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The role FinTech Start-ups play in the personal banking industry in South Africa

by

Doctor Teddy Nkosi

Research report submitted in partial fulfilment of the requirements for the degree of

Master of Management in Entrepreneurship and New Venture Creation

Faculty of Commerce, Law and Management

UNIVERSITY OF THE WITWATERSRAND BUSINESS SCHOOL

Prof Boris Urban

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Declaration

I declare that this research report is my own unaided work. It is submitted for the degree of Master of Management in Entrepreneurship and New Venture Creation, University of the Witwatersrand, Johannesburg. It has not been submitted before for any other degree or examination in any other university.

_____

D.T. Nkosi
704621

29 March 2018

Dedication

To the King of kings and the Lord of lords, I dedicate this research report to you. You knew me before I was formed in my mother's womb (Jeremiah 1:5) and set me apart (Jeremiah 1:5). My Father, I pray that it serves the purpose you want it to serve to your people.

To my mother and father, who have stood by me and supported me in all my endeavours. To my siblings, Marvin, Charmaine and Linda: never stop believing in your dreams and keep on fighting till you realise them.

I dedicate this report to my love, Kwena Kopano Mokgokong. Keep on dreaming big and going for what you want! Like the Adidas slogan goes, "Impossible is Nothing".

Madodonke Mpetshwa, let's continue looking out for more and never fear the unknown. Continue being the great leader, mentor and brother you are to me.

To my friends and family: always strive to do your best and never settle for less!

Lastly, to all entrepreneurs: never stop chasing the dream and building the business. The country and the continent need you!

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Abstract

The global financial crisis of 2008 became a platform for Financial Technology (FinTech). Investment in the sector has been growing substantially. Investment is largely driven by financial institutions who see that there is a real risk of them being disrupted. The failure of a number of such institutions across the globe was a turning point for FinTech start-up's. What drives the FinTech disruption is not necessarily what product or service is offered but by who is offering that particular product or service.

Due to its sound regulation, South Africa has avoided a great deal of the negative impact that banks across the globe have faced during the 2008 global financial crisis. The South African personal banking industry is largely dominated by five banks, namely ABSA, FNB (First National Bank), Standard Bank, Capitec and Nedbank.

The researcher investigated the role FinTech Start-up's play in the personal banking industry in South Africa. The research was focused on three areas within corporate entrepreneurship literature. Internal corporate venturing, external corporate venturing and collaboration

A quantitative research method was employed to test the relationships. The first hypothesis looked at the positive relationship between personal banks and fintech start-ups in relation to external corporate venturing; the second explored the positive relationship between personal banks and fintech start-ups in relation to internal corporate venturing; and lastly, the third hypothesis examined the positive relationship between personal banks and fintech start-ups in relation to collaboration. Data was collected from individuals who were in management , mainly employed in the banking industry. The respondents were sent the questionnaire by email and a mobile link was provided for them to complete the questionnaire.

Exploratory factor analysis was used to test validity of the constructs and all the constructs had a Kaiser-Meyer-Olkin value that is above 0.5. The Cronbach value of the constructs was above 0.7, thus demonstrating good reliability.

The study found that no relationship exists between the personal banking industry and FinTech start-ups in relation to external corporate venturing, internal corporate venturing and collaboration. This suggests that the South African personal banking industry has not significantly sought to venture with FinTech start-ups internally or externally. This is also the case with collaboration.

From a theoretical point of view the research has provided empirical evidence regarding corporate venturing in the South African personal banking space in relation to FinTech start-ups. The study therefore speaks to the need for South African banks to drive corporate entrepreneurial strategies for greater profitability, innovation and strategic renewal

Keywords:

FinTech

Banking

Corporate venturing

Corporate entrepreneurship

Collaboration

Internal corporate venturing

External corporate venturing

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List of acronyms and abbreviations

ATM	Automatic Teller Machine
CE	Corporate Entrepreneurship
ECV	External Corporate Venturing
EFA	Exploratory Factor Analysis
FinTech	Financial Technology
FNB	First National Bank
GFC	Global Financial Crisis
ICV	Internal Corporate Venturing
IT	Information Technology
KMO	Kaiser-Meyer-Olkin
P2P	Peer-to-Peer
PwC	PricewaterhouseCoopers
TYME Bank	Take Your Money Everywhere Bank
SASSA	South Africa Social Security Agency
USD	United States Dollar
WEF	World Economic Forum

CHAPTER 1 :

INTRODUCTION

1.1. INTRODUCTION

The financial services industry has grown in leaps and bounds from the 1860s. Throughout history, innovation and development within the industry was largely driven by the traditional players such as banks, insurance companies and asset management firms (Arner, Barberis, & Buckley, 2015). But the global financial crisis (GFC) in 2008 changed this. The GFC became a catalyst that catapulted FinTech start-ups to where they are today, they have completely revolutionised the way in which we interact with the financial services sector (Arner, Barberis, & Buckley, 2015).

The development of smartphone technology and greater access to the internet has provided a unique opportunity for FinTechs to reach the unbanked population who are mainly from rural areas where there is little or no banking infrastructure. Globally, two billion adults remain unbanked, according to the Global Financial Inclusion report (Global Findex) (Demirguc-Kunt, Klapper, Singer, & Van Oudheusden, 2014). In Africa, 75 per cent of the population remains unbanked (PricewaterhouseCoopers [PwC], 2017). South Africa has a lower unbanked population, with 42 per cent of the population remaining unbanked (Finmark Trust, 2015).

It is therefore important that banks and financial institutions ensure that they position themselves so that they are not eroded by FinTech. The FinTech revolution is not characterised by what services are offered but by who is offering those services.

1.2. CONTEXT OF THE STUDY

Financial Technology or FinTech is not a new phenomenon. It can be traced as far as back as the 1860s (Arner, Barberis, & Buckley, 2015). The GFC in 2008 became a catalyst for the evolution of FinTech start-ups. The difference about the FinTech revolution is not about the services offered, i.e. payment or loan solutions, but the main difference is about who is offering those services (Arner et al., 2015).

The banking industry is made up of several areas, namely personal, business, corporate and investment banking. The current study focused on the personal banking space in South Africa. The South African banking industry is made up of 10 domestic banks, 15 branches for foreign banks, 38 foreign representative banks and three mutual banks (South African Reserve Bank [SARB], 2017). The South African banking industry is dominated by five banks, namely ABSA, Capitec, FNB, Standard Bank and Nedbank (Major, 2017).

A report compiled by FinScope in 2015 stated that 77 per cent of South Africans are banked; however, once you exclude South Africa Social Security Agency (SASSA) grant beneficiaries, the banking population is reduced to 58 per cent (Finmark Trust, 2015). This presents a unique opportunity for FinTech start-ups and banks operating in the personal banking space. FinTech can reach remote locations where there is little or no banking infrastructure, whereas banks can have problems in operating in remote locations. A study carried out by FinScope found that about 40 per cent of the South African population use smartphone apps and 51 per cent of adults have a smartphone (Finmark Trust, 2015). Going forward, this presents a unique opportunity for FinTech start-ups operating in South Africa to develop and provide services at a reduced cost.

A report compiled by Accenture indicates that investment in the FinTech sector has grown from USD 4.05 billion in 2013 to USD 22 billion in 2016 (Skan, Dickerson, & Gagliardi, 2016). In 2016, USD 22 billion had been invested in the sector. The significant growth in FinTech investment demonstrates its visibility in the world of finance, and it provides a platform for further research and ideas within the sector (Zavolokina, Dolata, & Schwabe, 2016).

FinTech start-ups are creating new opportunities for individuals. They have created a space for greater transparency, reduction of costs, greater access to information, and in some cases they have cut out the 'middleman' (Zavolokina et al., 2016). In the financial services industry, FinTech start-ups operate in banking, insurance, wealth and asset management (Ernst & Young, 2015). Each of the sub-sectors in the financial services sector stands to be disrupted by FinTech start-ups. In an article published by Mackenzie (2015), some of the interesting findings the researcher came across were that people want to invest and borrow money with ease (Mackenzie, 2015). Dapp (2014) defines FinTech as a financial service that is about satisfying the requirements of tomorrow, which is about ensuring greater efficiency, cost reduction, improvement of business processes, rapidity and innovation.

Service quality is a crucial aspect of customer experience (Bick, Abratt, & Möller, 2009). Elements such as convenience, ease of use, cost and access are driving consumers towards FinTech solutions (BBVA Innovation Centre, 2015). Nedbank in 2015 highlighted that their key to growth lies in acquisition, retention and cross-sell (Nedbank Group, 2015). These three elements are important for banks operating in the personal banking space in growing their net interest revenue.

The banking environment is also set to change quite significantly in South Africa. A number of banks are going to be launched in the near future. Discovery, African Bank and the Post Office are set to launch their banks next year. Coupled with FinTech start-ups, the banking space will see a number of changes that will ulimately benefit the consumer and the country.

1.3. PROBLEM STATEMENT

Financial services have evolved over the past couple of years. Technology in the sector was primarily driven by the players in the sector such as banks, insurance companies and other financial institutions (Arner, Barberis, & Buckley, 2015). The focus of this research was on the role FinTechs play in the banking industry in South Africa. It must be noted that FinTechs are not necessarily a new phenomenon but they have been in existence since the 1860s. The study focused on how banks in South Africa have applied corporate entrepreneurship (CE) in competing with FinTechs. The FinTech revolution is not driven by the products offered or services rendered but by who is offering those services (Arner et al., 2015).

1.3.1. Sub-problem 1

The first sub-problem identified was the fact that FinTechs have the potential of affecting the business model of the banking industry. Banks are finding it increasingly difficult to compete in the digital marketplace (Sia, Soh, & Weill, 2016). Banks have to contend with legacy issues and compliance issues, making it difficult for them to experiment with digital innovation (Sia et al., 2016), whereas with FinTech start-ups, it is the opposite, as they are able to position themselves against banks by offering a personalised service to clients, creating a culture of innovation, providing solutions that are data driven and being agile in the market (Lee, 2016).

FinTechs are disrupting the banking industry in the payments, lending and financing and the capital markets space, which are key areas for retail banks (Omarini, 2017). FinTechs also have a cost advantage as opposed to banks: they can offer a quick, efficient service at a much lower cost than financial institutions (Lee, 2016).

1.3.2. Sub-problem 2

The second sub-problem that I identified is the way South African banks have gone about to partner, compete or collaborate. Institutions across the globe have begun to invest in FinTech start-ups both internal and external of the organisation to ensure that they are at the forefront of FinTech innovation and have a competitive advantage in the market (Lee, 2016). Much of the investment in the space is largely driven by traditional financial institutions (Lee, 2016).

1.4. RESEARCH PURPOSE, RESEARCH QUESTION AND AIMS OF THE STUDY

The purpose of the study was to determine the role FinTech start-ups play in the personal banking space in South Africa, in respect of whether they are disrupting the banking industry and whether they are complementing the big banks in South Africa. The aim of this study was to gain a thorough understanding of the role FinTechs play in the banking industry in South Africa, and more specifically of how banks are using CE as a tool to reposition themselves in the market to compete with FinTech start-ups. FinTechs are growing and have been receiving a significant amount of investment over the years. Investment in the sector has grown from $ 4 billion USD to 22 billion USD (Skan et al., 2016).

1.4.1. Conceptual/Theoretical definition of terms

FinTech (Financial Technology) – Describes the intersection of financial services and technology (PwC, 2016). It is the integration of technology with financial services (Arner et al., 2015).

Corporate Entrepreneurship (CE) – Corporate entrepreneurship can be defined as a process of creating new organisations, or it can be described as a process of organisational renewal or innovation through an employee or employees in the organisation (Sharma & Chrisman, 1999).

1.5. CONTRIBUTION OF THE STUDY

The study examined and analysed the influence of FinTech start-ups on established banks operating in the personal banking space in South Africa. FinTech start-ups want to make it easy and convenient for clients to borrow and invest money (Mackenzie, 2015). South African banks have largely been focused on competing and increasing their client pool. However, banks across the world face a threat from FinTech start-ups. If banks are not vigilant, they can be disrupted and end up in the same position as the meter taxi industry when UBER disrupted the market. The study will benefit banks and other players in the South African financial services industry on the impact of FinTech start-ups on the personal banking industry. South African banks face threats from new entrants: Discovery will largely focus on the mass affluent market, African Bank is expected to focus on the lower to middle class segments, and the Post Office is expected to service the lower end of the market.

However, the threat for established banks will no longer be from Capitec or the new entrants only but also from FinTech start-ups which offer services at a reduced cost.

CHAPTER 2 :

LITERATURE REVIEW

2.1. INTRODUCTION

Over the past four decades corporate entrepreneurship (CE) has developed and evolved to play a crucial role in organisations to foster innovation and ensure that organisations are able to compete effectively in the global market (Kuratko, Hornsby, & Hayton, 2015). CE therefore plays a crucial role in the longevity of an organisation and ensures that organisations are able to continually renew themselves to compete with existing organisations and new competitors that are coming into the market. The literature review will provide an analysis on CE and financial technology and how it influences the personal banking industry in South Africa.

2.2. LITERATURE BACKGROUND

2.2.1. Entrepreneurship

Entrepreneurship can be defined as a process of creating new organisations, innovation, wealth and bringing about change (Morris, Kuratko, & Covin, 2011). However, Stevenson and Jarillo-Mossi (1986) define entrepreneurship as creating value by combining a set of unique resources to take advantage of an opportunity. The term entrepreneurship is derived from the French word “entreprendre”, which means to take on or to venture on (Venter et al., 2015). Scholars have over the years defined the term entrepreneurship. Schumpeter describes an entrepreneur as someone who innovates and who develops new combinations to create economic value, and this could be the creation of new goods and services, a new way of

producing, entering into new markets, finding new sources of raw materials or creating a new organisation (Schumpeter, 1934). Kinder described an entrepreneur as someone who creates change by identifying a gap in new or existing markets (Kirzner, 1973). Knight (1921) postulates that an entrepreneur is someone who deals with an uncertain environment in taking advantage of opportunities (Knight, 1921). However, Shane and Venkataraman (2001) change the way entrepreneurship is defined and focus primarily on the entrepreneur and how an entrepreneur can identify new opportunities and exploit those opportunities (Shane & Venkataraman, 2001). The term entrepreneurship has been used extensively and there are contrasting views as to what it means. Our focus will be on CE.

2.2.2. Corporate entrepreneurship

Corporate entrepreneurship (CE) has evolved remarkably over the past 40 years, into a strategy that plays a pivotal role in organisations' focus on creating innovative solutions and ensuring the organisation competes effectively in the global market (Kuratko et al., 2015). According to Covin and Miles (1999), all forms of CE are rooted in innovation. CE as defined by Sharma and Chrisman is a process of creating a new organisation, starting a process of renewal or innovating through an employee or employees within an organisation (Sharma & Chrisman, 1999). Rutherford and Holt (2007) define CE as a process of improving a firm's capability through using the employees' innovative skills and abilities. From a strategic perspective, CE is vision focused; there is a culture of entrepreneurial behaviour within the firm that identifies and takes advantage of opportunities to bring renewal to the firm and extend the company's scope of operational activities (Ireland, Covin, & Kuratko, 2009). Organisations that demonstrate CE are flexible, dynamic, and ready to take on new business opportunities (Kuratko, Hornsby, & Goldsby, 2012).

