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Exploring the relationship between Fintech and Financial Service Providers in South Africa

An extension of the Duality of Technology Theory

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"The soul becomes dyed with the colour of its thoughts." - Marcus Aurelius

Plagiarism declaration

I Dylan Virasamy hereby declare that this master's thesis is my own work.

I understand what is expected of me in terms of academic referencing style and how to appropriately acknowledge the ideas or writing of others.

Sections with no source reference are my own ideas, arguments and conclusions.

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Signed: Dylan Virasamy Date: 27 June 2021

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Abstract

Purpose of the Study

The Global Financial Crisis (GFC) of 2008 and the subsequent failure of the established financial system led to a severe lack of trust in Financial Service Providers (FSPs) within economies and the world at large. In developed economies, this subsequently led to the formation of multiple new players in the financial sector who sought out innovative and bespoke solutions to customer pain points, without the need for mediation, intervention, or regulation from the traditional financial system. In developing economies, there are also multiple new players entering the market that are looking to solve very pressing contextual financial and economic issues using new and emerging technologies. Today these players are known as Fintech and they represent an exciting prospect for economic development and innovation. At the same time, they may get mixed reactions from more established FSPs as they are challenging the status quo within financial services. The objective of this paper is to gain a deeper understanding of the relationship between Fintech and established FSPs in the changing competitive financial services landscape in South Africa.

Methodology

This research topic uses an interpretivist paradigm along with the Duality of Technology Theory as its core theoretical underpinning. A conceptual framework is proposed, by extending on the Structurational Model of Technology, to illustrate and study the relationship between Fintech and FSPs. An exploratory research design, using a case study strategy, as well as a purposeful sampling method was used to conduct this research. The data collection for this study was conducted within an established financial institution in South Africa, using a semi-structured interview strategy.

Findings

The research shows that the concepts originally introduced within the Duality of Technology are still valid in studying technological change within organisations. Concepts like 'duality', 'interpretive flexibility' and the various modes (design and use) used within the definition of technology by Orlikowski (1992) are still extremely relevant and can be effectively applied to other concepts like 'innovation'. By extending on the Structurational Model of Technology, the researcher was able to effectively study the change being brought about by Fintech within the financial services industry.

The findings from this research show that the formation of newer Fintech firms is forcing the speed of innovation and technological development within established FSPs, along with multiple changes to their 'institutional properties' (organisational structures, culture, strategy and norms etc). Change is being driven across the financial services value chain and newer business models are emerging; those that are not already considering their strategy and approach to this market evolution are urged to do so. The market is evolving, and a potential consequence of this evolution is for FSPs and Fintech players to leverage off each other's products and services through mutually beneficial interactions and relationships. The research findings also show that government and regulators in South Africa are potentially not monitoring the Fintech sector closely enough; balancing the need for economic growth and a stable financial sector should be a key focus for government. Government should be carefully considering how it is going to approach the Fintech sector along with its key players, as if left unregulated for too long it could potentially have disastrous consequences for the economy.

Contributions

A major theoretical contribution of this study was to build upon the Structurational Model of Technology to cater for emerging business models. The original framework was extended to include: 1) the 'external' environment as a key concept that interacts with all concepts within the 'internal' environment; 2) 'innovation' as a concept that drives any modern organisation, along with its various interactions within the organisation. The major practical contributions of this paper are that it may help various stakeholders within the financial economy to understand the change being brought about by the introduction of Fintech into the industry. A further practical contribution of this paper is that it lists multiple ways in which an organisation may drive innovation and technology successfully.

KEYWORDS: Duality of Technology, Fintech, Financial Services, Technology, Innovation, Organisational Impact of Technology, Structuration Theory, Developing Countries, South Africa, Business Model, Open Innovation, Structurational Model of Technology

1. Introduction

1.1 Background

Financial services has historically been one of the most stable sectors in the world, seeing only a few established players dominate each market across the globe (Ross, 2020). This view has changed drastically over the past few years with the introduction of Fintech firms who are introducing newer and more innovative approaches to financial services (Arner et al., 2015). Fintech players have completely disrupted the financial services sector and there is a significant need for all stakeholders within the financial economy to understand the change being brought about by the introduction of Fintech (Zalan & Toufaily, 2017).

Financial Service Providers (FSPs) are organisations that operate in one of the following key areas: retail banking, investment banking, and insurance (Asmundson, 2011). Financial services are one of the key industries that drive the global economy (Ross, 2020). Ross (2020) estimates that the financial services market is expected to reach approximately $26.5 trillion in market value by the year 2022 at a growth rate of almost 6%, led primarily by the growth in Fintech. Beck et al. (2016) argue that there is a direct correlation between financial development and economic growth; thus, stressing the importance of the established financial sector.

Financial innovation has been one of the key drivers of success in the financial sector in recent years, which has directly affected economic growth (Fontin & Lin, 2019). Innovation and Information Technology (IT) have led to multiple improvements in product design, process, technology, as well as new organisational forms within financial services (Fontin & Lin, 2019). The convergence between financial services and IT in recent years has been termed Fintech (Arner et al., 2015). The surge in Fintech firms in recent years is being referred to as The Fintech Revolution (Gomber et al., 2018). Amalia (2016, p. 1) views Fintech as “a new wave of companies that change the way people pay, send money, borrow, lend and invest”. Saksonova And Kuzmina-Merlino (2017) believe that the Fintech sector consists mostly of organisations that have a clear concept or solution for a specified customer sub-segment in financial services; for example, Gozman et al. (2018) show that Fintech firms target specific market segments like payments or lending, and would, in turn, offer these services to either low, middle or high-income individuals, as well as commercial customers. The researcher believes that the term Fintech within both academia and within practice is used quite loosely to describe different types of financial technologies, as well as organisations that initiate or introduce services or products within financial services by utilizing technology.

Still et al. (2019) claim that established players in the financial services sector have been slow to innovate, thus leaving the door open for other institutions to enter and capture the market. The innovative nature of Fintech is now being recognised by traditional banks and FSPs (Saksonova and Kuzmina-Merlino, 2017). The introduction of innovative, low-cost services being offered by Fintech are in turn encouraging existing FSPs to become more innovative themselves, thus driving competition within the financial services sector (Saksonova and Kuzmina-Merlino, 2017). Funding in Fintech grew by almost 82% from 2017 to 2018, showing that Fintech have a key role to play in the development of innovative financial services and economic development in the near future (Ross, 2020).

1.2 Problem Statement & Research Context

The introduction of Fintech has completely disrupted the financial services industry; with the current state leaving multiple unknowns across different countries and continents (Zalan & Toufaily, 2017). Market structures within The Fintech Revolution are changing rapidly and organisations need to understand how to react and adapt to these changes to remain competitive (Piccarozzi et al., 2018). Balancing innovation along with stability within the financial services sector can be seen as a key agenda item for the economic growth of any country (Su and Si, 2015).

The South African Fintech ecosystem has been growing over the past few years with multiple new players set to make an entrance in 2021 (RMB, 2021). Business Insider (2018) argue that the South African Fintech ecosystem will contribute as much as R150Bn to GDP (Gross Domestic Product) by the year 2022. This makes South Africa the perfect place, and this the perfect time to study the core relationship between Fintech providers and FSPs, as this relationship is still very much emerging and in its infancy.

While the introduction of Fintech in South Africa could ultimately benefit consumers in the long run through driving innovation, competition and economic growth, existing players within the South African financial services ecosystem are unsure about how to approach and react to Fintech (PwC, 2020). A current gap within literature is that the academic body of knowledge treats all Fintech firms in the same manner regardless of size, revenue, or business activity. Without intervention and understanding the core relationship between Fintech and FSPs, the Fintech industry could potentially become completely unregulated, both destroying competition and the established financial services ecosystem (Arner et al., 2017; Rizvi et al., 2018).

There is a definite equilibrium that needs to be reached within the new financial services ecosystem and Fintech Revolution. Exploring the relationship between these specific players could benefit all stakeholders as there is currently little knowledge or approach on how to address the topic of Fintech.

1.3 Research Objectives & Research Questions

This research is conducted from a Duality of Technology perspective and aims to explore innovation, technology and the topic of Fintech through social action by human agents within the organisation. The objective of this research is to gain a deeper understanding of the relationship between Fintech and FSPs in South Africa, thus answering the core research questions posed by this study.

Primary Research Question

> *What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?*

Secondary Research Question

> *What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?*

A systematic literature review on the topic of Fintech within developing countries was conducted. This enabled the identification of research gaps on the topic of Fintech, which ultimately allowed the researcher to compile a specific research question and topic. The literature review provided the

researcher with foundational knowledge around the topic of Fintech while also exposing the researcher to some of the advantages, issues and potential challenges around the topic.

This research uses an interpretivist paradigm and dismisses the notion of technological determinism in the context of this study. Technological determinists view the interaction between technology and society as separate spheres (Yousefikhah, 2017). A Duality of Technology perspective is favoured and is applied to the relationship between Fintech and FSPs as per the work of Orlikowski (1992). The Duality of Technology Theory states that technology can be both created and changed by human actors to accomplish a goal or action; technology can also shape and influence human action in the various interactions between people and technology (Orlikowski, 1992). By using the core tenets employed by Orlikowski (1992) the researcher is able to examine the relationship between Fintech and FPSs as one that is constantly changing based on the specific context and way in which these concepts interact through the perspective of human agents within the organisation. The use of the Duality of Technology Theory as well as utilizing an 'exploratory research design' has allowed the researcher to subjectively analyse the topic with the aim of building upon theory. This was appropriate as the topic in question is very much an emerging topic with little existing theoretical foundation.

1.4 Delimitations of this Study

Fintech by definition can refer to any form of financial technology; however, practitioners and academics often refer to Fintech as organisations that initiate some form of business activity within financial services, utilising technology-based solutions (Amalia, 2016; Ferenzy et al., 2017)**.** This is the definition that will be used throughout this thesis, i.e. Fintech within this research refers to any organisation regardless of size, that aims to initiate business activity within financial services by utilising technology and is not currently an established or incumbent FSP**.** Other types of emerging financial technology are referred to by other labels and names within academia and practice e.g. Blockchain, Bitcoin, Virtual Money. These do not form a part of the scope of this research.

Transactional Banking in this study refers to core transactional banking e.g. payments, debit orders, EFT (Electronic Funds Transfer), lending and credit, etc. often facilitated by a digital platform like internet or app-based banking.

This research specifically examines the relationship between Fintech firms and banks.

It should be noted that the terms FSP and bank are used interchangeably throughout this thesis as banks are the only FSPs examined within the research topic.

1.5 Significance of the Research

This research uses an interpretivist paradigm, along with the Duality of Technology Theory as its core theoretical underpinning. An exploratory research design, using a case study strategy as well as a purposeful sampling method was used to collect qualitative data by using a semi-structured interview strategy. This was appropriate as little theoretical foundation exists around the relationship between Fintech and Banks and there were no a *priori fixed* relations to be studied, hence a quantitative approach would not have been appropriate. The methods utilized have allowed the researcher the opportunity to collect rich contextual data around the phenomena of interest with the ultimate aim of building upon theory.

Kavuri And Milne (2019) argue that academic literature on the topic of Fintech has been incoherent with no specific structure, focus or research agenda. This has led to multiple research gaps within Fintech literature. Gomber *et al.* (2018) argue that a specific research gap within Fintech research currently, is how business models will be affected by the developments occurring in the sector. This research topic focuses on the changing market structure, business model or business ecosystem emerging out of Fintech, or what Kavuri And Milne (2019, p. 2) have dubbed "the changing industrial structure and organisation of financial services". A possible consequence of this evolving ecosystem and market structure is for larger FSPs to partner with Fintech, leveraging their solutions in a mutually beneficially relationship, thus introducing new and emerging business models within the financial sector (Rizvi et al., 2018). By focusing on the relationship between Fintech and banks within South Africa, this research may help both academics and practitioners understand the long-term effects of change being brought about by the Fintech Revolution; and create a focused research agenda around this topic. Kavuri And Milne (2019) argue that there is significant need to drive qualitative research within the field of Fintech that aids with conceptual contributions that can help drive the research agenda. This research attempts to bridge this gap by utilizing a qualitative and interpretivist approach by building upon an established Information System's theory and offering a conceptual framework around the topic.

Orlikowski (1992) argues that a specific limitation of the Structurational Model of Technology, is that it does not cater for newer or emerging business models. This research seeks to fill the research gap identified by Orlikowski (1992) and proposes a conceptual framework that allows the study of emerging business models. The original framework was extended to include: 1) the 'external' environment as a key concept that interacts with all concepts within the 'internal' environment; 2) 'innovation' as a concept that drives any modern organisation, along with its various interactions within the organisation.

This research helps shed light on the unknowns that Fintech disruption has introduced for all stakeholders within the financial economy. Multiple suggestions are offered on how an organisation may remain or enhance its innovation and technology capabilities into the future to deal with market disruption. Multiple insights are provided to help practitioners in creating an optimal business model within the financial services ecosystem.

1.6 Thesis Structure

The remainder of this thesis is divided into the following chapters:

Chapter 2: Literature Review

This chapter provides a systematic literature review on the topic of Fintech within developing countries. The history of Fintech as well as background is first explored, thereafter key themes that have emerged from the literature are introduced along with specific insights around the topic of Fintech. Finally, the shortcomings of existing research are discussed.

Chapter 3: Theoretical Underpinning & Conceptual Framework

This chapter discusses the core theoretical underpinning of this study The Duality of Technology Theory and the Structurational Model of Technology as well as other theories which were considered at the beginning of this research. The Duality of Technology Theory was also heavily influenced by Structuration Theory, and several key concepts of each are discussed. The core

conceptual framework for this study is then introduced and discussed, along with its main concepts, themes and relationships.

Chapter 4: Research Methods

This chapter discusses the research methods utilized for this study along with the appropriateness of each methodological decision and strategy in the context of this research. The research process utilized as well as specific context of each part of the research process is discussed along with background information around the case in question and participants. Finally, ethical considerations within the context of the research are discussed in detail, along with how ethics has been considered and conducted throughout the research process.

Chapter 5: Case Narrative and Interpretation

This chapter presents the findings from data collected during the interview process. The chapter is organised based on the relationships and themes that have emerged from the conceptual framework of this study.

Chapter 6: Discussion

An interpretation of the data collected in chapter 5 is presented within this chapter. The chapter begins with a critical reflection on the original conceptual framework for this study as well as its core concepts prior to the data collection. A revised conceptual framework is then presented and discussed post the critical analysis of the results and findings from the data. Finally, the chapter concludes with a re-examination of the research questions along with key findings.

Chapter 7: Conclusion

A synopsis of the research is presented which includes a discussion of the existing gaps identified, the objective of the study, along with a re-statement of the research questions. A summary of the critical research findings is then presented. Both practical and theoretical contributions are presented and discussed. This chapter concludes with recommendations from both a practical as well as theoretical perspective and finally a discussion on the limitations related to the research.

2. Literature Review

The objective of this research was to gain a deeper understanding of the relationship between Fintech and FSPs in South Africa, thus answering the core research questions posed by this study. Fintech is an emerging topic within both academia and practice and there was thus a significant need to conduct a Systematic Literature Review (SLR) around the topic to gain foundational knowledge and insight into the key phenomena. As the research focus is on South Africa, the systematic literature review has specific focus on Fintech within developing countries. The results of the SLR are discussed in this chapter.

2.1 Methods used for the Literature Review

Webster And Watson (2002) state that a literature review is successful when it helps other scholars understand the accumulated knowledge of a specific topic. Rowe (2014) states that a literature review should contain the follow key objectives: a) to synthesize past knowledge on a topic or subject b) identify bias and gaps in the existing literature c) propose future research directions; the researcher believes that each of these key objectives were covered within this literature review and

research thesis. This literature review followed a systematic literature review format, Fink (2005, p. 3) states that “a systematic literature review is a systematic, explicit, comprehensive, and reproducible method for identifying, evaluating, and synthesizing the existing body of completed and recorded work produced by researchers, scholars, and practitioners". The process adopted for this SLR is that prosed by Okoli And Schabram (2010) and is followed as closely as possible with relevance to this study. Okoli And Schabram (2010) propose the use of an 8-step process in conducting an SLR: 1) purpose of the literature review 2) protocol and training 3) searching for the literature 4) practical screen 5) quality appraisal 6) data extraction7) synthesis of studies 8) writing the review. Please refer to APPENDIX A: Process used in compiling the systematic literature review for a detailed view of the process used in compiling this literature review.

