this should be communicated to the Wits Business School Ethics Committee.

Please feel free to contact me or the supervisor should you require any further information.

Yours sincerely,

Dr Manamela Matshabaphala
+27 11 717 3668
Manamela.Matshabaphala@wits.ac.za

Supervisor:
DR LANGA
MTHANDENI@GMAIL.COM

Declaration by Researcher

One copy must be signed by the Researcher and returned to the Chairperson of the Wits Business School Ethics Committee.

I fully understand the conditions under which I am authorized to carry out the abovementioned research and I guarantee to ensure compliance with these conditions. Should any departure to be contemplated from the research procedure as approved I undertake to resubmit the protocol to the Committee.

Signature

Date: 26/06/2020