The GFC in 2008 affected a number of sectors and was a critical turning point for a number of organisations. The financial services sector was one of the sectors that was hit hard by the crisis, while a number of organisations had resource constraints, there was instability in market conditions, and it therefore created a challenge for organisational survival (Kuratko et al., 2015; Kuratko & Hornsby, 2014). It is for this reason that in the years that preceded the GFC in 2008, there was greater need among organisations for corporate innovative activities (Kuratko & Hornsby, 2014). The current dispensation requires organisations to be innovative and courageous, have an appetite for risk, and able to take a lead when it comes to entrepreneurship (Kuratko et al., 2015). It is important for organisations to develop their competitive advantages in tandem with what is happening at the moment and what will take place in the future (Ireland et al., 2009). The implementation of CE in an organisation therefore means that the organisation will mainly look at exploiting and growing through entrepreneurial opportunity to gain a competitive advantage in the market (Shane & Venkataraman, 2000).

When banks drive CE, it ensures that they are able to gain a competitive advantage against new and existing competitors. This in turn ensures that they are able to overcome challenges in an ever-changing market (Chai & Entebang, 2013). Challenges such as the GFC in 2008, changes in technology, globalisation and increased competition from existing competitors and new competitors have contributed to organisations finding it difficult to grow and maximise profits (Chai & Entebang, 2013). For banks to remain relevant in a changing industry, the need to be entrepreneurial is paramount (Lumpkin & Dess, 1996; Thornberry, 2001). Miller (1983) highlights the point that organisations that are more entrepreneurial perform better than those that are less entrepreneurial. It is therefore critical that banks have

a culture of CE, since they play a key role in the economy, whether in a developed economy or a developing economy (Chai & Entebang, 2013). Banks across the globe can therefore ill afford to ignore corporate entrepreneurship (Chai & Entebang, 2013).

2.2.3. Corporate entrepreneurship strategy

Organisations pursue a CE strategy to leverage off entrepreneurial opportunities (Shane & Venkataraman, 2000) for ensuring growth and for gaining an advantage in the market (Kuratko et al., 2015). A CE strategy is an organisation-wide strategy to foster entrepreneurial behaviour with the objective of constantly rejuvenating the organisation and shaping the scope of its operations through identifying and taking advantage of opportunities (Ireland et al., 2009). Established organisations have pursued CE for profitability (Vozikis, Bruton, Prasad, & Merikas, 1999; Zahra, 1993), strategic renewal (Guth & Ginsberg, 1990), innovation (Baden-Fuller, 1995),to develop future revenue streams (McGrath, Venkataraman, & MacMillan, 1994), global success (Birkinshaw, 1997) and organising the entity's resources for the development of an effective competitive advantage (Borch, Huse, & Senneseth, 1999).

2.2.4. Corporate entrepreneurship types

Corporate entrepreneurship (CE) can be divided into two parts, the creation of a new entity with the exisiting organisation and the strategic renewal of an organisation (Zahra, 1991). CE can compise formal or informal activities within the organisation (Kuratko et al., 2015). CE activities include the creation of new businesses in an existing business through market development as well as product and process innovation (Kuratko et al., 2015). Such activities can occur at a corporate level, divisional level or at a project level (Kuratko et al., 2015), and the

purpose of these activites is to improve the organisation's competitiveness and its financial performance (Kuratko et al., 2015).

2.2.4.1. Corporate venturing

CE occurs in organsations in two ways: it can be through corporate venturing or strategic entrepreneurship (Kuratko et al., 2015). Corporate venturing can occur in two ways: it can be innovation that is created within the organisation, which is internal corporate venturing (ICV) (Kuratko et al., 2015). In ICV, an organisation creates the new business and it owns the new business. The entity in most instances forms part of the firm's other businesses (subsidiaries) (Kuratko et al., 2015). Corporate venturing can also occur externally, which is known as external corporate venturing (ECV), where an innovation is created outside of the organisation (Kuratko et al., 2015). The process of ECV occurs when external parties outside the organisation create new businesses where the organisation purchases the business or invests in it.

Organisations therefore pursue corporate venturing for three reasons: In the first instance, an organisation will pursue corporate venturing to develop the organisation's innovative capacity, which is the foundation of ensuring that the organisation improves entrepreneurially and is adaptable to change (Kuratko et al., 2015). Second, the aim is to increase the firm's capacity in terms of operations and knowledge in areas that could be vitally important for the organisation (Kuratko et al., 2015). Finally, the aim is to bring in financial returns at a quicker rate (Kuratko et al., 2015). It is therefore important that the organisation improves its corporate entrepreneurial strategy to improve their operations and also to be able to tap into corporate venturing opportunities (Ferreira, 2002).

2.2.4.2. Strategic entrepreneurship

Strategic entrepreneurship differs from corporate venturing because it does not necessarily mean a new business is formed when this approach is applied by an organisation. Kuratko et al. (2015) define strategic entrepreneurship as important entrepreneurial activities or innovations that a firm adopts to ensure a competive advantage that does not necessarily lead to the creation of a new enterprise for the organisation. There are five forms of strategic entrepreneurship, namely strategic renewal, which is concerned with a firm adopting a new strategy; sustained regeneration, which is all about introducing new products to existing markets; domain regeneration, which is about changing the current product offering or the current market; organisational rejuvenation, which is concerned with ensuring that there is innovation within the organisation to improve strategy; and lastly, business model reconstruction, which is about reconstructing a firm's existing business model (Kuratko et al., 2015).

Strategic entrepreneurship can therefore be summarised as a firm's actions to take advantage of current opportunities and seek future opportunities at the same time, which leads to innovation and a competitive advantage in the market (Ireland & Webb, 2007). Strategic entrepreneurship helps position itself against any major changes in the market (Ireland & Webb, 2007) and this is particularly important as it can help banks to fend off competiton that is posed by FinTechs and new entrants into the market.

2.2.5. Business models

A firm's business model can be termed as the "*chassis"* of the organisation. A business model is defined as decision variables that include the entity's strategy, architecture or design as well as the economics that lead it to creating a competitive

advantage in its chosen industry (Kuratko, Morris, & Covin, 2011). A business model needs to address the following key questions in ensuring that the organisation remains competitive in its chosen field: (1) how will it create value for the business? (2) who is it creating value for? (3) what are the organisation's core strengths? (4) what will make the firm different from its competitors in the market? (5) how does the firm make money? and (6) what is managements vision for growth over a period of time? (Morris, Schindehutte, & Allen, 2005). These questions are critical for the organisation to ensure sustainability, profitability and relevance in the market. The points mentioned above can further be divided into three areas, namely the foundation, proprietary and rule levels (Morris et al., 2005). At the foundation level, management is concerned with making general decisions regarding the operation of the business, and it ensures that these decisions are consistent within the organisation (Morris et al., 2005). The foundation level touches on all the elements in each of the six points mentioned above (Morris et al., 2005). At the proprietary level, the organisation deals with innovation that only applies to the entrepreneur and the venture that is being pursued. The key difference between the foundation level and proprietary level is that the proprietary level focuses on strategy whereas the foundation level focuses on generic decisions (Morris et al., 2005). The foundation level can be replicated by competitors, whereas the proprietary level is much more difficult to replicate and this creates a competitive advantage for the firm (Morris et al., 2005). Business model innovation therefore is important in driving CE in an organisation (Morris et al., 2011). Business model innovation is further important as it allows the firm to re-examine and reshape their existing business model to be different from competitors in order to unlock value (Kuratko & Audretsch, 2009). Business model innovation is important to strategic entrepreneurship, which

is used by management to create and maintain their competitive advantage in the market (Ireland & Sirmon, 2003). Companies can develop a competitive advantage by developing and coming up with innovative business models that will take advantage of targeted opportunities in the market (Ireland, Hitt, Camp, & Sexton, 2001; Eckhardt, 2013). When a firm therefore applies an entrepreneurial method to changing the business model, the firm is able to address client needs, increase the value they create for clients, and plot a model of current market structures (Jaworski, Kohli, & Sahay, 2000).

2.2.6. What is FinTech?

FinTech is a combination of finance and technology (Dinardo, 2016). Dinardo (2016) defines FinTechs as firms that apply technological innovation to financial services. FinTech can also be defined as the integration of information technology (IT) with financial services. Arner et al. (2015) further define FinTechs as companies that offer financial solutions that are backed by technology. It is evident from the definitions above that FinTechs are firms that use IT with finance to serve human needs, and more especially in financial services. These services could be lending, investing or borrowing, etc.

2.2.7. FinTech ecosystem

For us to get a real understanding of how FinTechs operate, we need to understand the FinTech ecosystem. Lee (2016) identified five elements that are crucial to the FinTech ecosystem: first, the FinTech start-up itself; second, the technology developers; third, the government that provides direction in terms of regulation and legislation; fourth, the consumers, made up of individuals and businesses; and last, the traditional financial institutions. The elements mentioned above ultimately create a system that ensures collaboration and competition and plays a key role in

innovation and stimulating the economy, which benefits the consumer at the end (Lee, 2016).

2.2.8. History of FinTech

The history of FinTech stretches back to 1866 with the introduction of the telegraph in 1838 and the laying of the first transatlantic cable in 1866 (Arner et al., 2015). This paved the way for the evolution of financial services and in 1987 the first Automatic Teller Machine (ATM) was introduced by Barclays, which made a significant contribution to the evolution of modern financial technology (Arner et al., 2015).

The impact of the ATM led the former chairperson of the US Federal Reserve, Mr Paul Volcker, to say that the most important innovation he has seen in the past 20 years has been the ATM (Arner et al., 2015). Today one can interact with an ATM such as send money or withdraw money without an account with the bank. FNB's e-Wallet allows individuals to withdraw money without a bank account.

FinTech 3.0, a hybrid system that integrates traditional banking with the Internet, is largely driven by who is delivering services and is not concerned with what products or services are being offered (Dinardo, 2016; Arner et al., 2015). The GFC became a catalyst for FinTech start-ups as governments tightened regulation in the financial services industry. There was also a loss in confidence in financial institutions by consumers (Dinardo, 2016). Many financial institutions had to be bailed out by governments, effectively meaning that the public had to bail out financial institutions to ensure stability in the economy. This created the "perfect storm" for FinTech start-ups to move into the financial services industry.

2.2.9. FinTech in Africa

FinTech start-ups have a unique opportunity in Africa. They can reach Africa's unbanked population which does not necessarily have access to banking infrastructure. In a survey conducted by PricewaterhouseCoopers (PwC), it found that 75 per cent of the African continent remains unbanked (PwC, 2016). In South Africa the numbers are quite different: 77 per cent of the South African population is banked; however, once you exclude South Africa Social Security Agency (SASSA) grant beneficiaries, the banked population sits at 58 per cent (Finmark Trust, 2015). This means that 23 per cent of the population is unbanked if you include SASSA grant beneficiaries, but once you exclude them, the unbanked population in South Africa sits at 42 per cent.

2.3. FINTECH BUSINESS MODEL

Banks are finding it difficult to compete in the digital marketplace (Sia et al., 2016). Banks are affected by legacy information technology (IT) systems (Sia et al., 2016) that are expensive to implement and maintain, and have to contend with compliance issues that make it difficult for them. They are challenged to innovate as they do not have enough capacity to experiment with digital innovation (Sia et al., 2016). FinTechs, on the other hand, have positioned themselves in the market by providing personalised services to clients, providing data-driven solutions, creating a culture of innovation and having the ability to be agile in the market (Lee, 2016). Financial institutions have taken notice of the dynamic nature of FinTechs, which has seen them develop strategies on how they can partner with FinTechs, collaborating with or even competing with them (Lee, 2016). The dynamic nature of FinTechs is that consumers can use a different FinTech company / platform for different reasons, for example a consumer may choose a platform such as SoFi for a personal loan and

later use PayPal to send money. This creates a situation where the consumer can pick and choose which services to use without being reliant on one service provider such as a bank (Lee, 2016). Banks are increasingly finding themselves competing with FinTechs as the latter have the ability to acquire clients more rapidly and are able to innovate and adopt new payment capabilities at a quicker rate than banks (Lee, 2016) .

Financial Technology is one of the fastest growing and important innovations in the financial services industry (Lee&Shin,2016).Due to the disruptive nature of FinTech's companies in the financial services industry need to bolster their capabilities to either invest or to remain competitive in the industry (Sia et al, 2016). Financial technology is therefore important to companies operating in the financial services industry (Puschmann,2017). FinTech's have therefore positioned their firms on using information technology in delivering efficiency to the financial system(Park,Kin Yeon,Choi,2016). FinTech can therefore provide services through mobile phones , social media and other internet of things platforms (Park,Kin Yeon,Choi,2016). It is therefore important that banks realise that conditions in the global environment need them to adopt entrepreneurial strategies to succeed in the market (McGrath & MacMillan, 2000; Morris, Kuratko, & Covin, 2008). When an organisation starts using entrepreneurial strategies, it is revived and it starts becoming more innovative Cooper, Markman, and Niss (2000, p. 116)

2.3.1. Payments business model

Within the payments business model of FinTechs, there are FinTechs that play in the consumer and retail payment space as well as the wholesale and corporate payment space (Lee, 2016). FinTechs that are payments based are currently the most used and least regulated in the financial services space. This type of FinTech ensures that consumers can have an efficient payment experience that leverages speed, convenience and multi-channel accessibility (Lee, 2016).

2.3.2. Lending business model

Besides payments, lending is also a huge trend within FinTech. There are peer-to-peer (P2P) FinTechs that lend to consumers and P2P platforms that lend to businesses (Lee, 2016). P2P platforms can match borrowers to lenders and are able to offer lower interest than banks (Lee, 2016). These FinTechs only facilitate the transaction as opposed to banks who provide the funds to consumers or businesses.

2.3.3. Crowdfunding business model

The crowdfunding model puts together the individual or enterprise seeking the funds, the individuals that will be providing the funds, and the FinTech that will be facilitating the transaction between the three entities (Lee, 2016). The FinTech facilitates the transaction between the two parties by providing information of what the individual needs and matching that to a funder on the platform (Lee, 2016). An example of this has been Feenix, a crowdfunding platform which seeks to ensure that students who have outstanding university debt are matched with a funder (corporate/individual) to help them pay off their fees.

2.3.4. Capital market business model

FinTechs that operate in the capital markets play in the following areas: investment, foreign exchange, trading, risk management, and research (Lee, 2016). South Africa has many migrants from different countries on the African continent and even beyond the continent. Foreign currency transactions that are operated by FinTechs in this space have allowed individuals and businesses to incur lower costs when engaging in foreign currency transactions, and lowered the barriers, as this field was primarily dominated by financial institutions (Lee, 2016). Individuals can send and receive money through their mobile devices in real time (Lee, 2016).