2.1.1 Preliminary Selection of Keywords (Search Terms) and Articles

In beginning the literature review process, the initial search criteria were based on a preliminary set of articles relevant to the scope of this study in four major electronic databases (EBSCOhost, Proquest, Sciencedirect and JSTOR), these were accessed via the LibGuides Portal of the University of Witwatersrand, within the Commerce: Postgraduate Resources library guide. Databases selected were those most accurate to the area of study of Fintech and ‘financial innovation’; all databases are highly regarded and suggested by librarians of both the University of Witwatersrand and academics. The following is an example of the search criteria used (Fintech OR "Financial Technology" OR "Financial Innovation")) AND ((Banks OR Banking) AND ("Developing Economy" OR "Emerging Market" OR "Africa"). The search criteria were compiled using the Population, Intervention, Comparison, Outcomes and Study (PICOS) framework, further detail can be found in APPENDIX B: Detailed search criteria using the PICOS framework.

2.1.2 Round 1: Article selection

The preliminary search yielded a total of 68 articles from the four core academic databases. To ensure quality as well as relevance of the material selected that following criteria were applied: a) full text b) peer reviewed c) journal articles only d) only articles in the past 5 years were considered e) Abstract searches were included on the primary search words of (Fintech OR ‘financial technology’ OR ‘financial innovation’) were applicable to certain databases in order to focus the results of the search on the core subject matter and material.

2.1.3 Round 2: Abstract reading and removal of duplicates

3 duplicate articles were removed from the preliminary search, which yielded a total of 65 articles. An initial round of abstract and title reading was done to ensure that only articles applicable to the scope of this study were considered. This SLR was specifically focused on the impact of Fintech in ‘developing’ or ‘emerging economies’ on a macroeconomic level. The microeconomic environment refers to specific businesses and individuals, while the macroeconomic environment refers to countries and governments along with entire industries (Bowles, 2009; Mankiw, 2003)**.** The key considerations were the impact of Fintech on the economy as a whole, for example, consumers and how they view Fintech companies or products, banking institutions and the key considerations for them in the Fintech Revolution, as this was directly aligned to the research questions posed by this study. As such the following exclusion criteria were used:

- Articles that were not in the context of developing countries or emerging economies were removed e.g. those relating specifically to Fintech in Australia, America or the United

Kingdom. A few of these articles were however retained for a second abstract reading as they contained key information on the topic of Fintech or 'financial innovation'.

- Multiple resources pertaining to pricing, gold markets, stock and investment banking, credit volatility, Small to Medium Enterprises (SMEs) or SME funding were excluded from the core research set of articles.
- 2 articles were specifically removed as they were related to ecology and agriculture
- Articles using specific technologies and the impact this technology (empirical or otherwise) has on a developing economies financial system e.g. mobile banking, blockchain, supply chain financing were removed as they were not a part of the scope of this SLR and the overall research topic.
- Articles where a decision could not be made immediately were retained for a second abstract reading or review.

2.1.4 Round 3: Detailed review

Based on the exclusion criteria used in round 2, a total of 22 articles were considered for further review. A detailed review was done on the Abstract and Conclusions, including a brief skimming of certain articles to ensure topic relevance. 12 articles were excluded based on this detailed review, though 8 of these were kept for further reading as they matched only certain criteria relating to the scope of this SLR. 2 unpublished works were added based on handsearching and reference checking and one further journal article. A total of 13 articles was then included as the final body of work to conduct this SLR. Figure 1 below provides a diagrammatic representation of the SLR process.

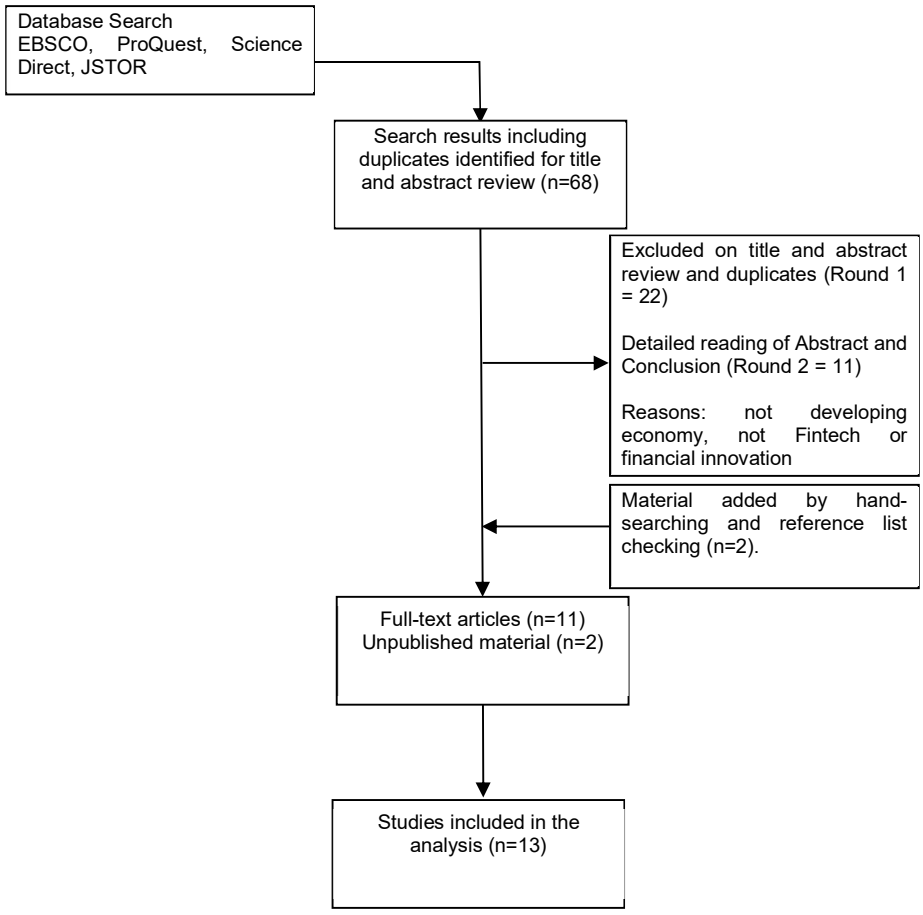


Figure 1: Detailed view of the SLR process

2.1.5 Round 4: Synthesis of literature using a data extraction template

Based on the 13 articles selected for the literature review, a data extraction template was compiled and used to aid the researcher with systematicity. Please refer to APPENDIX C: Data extraction template , APPENDIX D: A brief summary of the literature on fintech in developing countries and APPENDIX E: Advantages & Disadvantages or Risks of Fintech for further detail. Each of the themes identified within the SLR process is detailed in the sections that follow.

2.2 A brief History of Fintech

The concept of Fintech is not a novel one, the convergence between financial and technological ecosystems has been around for hundreds of years (Arner et al., 2016). The term Fintech was coined around the year 2014 and is simply a new term for an age-old relationship (Arner et al., 2016). Fintech has historically been characterised by the following phases:

- 'Fintech 1' depicts the period from 1866 to 1987 which saw the implementation of the transatlantic telegraph and increasing digitalisation of communication within financial services (Arner et al., 2015).
- 'Fintech 2' (1967-2008) saw rapid advances in the area of electronic and digital payment systems spurred on by developments in mobile and internet technologies (Arner et al., 2015).
- 'Fintech 3.0' emerged as a result of the Global Financial Crisis (GFC) of 2008 (Arner et al., 2016). Consumer confidence during the GFC fell to an all-time low, leading to the emergence of newer Small to Medium Enterprises (SMEs) offering bespoke financial services solutions (Arner et al., 2016). Fintech 3.0 is financial technology as we know it today (Amalia, 2016). Two specific technologies critical to the emergence of Fintech 3.0 were the introduction of Application Programming Interfaces (API's) and the introduction of smartphone technology (Arner et al., 2016). New developments in smartphone and internet technologies have completely transformed the diffusion and assimilation of financial services (McKinsey, 2016).
- The recent emergence of Fintech within developing countries has been coined 'Fintech 3.5' (Arner et al., 2016). Arner et al. (2016) argue that Fintech 3.5 has evolved as a result of deliberate choices for economic development and government policy. Fintech 3.5, while quite similar to Fintech 3.0 in its definition is very different in its intent; it helps provide mobility, ease of use, speed and lower cost financial and IT services to a large portion of the financially excluded population (Arner et al., 2016). Financial exclusion is forcing developing countries to innovate more and create different types of services to best serve their population (Arner et al., 2016; Saksonova and Kuzmina-Merlino, 2017). The World Economic Forum (2017) argue that developing economies will likely take the lead in designing customer-centric approaches to financial solutions for the future. McKinsey (2016) estimates that Fintech could boost the GDP of emerging economies and developing countries by $3.7 trillion by the year 2025.
- Sharma (2018) views 'Fintech 4.0' as the emergence of newer technologies to facilitate financial services e.g. blockchain, artificial intelligence, machine learning, and robotics. It is characterised by the monetisation of data with a significant reliance on digital identity (Arner et al., 2017).

2.3 Fintech: What do they do and where do they fit in?

The development of Fintech has been broadly categorised into the following key business models and sectors**:** finance, investment and insurance, operations and risk management, payments and infrastructure, data security and monetisation, customer interface, regulatory technology (RegTech) and loyalty programs (Arner et al., 2015; Haddad et al., 2018).

Rizvi et al., (2018) find that based on their lifecycle, Fintech can be classified into one of the following stages:

- 'Start-up' is a company that aims to initiate business activity on one of the business models and sectors mentioned above.
- 'Unicorns' are organisations that have a theoretical value of more than one billion dollars. Their market value is based mainly on speculation and future profitability and growth.
- 'GAFAs' (Google, Apple, Facebook, Amazon) are large listed organisations that are seen as market leaders in digital innovation.

2.4 Growth Stages of Fintech

Figure 2 represents the key growth stages and differentiation in growth from Fintech 2.0 to Fintech 3.0 as depicted by Arner et al. (2016). Typical growth goes from too-small-to-care; once tacit acceptance is gained by Fintech firms, they grow in market share and revenue and move to too-large-to-ignore; after further growth, they move into the too-big-to-fail which are typically Unicorns and are forced to go through multiple licensing obligations and regulatory concerns (Arner et al., 2015, 2016). Fintech 2.0 followed very much a linear progression in growth while organisations within Fintech 3.0 and upward are transitioning directly from start-up (too-small-to-care) to (too-big-to-fail) (Arner et al., 2016).

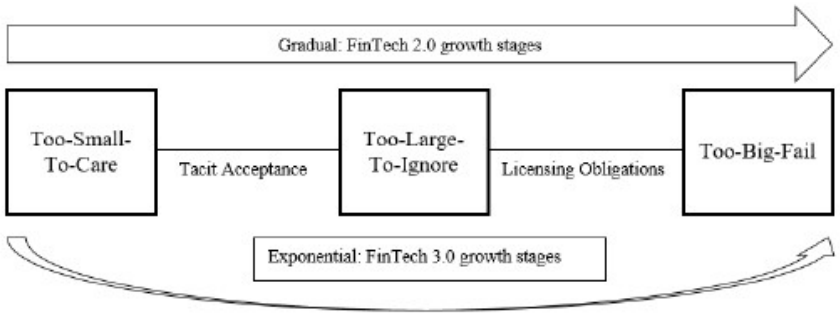


Figure 2: Growth stages of Fintech (Arner et al., 2016)

2.5 The Dark Side of Fintech

As Fintech grow they begin to look more like traditional FSPs (Arner et al., 2016). It is argued that the GFC of 2008 was caused mainly by profit-seeking financial institutions, who strived to reach higher profit margins no matter the cost or risk involved in attaining them (Su and Si, 2015). Profit incentives associated with business activities can have a strong influence and bias on product design and implementation (Su and Si, 2015). Fintech and GAFA's are no exception and are also prone to such threats; thus as Fintech grow in size and revenue the darker side of Fintech should not be ignored and must be closely monitored (Rizvi et al., 2018). As Fintech begin to reach Unicorn status and market values in excess of one billion dollars, they should be subject to the same regulation as

regular FSPs (Rizvi et al., 2018). For a brief overview of some of the advantages and disadvantages or risks around Fintech, refer to APPENDIX E: Advantages & Disadvantages or Risks of Fintech.

2.6 Fintech Enablers

There are multiple factors that drive and enable the growth of Fintech within the global economy; from IT and innovation to changes in customer demand and changes to both the micro and macroeconomic environment (Rizvi et al., 2018)**.** Fintech and the introduction of digital technology offer an opportunity to provide financial services that are customer-centric, far-reaching and at a much lower cost than previously imagined (Amalia, 2016; Arner et al., 2015; Fontin & Lin, 2019)**.** Based on the literature reviewed while conducting this study, the researcher has identified specific themes within the literature that have been synthesised under the overarching topic of 'Fintech Enablers', these are 'globalisation', 'smartphones', 'the internet', and 'government intervention and regulation'.

'Globalization, Smartphones and The Internet': Globalisation and the internet have allowed for the assimilation and diffusion of technology, communication, and information at a rapid pace worldwide (Beugré et al., 2006). This has led to multiple developments within Fintech and economies at large (Rizvi et al., 2018). Smartphones and the use of the internet have revolutionised technology and the diffusion of Fintech (Amalia, 2016)**.** Mobile payments are able to lower the cost of banking by an estimated 80-90% while still being profitable (Amalia, 2016).

'Government Intervention & Regulation'**:** Governments have arguably the most pivotal role to play in the diffusion of technology, education, regulation, and policy reform to stimulate economic growth using Fintech (Amalia, 2016; Arner et al., 2016; Rizvi et al., 2018). While Fintech can be used to drive competition and growth, they can be faced with a multitude of complex challenges including barriers to entry, regulatory uncertainty, technology integration and data privacy to name a few (Rizvi et al., 2018). Policymakers are recommended to carefully consider those policies that encourage competition though at the same time stimulate the growth of both Fintech and the economy (Fontin & Lin, 2019).

Regulation can also be used as a key strategic tool to stimulate both market competition and economic growth (Fontin & Lin, 2019). Arner et al. (2015, p. 31) argue that the key considerations with regards to regulation are: "1) financial stability 2) prudential regulation 3) conduct and fairness and 4) competition and market development". The question of when to regulate becomes just as important as what to regulate as there may be benefit to observing the effect of technological diffusion without regulation (Arner et al., 2015). Regulators should understand that technology may need to find its final use and the market may need time to settle before regulation is implemented (Arner et al., 2015). Regulation prior to the Global Financial Crisis often focused on preventing disruption within financial industries, though this view has recently changed (Arner et al., 2017). Arner et al. (2017) argue that there is a need for smarter regulation that considers economic growth, financial stability, innovation, and consumer protection; this new form of regulation has been labelled as RegTech (Arner et al., 2017, 2016). RegTech offers potential cost savings while simultaneously meeting compliance obligations and allows regulators the opportunity to perform their function more effectively with the use of technology (Arner et al., 2017, 2016). There is no one size fits all or perfect approach to regulation, more experimentation is needed with both RegTech and regulatory approaches before the time is right to seek their standardisation (Arner et al., 2017, 2016).

2.7 Fintech Insights

Investment in Fintech has been growing steadily since the Global Financial Crisis (GFC) of 2008 though with smaller investment values in 2008 and 2009 (Accenture, 2016). The value of global Fintech investment in 2015 grew by 75% to $22.3 billion, driven by deal-flow across continental Europe and Asia-Pacific (APAC); the year-on-year growth affirmed the sector's position as a key focus area within financial services (Accenture, 2016; CB Insights, 2018). However, while this stellar growth continues to outpace venture investment as a whole, which in contrast grew by only 29% in 2015, there were signs the Fintech industry had reached a new level of maturity, with some regions cooling-off and a continued increase in larger deal sizes (CB Insights, 2018). As shown in Figure 3, the three main investors in Fintech currently are Europe, America and the Asian Pacific Region. CB Insights (2020) reveals that there are currently 70 Fintech Unicorns in existence around the world with a total market value of $248Bn; this is more three times the amount quoted by CB Insights (2018).

Figure 3: Fintech Investment 2015 (Accenture, 2016, p. 3)

NL4WorldBank (2019) argue that South Africa's financial sector is one of the most sophisticated and internationally recognised in terms of its use of technology and has a fast-growing Fintech industry that presents both considerable benefit and risk. NL4WorldBank (2019) posits that there is a potential market size of more than 200 active Fintech players which is set to grow in the near future. Figure 4 shows a view of the current segmentation of Fintech players in South Africa based on their primary business activities. Business Tech (2018) posits that the South African Fintech ecosystem will contribute as much as R150Bn to GDP (Gross Domestic Product) by the year 2022. While typical Fintech growth around the world has first seen the emergence of payments and retail banking, South Africa has tended to follow the opposite path with the emergence of lending, InsurTech and data analytics based Fintech (Accenture, 2016; Meunier, 2016). Business Tech (2021) show that South Africa has seen the emergence of multiple new world-class and potential Unicorn status, Fintech digital 'transactional' banks including the likes of Discovery, Tyme Bank and Bank Zero.