2.4. SEGMENTS IN PERSONAL BANKING AND PRACTICES

FinTech is revolutionising the banking industry. FinTechs are not only disrupting the banking industry but they are disrupting the entire financial services industry. FinTechs are affecting a number of areas in the personal banking space. In payments, FinTech start-ups are searching for innovative methods to simplify the process of transfer between parties (Gibson, 2015). FinTech firms have entered the banking market to provide payment solutions by targeting the emerging mobile payments market (Omarini, 2017). FinTechs have targeted three main areas of retail banking, which is payments, lending and financing, and financial assets and capital markets (Omarini, 2017). Omarini (2017) points out that FinTechs are challenging this space as it is where there are gaps in customer satisfaction and expectations. The FinTech business model, as Omarini (2017) points out, is that FinTechs want to provide a niche service to clients, they want to be transparent, acquire customers, offer a simplified service, and distribute their service (Omarini, 2017). FinTechs therefore can reshape the way consumers do banking (Omarini, 2017). In a report that was compiled by Capgemini, it found that FinTech firms are easy to use, they offer a quick service, and they ensure a good customer experience (Capgemini, 2016). The same report found that more than 60 per cent of customers across the globe use products or services from FinTech companies (Capgemini, 2016). FinTechs have many key advantages in that they can move much quicker than banks and are also able to innovate at a quicker rate than banks (Omarini, 2017).

2.5. FINTECH IN SOUTH AFRICA

FinTech is shaping the way we interact with financial services daily. FinTechs are creating a space in the financial service space which is going to lead to a reduction of costs and an improvement in financial services (Lee, 2016). The advent of

FinTech has the possibility of reaching the unbanked across the globe. In Africa, for example, three quarters of the population remain unbanked (PwC, 2017). This presents a unique opportunity for banks to grow on the African continent. Lee (2016) posits that financial institutions will choose to collaborate, compete or exist within the same space as FinTech start-ups. Investment in the FinTech space is largely driven by financial institutions that invest in FinTechs to collaborate in a bid to bypass innovation in the space and ensure a competitive advantage (Lee, 2016).

The South African banking industry is largely dominated by five banks, namely Standard Bank, Nedbank, Barclays Group, First National Bank (FNB) and Capitec (Thwaits, 2016). The industry is highly competitive, to the extent that the banking sector is ranked second in the world by the World Economic Forum (WEF) Global Competitiveness Report for soundness (Schwab, Brende, & Sala-i-Martin, 2016). South African banks, as dominant as they are in the market, also face the risk of being disintermediated by FinTechs. Ndzamela (2016) suggests that banks have had to invest large sums of money in digital platforms to ensure that they can keep up with consumer demand. Financial institutions across the world and even in South Africa have taken a position to either collaborate or partner with FinTech start-ups. It must be noted that banks play a key role in the economy and hence a competitive banking sector is imperative (Simbanegavi, Greenberg, & Gwatidzo, 2015). As mentioned, the banking sector in South Africa is highly concentrated and is dominated by Standard Bank, FirstRand, Nedbank, and ABSA, but more recently Capitec has become part of big banks in South Africa (Simbanegavi et al., 2015). The high concentration can potentially lead to collusion amongst the banks (Simbanegavi et al., 2015).

2.6. THEORETICAL BACKGROUND

CE is defined as a process of creating new organisations, a process of renewal or innovation through employees, according to Sharma and Chrisman (1999). CE has grown over the past four decades, and plays an important role as a strategy that organisations use to create innovative solutions and ensure that they can compete effectively in the global market (Kuratko et al., 2015). The research was based on looking at the role that FinTech start-ups play in the personal banking space in South Africa.

The growth of FinTech start-ups was largely driven by the 2008 GFC (Lee, 2016). This created a perfect catalyst for FinTechs to enter the financial services industry. Banks are finding it increasingly difficult to compete in the digital marketplace (Sia et al., 2016). They have to contend with issues such as IT legacy systems and compliance issues, to name a few (Sia et al., 2016). It is for this reason that banks need to pay attention to their CE strategy. CE strategy is pursued by organisations to take advantage of entrepreneurial opportunities (Shane & Venkataraman, 2000). Organisations will pursue this type of strategy for growth and for gaining a competitive advantage in the market (Shane & Venkataraman, 2000).

Corporate entrepreneurial strategies are important for an organisation , as these strategies ensure that the organisation remains innovative and able to compete with existing and new competitiors McGrath & MacMillan, 2000; Morris, Kuratko, & Covin, 2008. As the global economic context changes , organisations more especially financial institiutions face a challenge of being able to innovate, be courageous, take risk and still demonstrate entrepreneurial leadership (Kuratko & Morris, 2013)

Innovation is therefore a key underlying theme for all forms of corporate entrepreneurship (Covin & Miles,1999). (Ireland et al , 2009) describes corporate entrepreneuship strategy as vision that is directed throughout the organisation , which is anchored on corporate entrepreneurial behaviour that directs or brings to life the organisations operations and how it recognises and exploits entrepreneurial opportunities.Organisations have initiated corporate entrepreneurial opportunities to drive profitability (Vozikis et al.1999;Zahara 1993) , drive strategic renewal (Guth and Ginsberg 1990), innovation (Baden-Fuller,1995), developing new revenue streams (McGrath et al, 1994), international success (Birkinshaw 1997) as well as developing competitive advantages (Borch et al, 1999; Covin and Miles,1999; Covin et al, 2000;Covin et al, 2003;Kuratko et al 2009). Corporate entrepreneurship strategies are a foundation for future profitable growth for companies (Hornsby et al 2009;Kuratko et al 2001). Corporate entrepreneurship is therefore demonstrated in corporate venturing (CV) or strategic entrepreneurship (Kuratko et al, 2015)

2.7. FIRST RESEARCH QUESTION/HYPOTHESIS DISCUSSION

Strategic entrepreneurship is a vital component of CE. Unlike corporate venturing, which focuses primarily on creating new businesses within the organisation (Kuratko et al., 2011), strategic entrepreneurship does not necessarily lead to the creation of a new organisation (Kuratko et al., 2011), but this means that the organisation adopts innovations and strategies that are aimed at pursuing a competitive advantage.

A key concept that is important in this discussion is the business model. A business model is vital to an organisation as it informs the decisions the organisation will adopt, the strategy it decides on, and its design and functions that ensure that it has a competitive advantage in its chosen industry (Kuratko et al., 2011).

FinTech start-ups have disruptive business models that appeal to the consumer. What makes the FinTech evolution unique is not about the products or services that are offered but about who is offering these services (Arner et al., 2015). The disruptive nature of FinTech start-ups poses quite a significant threat to personal banks, for example FinTech start-ups can reach remote locations by means of mobile phones, whereas traditional banks are often limited by infrastructure and regulations.

H1*:* There is a positive relationship between ECV in the personal banking industry and FinTech start-ups.

2.8. SECOND RESEARCH QUESTION/HYPOTHESIS DISCUSSION

As organisations grow and evolve, it is important that they adopt a CE strategy. Shane and Venkataraman (2000) suggest that organisations pursue a CE strategy to leverage off entrepreneurial opportunities that foster growth and that ensure a competitive advantage in the market (Kuratko et al., 2015). Sia et al. (2016) discovered that banks are finding it increasingly difficult to compete in the digital marketplace. Banks must contend with a number of challenges, such as legacy IT infrastructure, and compliance issues, and this makes it difficult for them to innovate as they do not have time to experiment with digital innovation (Sia et al., 2016). FinTech start-ups, on the other hand, have adopted a strategy that looks at providing a personalised service to clients that is data driven and fosters a culture of innovation. Organisations therefore use CE strategy to ensure profitability, strategic renewal, innovation, future revenue, global success and a competitive advantage in the market (Kuratko et al., 2011).

It is therefore important that banks in South Africa adopt such a strategy to ensure that they are able to achieve profitability, strategic renewal, innovation, future revenue streams, global and regional success and a competitive advantage (Kuratko et al., 2011).

Banks use CE strategy to compete with FinTech start-ups; therefore, the second hypothesis is that banks use corporate venturing to compete with FinTech start-ups.

H2: There is a positive relationship between corporate venturing in the personal banking industry and FinTech start-ups.

2.9. FIRST RESEARCH QUESTION/HYPOTHESIS DISCUSSION

The advent of FinTech start-ups and the danger they pose to banks has seen a number of banks across the world collaborate with FinTechs. A number of banks have developed new products and services to compete with FinTech start-ups whilst others have embraced FinTechs and have started to collaborate with them to improve their offering to clients (Omarini, 2017). Collaboration with FinTechs creates a situation where banks are no longer facing their competition but rather are collaborating with them, as FinTech start-ups one way or another need to collaborate with banks to access data from a client's account, need to access payment systems, and there is credit origination that they need access to as well as issues of regulation and compliance (Omarini, 2017). Investment in the FinTech space is largely driven by the financial services sector. Organisations with the financial services space collaborate with FinTech start-ups through investing in external FinTech start-ups or through starting up their internal FinTech projects (Lee, 2016). In this way they can be at the forefront of FinTech innovation and ensure a competitive advantage within the sector (Lee, 2016).

Therefore, the third hypothesis is that banks collaborate with FinTech start-ups.

H3: There is a positive relationship between collaboration in the personal banking industry and FinTech start-ups.

2.10. CONCEPTUAL FRAMEWORK OF HYPOTHESES

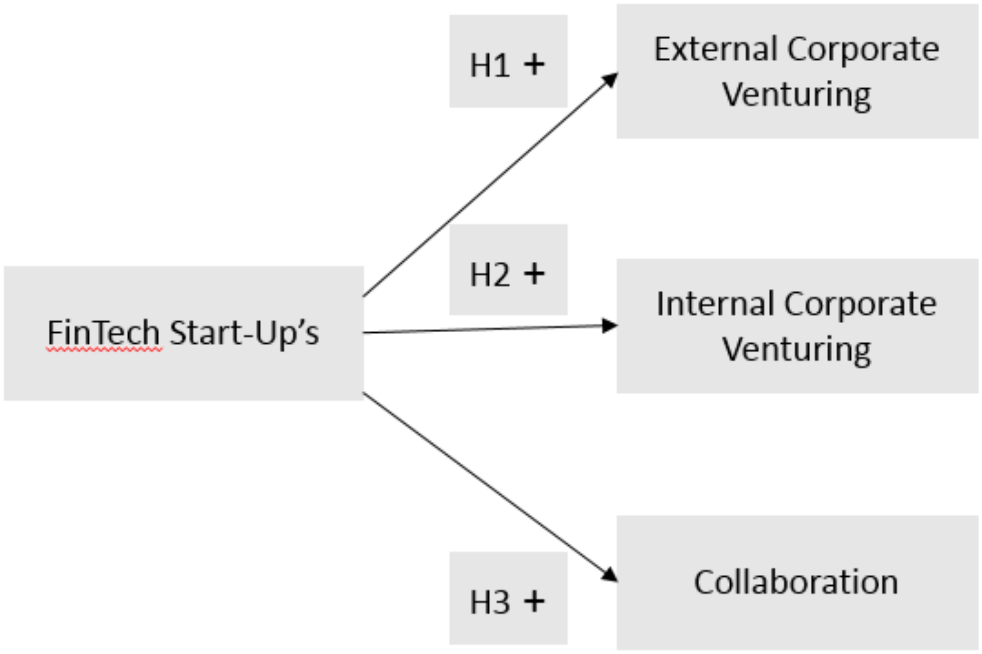


Figure 2.1: A conceptual framework

2.11. CONCLUSION OF LITERATURE REVIEW

The literature review argues that for organisations to compete effectively in the global market (Kuratko,Hornsby & Hayton,2015). Organisations need to be able to continually renew themselves to compete with existing organisations and new competitors that are entering into the market (Kuratko,Hornsby & Hayton,2015).Organisations that employ a corporate entrepreneurial strategy demonstrate flexibility, are dynamic and are ready to take on new business opportunities (Kuratko,Hornsby & Goldsby 2012). The global financial crisis of 2008 became a turning point for a number of organisations. The financial services sector was the hardest hit, organisations had resource constraints and there was market

instability as well. FinTech's capitalized on this and it has seen FinTech grow in leaps and bounds. There has also been significant investment within the space which brings new opportunities for empowerment that allows for greater transparency, reduction of costs and/or cutting out the middleman (Zavolokina et al., 2016) It is a strong reminder that FinTechs are taking over the banking space.In South Africa there is a 51 per cent smartphone penetration rate (Finmark Trust, 2015). This means that there is an enormous potential for growth in the market. Even though the banking sector in South Africa is largely dominated by only five banks, new entrants in the market such as Discovery Bank and TYME bank look to shake up how banking will be done in South Africa. Therefore, existing banks are not only getting competition from new entrant banks but also from FinTech start-ups.

CHAPTER 3 :

RESEARCH METHODOLOGY

3.1. RESEARCH METHODOLOGY

Research methodology is defined as how the research will be conducted. This describes the methods that will be used to collect data as well as the different measurements and analyses of data (Cooper & Schindler, 2006). The most common definition of research methodology is that it refers to a paradigm or theoretical framework, whereas the method refers to the tools or procedures used to collect and analyse data (Mackenzie & Knipe, 2006).

3.2. RESEARCH DESIGN

There are various approaches that can be used in research design, such as qualitative, quantitative or mixed methods in conducting research (Creswell, 2014). The distinction between quantitative and qualitative research is that quantitative research is numeric while qualitative research seeks to understand people's beliefs, knowledges, attitudes, behaviour, and interactions and hence generates non-numeric data (Saunders, Lewis, & Thornhill, 2012). Mixed methods comprise a combination of quantitative and qualitative research. Qualitative research involves the collection of qualitative data from text, interviews and transcripts (Bhattacherjee, 2012). Blumberg, Cooper, and Schindler (2011) describe qualitative research as exploration and analysis. In qualitative research the intention is to acquire an understanding of a phenomenon as opposed to predicting or explaining one (Bhattacherjee, 2012). This research followed a quantitative approach and involved the collection and analysis of quantitative data that was collected from individuals

who are consultants and who are either directly or indirectly involved in the banking space in South Africa.

3.3. POPULATION AND SAMPLE

3.3.1. Population

A population is a unit of analysis that a researcher uses when he/she is conducting a study. It can be made up of people, organisations, countries or any other object that a researcher wishes to study (Bhattacherjee, 2012). The population for the study comprised senior and middle management individuals who are employed in the different banks in South Africa as well as management consultants and legal experts who are directly involved in the banking industry. The researcher was able to dispatch the questionnaires, as he is currently in the employ of a management consulting firm that has relationships with many banks operating in South Africa. The researcher engaged with senior colleagues where he is employed to ensure that the questionnaires were sent out and completed for this research.

3.3.2. Sample

A sample is a group of items under observation that are selected to represent the population. Bhattacherjee (2012) describes sampling as a process of selecting a subset from the population to make observations and statistical inferences. Information that is gathered from a sample is used to generalise findings that are then brought back to a population (Bhattacherjee, 2012). The sampling method that was used for this research was the convenient sampling technique. This technique is a non-probability sampling method that allows individuals in a population to be selected based on accessibility, location, availability and a willingness to participate

in the study (Bhattacherjee, 2012). It is also referred to as an accidental or opportunity sampling method (Bhattacherjee, 2012).