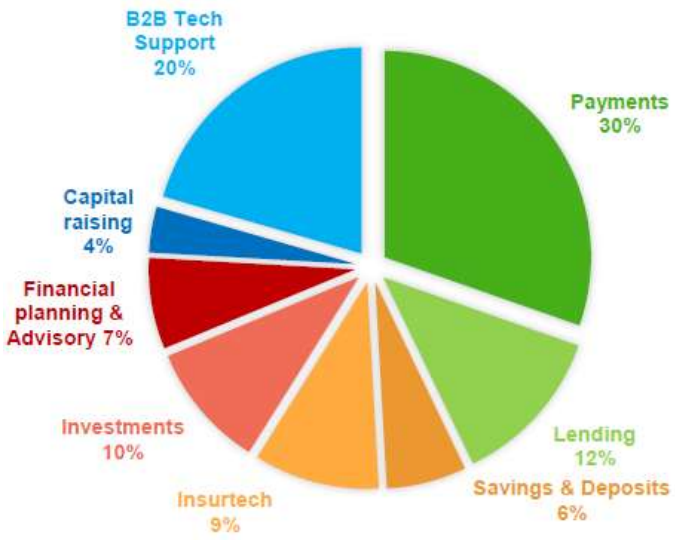


Figure 4: South Africa Fintech Market Segmentation (NL4WorldBank, 2019)

For further insight on the topic of Fintech, including a full bibliographic, territory, as well as cluster analysis refer to APPENDIX F: Fintech Insights.

2.8 Shortcomings of existing Research on Fintech

Kavuri And Milne (2019) argue that academic literature on the topic of Fintech has been incoherent with no specific structure, focus or research agenda. This has led to multiple research gaps within Fintech literature including an understanding of "the changing industrial structure and organisation of financial services" (Kavuri & Milne, 2019, p. 2). Kavuri And Milne (2019) argue that current research lacks frameworks to understand how technology is changing the financial industry. Gomber *et al.* (2018) argue based on their research around the topic of Fintech, that a specific research gap currently is how business models will be affected by the developments occurring in the Fintech sector. The aim of this paper is to present a framework underpinned by an established IS theory, in order to contribute to addressing this gap. The researcher does recognise a specific study by Gozman et al. (2018) who conducted a mixed-methods study and cluster analysis on the innovation mechanisms of Fintech start-ups. This study offers a valuable conceptual model which depicts the value creation within the Fintech landscape through the flow of financial information and is also a good starting point to cover the specific research gaps mentioned above, though it does not delve into detail around the relationship between Fintech and banks nor the research questions posed by this study. Gozman et al. (2018) focus specifically on start-up firms through insights from SWIFT's Innotribe competition and while their study offers valuable insight on Fintech business models and value creation strategies, it does not delve into detail around the relationships between multiple types of Fintech and banks, nor does it focus on the impact of the 'external' environment on the 'internal' environment and vice versa, or the impact that Fintech is having on the 'institutional properties' of the organisation and vice versa.

In addition to the gaps identified by Kavuri And Milne (2019) and Gomber *et al.* (2018), the researcher proposes the following gaps that also require further consideration both within this research, as well as for setting the foundation for future business model research within Fintech. Current research views Fintech with too broad a lens; this thesis separates the concept of Fintech

into small innovative firms or Small to Medium Enterprises (SMEs), Unicorns, and GAFAs. GAFAs and Unicorns do not fall into the same category of small, poorly resourced and nimble new market entrants (Zalan & Toufaily, 2017). Fintech research should treat GAFAs, Unicorns and smaller Fintech entrants as separate entities as they deal with very different internal and external characteristics as well as regulatory concerns. Another stream of research that is emerging out of the global economy and Fintech is that of cross-industry convergence e.g. larger brands like FSPs venturing into other industries like telecommunications or health insurance. In studying the relationship between Fintech and banks, each of the different types of Fintech (SMEs, GAFAs, Unicorns, Cross-Industry Convergents) has been considered separately within this research, as the characteristics of the relationship between them are inherently different, as evidenced by the research findings.

Current literature on Fintech in relation to financial services is extremely dispersed, and there is a need for more focused theoretical development within this field; refer to APPENDIX F: Fintech Insights for further detail. While current research briefly mentions the relationship between Fintech and banks, it has not provided a detailed understanding of this relationship. This provides an opportunity to extend on the existing body of knowledge from both a theoretical and practical perspective.

2.9 Conclusion

This SLR explored current literature around the topic of Fintech within developing countries by first introducing the concept of Fintech, its background and history. Key themes were then discussed around developing countries prior to providing specific insight into Fintech within the South African market and context. The chapter concludes by discussing the shortcomings of existing literature; as this is very much an emerging topic there is a significant need for theoretical and conceptual contribution as well as a focussed research agenda within Fintech. This research focuses mainly on business models within the 'financial services sector' and how they will be impacted by the developments occurring in Fintech.

The next chapter examines the theoretical underpinning of this research that has been utilized to build the conceptual framework for this study. Each of the key themes identified within the SLR are then incorporated into specific relationships, themes and concepts that are discussed in detail within the conceptual framework in the next chapter.

3. Theoretical Underpinning & Conceptual Framework

This chapter discusses the core theoretical underpinnings for this research. The chapter begins with an introduction into specific theories that were considered by the researcher when beginning this research. The history and background of each theory, as well as justifications as to why they were eventually not chosen as the theoretical lens for this research are presented. The core theoretically underpinning of this study was the Duality of Technology Theory; each of its concepts and relationships are unpacked along with specific justification around the choice of this framework as the core theorical underpinning. The chapter concludes with a presentation and discussion of the conceptual framework for this study along with its core themes, relationships and concepts. The conceptual framework guides the research by showing the interrelation between specific concepts that emerge from the literature review as well as the theoretical underpinning (Smyth, 2004). As the Duality of Technology Theory builds heavily on the concepts of Structuration Theory, the researcher highlights the links to Structuration Theory throughout this research thesis.

In considering the research objective and research question of this study, the use of multiple theoretical frameworks was considered. The aim was to choose a theoretical framework that would form the backbone and starting point, from which to build a conceptual framework to suit the needs of this research. Selecting the most appropriate framework for this study was a critical part of the research process as the theoretical framework used sets the foundation for the research. The following frameworks were identified and were instrumental in selecting the conceptual framework that was ultimately chosen:

- Actor-Network Theory (Callon et al., 1986)
- Structuration Theory (Giddens, 1976, 1979, 1984)
- Adaptive Structuration Theory (DeSanctis & Poole, 1994)
- The Social Construction of Technology (SCOT) (Pinch and Bijker, 1984)
- The Duality of Technology (Orlikowski, 1992)
- Contingency Theory (Weill & Olson, 1989)
- Social Cognitive Theory (Bandura, 1986)

These theoretical frameworks were considered over others, as they were directly aligned to the researcher's philosophical paradigm, as well as the research objective and question which is predominantly based on the study of organisations (banks and Fintech) as the primary actors. Each paper mentioned above was also published in at least one highly renowned academic journal. The main theory that was eventually chosen to form the theoretical lens for the conceptual framework, was the Duality of Technology Theory by Orlikowski (1992). A brief description of each theory considered by the researcher and why it was not chosen is explored in the paragraphs that follow.

Actor-Network Theory (ANT) was developed by Callon et al. (1986) and distinguished itself from other theories in that the actor-network is made up of a number of collective actors which are not merely people but can be objects and organisations that interact with each other in a heterogeneous network. Actor-networks can consist of both social and technical parts and are seen as inseparable. This is quite similar to the definitions adopted by Orlikowski (1992) who argues that technology is of no use without human intervention and action thus reinforcing the importance of the interaction between people and technology. Callon et al. (1986) concept of interaction is similar to Orlikowski (1992) view of technology and both theories view the interaction between the social and technical as inseparable. While mapping an actor-network could have been valuable for the research topic, ANT would not have allowed the researcher to explain detailed events involved in the changing market structure being caused by Fintech as effectively as the Duality of Technology has.

Structuration Theory is a general theory of social organisations rather than one specific to IS and was developed by Giddens (1984, 1979, 1976), the central premise of Structuration Theory is the relation between individual (agency) and society (structure) and that they are mutually interdependent. Orlikowski (1992) draws heavily on the core tenets of Structuration Theory, though the Duality of Technology was more suitable to study the relationship between Fintech and banks as well as the organisation as the primary unit of analysis. The researcher does however acknowledge the links to Structuration Theory throughout this thesis.

Adaptive Structuration Theory was developed by DeSanctis And Poole (1994) and used Giddens (1984, 1979, 1976) Structuration Theory as the theoretical foundation. Like Orlikowski (1992),

DeSanctis And Poole (1994) used the core tenets of Structuration Theory to study the interaction between social groups, organisations and technology. The researcher does recognise that DeSanctis And Poole (1994) draw heavily on the concepts introduced by Orlikowski (1992) and concepts like 'role' and 'utility' within Adaptive Structuration Theory are very similar to the 'role' and 'use' of Technology proposed by Orlikowski (1992) within the Structurational Model of Technology. Adaptive Structuration Theory is mainly focused on the perceptions of how 'role' and 'utility' can be applied to the activities they conduct, as perceptions influence how a technology is used and can mediate group outcomes. The goal of this research was not to study how technology can mediate group outcomes but rather to study in-depth the relationship between Fintech and banks, and thus the Duality of Technology was more suitable than Adaptive Structuration Theory.

The Social Construction of Technology or SCOT originally published by Pinch And Bijker (1984) views the development of technology as an interactive process with technologists, engineers and other relevant social groups. The central concept of SCOT is that of 'interpretive flexibility', which is also a key concept drawn upon by Orlikowski (1992) within the Structurational Model of Technology. A specific criticism of SCOT is that it was not a well-defined theory at the time of publication. Orlikowski (1992) is more relevant as it draws on the concept of the 'interpretive flexibility' of technology and allows for the study of organisations. Both ANT and the Duality of Technology build on those concepts originally emerging from SCOT though are more developed and well defined from a theoretical perspective (Klein & Kleinman, 2002).

Social Cognitive Theory (SCT) was developed by Bandura (1986) and provides a framework that assists in understanding, predicting and changing human behaviour. The framework developed shows the interaction between person, behaviour and environment. Orlikowski (1992) may have drawn heavily on the visual representation of Social Cognitive Theory, as the Structurational Model of Technology shares a very similar visual representation as depicted in Figure 5 below. SCT's focus is more on the behavioural aspects of how people learn by replicating the actions of others. The Structurational Model of Technology was a more suitable choice as it incorporates the mutual interaction between people and organisations, along with a specific focus on how these concepts interact with technology.

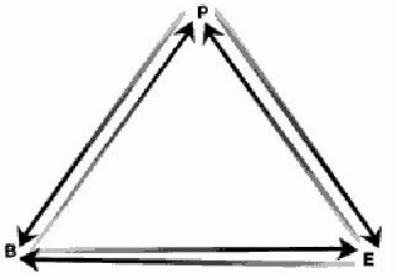


Figure 5: Social Cognitive Theory (Bandura, 1986)

The core model or framework put forward by Orlikowski (1992) is the Structurational Model of Technology which was derived from work originally published by Orlikowski And Robey (1991). The Duality of Technology Theory and the Structurational Model of Technology Framework were chosen as the core theoretical underpinning for the following reasons: 1) the underlying concepts were directly aligned to the researcher's philosophical paradigm i.e. the dismissal of technological determinism and viewing technology as an object of social change; 2) the theory and framework is

based on the study of organisations as the primary unit of analysis; 3); the use of the Structurational Model of Technology formed a good basis for the conceptual framework used to answer the core research questions posed by this study.

3.1 The Structurational Model of Technology

The Structurational Model of Technology employs core tenets of the research done by Giddens (1984, 1979, 1976) and his work on Structuration Theory. Orlikowski (1992) draws heavily on the concepts originally proposed by Giddens (1984, 1979, 1976) like 'the duality of structure', as well as the concepts that encompass 'structure' and 'society' like 'domination', 'signification', and 'legitimation'. In the Structurational Model of technology, structuration is understood as a dynamic process that is embedded both historically and contextually within the organisation (Mota & Filho, 2011). The 'duality of structure' is a process whereby agents and structures mutually enact social systems, and social systems in-turn become a part of that duality (Giddens, 1984). According to Giddens (1984), structure consists of: 'signification' or meaning which is the constitution and communication of meaning by human agents within the organisation; 'domination', which is the power of human agents to transform the social and material world, there is always the potential for human agents to change a particular structure of domination which is referred to by Giddens (1984) as the 'dialectic of control'; and 'legitimation' or norms which are organisational conventions or rules that govern the legitimate or appropriate conduct.

Orlikowski (1992) examines the core relationship between organisations, technology, and people. The main argument put forward by Orlikowski (1992) is that technology is of no use without human intervention and action. Technology and organisations are shaped by human action and human action is also shaped by technology and the organisation (Orlikowski, 1992). "Technology embodies and hence is an instantiation of some of the rules and resources constituting the structure of an organisation" (Orlikowski, 1992, p. 9). Orlikowski (1992) and her reconceptualization of the Structuration Theory to encompass 'technology' were and are vital to the subject of IS and theoretical development within the field.

3.1.1 The Scope and Role of Technology in Organisations

Orlikowski (1992) argues that while research historically sees technology as an important variable, researchers have had little agreement on the definition of technology. In putting forward a single, widely accepted definition of technology, Orlikowski (1992) believes that two concepts are pivotal: that of 'scope', which is those things that a technology is comprised of; and 'role', which is how the interaction between the technology and people are defined (Orlikowski, 1992). 'Scope' in the Structurational Model Of Technology has been limited to material artefacts such as hardware and software; while the 'role' of technology is seen as the mutual, socially constructed interaction between people and technology (Orlikowski, 1992).

3.1.2 Underlying Premise of the Structurational Model of Technology

The Structurational Model of Technology is premised on two main concepts: 'the duality of technology' and 'interpretive flexibility' (Orlikowski, 1992).

3.1.2.1 The Duality of Technology

The Duality of Technology states that technology can be both created and changed by human actors to accomplish a goal or action (Orlikowski, 1992). 'Duality' signifies that there is a constant shaping and interaction between technology and human actors (Kolb, 2008). Technology is the product of action by humans, it is physically constructed by different actors, in different social contexts, who

apply and attach different meanings to the technology (Iyamu, 2017; Orlikowski, 1992). The ongoing action of human agents in their day-to-day interaction with a technology is what institutionalises it and forms conceptualizations of shared value and use (Cunha, 2013; Orlikowski, 1992). Technology becomes institutionalised when it is assigned shared value by multiple users, and this becomes the primary use of the technology; once the technology becomes institutionalised and reified it loses its connection with the human agents that initially assigned it meaning and becomes a part of the objective and structural properties of the organisation (Barley, 1986; Cunha, 2013; DeSanctis & Poole, 1994; Orlikowski, 1992). The example of M-Pesa in Kenya is a good example to put this 'duality' into perspective; M-Pesa was originally designed as a system to allow loan repayments via mobile phone, though during pilot testing the designers realised that users were assigning multiple uses and values to the technology, and it could be used for much more than its original design intended (Mbiti & Weil, 2015). Today M-Pesa is a general transactional banking tool used by millions of people in multiple developing countries and has completely transformed these financial systems by bringing people into the formal financial economy (Mbiti & Weil, 2015). The users (human agents) of M-Pesa proved instrumental in shaping the technology and its use over time (Mbiti & Weil, 2015). While M-Pesa has been a huge success in certain countries like Kenya, it has not been as successful in countries like South Africa due to the deep contextual factors that influence both the use and adoption of this technology (Jack et al., 2010; Van Zyl, 2016). South Africa for example has an extremely well established financial system, with a few large institutions that dominate the market; gaining market share where there wasn't a specific need for M-Pesa proved a difficult task as there was no specific demand to be met (Van Zyl, 2016).

3.1.2.2 Interpretive Flexibility

The interaction between technology and organisations is shaped by people of different experiences and backgrounds, who in turn shape the development and use of the technology and organisations; this is known as 'interpretive flexibility' (Doherty et al., 2006; Orlikowski, 1992; Pinch & Bijker, 1984). The Structurational Model of Technology posits that artefacts and their interaction are modifiable throughout their existence (Orlikowski, 1992). Orlikowski (1992) suggests that people have two iterative modes or perspectives in their interaction with technology; the 'design mode' and the 'use mode'. The 'design mode' reflects certain interpretive schemes built into a technology by people (Orlikowski, 1992). The 'use mode' reflects the process of agents assigning shared meaning to a technology and influencing 'human agents' appropriation of the interpretive schemes, facilities, and norms that are designed into the technology (Orlikowski, 1992). While a technology can be interpretively flexible, this flexibility is not infinite as it is constrained by the material characteristics of the technology as well as the institutional context in which it is designed and implemented (Orlikowski, 1992). The example of M-Pesa given above also provides a good example of the interpretive flexibility of technology in both its design and use.