3.4. RESEARCH INSTRUMENT

The research instrument was a questionnaire, which was accompanied by a letter providing the respondents information about the research as well as their rights as participants.

3.5. PROCEDURE FOR DATA COLLECTION

The questionnaire was distributed to respondents using the Qualtrics platform. The questionnaire required 10 to 15 minutes to enable the respondents to answer the questions quickly and as accurately as possible. The questionnaire was distributed to senior management, middle management and executives in the different banks as well as management consultants and legal experts involved in the banking industry. The researcher was able to despatch the questionnaires as he is currently in the employ of a management consulting firm that has a relationship with banks operating in South Africa.

3.6. DATA ANALYSIS AND INTERPRETATION

Data analysis involves the researcher drawing conclusions from the quantitative study, research questions, hypothesis, and the larger meaning of the results (Creswell, 2014).

3.6.1. Descriptive statistics

The empirical analysis of the study was based on descriptive statistics, exploratory factor analysis (EFA) and multiple linear regression analysis. Descriptive statistics measures central tendencies such as the mean and standard deviation. The results

from the descriptive analysis of the data were presented in figures and tables. A regression model analysis and correlation analysis was conducted as well.

3.6.2. Correlation analysis

A correlation analysis was conducted to test the relationships between the constructs. There are two major tests that are done in correlation analysis, namely Pearson correlation, which tests relationships between continuous variables, and the Spearman correlation, which tests the relationship between ordinal variables.

3.6.3. Exploratory factor analysis

Exploratory factor analysis (EFA) is used to summarise data. This is done to ensure that relationships and patterns can be interpreted and understood. EFA regroups variables into a set of clusters which is based on a shared variance (Yong & Pearce, 2013). The constructs were analysed using exploratory principal component factor analysis to reduce the number of variables based on how related they were. Varimax rotation analysis was used to load a smaller number of variables into each factor, which provided clusters of data that were more interpretable (Field, 2014).

3.6.4. Multiple linear regression analysis

A multiple linear regression analysis was done to estimate a relationship between the constructs. Regression is used to determine or predict a dependent variable from an independent variable or, in the case of multiple linear regression, numerous independent variables (Grégoire, 2014). Regression analysis demonstrates how much of an effect an independent variable has on a dependent variable, normally used in situations where there are a number of predictor variables (Field, 2014).

3.7. LIMITATIONS OF THE STUDY

Research limitations are described as those inherent biases that the researcher has no control over and that affect findings (Price & Murnan, 2004). The study will be largely affected on whether the respondents will understand and interpret the questions that are being asked on the questionnaire. As there might be a risk that the questions will be interpreted differently.

3.8. VALIDITY AND RELIABILITY

Validity ensures that research results are truthful (Cooper & Schindler, 2008), whereas reliability looks at the consistency of the results over a period (Cooper & Schindler, 2011). It must be noted that reliability does not mean accuracy but that the manner in which you measure constructs is consistent (Bhattacherjee, 2012).

3.8.1. External validity

External validity occurs when the results under observation can be generalised into groups, environments and contexts outside of experimental settings. (Onwuegbuzie, 2000). Winter (2000) defines external validity as the ability to generalise results so that they can be useful to other populations and qualitative findings that can be applied to the development of theory. To ensure external validity the researcher ensured that the questionnaire was distributed to individuals who work in the banking space directly and indirectly in South Africa.

3.8.2. Internal validity

Internal validity occurs when the results are only due to the independent variable (Onwuegbuzie, 2000). It determines whether variables that are under observation are caused by the independent variable (Winter, 2000). The questions on the questionnaire were linked directly to the issues that the study was looking at.

3.8.3. Reliability

Cooper and Schindler (2011) describe reliability as the degree to which results or findings are consistent over a period. In qualitative research, reliability is based on consistency (Leung, 2015). In qualitative research, trustworthiness is vital to ensure that there is reliability in the research (Seale, 1999***).*** According to (Bryman and Bell 2014; p.24) , there are three common features regarding reliability.The first feature is stability , which assess the level of confidence of measures to ensure that the measures are consistent over time and do not change when the same exercise is repeated over and over again (Bryman and Bell 2014; p.24). The second feature is internal reliability, which assesses whether the indicators that create the scale are stable and that the respondents response on any other indicator relate to the other responses with indicators (Bryman and Bell 2014; p.24). The last feature relates to inter-observer consistency, it occurs when there is more than one respondent and whether or not what the respondent records is consistent with the other respondents responses (Bryman and Bell 2014; p.24). The researcher therefore ensured reliability by using a questionnaire that had been used before and proven reliable when testing similar variables in the past.

CHAPTER 4 :

PRESENTATION OF RESULTS

4.1. INTRODUCTION

This chapter will present the empirical findings from the research. Primary data was collected, cleaned and analysed using SPSS predictive analytics software. The data was analysed in accordance with what was discussed in Chapter 3: Research Methodology. The study was quantitative in nature and based on the statistical analysis of data.

This chapter is divided into four parts. The first part will cover demographic information, the second will look at measurement scales, the third will cover hypothesis testing, and the last part other hypotheses that were tested in collecting the data.

The total number of respondents equated to 108. Of the 108 responses ,36 were incomplete. These were removed from the study and only 72 responses were completed. The sample generated a response rate of 60%

4.2. DEMOGRAPHIC INFORMATION

The data that was used to do the analysis was collected using an online questionnaire which was sent through email and through mobile cellphone links. The questionnaire was sent out to a number of organisations and individuals and the total number of respondents was 108. Thirty-six responses were incomplete and therefore 72 were analysed.

4.2.1. Respondent gender

Figure 4.1 shows the sample breakdown in terms of gender.

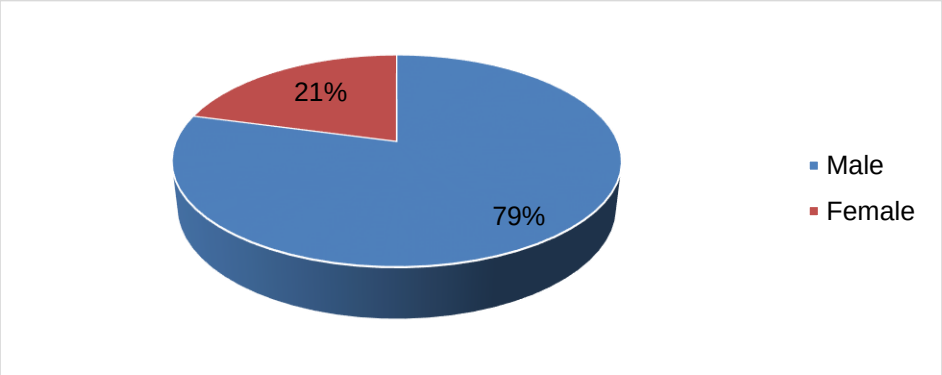


Figure 4.1: Respondent gender

The results show that most of the respondents in the sample were male (79%) and the remainder (21%) were female.

4.2.2. Number of years in the organisation

The number of years that the respondents had been within their organisation is shown in Figure 4.2.

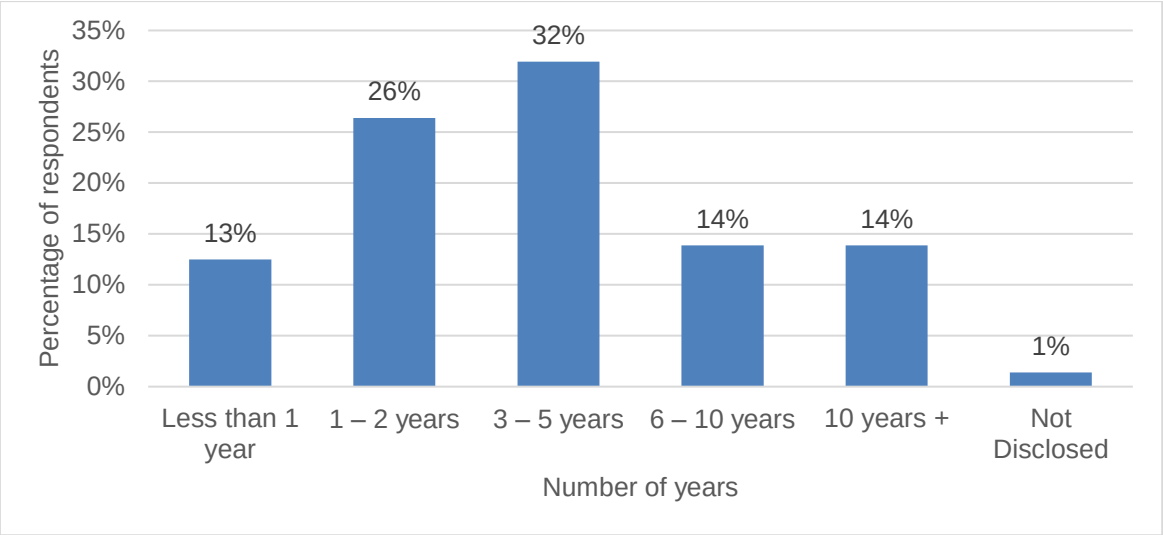


Figure 4.2: Number of years in organisation

It can be noted from Figure 4.2 that 13 per cent of the respondents had been with their organisation for less than one year, 26 per cent for one to two years, 32 per cent for three to five years, and 28 per cent for six years or more. There was also one per cent of the sample that did not disclose the amount of time that they had been with the organisation.

4.2.3. Level in the organisation

The levels of the respondents within their organisation are summarised in Figure 4.3.

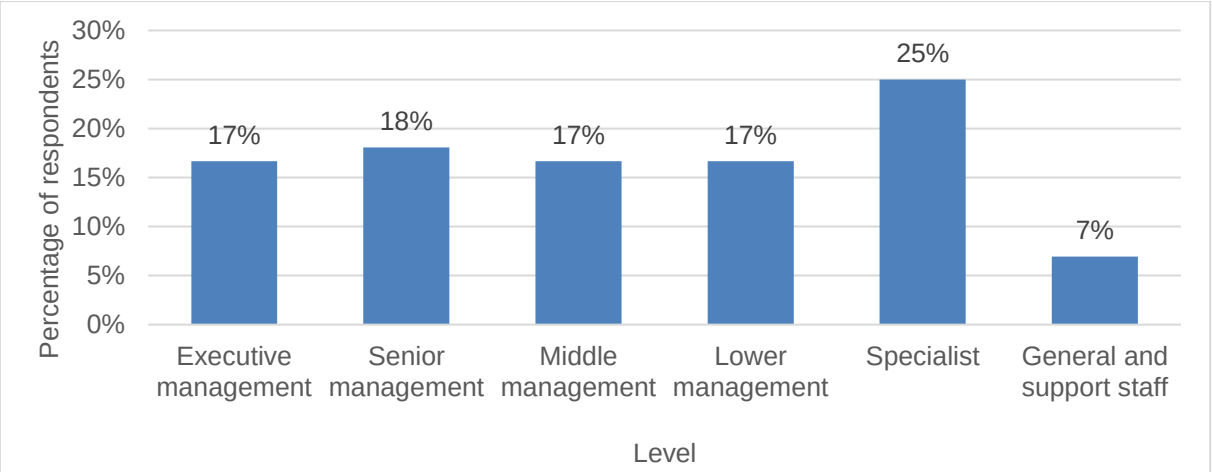


Figure 4.3: Level in organisation

There was almost an equal representation of executive management (17%), senior management (18%), middle management (17%) and lower management (17%). Specialists had the highest representation in the sample at 25 per cent while general staff and support staff had the lowest representation in the sample at seven per cent.

4.2.4. Highest level of education completed

Respondents were asked to indicate the highest level of education that they had completed, and the results are summarised in Figure 4.4.

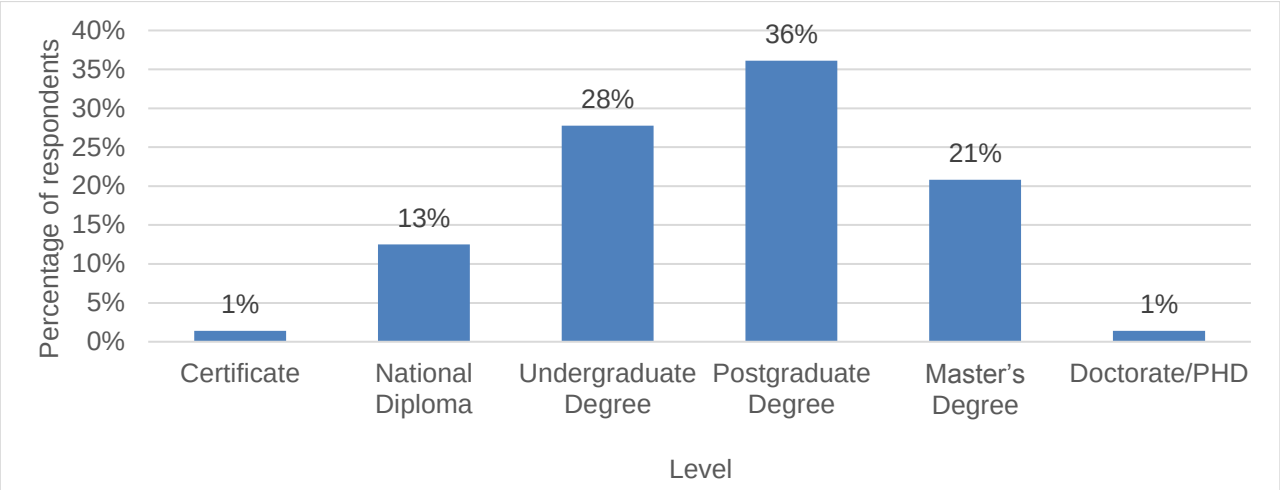


Figure 4.4: Highest level of education completed

Most of the respondents had at least a degree (86%), with the remaining 13 per cent having attained diplomas and one per cent with certificates.

4.2.5. Number of years employed

Figure 4.5 shows the number of years for which the respondents had been employed.

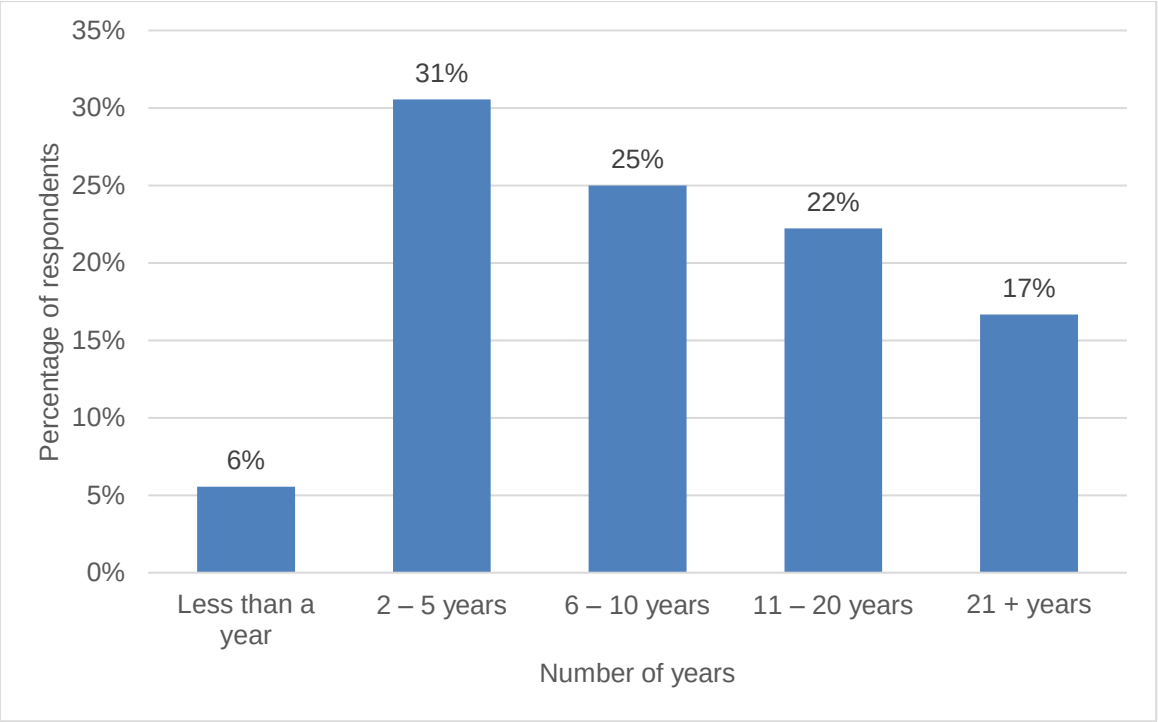


Figure 4.5: How long have you been employed?

It can be noted that the respondents had been employed for some time, with only six per cent having been employed for less than a year. A proportion of 31 per cent of the respondents had been employed for one to five years, 25 per cent for six to ten years, and 22 per cent for 11–20 years while 17 per cent had been in employment for 21 years or more.

4.3. MEASUREMENT SCALE

4.3.1. Scale validity

Exploratory factor analysis (EFA) was conducted to assess the validity of the constructs. For EFA it is required that the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) should be 0.5 and above and that the Bartlett's test of sphericity was significant (that is p-value < 0.05).

Table 4.1: Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test

FinTech Start-ups		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.758
Bartlett's test of sphericity	Approx. Chi-Square	64.649
	df	6
	Sig.	.000
Collaboration		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.757
Bartlett's test of sphericity	Approx. Chi-Square	189.524
	df	3
	Sig.	.000
External corporate venturing		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.708
Bartlett's test of sphericity	Approx. Chi-Square	97.574
	df	3
	Sig.	.000
Internal corporate venturing		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.678
Bartlett's test of sphericity	Approx. Chi-Square	78.466
	df	3
	Sig.	.000

The KMO values were 0.708 > 0.5. Thus, the sample size was enough to conduct factor analysis. The Bartlett's test of sphericity had a p-value lower than 0.05. This means that there are some relationships among the items within each scale.

The table below shows the final construct composition, the total variance explained and the Cronbach's alpha for the four constructs.

Table 4.2: Validity of the scale

Construct	Items	Factor Loading	Total Variance Explained
FinTech start-ups	New technology	.820	58
	Ease of use	.778	
	Price advantage	.768	
	Quality advantage	.666	
Collaboration	Banks exhibit high levels of cooperative corporate venturing with regard to FinTech start-ups	.954	89
	Banks in South Africa currently manifest cooperative corporate venturing initiatives with regard to FinTech start-ups	.953	
	In general, banks in South Africa are at the cutting edge when it comes to cooperative corporate venturing initiatives	.926	
External corporate venturing	Banks in South Africa currently manifest external corporate venturing initiatives with regard to FinTech start-ups	.916	78
	Banks exhibit high levels of external corporate venturing with regard to FinTech start-ups	.871	
	In general, banks in South Africa are on the cutting edge when it comes to external corporate venturing initiatives with regard to FinTech start-ups	.857	

Construct	Items	Factor Loading	Total Variance Explained
Internal corporate venturing	Banks in South Africa currently manifest internal corporate venturing initiatives with regard to FinTech start-ups	.892	73
	Banks in South Africa exhibit high levels of internal corporate venturing with regard to FinTech start-ups	.884	
	In general, banks in South Africa are on the cutting edge when it comes to internal corporate venture initiatives with regard to FinTech start-ups	.781	

The FinTech start-ups construct resulted in the deletion of an item referred to as “Brand Recognition”. This is because the item did not correlate significantly with the other variables. The four constructs all retained one factor with the FinTech start-ups construct explaining 58 per cent of variation in the initial items. Collaboration factor explained 89 per cent, ECV 78 per cent and ICV had factors explaining 73 per cent.

All the items within various scales loaded highly onto their respective factors / constructs.

4.3.2. Reliability of the scale

Cronbach’s alpha values were computed to assess the reliability of the scale. Values ranged from zero to one. A value > 0.7 is good enough for the items within a scale to be combined to form a summated scale.

Table 4.3: Reliability

Construct	Number of Items	Cronbach's alpha
FinTech start-ups	4	.749
Collaboration	3	.938
External corporate venturing	3	.852
Internal corporate venturing	3	.801

The results show that there was excellent reliability for collaboration (α = 0.938), very good reliability for ECV, FinTech start-ups and ICV (α = 0.801). FinTech start-ups had the lowest Cronbach's alpha (α = 0.749) but the value is still above the minimum acceptable value of 0.7.

Since all the constructs had Cronbach's alpha greater than 0.7, this means that a summated scale was computed by calculating the average of the items within the scale.

The descriptive statistics and Pearson's correlation among the variables are summarised in Table 4.4.

Table 4.4: Descriptive statistics and Pearson's correlations

Descriptive Statistics			Pearson's Correlations			
	Mean	Std Deviation	FinTech start-ups model	Collabora-tion	External corporate venturing	Internal corporate venturing
FinTech start-ups model	5.47	0.92	1	.188	.157	.203
Collabo-ration	4.26	1.49	.188	1	.680**	.514**
External corporat e venturing	4.26	1.31	.157	.680**	1	.571**
Internal corporat e venturing	4.55	1.33	.203	.514**	.571**	1

The results indicate that the FinTech start-ups model construct was the highest rated (mean = 5.47) followed by ICV (mean = 4.55), collaboration (mean = 4.26) and ECV (mean = 4.26).

4.4. HYPOTHESIS TESTING

Path analysis was used to assess the hypotheses. The results are presented in Tables 4.5 and 4.6.

Table 4.5: Regression weights

			Estimate	Standardised Estimate	S.E.	C.R.	P
Collaboration	<---	FinTech start-ups model	,304	,188	,188	1,612	,107

External corporate venturing	<---	FinTech start-ups model	,223	,157	,166	1,343	,179
Internal corporate venturing	<---	FinTech start-ups model	,291	,203	,167	1,743	,081

The regression weights indicate that the FinTech start-ups model had no significant impact on any of the variables collaboration (B = 0.304, β = 0.188, t-value = 1.612, p-value = 0.107), ECV (B = 0.223, β = 0.166, t-value = 1.343, p-value = 0.179), and ICV (B = 0.291, β = 0.167, t-value = 1.743, p-value = 0.081), since the p-values were greater than 0.05.

Table 4.6: Squared multiple correlations

	Estimate
Internal corporate venturing	,041
External corporate venturing	,025
Collaboration	,035

The Squared Multiple Correlations show that the FinTech start-ups model can only predict 4.1 per cent of ICV (r-square = 0.041), 2.5 per cent of ECV (r-square = 0.025), and 3.5 per cent of collaboration (r-square = 0.035).

4.4.1. Results pertaining to Hypothesis 1 (H1)

There is a positive relationship between external corporate venturing in the personal banking industry and FinTech start-ups.

H0: There is no relationship between external corporate venturing in the personal banking industry and FinTech start-ups.

H1: There is a positive relationship between external corporate venturing in the personal banking industry and FinTech start-ups.

The results from part analysis show that the relationship between FinTech start-ups and ECV (B = 0.223, β = 0.166, t-value = 1.343, p-value = 0.179) is not significant since the p-value was greater than 0.05. This implies that H1 is not supported. Thus, the null hypothesis could not be rejected, and it is concluded that there is no relationship between ECV in the personal banking industry and FinTech start-ups.

4.4.2. Results pertaining to Hypothesis 2 (H2)

There is a positive relationship between internal corporate venturing in the personal banking industry and FinTech start-ups.

H0: There is no relationship between internal corporate venturing in the personal banking industry and FinTech start-ups.

H1: There is a positive relationship between internal corporate venturing in the personal banking industry and FinTech start-ups.

The results from part analysis show that the relationship between FinTech start-ups and ICV (B = 0.291, β = 0.167, t-value = 1.743, p-value = 0.081) is not significant since the p-value was greater than 0.05. This implies that H2 is not supported. Thus, the null hypothesis could not be rejected, and it is concluded that there is no relationship between ICV in the personal banking industry and FinTech start-ups.

4.4.3. Results pertaining to Hypothesis 3 (H3)

There is a positive relationship between collaboration in the personal banking industry and FinTech start-ups.

H0: There is no relationship between collaboration in the personal banking industry and FinTech start-ups.

H1: There is a positive relationship between collaboration in the personal banking industry and FinTech start-ups.

The results from part analysis show that the relationship between FinTech start-ups and collaboration (B = 0.304, β = 0.188, t-value = 1.612, p-value = 0.107) is not significant since the p-value was greater than 0.05. This implies that H3 is not supported. Thus, the null hypothesis could not be rejected, and it is concluded that there is no relationship between collaboration in the personal banking industry and FinTech start-ups.

4.4.4. Summary of hypotheses

Table 4.7: Summary of hypotheses

Hypothesis		Outcome
H1	There is a positive relationship between external corporate venturing in the personal banking industry and FinTech start-ups.	Not supported
H2	There is a positive relationship between internal corporate venturing in the personal banking industry and FinTech start-ups	Not supported
H3	There is a positive relationship between collaboration in the personal banking industry and FinTech start-ups	Not supported

4.5. OTHER RESULTS

The table below shows the results on the most appropriate situation when FinTechs were introduced into the South African market. All items were rated on a 7-point Likert scale where 1 was strongly disagree and 7 was strongly agree.

Table 4.8: Situation when FinTechs were introduced in South Africa

	N	Mean	Std Deviation
The innovation was introduced initially into a low-end market which was not financially attractive to established competitors	72	4.58	1.499
It was not initially attractive to mainstream customers in the main market	72	4.49	1.463
It was introduced into a previously un-served market	72	4.60	1.684
It was introduced into a small niche market that we did not believe was big enough to accommodate another new competitor	72	4.42	1.536

1 = strongly disagree and 7 = strongly agree

Results on the difference between the FinTech business model (new business model) compared to the personal banking model are presented below.

Table 4.9: Similarities between FinTech business model compared to the personal banking model

	N	Mean	Std Deviation

Production process (activities in production)	72	5.18	1.437
Supply channels	72	5.22	1.436
Distribution channels	71	5.42	1.421
Marketing and sales	72	5.33	1.529

1 = Very similar and 7 = Very different

The results of effectiveness of the FinTech business model relative to the personal banking business model are presented below.

Table 4.10: Effectiveness of the FinTech business model relative to the personal banking model

	N	Mean	Std Deviation
Cost advantage	72	5.69	1.043
Gaining consumer insight	72	5.56	1.099
Speed to market for new products or services	72	5.74	1.374

1 = Very ineffective and 7 = Very effective

The table below shows the results on how difficult it is for FinTech to develop and scale up in South Africa.

Table 4.11: Difficulty for FinTech to develop and scale up in South Africa

	N	Mean	Std Deviation
Lack of access to capital or resources (finance, skilled labour, technology, equipment)	72	5.64	1.104

Customer lack of accessibility (shortage of business infrastructure)	72	5.15	1.381
Customer lack of affordability (large population with low income and/or low education)	72	4.86	1.577
Lack of clear government or industry regulations	72	5.18	1.559
Incompatibility of the innovation with existing complementary devices	72	4.53	1.678

1 = strongly disagree and 7 = strongly agree

The table below shows how important certain factors were in stimulating the growth of FinTechs in the South African market.

Table 4.12: Factors stimulating growth of FinTechs in the South African market

	N	Mean	Std Deviation
Competition among new competitors with new business models	72	5.75	1.275
Competition from traditional competitors	72	5.63	1.261

1 = Not important at all and 7 = Very important

Results on how different FinTechs are relative to established banks are shown below.

Table 4.13: Different between FinTechs and established banks

	N	Mean	Std Deviation

How different is the FinTech start-up compared to a personal bank's existing core product or service design?	72	6.17	1.592
How different are FinTechs compared to a personal bank's existing core competencies (knowledge, technology, processes)?	72	6.26	1.529
How different was the innovation to your mainstream customers in the industry?	72	6.28	1.475
How different are FinTechs compared to a bank's established main revenue model?	72	6.14	1.714

1 = Very small and 7 = Very big

Results on the number of FinTech start-ups that have already been introduced in South Africa are shown below.

Table 4.14: FinTech start-ups that have already been introduced in South Africa

	N	Mean	Std Deviation
The number of competitors	72	3.93	1.495

1 = Very Small and 7 = Very big

CHAPTER 5 :

DISCUSSION OF EMPIRICAL FINDINGS OF THE STUDY

5.1. INTRODUCTION

Chapter 5 of the research report provides a discussion on the results provided in Chapter 4 (Presentation of Results). Chapter 5 is divided into six parts. The first part of the chapter will present demographic information, discussing gender, education levels, and experience in the banking space among the respondents. The second part will look at the measurement scales of the study, followed by a discussion on the three hypotheses, primarily focusing on the results obtained from the hypothesis testing. Finally, some concluding remarks will round off the chapter. The discussions presented in this chapter will be compared with the literature, most of which was covered in the first few chapters of the study.

The three main hypotheses that were covered in the study are:

1. There is a positive relationship between external corporate venturing in the personal banking industry and FinTech start-ups.
2. There is a positive relationship between internal corporate venturing in the personal banking industry and FinTech start-ups.
3. There is a positive relationship between collaboration in the personal banking industry and FinTech-start-ups.

With reference to the hypotheses, the research found that there was no relationship regarding ECV, ICV and collaboration in the personal banking industry and FinTech start-ups. It however demonstrated the dominance of South African banks in the personal banking industry, namely the big five (Standard Bank, FirstRand, Nedbank,

ABSA and more recently Capitec) (Simbanegavi et al., 2015). It can therefore be said that FinTech adoption is at its infancy stage in South Africa, as the study demonstrated that there is no relationship between FinTech start-ups and personal banks, even though there might be a FinTech with a bank here or there. The study proved that the relationship between FinTech and banks is not significant.