3.1.3 Original Framework, Concepts & Relationships

3.1.3.1 Original Framework

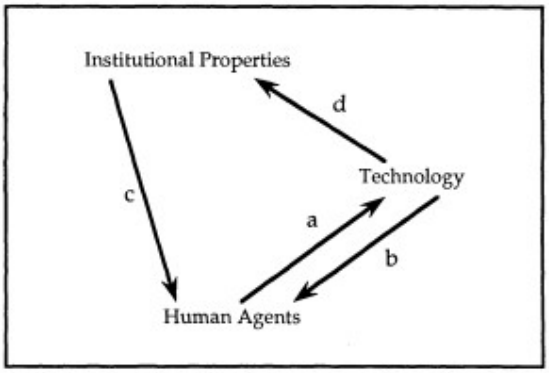


Figure 6: The Structurational Model of Technology (Orlikowski, 1992, p. 410)

Figure 6 depicts the original theoretical framework labelled the Structurational Model of Technology developed by (Orlikowski, 1992).

3.1.3.2 Concepts & Relationships

This section details the core concepts and relationships that form a part of the Structurational Model of Technology.

3.1.3.2.1 Definition of core Concepts

Concept	Definition
Human Agents	Comprises of people as technology designers, users and decision-makers within an organisation.
Technology	Consists of material artefacts that mediate the execution of tasks in the organisation.
Institutional Properties of Organisations	Includes organisational dimensions such as environmental pressures, competitive forces, culture, professional norms, state of knowledge about technology etc.

Table 1: Definition of Concepts from the Structurational Model of Technology adapted from (Orlikowski, 1992)

Table 1 provides a view of the core concepts used within the Structurational Model of Technology as well as a definition of each of these concepts.

3.1.3.2.2 Relationships

Arrow	Nature of Relationship
A	Technology is a product of human action in its design, use, development, appropriation and modification.
B	Technology has the ability to both aid and inhibit human action through its interpretive schemes, facilities and norms.
C	The institutional properties of an organisation have the ability to influence human agents in the way they interact with a technology.
D	The interaction with technology can influence the institutional properties of an organisation through reinforcing and transforming the structures of signification, domination and legitimation.

Table 2: Core Relationships of the Structurational Model of Technology (Orlikowski, 1992)

Table 2 provides a view of the core relationships introduced within the Structurational Model of Technology, as well as the nature of each relationship. The relationships depicted by arrows (a) and (b) are primarily concerned with technology as social action; often referred to in current literature as Social Informatics (Kling et al., 2000); and incorporates Orlikowski (1992) concepts of 'scope', 'role' 'use mode', 'design mode', 'duality' and 'interpretive flexibility'. Consider the internet for example; the internet of today is used for global communication between both individuals and businesses and is mediated by thousands of technological artefacts like servers, fibre optic cables and computer systems (Nienaber, 2009). Core to the internet however are those human agents that interact with each other, without human agents the internet is merely a collection of material technological objects (arrow a and arrow b). The internet was originally designed to be used by the military, though its use later expanded for the common purpose of communication between scientists and is used today as a global communications network (Nienaber, 2009). While the internet was designed with specific interpretive norms and schemes it has been completely transformed from its original use and has both shaped and been shaped by people all over the world to the internet we know today ('interpretive flexibility', 'design mode', 'use mode' are all represented here). And while the internet has very much aided us in our day to day lives, it can also constrain performance by facilitating a particular manner of doing things (arrow b). Considering a further example and study by Orlikowski (1993) where she presents the findings of an empirical study on the adoption of case tools by two different organisations; it is clear that each of these organisations is influenced by the historical use of technology and knowledge of case tools. This influences the interaction with new technology as each organisation would have very different knowledge about the technology from past use (arrow c). "Technology is built and used within certain social and historical circumstances and its form and function will bear the imprint of those conditions" (Orlikowski, 1992, p. 15). Once a technology assimilates and becomes embedded within the organisation it also transforms the structures of signification, domination and legitimation. It becomes a part of that organisation and its identity; future implementations of technology are also influenced (arrow d).

3.2 Conceptual Framework

The Duality of Technology Theory, as well as its key concepts of 'scope', 'role', 'duality' and 'interpretive flexibility', are used as the underlying framework and theoretical underpinning for the conceptual framework developed within this study. The objective here is not to validate the model presented by Orlikowski (1992) but to propose an extended framework that serves to guide in

understanding the relationship between Fintech and banks, and then to apply this to a specific case using empirical data collection and analysis. The framework proposed here has been labelled as the Structurational Framework of Fintech and FSPs and is shown in Figure 7.

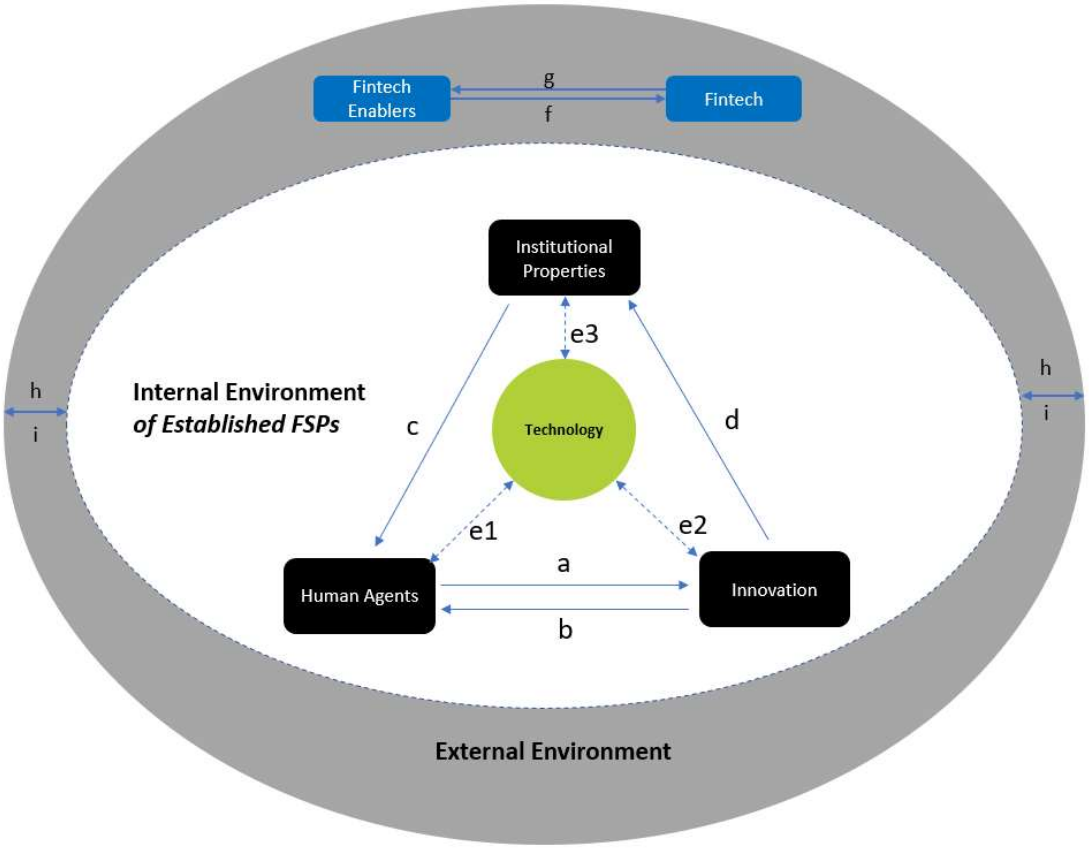


Figure 7: The Structurational Framework of Fintech and FSPs

The Structurational Framework of Fintech and FSPs

In the Structurational Model Of Technology, Orlikowski (1992) does not differentiate between the 'internal' and 'external' environment, instead, she views these as a part of the 'institutional properties' of the organisation. "The institutional properties of organisations are made up of organisational dimensions such as structural arrangements, business strategies, ideology, culture, control mechanisms, standard operating procedures, division of labour, expertise, communication patterns, as well as environmental pressures such as government regulation, competitive forces, vendor strategies, professional norms, state of knowledge about technology, and socio-economic conditions" (Orlikowski, 1992, p. 16). Beugré et al. (2006) argue that the current pace of globalisation and technological change requires organisational structures that are extremely sophisticated and agile. The external environment contains a multitude of complexities that impact an organisation's behaviour and performance (Voiculet et al., 2010); it can be highly unpredictable and nonlinear in nature (Burke, 2003; Ndegwa et al., 2020). Organisations have very little control over the 'external' environment although they must tackle it head-on if they are to survive and grow (Ndegwa et al., 2020). Thus, a different perspective is offered here to that of Orlikowski (1992). The

Structurational Framework of Fintech and FSPs proposes that the 'internal' and 'external' environment be viewed as separate concepts. The 'internal' environment portrayed here is the 'internal' environment of established FSPs and consists of ('human agents', 'technology', 'innovation' and 'institutional properties') as outlined in section 3.2.1.1 Internal Environment (of Established FSPs). The 'external' environment is made up of ('Fintech' and 'Fintech Enablers') as outlined in section 3.2.1.2 External Environment. Dissecting the definition and concept of 'institutional properties' provided by Orlikowski (1992) above, all external pressures would form a part of the 'external' environment, while concepts like business strategy, division of labour etc. would form a part of the 'internal' environment.

To fully understand the change being brought about by Fintech, the 'internal' and 'external' environments need to be considered separately within the conceptual framework; for example considering the relationship between Fintech and banks using the original Structurational Model of Technology, Fintech in this instance would be considered as a part of the 'institutional properties' of the organisation as a 'competitive force', however, this would not allow for the consideration and isolation of how the impact of a specific external event like the Fintech Revolution impacts on the 'institutional properties' of the organisation. There is a complex relationship and interaction between the 'internal' and 'external' environment and viewing these as a single concept does not allow the researcher the ability to pinpoint specific changes in the 'external' environment and how these affect the 'internal' environment. While all parts of the 'internal' environment are impacted on by the 'external' environment, the key difference is that organisations have control over their 'internal' environment, they can set the tone, strategy and key decisions regarding what is at the core of the organisation. The 'external' environment, however, is impacted by a multitude of different factors (Voiculet et al., 2010); the magnitude of the impact that the 'internal' environment may have on the 'external' environment also cannot be determined in viewing them as a single concept. The researcher has thus isolated specific changes to the 'external' environment that are being brought about by Fintech, and the effect these have on the 'internal' environment of the organisation and vice versa; this cannot be achieved within the Structurational Model of Technology (Orlikowski, 1992). The researcher thus believes that this is a justifiable theoretical extension.

Other key differences between the conceptual framework presented above and that of Orlikowski (1992) is the addition of 'innovation' as a concept, as well as viewing 'technology' as a concept around which all other concepts revolve. Since the original paper by Orlikowski (1992), a lot has changed both within industry and organisational research. In the current environment, 'innovation' should be seen as a salient concept for any organisation (Parobek et al., 2020). Organisations that operate in highly competitive markets must have the ability to respond quickly to any changes in their business environment (Gaspary et al., 2020). In order to respond to such competitive pressure, organisations must be flexible and able to implement innovative strategies to remain competitive (Schreyögg & Sydow, 2010). While Gaspary et al. (2020) argue that research often couples 'innovation' with the 'institutional properties' of the organisation, the researcher believes that it should be seen as an isolated concept for the purpose of this research. Dougherty (2008) argues that social theory often theorises that human agents have enormous social competence and that improvisation by human agents, rather than institutionalisation drives behaviour within organisations, therefore innovation should not just be considered as a part of the institutional properties of the organisation. Fintech is having a massive impact on innovation and technological change within the industry which are a part of the 'external' environment of the organisation

(Haddad et al., 2018); by isolating the concept of 'innovation' the researcher is able to determine the impact of Fintech on the innovation capabilities 'internal' to the organisation. The researcher thus sees this as a justifiable theoretical extension as it allows for viewing the change occurring in the 'external' environment, and the impact it has on the 'internal' environment, including the innovation capabilities of the organisation. Gozman et al. (2018) argue that while technology has been used extensively across the financial services value chain, academia has provided little insight into the recent innovation associated with the Fintech Revolution. Gomber *et al.* (2018) argue that a key element of the Fintech Revolution that deserves specific attention is that of 'technology-innovation'. 'Technology-Innovation' is regarded as the engine behind the Fintech Revolution; it can be defined as the constant relationship between innovation and technology, both feeding and evolving off each other in a never-ending relationship. It should be noted that while 'technology-innovation' according Gozman et al. (2018) seems to look like a single concept, they are very much two separate concepts that are closely related. This approach has also been followed within the Structurational Framework of Fintech and FSPs, as both 'technology' and 'innovation' are presented as separate concepts that form part of the 'internal' environment of the organisation.

3.2.1 Core Concepts

3.2.1.1 Internal Environment (of Established FSPs)

The core concepts and relationships examined here are the relationships between 'human agents', 'innovation', 'technology', and the 'institutional properties' of FSPs. These form the core structural relationships of the 'internal' environment of an FSP.

'Human Agents' consist of the users, designers and leaders within the organisation (Orlikowski, 1992). The key activities that human agents engage in within organisations are that of 'use' and 'design' of technology (Orlikowski, 1992); and solving problems through the process of 'innovation' (Robertson, 1967).

'Innovation' in the context of this paper is specifically the *process* of innovation and is a process of deliberate social action by human agents (Hellström, 2004), as opposed to the popular diffusion of innovation theory which portrays how innovation is communicated through certain channels over time and within a particular social system (Rogers, 2010). It can also be referred to as 'innovativeness', 'innovating' or 'to innovate'. Robertson (1967, p. 1) defines innovation as "a process whereby a new thought, behaviour, or thing, which is qualitatively different from existing forms, is conceived and brought into reality". Robertson (1967) posits that innovation consists of four key steps:

1) Perception of the problem: for innovation to occur there must be a problem that has been identified that needs to be solved.
2) Setting the stage: a specific configuration of events that are brought together at a specific time.
3) The act of sight: is the act of finding the correct solution in situations of high uncertainty, where many solutions may present themselves.
4) The critical revision: where the practicality of the innovation is analysed.

Innovation is the result of deliberate action by human agents (Robertson, 1967).

'Technology' consists of material artefacts that mediate task execution in the workplace (Orlikowski, 1992). For the purpose of this paper, the researcher would like to broaden this definition of

technology, to also include the use of technology sold on to customers as a product. Within the topic of Fintech, most organisations offer technology or services to customers as a by-product of the innovation process, which may also lead FSPs to create newer enhanced technologies and services (NL4WorldBank, 2019; Saksonova and Kuzmina-Merlino, 2017). The researcher thus sees this as a justifiable extension to the definition of technology for the purpose and context of this thesis. The ultimate goal of technology is to enhance the organisation's operational efficiency, generate revenue or improve on the organisation's strategic position (Tufano, 2003).

The 'institutional properties' of FSPs consists of the structures, culture, strategy, roles and standard operating procedures of the organisation (Hoogendoorn et al., 2004; Orlikowski, 1992).

Table 3 shows the core relationships identified as a part of this research that are fundamental to the 'internal' environment of FSPs.

Arrow	Nature of Relationship
a	**Innovation is a product of human action in its design, implementation and use** Hellström (2004) argues that the concept of innovation as well as its definition, has been rife with inconsistency and conceptual contradictions. The definition of innovation should not be sought on a semantic level though on one that is rooted primarily in social action (Hellström, 2004). Applying the foundational aspects of Orlikowski (1992) in 'scope', 'role', 'interpretive flexibility' and 'duality', the researcher sees these as behavioural aspects of social action rather than being specific to technology. Thus the researcher seeks to explore whether 'innovation' also exhibits those foundational theoretical concepts put forward by Orlikowski (1992).
b	**Innovation also shapes human action within organisations** As per Orlikowski (1992), 'duality' signifies that there is constant shaping and interaction between 'human agents' and 'technology'. Extrapolating this to the concept of 'innovation' would signify that innovation also shapes human action within an organisation. This is also argued by (Hellström, 2004) who posits that 'innovation' also exhibits a kind of 'duality'.
c	**The institutional properties of organisations will influence human agents in the process of innovation or innovating** Dougherty (2008) applies a design science and structuration perspective to innovation and argues that the 'institutional properties' of an organisation will have a significant impact on both human agents and their innovative capabilities. There are specific 'institutional properties' that can both hinder and foster human agents in their interaction with 'innovation' (Dougherty, 2008).
d	**The interaction with innovation will influence the institutional properties of organisations through reinforcing or transforming the structures of signification, legitimation and domination of that organisation** The concept of 'duality' by Orlikowski (1992) is extrapolated here once again to show that 'human agents' and their interaction with 'innovation' will also influence the 'institutional properties' of the firm. This duality is also posited by Dougherty (2008).
e	**Technology both shapes and is shaped by: human agents (e1); innovation (e2); and the institutional properties of the organisation (e3)** Orlikowski (1992) argues that technology is shaped by 'human agents' and the 'institutional properties' of the organisation. As the concept of 'innovation' is seen as a separate concept to the 'institutional properties' of the firm within the Structurational Framework of Fintech and FSPs, it is posited that 'innovation' also shapes 'technology' based on the theoretical foundation of this research.