5.2. DEMOGRAPHIC PROFILE OF RESPONDENTS

The data from the study was collected using an online questionnaire on the Qualtrics platform, an online survey tool. The questionnaire was distributed mainly to management in the banking industry as well as to management consultants who have banking experience and work with banks in South Africa on a day-to-day basis. The data was collected in the following manner: email links as well as mobile links were sent to respondents to enable them to complete the questionnaire on their laptops or cellphones. There was hesitation at first with completing the questionnaire regarding the nature of the questionnaire and the purpose of the study. One particular organisation wanted to ensure that client information was not used in the study. These questions were clarified, the researcher provided background and context to the respondents and allayed any misunderstanding with regard to client information. This ensured that quality data was collected and respondent information was not compromised.

The total number of respondents equated to 108. Of the 108 responses, 36 were incomplete. These responses were removed from the study. The sample generated a response rate of more than 60 per cent.

5.2.1. Gender of respondents

The study sample was made up mainly of males, with 79 per cent of the respondents being male and 21 per cent of the respondents being female. Globally, a report conducted by Oliver Wyman found that 20 per cent of women across the globe serve on boards and a further 16 per cent serve on executive committees within the financial services industry (Oliver Wyman, 2016). The study sample affirms this and demonstrates that the sector, in this case the personal banking industry, needs to transform to ensure that there is greater participation of females. In South Africa, within the big five banks there is only one female chief executive officer, Maria Ramos of Barclays Africa, (which will revert to ABSA in the course of 2018). This shows that there is only 20 per cent participation of female chief executives in the banking industry.

5.2.2. Number of years in the organisation

The study revealed that most of the respondents, 71 per cent, had been employed in their current organisation for a period of less than five years. Twenty-eight per cent of the respondents had been with their respective organisations for more than six years. ‘Organisation’ in this context refers to a bank or management consultancy firm.

5.2.3. Level in the organisation

The study was distributed to individuals who are in management and decision making positions within their respective organisations. The data provided the following finding: 17 per cent of the respondents were in executive management, another 18 per cent were in senior management, and 17 per cent were in middle management roles, while a further 17 per cent were in lower management. This

ensured that quality data was sourced about the true nature of the role of FinTech start-ups in the personal banking industry in South Africa.

5.2.4. Level of education completed

Of the respondents, 86 per cent at least had a degree. This means that they had either completed an undergraduate degree, postgraduate degree or a master's degree. Only one per cent of the sample had a PhD and the rest of the respondents held a diploma or a national certificate. The population sample represents highly skilled individuals who mostly occupy management positions and are responsible for decision making in their respective organisations, and specialists in the banking sector. Such individuals have the ability to understand a wide array of viewpoints and that helps in solving complex problems and taking significant decisions (Zimmerman, 2000). It demonstrates that South Africa is quite competitive as it ranks 47th in the World Economic Forum Report 2016–2017. This signals improving levels of tertiary education in South Africa as most of the tertiary institutions rank amongst the best on the African continent.

5.2.5. Number of years employed

Six per cent of the respondents were employed for less than a year. We can assume that these are individuals who have been recently employed. However, 31 per cent of the respondents had been employed for a period of between two and five years and the rest of the respondents had been employed for six years or longer and alpha these added up to 64 per cent of the respondents.

5.3. MEASUREMENT SCALE

The Cronbach values were calculated to assess the reliability of the instrument. Cronbach values range from zero to one and a value that is above 0.7 is adequate

for the items within the research instrument to be combined. The results demonstrate that there was excellent reliability for collaboration (α = 0.938), ECV (α = 0.852) and ICV (α = 0.801). The lowest construct, FinTech start-ups, produced a Cronbach alpha of (α = 0.749), which is still above the minimum acceptable value of 0.7.

Such a result was expected as the instrument had been used before for a similar study. The instrument was however adjusted to align with the constructs used for this study. The KMO value lies between 0 and 1 (Field, 2014), a KMO value that is below 0 provides an indication that conducting factor analysis will be unsuitable (Field, 2014). However, a value close to one provides an indication that factor analysis can be performed (Field, 2014). According to (Kaiser, 1974), values that lie below 0.5 are not acceptable and therefore the researcher should consider collecting more data or revaluating which variable to include (Field, 2014; Kaiser, 1974).

The KMO test was conducted, and all the KMO values for the study were above 0.5, which demonstrates that the sample size was large enough for factor analysis to be performed. When we look at Fin-Tech start-ups, the value was 0.758, collaboration 0.757, ECV 0.708 and internal venturing 0.678 (see Table 4.1: KMO and Bartlett's Test). Most of the KMO values were between 0.7 and 0.8, which means the sample size is good (Hutcheson & Sofroniou, 1999).

It must be noted that when external factor analysis was conducted, the brand recognition construct was removed. This was mainly because its correlation was low when compared to the other variables (see Table 4.2: Validity of the scale). The other four constructs were retained as factors.

5.4. DISCUSSION OF HYPOTHESIS 1: EXTERNAL CORPORATE VENTURING

The primary objective of the first hypothesis in the study was to establish whether there is a positive relationship between ECV in the personal banking industry and FinTech start-ups.

H0: There is no relationship between external corporate venturing in the personal banking industry and FinTech start-ups.

H1: There is a positive relationship between external corporate venturing in the personal banking industry and FinTech start-ups.

The results from the data demonstrate the following (B = 0.223, β = 0.166, t-value = 1.343, p-value = .179): the p-value in the hypothesis is not significant since the value is greater than 0.05 (Field, 2014).

This implies that there is no relationship between ECV in the personal banking industry and FinTech start-ups in South Africa. The literature review highlighted the following aspects pertaining to ECV in the personal banking industry in South Africa.

Corporate venturing in essence occurs when an organisation creates a new business, purchases a business or invests in a business (Kuratko et al., 2015). Kuratko et al. (2015) found that the GFC became a catalyst that catapulted FinTech start-ups, as a number of financial institutions had resource constraints, while market instability created an enormous challenge for organisational survival. A number of financial institutions had to shut down because of the crisis, while some were merged to ensure that economies were not collapsed. It was therefore paramount for financial institutions after the 2008 GFC to implement corporate

innovative activities (Kuratko & Hornsby, 2014). When banks drive a CE strategy, this ensures that they are able to maintain a competitive advantage against new and existing competitors. This enables them to overcome challenges in an ever-changing market (Chai & Entebang, 2013).

In South Africa, however, more than 69 per cent of the respondents highlighted that there is no significant ECV between banks and FinTech start-ups, if at all. Therefore, for banks to drive greater profitability, strategic renewal and innovation need to implement a CE strategy (Kuratko et al., 2015). The study found no ECV by banks with regard to FinTech start-ups.

5.5. DISCUSSION HYPOTHESIS 2: INTERNAL CORPORATE VENTURING

The second objective of the hypothesis was to establish whether there is a positive relationship between ICV in the personal banking industry and FinTech start-ups.

H0: There is no relationship between internal corporate venturing in the personal banking industry and FinTech start-ups.

H1: There is a positive relationship between internal corporate venturing in the personal banking industry and FinTech start-ups.

The results of ICV demonstrate ($B = 0.291$, $\beta = 0.167$, t-value = 1.743, p-value = 0.081) that the p-value is not significant, since the p-value was greater than 0.05 (Field, 2014).

This implies that there is no relationship between ICV in the personal banking industry and FinTech start-ups. The literature review covered the following with regard to corporate venturing: it occurs in two ways, namely ICV or ECV. Internal corporate venturing as highlighted in the literature is innovation created with the

organisation (Kuratko et al., 2015). With internal corporate ventures, the organisation creates the new business and it owns the business in most cases. This new business therefore becomes part of the other subsidiaries of the firm (Kuratko et al., 2015).

Organisations pursue a CE strategy for three reasons, and that is to develop the organisations' innovative capacity, improve the organisation entrepreneurially, and allow the organisation to adapt to change (Kuratko et al., 2015).

The study provided the following findings: that there is no relationship between personal banks and FinTech start-ups when it comes to ICV in South Africa. The literature revealed that on a global scale, FinTech start-ups have adopted a strategy that looks at providing a personalised service to clients that is data driven and fosters a culture of innovation (Sia et al., 2016). Banks across the globe are finding it increasingly difficult to compete in the digital marketplace (Sia et al., 2016). Banks have had to contend with a number of issues such as legacy IT systems that cost a significant amount to maintain. There are also compliance issues that make it difficult for them to innovate (Sia et al., 2016). In South Africa, however, there has not been a significant change in the banking industry when it comes to ICV. Most of the respondents said that there is no relationship with regard to ICV and FinTech start-ups in South Africa. Most of the respondents are managers and had spent more than five years (95%) in the banking sector. Kuratko et al. (2011) highlighted that organisations need to adopt a CE strategy to achieve greater profitability, innovation, strategic renewal and, most importantly, generate future revenue streams, global as well as regional success, and gain a competitive advantage over competitors.

5.6. DISCUSSION OF HYPOTHESIS 3: COLLABORATION

The third objective of the hypotheses was to establish whether there is a positive relationship between collaboration in the personal banking industry and FinTech start-ups.

H0: There is no relationship between collaboration in the personal banking industry and FinTech start-ups.

H1: There is a positive relationship between collaboration in the personal banking industry and FinTech start-ups.

The results of collaboration demonstrate (B = 0.304, β = 0.188, t-value = 1.612, p-value = 0.107) that the p-value is not significant, since the p-value was greater than 0.05 (Field, 2014).

It must be noted from the literature review that collaboration between FinTech start-ups is important since it eliminates competition, as banks no longer compete with FinTech start-ups but are rather collaborating with FinTech start-ups (Omarini, 2017). However the results demonstrate that in South Africa there is no relationship between personal banks and FinTech start-ups regarding collaboration. Omarini (2017) further adds that FinTech start-ups need to collaborate with banks as they will access client data and payment systems and keep up with regulation and compliance. In the South African context, however, we are unlike other parts in the world, and have not seen significant collaboration between banks and FinTech start-ups, as the results have demonstrated. Banks in other parts in the world have embraced FinTech start-ups and have partnered with these entities to improve client offering (Omarini, 2017). These banks are able to be at the forefront of innovation and ensure a competitive advantage is maintained over their competitors (Lee,

2016). The results indicate that most of the respondents were in management (69%) or specialists within the South African banking industry (25%) and that there are no significant collaborative efforts between personal banks and FinTech start-ups.

The South African banking industry is largely dominated by five banks, namely ABSA, Standard Bank, FirstRand (First National Bank), Nedbank and Capitec (Thwaits, 2016). Ndzamela (2016) produced interesting findings that banks in South Africa have invested significantly in digital banking platforms and not necessarily FinTech platforms, and this is done purely to keep up with client demand. This concurs with the findings that there is no relationship between personal banks and FinTech start-ups with regard to collaboration. Financial institutions globally have decided that they will either partner or collaborate with FinTech start-ups (Simbanegavi et al., 2015). It is unsurprising that global investment in the sector has grown from USD 4.05 billion in 2013 to USD 22 billion in 2016 (Skan et al., 2016). However, the findings paint a different picture about South Africa, showing that there is no relationship of collaboration between personal banks and FinTech start-ups.

5.7. CONCLUSION OF THE DISCUSSION OF RESULTS

Chapter 5 covered the main findings of the study. The chapter presented the demographics of the study, which focused on the gender of the respondents in the personal banking industry, the years the respondents have spent in the industry, the level of education completed and the number of years they have been employed in the sector. Significantly, more than 75 per cent of the respondents were male, which highlights the gender imbalance in the financial services industry not only in South Africa but globally as well. Globally, 20 per cent of females serve on boards in the financial services industry and 16 per cent sit on executive committees (Oliver Wyman, 2016). Seventy-one per cent of the respondents had spent five years or

less in the current organisation, whereas more than 25 per cent had spent more than six years in their particular organisations. These organisations range from banking to consulting firms. The results also showed that more than 65 per cent of the respondents were in management, from lower to executive management; 26 per cent of the respondents were specialists in the banking sector; and most of them were involved in the IT space implementing systems such as SAP Banking Services.

The results demonstrate that with regard to the relationship between the FinTech model and ECV (B = 0.223, β = 0.166, t-value = 1.343, p-value = .179), the Cronbach value which evaluates the reliability of the tool was above 0.7 for all the constructs. The KMO values were also above 0.7, which demonstrates that there is good reliability within the data; however, the data demonstrates that there is no relationship between external venturing in the personal banking industry and FinTech start-ups. When the second hypothesis was evaluated (B = 0.291, β = 0.167, t-value = 1.743, p-value =0.081), we found that there was no relationship with ICV with regard to the personal banking industry and FinTech start-ups. Lastly the third hypothesis (B = 0.304, β = 0.188, t-value = 1.612, p-value = 0.107) found that there was no collaboration between personal banks and FinTech start-ups in South Africa. The findings demonstrate the following: there is no relationship between personal banks and FinTech start-ups with regard to ECV. The same can be said about ICV within personal banks as well as collaboration with FinTech start-ups. Therefore, we can conclude that H1: *There is no relationship between internal corporate venturing in the personal banking industry and FinTech start-ups*; H2: *There is no relationship between internal corporate venturing in the personal banking industry and FinTech start-ups*; and lastly H3: *There is no relationship in the personal banking industry with collaborating with FinTech start-ups*.

H1: There is no relationship between collaboration in the personal banking industry and FinTech start-ups.

H2: There is no relationship between internal corporate venturing in the personal banking industry and FinTech start-ups.

H3: There is no relationship between collaboration in the personal banking industry and FinTech start-ups.

CHAPTER 6 :

CONCLUSION OF THE STUDY

6.1. INTRODUCTION

The purpose of the study was to investigate the role of FinTech start-ups in the personal banking industry in South Africa. It was based on CE, and more specifically on corporate venturing by the South African personal banking industry, which is mainly made up of FNB (First National Bank), Standard Bank, Capitec, ABSA and Nedbank. The study explored corporate venturing in the following terms: internal corporate venturing, external corporate venturing, and lastly, collaboration.

The study has produced a number of findings and conclusions about the South African personal banking industry. The study found that in terms of ICV, ECV and collaboration no relationship exists between FinTech start-ups and the personal banking industry in South Africa. It demonstrates that the prevailing dominance and the oligopolistic nature of the industry leads to a situation where corporate venturing in the sector is not taking place; rather, it is about maintaining the status quo. The 2008 GFC became a catalyst that catapulted and precipitated FinTech start-ups and put them on the map (Kuratko & Hornsby, 2014), highlighting how imperative it is for financial institutions after the GFC to implement corporate innovative activities.

When banks drive a CE strategy, they are able to maintain a competitive advantage against new and existing competitors (Chai & Entebang, 2013). Compared to other banks globally, South African banks need to change in terms of corporate venturing. Inasmuch as there is a significant shift in technology and digital banking, there has not been a significant shift in terms of corporate venturing between banks and

Fintech start-ups. Employing a corporate entrepreneurial strategy will allow banks to drive greater profitability, and lead to greater innovation and strategic renewal for banks.

Even though the study was not geared towards transformation, it did highlight the need to transform the South African banking industry. Most of the respondents in the study were male and accounted for 79 per cent of the sample, while females accounted for only 21 per cent. This confirms the findings of a report by Oliver Wyman that 20 per cent of women globally serve on boards and 16 per cent sit on executive committees (Oliver Wyman, 2016). South Africa has only one female Chief Executive Officer (CEO) amongst the big five banks. It follows that the need to transform the sector is vital and cannot be ignored.

South African banks, such as the big five banks, have relatively maintained their market share, with the exception of the change that Capitec has introduced in the market. South African banking regulations ensure that we have a sound banking environment; however, this creates a situation where the prevalence of Fintech start-ups is reduced. For FinTech start-ups to function optimally in South Africa, they need to be plugged into a financial institution, but regulation hinders their progress in this regard. However, even though in this research no relationship was established in the different hypotheses, it must be noted that there is change in the market. For instance, cellphone banking services commenced as early as 1998 with 100 000 active subscribers (Bankole, 2017). Twenty years on, cellphone banking is an everyday occurrence in banking. This also means that in due time and with the improvement of regulation FinTech start-ups will disrupt the market and banks will therefore need to collaborate, form their own internal ventures or perform an external venture. This is confirmed in the literature: in 2010 cellphone subscriptions

exceeded the total South African population, which is over 50 million (Bankole, 2017). This underscores the point that the banking market can be distrupted as more technology develops.

The key for banks will be to harness FinTechs. There is a strong need for banks to use and benefit from CE strategy. The market concentration of the banking sector has seen regulators being quite critical of mergers (Wanke, Maredza, & Gupta, 2017), but a corporate entrepreneurial strategy will ensure greater profitability, strategic renewal, and innovation within organisations.

6.2. IMPLICATIONS OF THE STUDY

The study has both theoretical and practical implications, which will be briefly discussed below.

On a theoretical level, the study has provided empirical evidence and methods for examining the role of FinTech start-ups in the personal banking industry in relation to CE.

Practically, the study has provided empirical findings on the personal banking industry in relation to Fintech start-ups. It has found that no significant relationship exists in the personal banking industry with FinTechs in terms of ICV, ECV, and collaboration amongst banks and FinTech start-ups.

The study speaks to the need for banks to drive corporate entrepreneurial strategies for stimulating profitability (Vozikis et al., 1999; Zahra, 1993), innovation (Baden-Fuller, 1995) and strategic renewal (Guth & Ginsberg, 1990).

6.3. RECOMMENDATIONS

The study has provided a number of findings pertaining to the personal banking industry in South Africa in relation to FinTech start-ups.

It is important for South African banks to pursue innovative corporate activities relating to ICV. It is vital that existing brands drive such a culture to develop FinTechs in South Africa. Banking is continuously changing and the South African banking landscape is about to be change significantly with new entrants such as Discovery Bank, BankZero and TYME Bank (Take Your Money Everywhere Bank). These new entrants are advancing a different value proposition that is going to fundamentally shift how we do banking in South Africa.

In terms of ECV, there have been ventures such as SnapScan with Standard Bank, but these have not been significant. For banks in South Africa to truly unlock the value of the market and reach the unbanked population, non-conventional methods will need to be implemented. Investing in FinTech start-ups will allow banks to gain greater market share over competitors, help banks to grow in terms of acquisition, and lead to greater retention and increased cross-selling.

Collaboration is equally important: collaborating with FinTechs will allow banks to drive acquisition, retention and cross-selling. Consumers now have greater access to smartphone technology and banks should harness this by working with FinTechs to grow the acquisition of clients, retain clients and cross-sell to clients.

6.4. LIMITATIONS OF THE STUDY

The study had its share of limitations, which will be discussed below.

Collecting data from respondents was a challenge. Calling the different banks was not a problem but getting their employees to respond was a challenge. Most of the banks acknowledged the questionnaire but there were no adequate responses to it. Even though the researcher was in a management consulting environment in a big four professional services firm, there was still hesitation in completing the questionnaire as some respondents felt that client information was being collected. Nevertheless, once the nature and the purpose of the questionnaire was explained, more respondents completed the questionnaire.

Some of the data had to be removed as some of the questionnaires were not completed properly and in some cases respondents showed a lack of interest by not completing the questionnaire at all.

Despite the challenges, the researcher was able to collect quality data to produce a report that contributes to the literature.

6.5. SUGGESTIONS FOR FURTHER RESEARCH

There is a need for extensive studies to look at the South African banking industry. The sector is being shaken up and will see a number of changes in the next couple of years. Future studies should investigate transformation in the sector towards CE, banking regulation and the inclusion and participation of women and previously disadvantaged South Africans. Stringent regulations in the South African banking system have ensured that only a handful of players dominate the industry. Researchers should explore how this can be changed and improved to drive a culture of entrepreneurship and inclusion in the banking industry.

Another area for enquiry is the advent of smartphone technology and how such technology can be used in conjunction with FinTech start-ups to reach the unbanked

population in Africa. A report by PwC found that 75 per cent of the continent remains unbanked (PwC, 2017). Globally, two billion adults remain unbanked (Demirguc-Kunt et al., 2014). Future research could explore how this situation can be resolved to improve the quality of life on the continent.

REFERENCES

Arner, D. W., Barberis, J. N., & Buckley, R. P. (2015). *The evolution of FinTech: A new post-crisis paradigm?* [Online] Retrieved from https://hub.hku.hk/bitstream/10722/221450/1/Content.pdf.

Baden-Fuller, C. (1995). Strategic innovation, corporate entrepreneurship and matching outside-into inside-out approaches to strategy research. *British Journal of Management*, *6* (special issue), S3-S16.

Bankole, F. O. (2017). Influences on cellphone banking adoption in South Africa: An updated perspective. *Journal of Internet Banking and Commerce*, *22*(3), 1-16.

BBVA Innovation Centre. (2015, July 10). *Banking penetration: Africa driven mobile devices.* [Online] Retrieved from http://www.centrodeinnvacionbbva.com/en/news/banking-penetration-africa-driven-mobile-devices.

Bhattacherjee, A. (2012). *Social science research: Principles, methods, and practices*. Florida: Anol Bhattacherjee.

Bick, G., Abratt, R., & Möller, D. (2009). Customer service expectations in retail banking in Africa, *South African Journal of Business Management*, *41*(2), 13-. 27.

Birkinshaw, J. (1997). Entrepreneurship in multinational corporations: The characteristics of subsidiary initiatives. *Strategic Management Journal*, *18*(3), 207-229.

Blumberg, B., Cooper, D. R., & Schindler, P. S. (2011). *Business research methods*. 3rd Edition. New York: McGraw-Hill Higher Education.

Borch, O. J., Huse, M., & Senneseth, D. A. (1999). Resource configuration, competitive strategies and corporate entrepreneurship: An empirical examination of small firms. *Journal of Business Venturing*, *24*(1), 49-70.

Bryman, A., & Bell, E. (2014). Research methodology: Business and management contexts. Oxford University Press Southern Africa.

Capgemini. (2016). *World Retail Banking Report*. Capgemini.

Chai, B. B.-H., & Entebang, H. (2013). *A conceptual model of corporate entrepreneurship in banking industry*. Proceedings of 2013 International Conference on Technology Innovation and Industrial Management, 29-31 May 2013, Phuket, Thailand, pp. 131-136.

Cooper, D. R., & Schindler, P. S. 2011. *Business research methods*. 11th Edition. New York: McGraw-Hill/Irwin, 142-155.

Cooper, D. R., & Schindler, P.S (2008). *Business research methods*. 10th Edition. New York: McGraw-Hill/Irwin.

Cooper, D. R., & Schindler, P. S. (2006). *Business research methods*. 9th International Edition. New York: McGraw-Hill Companies.

Cooper, A.C., Markman, G.D., & Niss, G. (2000). The evolution of the field of entrepreneurship. In G.D. Meyer & K.A. Heppard (Eds.), Entrepreneurship as strategy (pp. 115–133). Thousand Oaks, CA: Sage Publications

Covin, J. G., & Miles, M. P. (1999). Corporate Entrepreneurship and the pursuit of competitive advantage. *Entrepreneurship Theory and Practice*, *23*(3), 47-64.

Creswell, J. (2014). *Research design: Qualitative, quantitative and mixed methods approaches*. Thousand Oaks, CA: Sage.

Dapp, T. F. (2014). FinTech-*The digital (r) evolution in the financial sector.* Deutsche Bank Research. [Online] Retrieved from https://www.deutschebank.nl/nl/docs/Fintech-The_digital_revolution_in_the_financial_sector.pdf.

Demirguc-Kunt, A., Klapper, L., Singer, D., & Van Oudheusden, P. 2015. *The Global Findex Database 2014: Measuring financial inclusion around the world.* Policy Research Working Paper No. 7255. Washington, DC: World Bank.

Dinardo, F. (2016). *The rise of alternative finance: How FinTech companies are revolutionizing the financial services and the traditional bank financing*. Italy: University of Padua.

Eckhardt, J. T. (2013). Opportunities in business model research. *Strategic Organisation*, *11*(4), 412-417.

Ernst & Young. (2015). *Exploring a new financial services landscape*. [Online] Retrieved from www.ey.com: http://www.ey.com/gl/en/industries/financial-services/ey-fintech-adoption-index.

Ferreira, J. (2002). Corporate entrepreneurship: A strategic and structural perspective. ICSB World Conference, Puerto Rico, June 16–19.

Field, A. (2014). *Discovering statistics using IBM SPSS statistics*. 4th Edition. CA: Sage.

Finmark Trust. (2015). *Finscope South Africa*. Johannesburg: Finmark Trust.

Gibson, J. (2015). *The impact that financial technology known as FinTech is having on the financial services industry in Ireland*. Unpublished MBA dissertation. Dublin: Dublin Business School.

Grégoire, G. (2014). Multiple linear regression. *Statistics for Astrophysics Methods and Applications of the Regression*, *66*, 45-72.

GSMA Intelligence. (2017). *The mobile economy*. London: GSM Association.

Guth, W.D., & Ginsberg. A. (1990). Guest editor's introduction: Corporate Entrepreneurship. *Strategic Management Journal, 11*(Summer), 5-16.

Hutcheson, G., & Sofroniou, N. (1999). *The mulitvariate social science*. London: Sage.

Ireland, R. D., & Sirmon, D. G. (2003). A model of strategic entrepreneurship: The construct and its dimensions. *Journal of Management*, *29*(6), 963-989.

Ireland, R. D., & Webb, J. W. (2007). Strategic entrepreneurship: Creating competitive advantage through streams of innovation. *Business Horizons*, *50*(1), 49-59.

Ireland, R. D., Covin, J. G., & Kuratko, D. F. (2009). Conceptualising corporate entrepreneurship strategy. *Entrepreneurship Theory and Practice*, *33*(1), 19-46.

Ireland, R. D., Hitt, M. A., Camp, S. M., & Sexton, D. L. (2001). Integrating entrepreneurship and strategic management actions to create firm wealth. *The Academy of Management Executive*, *15*(1), 49-63.

Jaworski, B., Kohli, A. K., & Sahay, A. (2000). Market driven versus driving markets. *Journal of the Academy of Marketing Science*, *28*(1), 45-54.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, *39*(1), 31-36.

Kim, Y., Park, Y. J., & Choi, J. (2016). The adoption of mobile payment services for “Fintech”. International Journal of Applied Engineering Research, 11(2), 1058-1061.

Kirzner, I. M. (1973). *Competition and entrepreneurship*. Chicago: University of Chicago Press.

Knight, F. H. (1921). *Risk, uncertainty, and profit*. New York: Kelly & Millman, Inc.

Kuratko, D. F., & Hornsby, J. S. (2014). Why implementing corporate innovation is so difficult. *Business Horizons*, *57*(5), 647-655.

Kuratko, D. F., & Audretsch, D. B. (2009). Strategic entrepreneurship: Exploring different perspectives of an emerging concept. *Entrepreneurship Theory and Practice*, *33*(1), 1-17.

Kuratko, D. F., Hornsby, J. S., & Goldsby, M. G. (2012). *Innovation acceleration*. Pearson. Upper Saddle River, NJ: Pearson.

Kuratko, D. F., Hornsby, J. S., & Hayton, J. (2015). Corporate entrepreneurship: the innovative challenge - for a new global economic reality. *Small Business Economics, 45*(2), 245-253.

Kuratko, D. F., Morris, M. H., & Covin, J. G. (2011). Corporate innovation and entrepreneurship. In D. F. Kuratko, M. H. Morris, & J. G. Covin (eds.), *Corporate Innovation and Entrepreneurship* (pp. 102-103). Canada: South-Western Cengage Learning.

Lee, I. (2016). FinTech: Ecosystem and business models. *Advanced Science and Technology Letters*, *142*, 57-62.

Lee, I., & Shin, Y. J. (2018). Fintech: Ecosystem, business models, investment decisions, and challenges. Business Horizons, 61(1), 35-46.

Leung, L. (2015). Validity, reliability and generalizability in qualitative research. *Journal of Family Medicine and Primary Care*, *4*(3), 324-327.

Lincoln, Y. S., & Guba, E.G. (1985). *Naturalistic inquiry.* Vol. 75 of Sage focus editions. Beverley Hills, CA: Sage.

Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *The Academy Management Review*, *21*(1), 135-172.

Mackenzie, A. (2015). The FinTech Revolution. *London Business School Review*, *26*(3), 50-53.

Mackenzie, N., & Knipe, S. (2006). Research Dilemmas: Paradigms, methods and methodology. *Educational Research*, *16*(2), 193-205.

Major, R. K. (2017). *Determining predictors of customer loyalty in the South African Retail Industry*. Master of Commerce dissertation. Potchefstroom: North-West University.

McGrath, R. G., Venkataraman, S., & MacMillan, I. C. (1994). The advantage chain: Antecedents to rents from internal corporate ventures. *Journal of Business Venturing*, *9*, 351-369.

McGrath, R.G. & MacMillan, I.C. (2000). The entrepreneurial mindset: Strategies for continuously creating opportunity in an age of uncertainty. Boston: Harvard Business School Press

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, *29*(7), 770-791.

Morris, M. H., Kuratko, D. F., & Covin, J. G. (2011). *Corporate entrepreneurship and innovation: Entrepreneurial development within organisations*. Boston: Cengage Learning South Western Publishers.

Morris, M.H., Kuratko, D.F., & Covin, J.G. (2008). Corporate entrepreneurship and innovation. Cincinnati, OH: Thomson/SouthWestern Publishers.

Morris, M. H., Schindehutte, M., & Allen, J. (2005). The entrepreneur's business model: Toward a unified perspective. *Journal of Business Research*, *58*(6), 726-735.

Ndzamela, P. (2016). *Doing research: Forcing the pace*. Johannesburg: Financial Mail.

Nedbank Group. (2015). *Integrated Report for the year ended 31 December*. Johannesburg: Nedbank.

Oliver Wyman. (2016). *Women in financial services*. United Kingdom: Oliver Wyman.