Table 3: Fundamental relationships relative to the 'internal' environment of FSPs (An adaptation of Orlikowski (1992) in the context of Fintech and its impact on established FSPs)

3.2.1.2 External Environment

The 'external' environment consists of all factors that influence the organisation, that are not directly controlled by the organisation. The researcher diverges here from Orlikowski's (1992) framework and posits that the 'external' environment be viewed as a separate concept within the Structurational Framework of Fintech and FSPs. Within this new framework, 'Fintech Enablers' and 'Fintech' are seen to be a part of the 'external' environment of FSPs.

The definition of Fintech used within this study is that of Saksonova And Kuzmina-Merlino (2017) who believe that Fintech are companies that have a clear concept or solution for a specified customer sub-segment in financial services. Fintech firms could be SMEs, Unicorns, GAFAs or Cross-Industry Convergents.

'Fintech Enablers' consist of the following key components: 'globalisation', 'smartphones', 'the internet', 'government intervention' and 'regulation'. Further detail around both 'Fintech' and 'Fintech Enablers' can be found in section 2. Literature Review.

Table 4 shows the core relationships identified as a part of this research that are fundamental to the 'external' environment of FSPs; the relationship between 'Fintech' and 'Fintech Enablers' and the relationship between the 'internal' and 'external' environment of the organisation.

Arrow	Nature of Relationship
f	**Fintech Enablers will have an effect on Fintech** Positive or reinforcing action by 'Fintech Enablers' will lead to the formation of multiple new Fintech firms within the economy (Rizvi et al., 2018). 'Fintech' providers will provide specific niche services at a lower cost, at a faster pace, though will not be as scalable as a larger FSP, as they lack the resources of larger FSPs (Haddad et al., 2018; Saksonova and Kuzmina-Merlino, 2017; Still et al., 2019).
g	**Fintech will have an effect on Fintech Enablers** The creation of newer 'Fintech' firms will lead to further action by 'Fintech Enablers' (Arner et al., 2016, 2015). 'Fintech Enablers' will have to adjust to the growth, changing market structures, and technological advancement to enable balanced competition within the economy (Amalia, 2016; Arner et al., 2016, 2015; Rizvi et al., 2018).
h	**The external environment will have an effect on the internal environment** The innovative nature of Fintech is being recognised by traditional banks and FSPs (Saksonova and Kuzmina-Merlino, 2017). The introduction of innovative, low-cost services being offered by Fintech are in turn encouraging existing FSPs to become more innovative themselves, thus driving competition (Saksonova and Kuzmina-Merlino, 2017). Established FSPs may have to change their internal strategy, adopt newer technologies, innovative ideas, processes, and changes to their 'institutional properties' in order to remain competitive. This will have an effect on all concepts within the 'internal' environment of FSPs ('human agents', 'technology', 'innovation' and the 'institutional properties' of FSPs).
i	**The internal environment will have an effect on the external environment** Established FSPs are also seen as the driving force behind Fintech development as they play a pivotal role in driving existing financial services ecosystems, as well as economies forward in the Fintech Revolution (Still et al., 2019). A possible consequence of this evolving ecosystem and market structure is for larger FSPs to partner with Fintech, leveraging their solutions in a mutually beneficially relationship (Rizvi et al., 2018). FSPs will have to decide whether to partner or support, buy or compete directly with Fintech firms (Rizvi et al., 2018; Still et al., 2019). This will lead to the creation of newer organisational forms and market structures in the financial services landscape.

Table 4: Fundamental relationships relative to the changes in the 'external' environment

3.3 Conclusion

This chapter provided the background of multiple theoretical frameworks that have influenced the research topic. Current literature shows that the introduction of Fintech is having a drastic effect on the existing financial services ecosystem. Using the Duality of Technology Theory by Orlikowski (1992) as an underpinning theoretical lens for this study has allowed the researcher to develop an understanding of this relationship and offer a conceptual view of it.

Each concept and relationship of the Duality of Technology Theory was explored within this chapter. The conceptual framework used to guide this study was then presented and explained along with its main concepts, themes and relationships. Each of the relationships that were identified within table 3 and 4 have informed and relate back to the primary and secondary research questions of this study, please see APPENDIX G: Research Instrument and APPENDIX H: Link between Concepts, Themes and Interview Questions for further detail. Each relationship within the conceptual

framework, which is articulated in table 3 and table 4 has been unpacked and has informed specific research questions that were utilized within the data collection of this study. The conceptual framework was used to guide the entire research process. The concepts and relationships identified within the conceptual framework also informed the choice of research methods and strategy discussed in the next chapter.

The next chapter examines the research methods and strategy that was utilized throughout this research. The choices and justifications behind the chosen research paradigm, design, strategy, site selection, data collection, participant selection and data analysis process is discussed. Each method is then evaluated based on its appropriateness to the topic, research questions and objective of this study. The chapter concludes with a detailed account of the ethical considerations for this study.

4. Research Methods

This chapter describes the research strategy and methodology used to conduct the research. The research paradigm, research design and strategy including the site and participant selection along with data collection and sampling methods are discussed first. The data analysis process used is then discussed in detail, including a discussion around the qualitative data coding and how this links directly to the themes, relationships and concepts within the conceptual framework of this study. A detailed evaluation and justification of the research methods chosen is then presented and discussed. The chapter concludes with a discussion around ethical considerations and how they were utilized within this research thesis from conducting the research, to analysing the data and finally the reporting of results gathered.

At its core, research is about creating new knowledge (Oates, 2006). Research methods form the foundation of our research, they are the tools we use to gather and present quality information (Fraenkel et al., 2011). In selecting the appropriate research methods for this thesis, the research onion developed by Saunders et al. (2019) was utilised and is shown in Figure 8 below. The sections that follow will elaborate on each of the methods selected, beginning at the outmost layer of the research onion, moving inward.

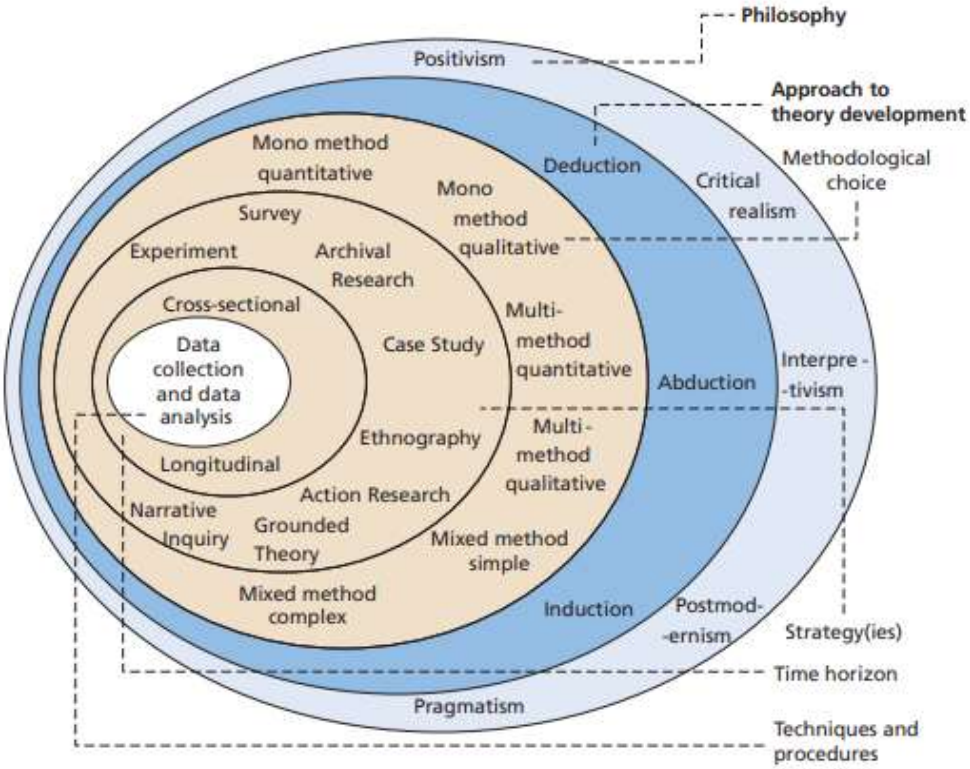


Figure 8: The Research Onion (Saunders et al., 2019)

4.1 Research Paradigm & Approach

A research paradigm can be viewed as a shared set of beliefs about how a problem can be understood or addressed (Kuhn, 1962). The two main philosophical approaches within Information Systems (IS) research are 'positivism' and 'interpretivism' (Oates, 2006; Saunders & Lewis, 2009). This study favours the use of an interpretivist paradigm to study in-depth the relationship between Fintech and banks. Interpretivist research is an inductive approach to research which sets out to build a theory or study a phenomenon more intimately, thus gaining greater insight into the phenomena and forming conceptualizations from the observed data (Battercherjee, 2012). In understanding a research paradigm, it is important to distinguish between the following core concepts and how they are understood:

- Epistemology is the nature of knowledge that guides the researcher and research (Orlikowski & Baroudi, 1991). Orlikowski And Baroudi (1991, p. 8) view it as the "criteria for constructing and evaluating knowledge".
- Ontology deals with whether the researcher views the social and physical worlds as either objective or subjective (Orlikowski & Baroudi, 1991). This deals with the human element of reality, objectivity means that the social and physical world exists independently of humans while subjectivity means that these can only exist as a consequence of human action (Orlikowski & Baroudi, 1991).

Interpretivists have a subjective view of the social and physical worlds and believe that they are a core part of the research process, influencing both the researcher and participants (Battercherjee, 2012; Saunders and Lewis, 2009). Interpretivists believe that reality is constantly changing and can

have a multitude of different perspectives (Wahyuni, 2012). Interpretivist studies attempt to identify, explore, and explain, to gain an in-depth understanding of how meaning is created in the real world through social action (Oates, 2006).

An interpretivist lens was appropriate for this study for the following reasons. There is a considerable need for theoretical development around the topic of Fintech within developing countries (Kavuri & Milne, 2019). Walsham (2006, 1995) argues that interpretivist research is most appropriate where the researcher does not have *a priori* understanding of the situation in question. Due to the lack of clear theoretical foundation and knowledge within Fintech, an interpretivist paradigm proved to be more suitable for the study in question. Secondly, while there were some assumptions as to how the relationship between Fintech and banks may have played out, the relationship was clearly non-deterministic in nature and was unique to the specific context in which this study was conducted. The use of an interpretivist paradigm can increase our understanding of the phenomena of interest in its contextual setting (Walsham, 1995). Finally, interpretivist research lends itself well to studying the phenomena of interest from the perspective of human agents, through understanding behavioural and social phenomena from the perspective of these human agents (Saunders et al., 2019; Walsham, 1995).

In contrast, a positivist lens applied to the relationship between Fintech and banks would not have been as appropriate for this study; as there was little theoretical foundation and research direction on the topic of Fintech (Kavuri & Milne, 2019), there were no *a priori* fixed relations to be studied. Positivist research is a deductive approach and is premised on the existence of fixed relationships to test specific hypotheses (Orlikowski & Baroudi, 1991). The objective of this study was to gain a deeper understanding of the relationship between Fintech and banks as opposed to testing the strength of relationships through correlational analysis. The goal of positivist research is to create generalisations on the phenomena of interest (Battercherjee, 2012; Saunders and Lewis, 2009); and thus an interpretivist approach proved to be more suitable.

Reflecting upon the research objective and research question posed by this study; the use of an interpretivist paradigm and an inductive approach to research has allowed the researcher the ability to building upon an existing theory and study the uniqueness of the context in question, thus adding to and building upon the existing body of knowledge on the topic of Fintech.

4.2 Research Design & Strategy

4.2.1 Research Design

The chosen research design for this study was that of an 'exploratory design'. Exploratory research is primarily concerned with discovery and the generation of new ideas (Jupp, 2006). It is usually conducted in areas of which there exists little knowledge of the subject or phenomena, to understand the subject in a preliminary way (Battercherjee, 2012). Exploratory studies are mainly conducted to identify the boundary of a problem, generate some initial ideas about a subject or identify factors that are salient or might be relevant to the research (Battercherjee, 2012). This type of research is used to explore situations in which the intervention being assessed is not clear (Baxter & Jack, 2008). These studies form the basis for future research on the subject (Brotherton, 2008).

Examining the core research question and shortcomings on existing Fintech literature, there are few studies if any, that have examined in depth the relationship between Fintech and established banks within developing countries; thus, the intervention being assessed was not clear. An exploratory

approach has allowed the researcher to generate some initial ideas and theory around the core research question. While the researcher could have considered using a descriptive research approach on the topic of Fintech broadly, it would not have been possible to answer the specific research question posed within this study with a descriptive research design or any of the other research designs depicted in Figure 8. Descriptive research aims to systematically describe an area of interest with high accuracy and precision; it is used to describe an intervention or phenomena in the real-life context in which it occurred and examine the situation in its current state (Battercherjee, 2012; Baxter & Jack, 2008; Brotherton, 2008). The aim of this study was to generate some initial ideas on the relationship between Fintech and banks and to identify factors that may be salient to this research topic. Kavuri And Milne (2019) argue that this is an emerging area of research, as such this study could form the basis of future research within this specific field of interest. As there is currently limited knowledge around the relationship between Fintech and banks, an 'exploratory design' was thus chosen as it matches the context and complexity of this study, its research objective, and the specific research question posed herein.

4.2.2 Research Strategy

The chosen research strategy for this study was that of a 'case study' using 'qualitative' data collection and analysis. A case study is defined as "when a researcher explores in depth a program, an event, an activity, a process, or one or more individuals" (Creswell, 2003, p. 15). Case study research sets out to explore the research within its context using a variety of different sources to gather data (Baxter & Jack, 2008; Oates, 2006). Case studies lend well to exploratory research designs and qualitative data analysis as they allow the researcher to study an area where little knowledge exists and gain deep insight into the phenomena (Brotherton, 2008). Qualitative case studies focus on a single subject of inquiry with the aim of obtaining rich and detailed insight (Oates, 2006). They provide an account of what would have occurred in a specific social setting that may be unique to that specific context (Oates, 2006). Unlike quantitative data which contains numbers, qualitative data consists of words, images, sounds, etc; qualitative methods include the use of interviews, observation of participants, document analysis or questionnaires (Oates, 2006). Brotherton (2008) argues that one of the main disadvantages of case studies is that, they are limited in terms of the generalisability of findings. The purpose of conducting this research was not to form generalisations but to understand in depth a single case as well as to build upon existing theory. This study has collected data around perceptions, expectations and the experience of human agents within a specific organisation and case. A case study strategy using qualitative data analysis has allowed the researcher to study the relationship between Fintech and banks within a single case, and to obtain rich contextual data around this case. This has allowed the researcher to build foundational theory around Fintech business model research, which could potentially be used within future research in this field.

4.2.3 Site Selection

The case study in question has studied the relationship between Fintech and banks within a single bank in South Africa (SA). This research has focused solely on the South African banking sector; SA's banking sector consists of four large financial institutions or banks (Kumbirai & Webb, 2010). This study was conducted within Delta Bank (pseudonym), a major South African bank who has been very open about its approach and strategy toward Fintech in South Africa. Delta banks offer a comprehensive list of products and services within both the Commercial and Retail Banking sectors and have won multiple awards for its efforts in digitisation, as well as product and portfolio

optimisation and delivery. They are a leader within the South African banking sector and are a world leader in their digital banking platforms. Delta bank was thus chosen as the research site as it was assumed that they would be very familiar with the topic of Fintech, as well as newer and emerging developments in innovation and technology based on their various awards for technology and digitisation along with their openness around their Fintech strategy. As this research focuses on transactional banking, the specific site in question was the transactional banking division within Delta Bank.