Omarini, A. (2017). The digital transformation in banking and the role of FinTechs in the new financial intermediation scenario. *International Journal of Finance, Economics and Trade (IJFET), 1*(1), 1-6.

Onwuegbuzie, A. J. (2000). *Expanding the framework of internal and external validity in qualitative research*. Paper presented at the Annual Meeting of the Association for the Advancement of Educational Research (AAER) (Ponte Vedra, FL, November.

Price, J. H., & Murnan, J. (2004). Research limitations and the necessity of reporting them. *American Journal of Health Education, 35*(2), 66-67.

PricewaterhouseCoopers (PwC). (2017). *Global FinTech executive summary*. [Online] Retrieved from https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-fintech-exec-summary-2017.pdf.

PricewaterhouseCoopers (PwC). (2016). *Financial services*. [Online] Retrieved from www.pwc.com: http:// www.pwc.com/us/en/financial-services/publications/viewpoints/assets/pwc-fsi-what-is-fintech.pdf.

Puschmann, T. (2017). Fintech. Business & Information Systems Engineering, 59(1), 69–76

Rutherford, M. W., & Holt, D. T. (2007). Corporate Entrepreneurship: An emprical look at the innovativeness dimension and antecedents. *Journal of Organisation Change Management*, *20*(3), 429-444.

Saunders, M., Lewis, P., & Thornhill, A. (2012). *Research methods for business students.* 6th Edition. Essex: Pearson Education Limited.

Schumpeter, J. A. (1934). *The theory of economic development*. Harvard University Press: Cambridge.

Schwab, K., Brende, B., & Sala-i-Martin, X. (2016). *Global competiveness report*. World Economic Forum.

Seale, C (1999). Quality in qualitative research. *Qualitative Inquiry, 5*(4), 465-478.

Shane, S., & Venkataraman, S. (2001). Entrepreneurship as a field of research: A response to Zahra and Dess, Singh and Erickson. *Academy of Management Review*, 217-239.

Shane, S., & Venkataraman, S. (2000). The promise of entrepreneurship as a field of research. *Academy of Management*, *25*(1), 217-226.

Sharma, P., & Chrisman, J. J. (1999). Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship. *Entrepreneurship Theory and Practice*, *23*(3), 11-26.

Sia, S. K., Soh, C. S., & Weill, P. (2016). How DBS Bank pursued a digital business. *MIS Quarterly Executive*, *15*(2), 105-121.

Simbanegavi, W., Greenberg, J. B., & Gwatidzo, T. (2015). Testing for competition in the South African banking sector. *Journal of African Economies*, *24*(3), 303-324.

Skan, J., Dickerson, J., & Gagliardi, L. (2016). FinTech and the evolving landscape: Landing points for the industry. *Accenture*, April. [Online] Retrieved from http://www.fintechinnovationlablondon.co.uk/pdf/Fintech_Evolving_Landscape_2016.pdf.

South African Reserve Bank (SARB). (2017, October 03). *South African registered banks and representative offices*. [Online] Retrieved from https://www.resbank.co.za/RegulationAndSupervision/BankSupervision/Pages/SouthAfricanRegisteredBanksAndRepresentativeOffices.aspx.

Stevenson, H. H., & Jarillo-Mossi, J. C. (1986). Preserving entrepreneurship as companies grow. *Journal of Business Strategy*, *7*(1), 10-23.

Thornberry, N. (2001). Corporate entrepreneurship: antidote or oxymoron? *European Management Journal*, *19*(5), 526-533.

Thwaits, C. R. (2016). 3. *How are FinTechs operating in South Africa competing partnering, or complementing the banking industry?* Johannesburg: FinTech.

Venter, R., Urban, B., Oosthuizen, C., Reddy, C., Venter, E., & Beder, L. (2015). Entrepreneurship theory in practice. In R. Venter, B. Urban, L. Beder, C. Oosthuizen, C. Reddy, & E. Venter, *Entrepreneurship theory in practice* (p. 7). Cape Town: Oxford University Press.

Vozikis, G. S., Bruton, G. D., Prasad, D., & Merikas, A. A. (1999). Linking corporate entrepreneurship to financial theory through additional value creation. *Entrepreneurship Theory and Practice, 24*(2), 33-43.

Wanke, P., Maredza, A., & Gupta, R. (2017). Merger and acquisitions in South African banking: A network DEA model. *Research in International Business and Finance*, *41*(C), 362-376.

Winter, G. (2000). A comparative discussion of the notion of validity in qualitative and quantitative research. *The Qualitative Report, 4*(3), 1-14.

Yong, A. G., & Pearce, S. (2013). A beginner's guide to factor analysis: Focusing on exploratory factor analysis. *Tutorials in Quantitative Methods for Psychology, 9*(2), 79-94.

Zahra, S.A (1993). A conceptual model of entrepreneurship as firm behaviour: A critique and extension. *Entrepreneurship Theory and Practice, 17*(4), 5-21.

Zahra, S. A. (1991). Predictors and financial outcomes of corporate entrepreneurship: An exploratory study. *Journal of Business Venturing, 6*(4), 259-285.

Zavolokina, L., Dolata, M., & Schwabe, G. (2016). *FinTech – What's in a name?* Proceeds of the 37th International Conference on Information Systems, Dublin, Ireland, 11-14 December.

APPENDIX A:

RESEARCH INSTRUMENT



University of Witwatersrand Johannesburg

Private Bag 3

WITS 2050

Dear Sir/Madam

My name is Doctor Teddy Nkosi. I am completing a Master's Degree at the University of Witwatersrand Business School (WBS) Johannesburg in Masters in Management, Entrepreneurship and New Venture Creation**.** As part of my studies for the masters, I need to do a research project. The study will that I will undertake will be looking at the role that Fitch start-ups play in the personal banking industry in South Africa. The aim of the research is determine the relationship Fitch start-ups have on the banks in terms of business models, corporate venturing and collaboration.

As part of this project, I would like to invite you to take part in completing the online questionnaire. This activity will involve reading the question and ticking one option that matches your view and click the send icon at the end of the survey, these will take around 10 minutes.

There will be no direct benefits or penalties relating to your choice to participate or not. The survey will only gather information related to the study and the information

will be completely confidential and anonymous as I will not be asking for your name or any identifying information, and the information you give to me will be held securely and for this academic exercise only.

If you have any questions afterwards about this research, feel free to contact me or my supervisor on the details listed below. This study will be written up as a research report, which will be available online through the university library website.

Your assistance will be highly appreciated

Yours Sincerely

Doctor Teddy Nkosi (Student Researcher)
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Prof Boris Urban (Supervisor)
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APPENDIX B:

QUESTIONNAIRE

Section 1:

Demographic Information

Background information: *Please tick the appropriate box*

1.1 Gender

1	Male	
2	Female	

1.2 Number of years in Organisation

1	Less than 1 year	
2	1 – 2 years	
4	3 – 5 years	
5	6 – 10 years	
6	10 years +	

1.3 Level in organisation

1	Executive management	
2	Senior management	
4	Middle management	
5	Lower management	
6	Specialist	
7	General and support staff	

1.4 Highest Level of education completed

1	Matric (Grade 12 / Std 10)	
2	Certificate	
4	National Diploma	
5	Undergraduate Degree	
6	Postgraduate Degree	
7	Master's Degree	
8	Doctorate/PHD	

1.5 How long have you been employed?

1	Less than a year	
2	2 – 5 years	
4	6 – 10 years	
5	11 – 20 years	
6	21 + years	

Business Model

2.1 A business model is defined as decision variables that include the entity's strategy, architecture or design as well as the economics that lead it to creating a competive advantage in its chosen industry (Kuratko, Morris , & Covin, Corporate Innovation And Entrepreneurship, 2011) Please rate the relative advantage of the FinTech business model compared to existing personal banking business models All items rated on 7-point, Likert-type scales ranging from "Very least advantage " [=1] to "Very Great" [=7])

		Very Least advantage	Lesser advantage	Somewhat lesser	Equal Advantage	Somewhat better	Better advantage	Very Great
1	Price Advantage	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Ease of use	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	New Technology	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4	Quality Advantage	**1**	**2**	**3**	**4**	**5**	**6**	**7**
5	Brand recognition advantage	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	Other	**1**	**2**	**3**	**4**	**5**	**6**	**7**

2.2 Indicate the most appropriate situation when FinTechs were introduced into the South African Market. All items rated on 7-point, Likert-type scales ranging from "Strongly Disagree " [=1] to "Very Strongly agree" [=7])

		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	The innovation was introduced initially into a low-end market which was not financially attractive to established competitors	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	It was not initially attractive to mainstream customers in the main market	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	It was introduced into previously un-served market	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4	It was introduced into a small niche market that we did not believe it was big enough to accommodate another new competitor	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	Other	**1**	**2**	**3**	**4**	**5**	**6**	**7**

2.3 How different do you think is the FinTech business model is (new business model) compared to the personal banking model in terms of the following? All items rated on 7-point, Likert-type scales ranging from "Very Similar" [=1] to "Very Different [=7])

		Very Similar	Similar	Somewhat Similar	The Same	Somewhat Different	Different	Very Different
1	Production Process (activities in production)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Supply channels	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	Distribution Channels	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4	Marketing and sales	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	Other	**1**	**2**	**3**	**4**	**5**	**6**	**7**

2.4 In your opinion, how effective do you think is the FinTech business model in terms of the following? All items rated on 7-point, Likert-type scales ranging from "Very ineffective" [=1] to "Very Effective" [=7])

		Very ineffective	Ineffective	Somewhat ineffective	Neither effective nor ineffective	Somewhat effective	Effective	Very Effective
1	Cost advantage	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Gaining consumer insight	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	Speed to market for new products or services	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	Other	**1**	**2**	**3**	**4**	**5**	**6**	**7**

2.5 Please assess how difficulty would you think the following constraints could affect FinTech' s in their effort to develop and scale up its innovation in South Africa. All items rated on 7-point, Likert-type scales ranging from "Strongly disagree" [=1] to "Strongly agree" [=7])

		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	Lack of access to capital or resources (finance, skilled labour, technology, equipment)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Customer lack of accessibility (shortage of business infrastructure)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	Customers lack of affordability (large population with low income and/or low education)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4	Lack of clear government or industry regulations	**1**	**2**	**3**	**4**	**5**	**6**	**7**
5	Incompatibility of the innovation with existing complementary devices	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	Other	**1**	**2**	**3**	**4**	**5**	**6**	**7**

2.6 Please rate how important were the following factors in stimulating the growth of FinTech' s in the South African market? All items rated on 7-point, Likert-type scales ranging from "Not at all important" [=1] to "Very Important" [=7])

		Not important at all	Unimportant	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Important	Very important
1	Competition among new competitors with new business models	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Competition from traditional competitors	**1**	**2**	**3**	**4**	**5**	**6**	**7**
	Other	**1**	**2**	**3**	**4**	**5**	**6**	**7**

2.7 Relative to established banks, please evaluate how different FinTech' s are. All items rated on 7-point, Likert-type scales ranging from "Very Small" [=1] to "Very Big" [=7])

		Not important at all	Unimportant	Somewhat unimportant	Neither important nor unimportant	Somewhat important	Important	Very important
1	How different is the FinTech start-up compared to a personal banks existing core product or service design?	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	How different are FinTech' s compared to a personal banks existing core competencies (knowledge, technology, processes)	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	How different was the innovation to your mainstream customers in the industry	**1**	**2**	**3**	**4**	**5**	**6**	**7**
4	How different are FinTechs compared to a banks established main revenue model?	**1**	**2**	**3**	**4**	**5**	**6**	**7**

2.8 How big do you think is the number of FinTech start-ups that have already been introduced in South Africa? All items rated on 7-point, Likert-type scales ranging from "Very Small" [=1] to "Very Big" [=7])

		Very Small	Small	Somewhat small	Same as expected	Somewhat big	Big	Very Big
1	The Number of Competitors	**1**	**2**	**3**	**4**	**5**	**6**	**7**

Corporate Venturing

Corporate venturing entails various methods for adding, creating or investing in a new business. Corporate venturing - new businesses are created and owned by the company; these may reside within the company or may be outside. Given these definitions, please indicate the extent to which you agree with the following statements (All items rated on 7-point, Likert-type scales ranging from “Strongly disagree” [=1] to “Strongly agree” [=7])

3.1 Internal corporate venturing: new businesses are created and owned by the company.

		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	Banks in South Africa exhibit high levels of internal corporate venturing with regard to FinTech start-ups	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Banks in South Africa currently manifest internal corporate venturing initiatives with regard to FinTech start-ups	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	In general, banks in South Africa are on the cutting edge when it comes to internal corporate venture initiatives with regard to FinTech start-ups	**1**	**2**	**3**	**4**	**5**	**6**	**7**

3.2 External corporate venturing: refers to businesses that are created by other parties that the business invests in.

		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	Banks exhibit high levels of external corporate venturing with regard to FinTech start-ups	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Banks in South Africa currently manifest external corporate venturing initiatives with regard to FinTech start-ups	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	In general, banks in South Africa are on the cutting edge when it comes to external corporate venturing initiatives with regard to FinTech start-ups	**1**	**2**	**3**	**4**	**5**	**6**	**7**

3.3 Cooperative corporate venturing: also known as collaborative corporate venturing refers to created businesses that are owned in a joint partnership with an external partner

		Strongly disagree	Disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Agree	Strongly agree
1	Banks exhibit high levels of cooperative corporate venturing with regard to FinTech start-ups	**1**	**2**	**3**	**4**	**5**	**6**	**7**
2	Banks in South Africa currently manifest cooperative corporate venturing initiatives with regard to FinTech start-ups	**1**	**2**	**3**	**4**	**5**	**6**	**7**
3	In general, banks in South Africa cutting edge when it comes to cooperative corporate venturing initiatives	**1**	**2**	**3**	**4**	**5**	**6**	**7**

APPENDIX C:

CONSISTENCY MATRIX

The role FinTech start-ups play in the personal banking industry in South Africa					
Sub-problem	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
FinTechs affecting the banking business model	(Lee, 2016) (Sia et al., 2016) (Kuratko, Morris , & Covin, Corporate Innovation And Entrepreneurship, 2011). (Morris , Schindehutte, & Allen , The Entrepreneur's Business Model: Toward a Unified Perspective , 2005)	There is a positive relationship between External corporate venturing in the personal banking industry and FinTech start-ups.	Questionnaire	Interval	Regression Correlation Analysis
FinTechs are disrupting the retail banking industry in lending, payments, capital markets	(Omarini A. , 2017) (Lee, 2016) (Zahra, 1991).	There is a positive relationship between corporate venturing in the personal banking industry and FinTech start-ups	Questionnaire	Interval	Regression Correlation Analysis
South African Banks partnering / collaborating the banking industry	(Lee, 2016) (Kuratko, Hornsby, & Hayton, 2015) (Omarini A. , 2017)	There is a positive relationship between collaboration in the personal banking industry and FinTech start-ups	Questionnaire	Interval	Regression Correlation Analysis