4.2.4 Data Collection Methods & Participant Selection

4.2.4.1 Data Collection Methods

Walsham (1995) argues that theory can be used as an initial guide in the design and data collection of a study. The theoretical foundation put forward by Orlikowski (1992), specifically the concepts of 'interpretive flexibility', 'duality' of technology, along with the study of how 'human agents' interact with 'technology' in its 'design' and 'use' have influenced the data collection methods chosen for this study. This study favoured the collection of qualitative data through semi-structured interviews. Qualitative data allows the researcher to collect rich contextual data around the subject of interest in order to build a theoretical contribution (Travis, 1999; Williams, 2007). "The interview is a subset of empirical research and entails talking - usually face-to-face - with those knowledgeable about what is being studied" (Macdonald & Hellgren, 2004, p. 1). Semi-structured interviews involve a certain degree of flexibility in the conversation, though the researcher compiles a set of key themes that need to be covered and addressed (Macdonald & Headlam, 2008; Oates, 2006). This allows the interviewer to change the order of pre-determined questions or respond to issues brought up by the interviewees that were not necessarily covered within the themes compiled (Oates, 2006). The use of open-ended questions was favoured as it allowed the researcher to collect further information around the topic as opposed to closed-ended 'yes' or 'no', or limited response type feedback (Creswell, 2003).

As there is limited information around the relationship between Fintech and banks, literature around the topic did not provide the researcher with a complete view of the topic; nor can the researcher presume to have known or have had detailed information around this relationship prior to data collection. Based on the core research question as well as the conceptual framework developed within this paper; allowing for a degree of flexibility within the data collection by using semi-structured interviews allowed the possibility of uncovering information that was not already apparent in the existing body of knowledge. Interviewees had different perspectives and knowledge around what they perceived the relationship between Fintech and banks to be, which proved valuable to the field of study. A full view of the research instrument including *a priori* themes, and pre-determined questions that were formulated based on the research can be found in APPENDIX G: Research Instrument.

4.2.4.2 Sampling Methods & the Selection of Research Participants

As it is impossible to study the entire population within a study, academics and practitioners often rely on the process of sampling. Sampling is the process followed in selecting a sub-set of recipients (called a sample), of the overall population of interest for the purpose of making observations, statistical inferences or generalisations on the data collected for that population (Battercherjee, 2012; Fraenkel et al., 2011). The sampling techniques used to determine the research participants within this study was that of 'purposeful sampling'. Purposeful sampling is a common non-

probability sampling technique used within qualitative studies that allow the researcher to actively select the most productive sample in order to fully answer the research question (Byrne, 2001; Marshall, 1996; Suri, 2011). Purposeful sampling is also referred to as 'judgement sampling' and 'purposive sampling' (Devers & Frankel, 2000; Marshall, 1996).

Based on the research objective and research question, the following preliminary sampling criteria were identified by the researcher:

- Participants had to have been an employee of Delta Bank for more than six months. Should they have been an employee for less than six months it was assumed that they would not have been exposed to, or able to respond to key strategic changes in response to Fintech.
- Must have been employed in the Core Transactional Banking division of Delta Bank and be able to influence and operationalise the strategy of the organisation in a material way through change initiatives or product development.
- Must have been of middle to senior management level as it is assumed that these employees would have had the most exposure to and input into the core strategic and operational environment of the organisation.

Access to participants was not a challenge, though there was a delay in obtaining approval to conduct the research as the data gathered was extremely sensitive and strategic in nature. Gatekeepers were utilised to assist the researcher with access to participants. Gatekeepers are people that can allow overall access to the participants you need to study (Devers & Frankel, 2000). As the researcher was an employee of the organisation, existing relationships were utilised in order to gain access to the gatekeepers. Two gatekeepers were consulted, the first was the Chief Executive Officer (CEO), and the second was a Senior Executive member within the site in question. Multiple conversations were had with both gatekeepers, who confirmed that the preliminary criteria identified above by the researcher were in fact relevant. Both gatekeepers advised that two specific departments within the Transactional Banking division of Delta Bank would provide the researcher with the most relevant information and data to answer the research questions posed by this study; these were the 'product' and 'pricing' departments, as senior managers within these departments would have the most knowledge around Fintech and the strategy thereof.

As there was a single case and site that was selected, this limited the number of participants involved in this study. Fifteen participants were ultimately selected to form a part of this study, though two participants had to cancel their interviews multiple times due to work commitments and did not form a part of the final interview process and data collection. A total of thirteen participants were interviewed, and as per the advice of the Gatekeepers, all participants formed a part of either the product or pricing division of Delta Bank and occupied positions of senior leadership within their respective teams. Interviews lasted between sixty to ninety minutes on average, and most participants required only a single interview; however, four of the thirteen participants required between two and four interviews to complete the data gathering process. The researcher does believe that saturation was reached within the data collection process as a point was reached where no new information was emerging from the interview process, though due to time constraints there were specific limitations identified by the researcher which can be found in section 7.3.3 Limitations. Saturation occurs when additional data collection does not yield any further insight into the phenomena and where all themes articulated within the research instrument have been covered

adequately (Battercherjee, 2012). The main source that was constantly referenced by the researcher to ensure that saturation was reached within the data gathering process, was Harvard (2020).

As interviews were conducted during the COVID-19 pandemic, face to face interaction with participants was not possible. Interviews were scheduled through meeting invitations within participants' diaries. All interviews were conducted via Microsoft Teams as virtual interviews, with explicit permission requested to record each session from each participant. Even though participants had signed the participant consent forms and participant information sheets had been shared with participants, the researcher reiterated all information regarding privacy, security and confidentiality to each participant prior to beginning each interview, to ensure that participants were comfortable with the interviews and process.

As the interviews were conducted virtually, the researcher had to utilise multiple techniques to ensure active participation and collaboration with research participants. Leech (2002) advocate the use of the following techniques for semi-structured interviews which were utilised: 1) gaining and building rapport early on 2) putting respondents at ease 3) restating what people have said to ensure engagement 4) ensuring the correct question order and 5) using prompts to ensure effective collaboration. Gaining rapport was an extremely difficult process due to interviews being conducted virtually and the researcher ensured that multiple conversations were had with participants long before the data gathering process began. A specific technique that the researcher had to utilise on multiple occasions was the use of filler words like '*umm'* and '*ahh'*, merely to assure the participant that the researcher was still online and had not disconnected from the online interview.

Participant	Role	Description of core activity	Period within the Organisation (In Years)
1	Product Manager	Transactional Credit Card	20
2	Product Manager	Transactional and Lending: Overdraft Products	8
3	Product Manager	Transactional Current Account: Niche Products	6
4	Pricing Manager	Transactional Current Accounts	4
5	Product Manager	Transactional and Lending: Business Loans	1
6	Solutions Head (Executive)	Transactional Banking	10
7	Product Manager	Transactional and Lending: Customer Experience	7
8	Product Manager	Transactional Current Account: Multiple Sectors	5
9	Product Manager	Transactional Current Accounts: Multiple Sectors	6
10	Product Manager	Transactional Current Accounts: SME Sector	9
11	Product Manager	Transactional Card Issuing	8
12	Product Manager	Transactional and Lending: New Business Development	12
13	Product Manager	Transactional Banking: SME Sector	9

Table 5: List of participants

Table 5 above shows a list of the participants that formed the interview process. Pseudonyms are used to protect the identity of participants.

4.3 Data Analysis Process

Qualitative data analysis is an evolutionary and iterative approach that brings order, structure, and meaning to the data collected (Marshall, 1989; Seidel, 1998). “Good qualitative data analysis relies on the ability to locate information and to keep that information in context” (Devers & Frankel, 2000, p. 269). The data analysis process used for this research followed those principles set out by Miles And Huberman (1994) and is depicted in Figure 9 below. Data analysis is a critical step within the research process as this is where theory is generated for a qualitative study (Creswell, 2003). A critical mind is needed as well as attention to detail throughout the data analysis process to ensure quality output and results (Creswell, 2003). Miles And Huberman (1994) view the qualitative data analysis process as consisting of four components:

- **Data collection** involves the collection of data. Please see section 4.2.4 Data Collection Methods and Participant Selection above for further detail.
- **Data Reduction:** as the data collection process yielded large amounts of data, the data was reduced to those themes that the researcher deemed most relevant. A full list of the themes and sub-themes utilised can be found in the sections that follow.
- **Data Display** is an organised view of the data once it has been reduced. The data was displayed using the emergent themes identified within the literature and conceptual framework of this study. Multiple tables, pictures and matrices are used and can be found within sections 6. Discussion and 7. Conclusion.
- **Conclusions**: mean reflecting on the meaning of the data that has been analysed and drawing conclusions from this data. Please see section 7. Conclusion for further detail.

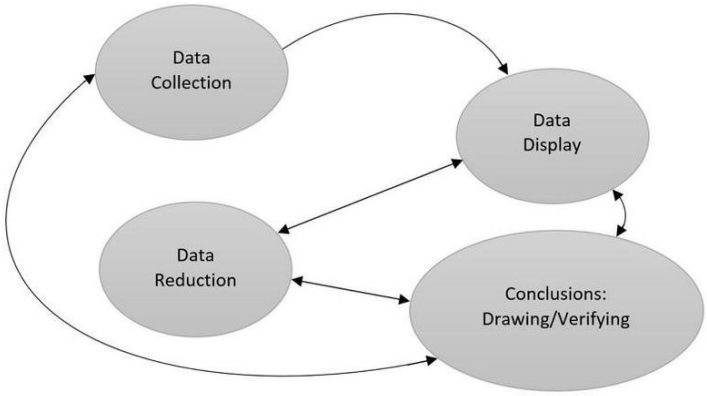


Figure 9: Iterative Model for Qualitative Data Analysis (Miles and Huberman, 1994)

The use of qualitative data analysis techniques put forward by Seidel (1998) was used during this study:

- **Noticing**: in noticing emerging themes and patterns, a popular technique used by qualitative researchers that was used throughout the data analysis process of this thesis was ***coding***. Coding allows the researcher to add labels which assign meaning to varying sizes of data (Miles et al., 2014). Codes can represent varying degrees of complexity from descriptive labels to complex ones (Miles et al., 2014). Miles et al. (2014) argue that coding and analysis should not be seen as separate parts of qualitative research; coding is a critical reflection, deep analysis, and interpretation of the data collected; coding is analysis.
- **Collecting:** in collecting the data it should be simultaneously sorted to ensure that the researcher is able to easily identify where the specific data fits into the greater research (Seidel, 1998).
- **Thinking about things**: this was true throughout the analysis process as the researcher needed to approach analysis with a critical mind. Codes and themes need to make sense, relationships should be easily recognised and examined carefully (Seidel, 1998). The researcher should always focus on the bigger picture, each part of the puzzle needs to fit together to enable the researcher to identify gaps should they exist (Seidel, 1998).

In conducting the literature review as well as compiling the conceptual framework for this research, nine specific relationships were identified which are represented in section 3.2.1 Core Concepts in

table 3 and table 4 (arrows a to arrow i). For ease of analysis, the researcher has reduced these into four core themes. Table 6 represents the core themes and their relevant descriptions, the codes and relationships examined within each theme, as well as the related research questions. Please refer to APPENDIX G: Research Instrument for a more detailed view.

Internal Environment Themes (Covers all relationships identified in table 3, i.e. all relationships internal to the organisation)				
Theme number	**Description**	**Code**	**Relationships Examined (arrows)**	**Related Research Question/s**
1	Exploring the concept of innovation within organisations	INO	a,b,c,d	**Primary Research Question:** What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?
2	Exploring the concept of technology within organisations	TECH	e1, e2, e3	**Primary Research Question:** What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?
External Environment Themes (Covers all relationships identified in table 4, i.e. The effect of the external environment on the internal environment of the organisation)				
Theme number	**Description**	**Code**	**Relationships Examined (arrows)**	**Related Research Question/s**
3	Exploring the concept and background of Fintech and the relationships with Fintech Enablers	FIN/FEN	f,g	**Primary Research Question:** What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa? **Secondary Research Question:** What impact do Fintech Enablers (Globalisation, Smartphones, The

				Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?
4	Exploring the effects of Fintech on the financial services sector and the relationship between Fintech and banks	REL	h,i	**Primary Research Question:** What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa? **Secondary Research Question:** What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?

Table 6: Core themes and relationships

All data collected was transcribed and stored on both local hard disk storage as well as backed up to cloud storage, to ensure file corruption and data loss was minimised. Password protection was used to ensure there is no unauthorised access to the data collected. Interview recordings were utilised along with an auto-generated caption file, which is a tool embedded within Microsoft Teams that was used to transcribe each of the thirteen interviews.

Qualitative coding was used as a technique to categorise the data obtained from the interview process in order to find patterns or links within the data (Saunders et al., 2019)**.** The data was analysed using each of the themes mentioned above as a starting point for the coding process. A middle range analysis was conducted, which allowed the researcher to build a framework that consisted of themes identified from the literature, conceptual framework and the data collected (Miles & Huberman, 1994; Saunders et al., 2019)**.** The rationale for using this method of coding was to capture the experiences of all participants within the research process.

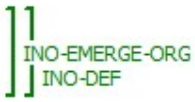
It should be noted that the coding process continued and evolved throughout the research process, and while there were multiple codes that made the final coding list, some codes may have been merged (e.g. IP-PHA-NOTTECH was an emergent theme that represented the 'institutional properties' of the organisation are a product of 'human action' rather than 'technology', though was later merged into IP-PHA which represented the 'institutional properties' as a 'product of human action' as an overarching topic) though were purposely kept by the researcher to assist in the write up of findings, further detail can be found in the section that follows. On average the coding process was repeated and refined between five or six times per transcript prior to the write up of the

research findings. A full list of the codes and sub-codes, descriptions, frequency of occurrence along with where each code emerged from can be found in APPENDIX I: Document Coding. Further detail around the codes utilised can be found in APPENDIX J: Visual Representation of the Coding Frequency.

A tool called QDA Data Miner (free version) developed by Provalis Research (2020) was used by the researcher to aid in the coding process. All coding was done within QDA Data Miner, along with comment, notes and colour coding that the researcher utilised at a later stage.

The following steps represent the coding process followed by the researcher:

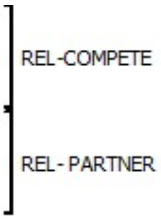
1. Organisation and cleaning of VTT caption files that were generated by Microsoft Teams from each interview. VTT files are unfortunately not extremely accurate in detecting language correctly and the researcher had to correct word for word and sentence for sentence to ensure they made sense. This was an extremely time-consuming process, and in retrospect, it may have been more efficient to transcribe each interview without the use of VTT files.
2. Step 2 involved the removal of participant names as well as company names and replacing these with pseudonyms throughout each document. This had to be an extremely accurate process as the researcher had to ensure confidentiality and anonymity to produce an ethically sound thesis.
3. Involved manual transcription, clean-up of sentences and organisation of data into the four overarching themes developed from the literature and conceptual framework. Each of the relationships represented within section 3.2.1 Core Concepts in table 3 and table 4 had been further reduced into the four core themes of 'innovation (INO)', 'technology (TECH)', 'Fintech and Fintech Enablers (FIN/FEN)', 'the relationship between Fintech and banks (REL)'.
4. Step 4 involved the first round and creation of codes and sub-codes. Each of the four core themes was colour coded to assist the researcher in identifying and analysing any overlapping codes and themes. The following colour coding was used, examples are provided below each theme and code:
    - Innovation (INO-Green)



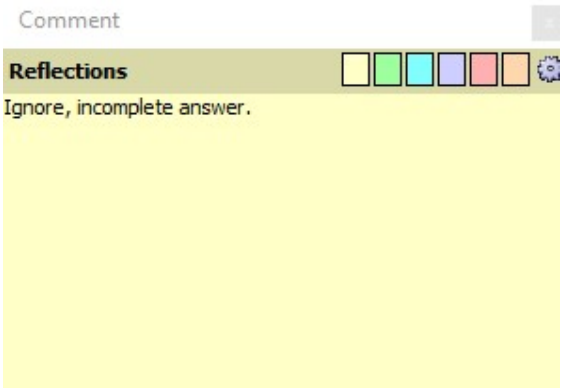
    - Technology (TECH-Blue)

    - Fintech General Information (FIN/FEN-Red)

    - The relationship between Fintech and banks (REL-Black)



5. Coding round 2 involved reviewing the full list of codes once more to ensure the initial codes generated were in fact valid.
6. Coding round 3 involved the recoding of emergent codes within the data. A keener and more critical eye was needed here to conduct a critical analysis of each response by participants, thereafter recode each document based on emerging themes. This was a very time consuming but necessary process. Some examples of emergent codes from the data were 'innovation drives further innovation (INO-DRIVES)', 'using a reward-based innovation program (INO-REWARD)', to name a few. A full list of codes is provided in APPENDIX I: Document Coding.
7. Coding round 4 involved the review of each and every code one further time to ensure all codes both from the extant literature and conceptual framework as well as those emerging from the data collection remained relevant. Multiple codes were deleted within this process as the researcher felt that certain codes were not needed or could be merged with others. Examples of deleted or merged codes include: 'why we innovate as people (INO-EMERGE-PPL)', 'innovation as a product of human action and not technology (IP-PHA-NOTTECH)'.
8. Initially, codes were exported into Microsoft Excel one core theme at a time and each core sub-theme was analysed separately. The researcher later realised that it would be more efficient to export one core theme as well as its sub-themes into Microsoft Excel, prioritise the relevant comments for each sub-theme and rate them qualitatively on parts that were most relevant to the write-up and research topic using sticky notes and comment.
9. Sticky notes, as well as comments, were utilised within QDA data miner to ensure that nothing was missed when reviewing each transcript and that all relevant coding and data was covered accurately. Colour coding was also done for each comment based on the criteria mentioned below:
    - **Yellow notes**: were general notes on specific items to exclude from the research output.
      Example of note



      In-text coded example: Labelled by the researcher as 'Poor and non-descriptive, ignore incomplete answer'.

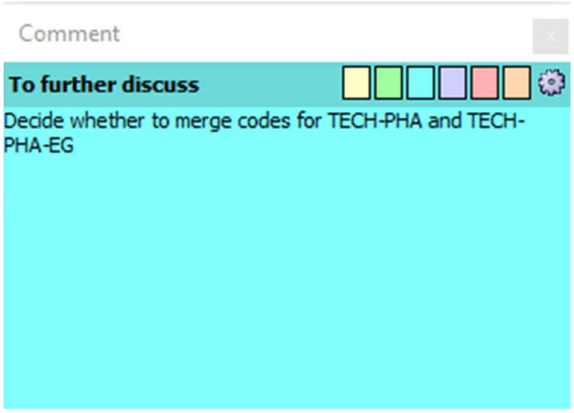
Example from the interview process

Researcher: Do you think that technology is almost a by-product of the innovation process?

"Oh, definitely, definitely." - (Participant 4)

- **Blue notes**: were for codes that needed to be merged; the example below is for the codes of TECH-PHA (technology as a product of human action) and TECH-PHA-EG (an example of technology as a product of human action).

Example of note



In-text coded example: all examples could have been collapsed into the sub-code of TECH-PHA, though the researcher decided to keep these separate to assist with the write up of findings.

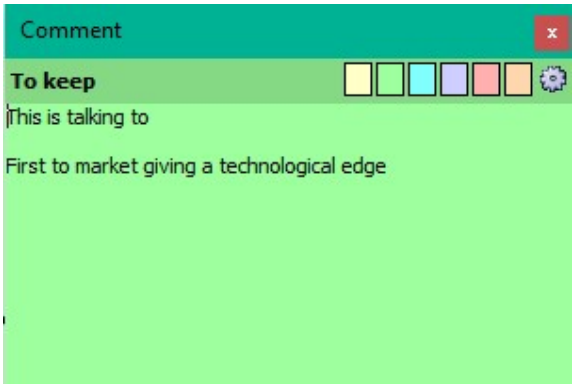
Example from the interview process

Can you give me an example of how technology is being used within your organisation?

"We've been using teams for a while since Jimi Hendrix (pseudonym) is our boss and he likes finding new ways to do things. So, we were on teams for a long time and we tried to get other people to use it and there was just so much resistance. And then we got into lockdown and now everyone is on teams and there's no resistance. So, for me that is very interesting to see cos I think we were using teams from last year, June." - (Participant 7)

- **Green notes**: were for items that deserved special attention in the analysis process, as they were potentially important findings.

Example of note



Being first to market could be an important finding in giving an organisation a competitive advantage, this was highlighted as potentially important within the in-text

example that could have potentially been highlighted in the final analysis should the researcher have deemed this important.

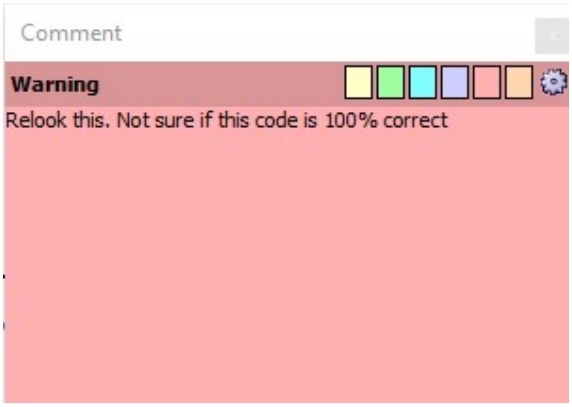
Example from the interview process

What do you think can give a company an edge in technological competence and advancement?

"Yes, technological edge allows you to be a leader; and you then have to be a leader all the time. But there is always somebody else who will come up with something that would be much better. They've taken longer times to sort of put something meatier, because I find some organisations want to be leaders with their technology without actually putting something that's tangible out there. They take the concept and the idea and create something that is so rushed with multiple defects; whereas some other organisations would rather sit and create something a bit more tangible, less defective, and put it out there, but it sometimes boils down to who speaks the loudest." - (Participant 8)

- **Red notes**: were for extremely important items that needed to be relooked at the end of the coding process.

Example of note



Example from the interview process

The below in-text example was initially coded as INO-IP (innovation shaping the institutional properties of the organisation), though based on further critical thought the researcher kept a note including comment to potentially recode and relook the example. This example was not included within the final write up.

"So, if you think about it, if you think about a Financial Product Z (pseudonym) product; there's not a single person in our organisation that would qualify for the lowest Financial Product Z that we have, so you must get out of your comfort zone and start thinking about the other people; you can't just solve your own problems. I think that's where a lot of organisations also miss it because you have the top management structures thinking of the cool stuff they need to do, you know build mobile apps, make fancy products; but really, you're sitting with millions of people outside that still deal with Financial Product X (pseudonym). And for them, it's very expensive to use Financial Product X and Z (pseudonym). So, by only solving your own problems you're not going to solve for the majorities and include those people in your service; and I think that's where for the likes of Theta Bank (pseudonym), they weren't innovative, they didn't build new stuff, they

built Financial Product X (pseudonym) and a Financial Product Z (pseudonym) extremely well, and they were incredibly successful with it." - (Participant 10)

Further information around the coding process can be found in APPENDIX H: Link between Concepts, Themes and Interview Questions, APPENDIX I: Document Coding and APPENDIX J: Visual Representation of the Coding Frequency.

4.4 Evaluation of Methods adopted

For qualitative case study research, Oates (2006) proposes the use of Lincoln And Guba's evaluation criteria. Lincoln And Guba (1985) posit that trustworthiness of a research study is important in evaluating its worth. Trustworthiness is viewed as the amount of trust we can place in the research (Oates, 2006). Research must be documented with significant rigour; there must be coherence in the connections between the research so that readers may judge the trustworthiness of the research (Angen, 2000). Within this study, the researcher has used specific techniques advocated by Lincoln And Guba (1985). Trustworthiness involves establishing the following:

Confirmability: is defined by Lincoln And Guba (1985) as the extent to which the research has been shaped by the participants and not by the bias from the researcher. The research must be covered with significant enough rigour; the argument being presented must be logical and easily understandable to the reader. This was addressed by ensuring that there was a logical flow of information from the literature review and conceptual framework, through to the research instrument, coding and analysis process, presentation of research results, contributions and limitations. The researcher has attempted to ensure that the argument presented is logical and easily understandable to the reader, by incorporating comments from the research supervisor as well by ordering the research based on emergent themes. Direct quotes from participants are used within chapter 5. Case Narrative and Interpretation to evidence any insight or claims made by the researcher. The research topic was also submitted to the European Conference of Information Systems (ECIS) and was reviewed by three academic reviewers and the Associate Editor, each providing valuable comment to incorporate and to ensure that the research is in fact *confirmable.*

Dependability: involves showing that the findings and stability of the data contained within the research are consistent (Oates, 2006; Travis, 1999). Oates (2006) proposes that an audit trail is used throughout the research process and that each step of the process is outlined and recorded step by step. This was addressed by ensuring that an audit trail was been kept throughout the research process and can be seen from the links drawn between each of the themes emerging out of the literature review and conceptual framework, through to the research instrument, coding and analysis process, presentation of research results, contributions and limitations.

Credibility: is the confidence of the researcher in the truth of their research findings (Oates, 2006; Travis, 1999). The researcher needs to ensure that participants are engaged on multiple occasions and that the data collection has reached saturation, else further research should be conducted. This was addressed by using prolonged engagement techniques advocated by Leech (2002), in order to understand the research case more fully. This involved understanding the case in-depth, creating rapport with the participants, understanding the culture and organisational setting (Lincoln & Guba, 1985). The researcher is confident that saturation was reached within the data gathering process and within the truth of the findings that have emerged from the data analysis.

Transferability: Transferability is not generalisability, it is being able to show that the research findings can be applied in other contexts (Travis, 1999). The researcher requires rich information and the researcher should provide thick descriptions of all information contained within their research such that the research can be transferrable to other contexts, times, settings and people (Oates, 2006; Travis, 1999). This was addressed by ensuring that thick descriptions are provided, including detailed accounts and context of the phenomena and case site being researched. The researcher is confident that the research is transferrable to other contexts, times, settings and people.

4.5 Ethical Considerations

Ethical considerations within research are the fundamental principles that help guide research, in what is deemed as right, and wrong (Battercherjee, 2012). Rosenthal (1994) argues that scientific quality and ethics are closely related and often directly correlated. Researchers have an obligation to produce and conduct research that is ethically sound and not waste the time or energy of all stakeholders (participants, funding agencies, academic journals, supervisors, etc.) concerned or impacted. In conducting this research, ethical approval was a key milestone that was achieved as a part of the research process. Ethical clearance was applied for and obtained through the University of Witwatersrand School of Business Sciences (SBS) ethics committee, please refer to APPENDIX K: Ethical Clearance Certificate. Rosenthal (1994) argues that ethical considerations should be considered within three essential parts of the research process, each of which have been given substantial consideration within this research topic. These specific issues are:

4.5.1 Conducting the research

The research needs to be safe for participants and design quality needs to be of a high standard (Rosenthal, 1994). Poor design is likely to lead to incorrect and unwarranted conclusions which wastes time and money (Rosenthal, 1994). As per the suggestion of Rosenthal (1994), ensuring that the research question was appropriate to the study design has assisted in driving a high level of research quality and ethical standards. Careful consideration and thought were put into choosing a research design, strategy, sampling method, and data collection strategy that matches the objective, research question and chosen research paradigm for this study. Discussions around appropriateness regarding issues of design were discussed between the researcher and research supervisor throughout the research process.

Issues of recruitment involve the reduction of bias from participants (Rosenthal, 1994). The more information given to the participants the better it will be in creating transparency (Rosenthal, 1994). Research participants are allowing you their valuable time and transparency is warranted. Rosenthal (1994) shows two specific issues of recruitment: 'hyperclaiming' involves overselling what the research is going to achieve and 'causism' involves implying relationships where none exist.

Battercherjee (2012) contends that participants within the research process should understand that their participation is completely voluntary and that they have complete freedom to withdraw from the process at any point; Battercherjee (2012) refers to this as 'voluntary participation and harmlessness'. The researcher ensured that as much information as possible was given to the research participants on what, why and how the research was being conducted, as per the guidelines set out by Battercherjee (2012). Participation was completely voluntary, and it was explicitly stated that participants could exit the research process at any point should they have wanted to. Informed consent should be obtained from all participants and an 'informed consent' form should be signed to ensure that the right not to participate and withdraw is explicitly stated

and understood by all participants prior to recording the interview process (Battercherjee, 2012; Crano et al., 2014). Informed consent was obtained from all participants through physical signature of consent forms and provision of a participant information sheet. The selection of participants was based on specific criteria as well as multiple discussions with Gatekeepers within Delta Bank, and not on the researchers' personal bias, as per the recommendations put forth by Rosenthal (1994). Participants were treated with the utmost respect throughout the interview process. As this research was conducted within an organisation, the researcher obtained consent and approval from the relevant authorities within the organisation as the research topic contained sensitive information. Oates (2006) argues that participants have the right to anonymity and confidentiality. The researcher has ensured full anonymity and confidentiality by ensuring that participant and organisation names are disguised with pseudonyms and that the data has been fully protected and secured, as per the recommendations of Oates (2006). Please see APPENDIX L: Participant Information Sheet for further details.

In conducting this research, the researcher aimed to gain a deeper understanding of the relationship between Fintech and banks; this was explained to all involved in the research process. The researcher attempted to avoid 'hyperclaiming' by all means and attempted to articulate questions, relationships, and results as accurately as possible without implying 'causation' where there is none (Rosenthal, 1994). Ensuring that an 'exploratory' research design was appropriate to answer the core research question, along with a good understanding of the literature around Fintech was intended to ensure a quality research design within this study. The use of language was carefully considered throughout the research process to ensure that it was not leading or causal in nature (Rosenthal, 1994).

Good research design, data analysis, and reporting come from good science and technical competence of the researcher (Rosenthal, 1994). The researcher has spent a significant amount of time throughout this master's degree increasing both their research skill, technical know-how and credibility as a researcher. This along with consistent review and guidance from the research supervisor has helped in ensuring the delivery of a quality master's thesis that is ethically strong. Rosenthal (1994) argues that individual investigators or review boards should weigh up the cost and benefit of doing research as well as the opportunity cost of not doing a particular study. The relationship between Fintech and banks is an emerging topic with multiple research gaps. The results yielded from this research will add to the existing body of knowledge on Fintech business model research. The costs and benefits both positive and negative, of doing this research have been given careful consideration. Costs include time spent on other activities, like work, family, resources, effort or hobbies. Benefits include adding to the existing body of knowledge within an emerging field of research, and practical value in understanding the changing market structure for all stakeholders within the financial economy. The review board and lecturers within the University of Witwatersrand's SBS committee have reviewed and approved the initial research proposal produced for this study as a part of a stringent approval process and have deemed this research topic valid of continuation.

4.5.2 Analysing the data

Rosenthal (1994) shows that unethical behaviour during the data analysis process can consist of, for example, the dropping of data to make research findings look favourable or biased, or the fabrication of data that does not exist. Battercherjee (2012) argues that researchers have an ethical obligation on how data is reported and analysed within their study. Unexpected findings should be

fully disclosed by the researcher (Battercherjee, 2012). The researcher has disclosed truthfully and accurately, all results of this research, including any unexpected findings. A further activity that can be seen as unethical is the exploitation of data. This involves the exploitation of data to uncover something different (Rosenthal, 1994). "It is unethical to present findings as a product of deliberate design" (Battercherjee, 2012, p. 139). The researcher has avoided any exploitation of data as this causes bias within the research and can be seen as unethical practice.

4.5.3 Reporting of results gathered

The misinterpretation of findings refers to the intentional and unintentional misinterpretation of findings that are either not found by inferences or are unfounded (Rosenthal, 1994). Intentional misinterpretation is purposely reporting data that never existed or when researchers purposely choose participants who will likely support their research hypothesis or findings (Rosenthal, 1994). Researchers are expected to be honest about the reporting of results gathered throughout the research process (Crano et al., 2014). The sample of participants selected was done based on purposeful sampling and multiple discussions with the Gatekeepers within Delta Bank; not to assist in supporting any specific hypotheses or preconceived output. Unintentional misinterpretation often involves an error in the data collection process which decreases the value of the findings (Rosenthal, 1994). Causal language is also another subtle form of unintentional misinterpretation. As the data analysis for this research has involved the use of coding techniques, analysing patterns in the data, including words and sounds; significant rigour was needed when analysing and interpreting the data. An audit trail has been kept to measure the quality of work as per criteria indicated by Lincoln And Guba (1985) i.e. 'trustworthiness' which consists of 'confirmability', 'dependability', 'credibility' and 'transferability'. The audit trail kept consists of recordings of each interview, transcripts of the interview process, all coded data within QDA data miner lite by Provalis Research (2020) along with comment and colour coding, a Microsoft Excel extract of all codes and interview responses, as well as the data instrument used within this study and the write up within the analysis process.

Questionable generalisability deals with forming generalisations on concepts that do not necessarily make sense (Rosenthal, 1994). While generalising to a population is not the aim of interpretivist research, it is important to show common themes out of the research; these can be seen within the coding process of this study and the emergent themes analysed. There was also heavy dependence on the sampling technique used to ensure this did not happen; using purposeful sampling along with multiple discussions with the Gatekeepers within Delta Bank has ensured that the correct participants were identified in order to conduct this research and fully answer the research questions posed herein. Failing to report or publish deals with what was not reported and why (Rosenthal, 1994). Failing to report or publish deals with two specific issues, Self-Censoring and External Censoring. Self-Censoring is admitting to one's own research shortcomings and attempting to fix them (Rosenthal, 1994). All data should be reported regardless of how good or bad (Rosenthal, 1994). Being self-aware and reporting on the researcher's own shortcomings regarding the research is important in justifying the ethical quality of research, please refer to section 7.4 Researcher's Reflections for further information. Peer review and the advice of the research supervisor has assisted the researcher in being more self-aware regarding the research topic and process. External-Censoring is often performed by academic gatekeepers to help keep the quality of published research to a high standard (Rosenthal, 1994). The research should be evaluated by academic gatekeepers and kept to stringent publishing criteria (Rosenthal, 1994). The results of the research

should also be subject to external censoring (Rosenthal, 1994). Academic gatekeepers should not hold back results that potentially contradict their own beliefs or research (Rosenthal, 1994). Thus far this research topic has been through stringent review within the University of Witwatersrand and has been reviewed by academic gatekeepers, the ethics board, and the research supervisor. An earlier version of this thesis was also submitted to the European Conference of Information Systems and was reviewed by three academic reviewers and the associate editor; while this paper was not accepted to the final conference, the reviewers have provided valuable feedback and agree that the research topic is indeed worthy of pursuing.

4.6 Conclusion

In this chapter methodological decisions regarding each of the layers of the research Onion developed by Saunders et al. (2019) were peeled away, starting with the outmost layer of the research onion moving inward. The research paradigm and strategy along with the site and participant selection were discussed in detail, along with a view of the data collection and sampling methods. The data analysis process was then discussed along with a view of the coding techniques utilized; examples and excerpts were included within the chapter to provide end to end traceability throughout the research process. Each of the chosen methods was then evaluated and justified; links were also drawn between the literature, conceptual framework, research questions as well as the research instrument utilized within this thesis. The research methods adopted were evaluated against the specific criteria advocated by Lincoln And Guba (1985). Ethical considerations were discussed in detail and justified using the criteria put forth by Rosenthal (1994) and Battercherjee (2012).

5. Case Narrative and Interpretation

This chapter presents the narrative and interpretation of the case in question. The data collected through the interview process is presented and analysed based on themes that have emerged from the analysis, as well as the conceptual framework presented in section 3.2 Conceptual Framework. The case narrative and themes outlined within this section form the basis from which the research questions posed by this study will be addressed. It is important to note that the conceptual or theoretical framework is merely used as a tool used to guide the research process, it does not map directly to each of the research questions, though is used to assist the researcher in creating a holistic picture that will help in answering the core research questions posed by this study. The research instrument utilised within this study can be found in APPENDIX G: Research Instrument.

5.1 Case Context & Background

Interview data reveals that Delta Bank are extremely pro innovative ideas and newer technology, as well as attempting to have a specific focus on customer experience. Employee responsibilities cut across many roles and often customer segments, and while many participants form a part of the product, pricing or solutions divisions, some employees look at specific metrics like customer experience within the organisation. As participant 8 mentions when discussing his or her role, Delta Bank is constantly looking for new ways to enhance or deliver new products, as well as enhance existing products to ensure that they are servicing their customers adequately across the different phases of their customer lifecycle.

> *"My role is to ensure that I come up with new products and also ensure that the existing products are functioning optimally. So other than focussing on the day-to-day functioning of*

the business, my role is to check where there are gaps or opportunities to improve on existing products, as well as coming up with new products that would complete the offering suite that we have at a specific point in time." - (Participant 8)

Participant feedback also shows that the regulatory environment has a direct impact on all employees across the bank, who must adhere to multiple frameworks put forth by the regulator; managing risk within these environments is extremely important and could be a full-time job for many, based on participant feedback. While delivery on stakeholder growth is an important organisational driver for Delta Bank, so too, is treating customers fairly, as well as providing a seamless service and customer experience.

"Our jobs have many different levels of accountability, so from looking at risk factors, that we're not breaking any rules and any legislation within the country; to make sure, because we're working in a regulated industry and we're abiding by those rules. It's looking at optimising income for our stakeholders, it's looking at whether we're treating our customers fairly; so, it speaks to your customer service as well, and how we are providing a seamless customer experience." - (Participant 11)

A key observation is that employees also seem to remain within Delta Bank for long periods within their careers. The organisation pushes and encourages employees to come up with new ideas and execute on these, as well as empowering employees to make decisions on those things that impact them directly. Delta Bank believes that multiple failed ideas could eventually lead to one ground-breaking idea which could change the status quo and strategic position in the market.

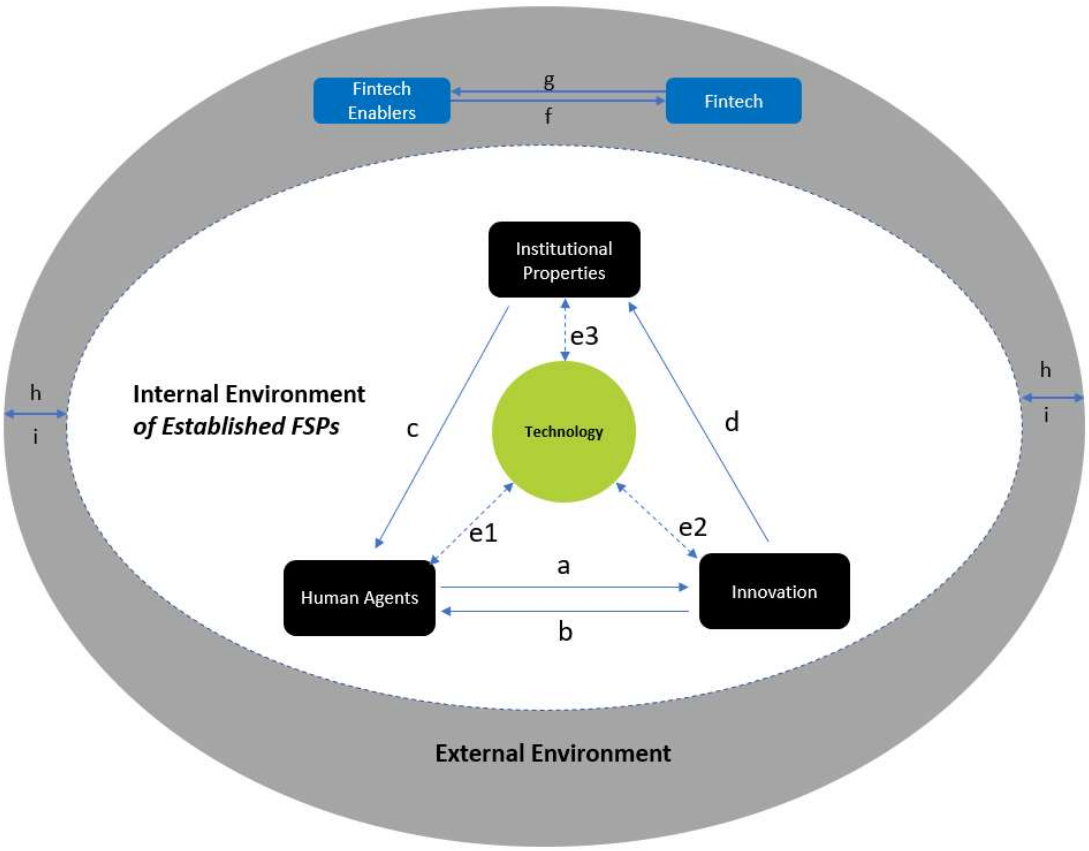
"So, where you create an environment where people are not scared to dream, people are not scared to try things; even if they do fail, don't punish people for trying, encourage them to try and make it known throughout the organisation how to do it and where you can do it, that's what our organisation does. Failure is not frowned upon as one good idea can put us ahead of the market." - (Participant 12)

Participants were extremely knowledgeable about the topic of Fintech as well as its current impact both globally and within South Africa. Delta bank has clearly done a lot of work to stay on top of current developments within the field of Fintech and has formulated a very strong position around how it aims to deal with this at all levels of the organisation. Interview data reveals that the bank has clearly communicated its strategic intent around Fintech, innovation, and newer technologies at multiple levels within the organisation, from top management down to lower levels.

Each of the sections that follow presents key findings from the data, including direct quotes from participants, along with a summary of the critical findings from the data analyses. It should be noted that the quotes included within this section are only provided as examples, and not every participant response coded under each theme or sub-theme is quoted. Each relationship depicted in the Structurational Framework of Fintech and FSPs in section 3.2 Conceptual Framework is explored in the sections that follow. The conceptual framework compiled is presented at the beginning of each section to aid the reader in understanding the data analysis and argument.

5.2 Internal Environment Themes

5.2.1 Theme 1: Exploring the concept of Innovation within Organisations



5.2.1.1 Perceptions of Innovation

Interview data was analysed to establish how well Delta Bank's senior managers understood the concept of 'innovation' and its interaction with both the 'internal' environment of the organisation and the 'external' environment. While innovation is a popular term within modern organisations, academic literature as well as perceptions within practice around innovation state that it could be understood differently in different contexts. As Hering et al. (2005) point out, 'innovation' is a concept that is often hard to define. The definition used within this research is as per that of Robertson (1967, p. 1) who defines innovation as "a process whereby a new thought, behaviour, or thing, which is qualitatively different from existing forms, is conceived of and brought into reality".

The interview findings showed multiple conceptions of the term innovation, though participants were consistent in the view that innovation is a *process*, consisting of either creating something new or making enhancements to an existing process for either the betterment of human beings or the organisation and its customers.

> *"So, innovation to me is the process of looking at developing solutions that can either optimise or create efficiencies within an area." - (Participant 2)*
>
> *"So, innovation is, I would say it's twofold; basically, looking at current processes and making them better, making them easier, and more accessible. And then the other part is creating*

new concepts, so in the payment space, creating new ways of making payments or new ways of accessing funds for customers; so, it's both creating and improving." - (Participant 11)

Participants also pointed out that innovation should also have a specific purpose in mind that the organisation sets out to achieve as it is something that should ultimately add value.

"Innovation, from my understanding is anything that you can come up with to make a current process better. So, making a current process shorter; something that currently existed, and now you can complete it quicker, or just something that results in a better output. So essentially, it's just bettering a current process, but it also speaks to solving a particular need that exists, because why on earth would you spend time developing something or improving on something if it's not going to add value?" - (Participant 3)

The term 'innovation' within literature is multidisciplinary in nature and has seen many different definitions across many markets and subjects; in their analysis of more than 60 different definitions of the term 'innovation' Baregheh et al. (2009) propose that the single common factor across all definitions is that *innovation is a process* and from an organisational perspective its ultimate aim is to allow an organisation to succeed, differentiate or compete. This definition is directly aligned to participant responses and the data collected, along with the definition of the concept of 'innovation' put forward in section 3.1.3.2 Concepts and Relationships. Participants believe that innovation does not necessarily have to be something brand new like a new product or service, it can, for example, be an idea that is generated by an employee within an organisation, that could improve or change an existing product or service, which allows them to differentiate or compete within their area of expertise. This is directly aligned to the research of Baregheh et al. (2009) who argue that innovation can be something new or it can be an improvement to an existing process.

Baregheh et al. (2009) argue that the output of innovation could be an enhanced process, or it could also be something technological in nature; this is directly aligned with the response from Participant 4 below. Participant 4 provides the example of innovation from transporting goods to using a horse, to then using a wagon.

"… innovation is a process where we re-look how we do things; so, it doesn't necessarily mean coming up with a brand-new product, but rather looking back at how we, we as in maybe corporates or scientists; how do we come up with a certain product or a method, and basically how do we then make it better? It can be something technological, it can be something right down to a manual process, that can over time be regarded as improving society. My simple example is going from transporting goods and services via horse, to a wagon at the back; so that's innovating, we are improving how we are doing things in society." - (Participant 4)

According to the views of the participants, innovation needs to be purposeful; it is something that should give you a competitive edge as an organisation either by adding value to the organisation, its customers, or generating revenue from these innovative activities and ideas. The view of participants is directly in line with what Baregheh et al. (2009) argue are the main objectives of innovation, which are to either allow an organisation to succeed, differentiate or compete.

"I don't want to be too philosophical about it, but for me, innovation is the changes that we make to our existing products or systems, that will give us the competitive edge in the near future. So be it, either playing catch up to existing competitors, I mean in a bigger

organisation that can also be seen as innovation, but it's also thinking of new products and services that you can offer customers. That you know, that's going to give you that competitive edge, either in terms of more efficiencies or additional revenue, or a better value proposition that you sell to and acquire more customers." - (Participant 10)

Participants also point out that you should not merely innovate for the sake of innovating as this can have a negative effect and be wasteful on resources. Participants argue that as an organisation you must be deliberate and execute on purposeful innovation that is going to add value, not wasting precious resourcing on something that may become immediately redundant. Dobni And Klassen (2018) argue that innovation should be focused on a handful of key drivers, the cost of which should be clearly articulated and carefully monitored; the business case, timing and prioritisation of innovation is a key driver for successful innovation. Organisations should be very clear around the cost element and problem statement around innovation as it can be a costly exercise to execute on something that may or may not be successful (Dobni & Klassen, 2018).

"… I think there are a few things that management need to be wary of to encourage the right type of innovation. Always balance the need of the customer as well as the need of the business. And then also they have to make sure that you're not changing stuff for the sake of change, and I think that's where a few organisations can get it wrong… it's something that you should definitely be on the lookout for; you should still accompany your innovation with a true business case because if you just innovate and try to do new things without looking at the real business side of it, I think the cost is just going to run away from you." - (Participant 10)

Multiple participants expressed that innovation should be carefully planned and linked to a strong business case with specific controls to accompany its implementation and execution. This is directly aligned to the research conducted by Robertson (1967) who argues that innovation should be deliberate action by human agents.

5.2.1.2 Innovation is a product of human action in its design, implementation and use (arrow a)

The consensus amongst participants is that innovation is very much a social process that is either driven by or emerges from human agents to drive the goals and objectives of the organisation. People are core to the process of innovation and its emergence within organisations.

"… I guess with people comes the attitude and mindset of those individuals within the organisation. And for me that obviously ultimately drives the innovative thinking and the downstream processes that are a result of those ideas or thinking that happens upstream." - (Participant 12)

One of the participants points out that while there are other elements that drive innovation, human resources are arguably the most important. The research supports the view of Thompson (2004) who argues that in driving innovation we need to embrace people as the drivers and ultimate producers of innovation in order to cause a shift in behaviour.

"I think fundamentally [innovation is] driven by people. But look, it could be an element of technology, elements of resources, or available resources, but part of those resources are human resources as well. So, it's the availability of all those aspects, but people play a massive and I suppose, are the most important aspect of driving innovation within an organisation." - (Participant 13)

The research shows that people are core to the process of innovation as they are the ones that initiate the process to build products and services that cater for their customers. As customer needs change so too does the market, along with the process of innovation and what is needed.

> *"We always need people to do the research and identify gaps in order to innovate. It's always worth constantly engaging with the market and trying to understand what they would want, and what their needs are, and trying to build something that aligns with that, as the process of innovation needs to change with the market evolving." - (Participant 1)*

The responses from participants are directly aligned to the research conducted by Hering et al. (2005) within their study on 'innovation roles' who argue that people are the starting point or what they refer to as the 'fuzzy front end' of the innovation process from both a societal as well as organisational perspective.

The research shows that innovative behaviour is not limited to a person, rank or role, as pointed out within the research, it is inextricably linked to human behaviour, and from an organisational perspective, it should be driven by everyone within an organisation at all levels from top management down to people on the ground. Hering et al. (2005) argue that organisations should engage with people and identify those who are willing to take risks and fail along the process. Having the right people will be the key to success for innovation in any endeavour and organisation (Hering et al., 2005).

> *"I suppose it can be as simple as; I mean a person, and it's regardless of rank, I believe whether it's a person that is, you know, assigned to cleaning toilets or to even to the highest form of responsibility in a Corporation, which is a CEO; to me, it's the ability to identify or recognise something that you are doing in a process that is quite mundane, but able to make that process even better and more efficient." - (Participant 4)*

5.2.1.3 Innovation also shapes human action within organisations (arrow b)

Participants believe that innovation does have an effect on how people behave, participant 5 provides an example of how digital technology has changed Delta bank's operating model, as well as employee ways of work.

> *"Innovation definitely has an effect on how people behave." - (Participant 9)*

> *"I definitely think innovation has an effect on how people behave. Take Delta bank for example; Delta Bank a few years ago under Jimmy Page (pseudonym) was one of the first banks to roll out digital platform technology, changing the way customers interact with the bank. So instead of having foot traffic going into a branch, digital banking changed the entire operating model. So, I think it definitely changed the way we would work, especially in our specific roles." - (Participant 5)*

Participants believe that innovation drives the way people behave as the constant questioning of the 'why' the organisation is doing things in a certain way is a key source of innovation.

> *"Innovation definitely drives the way people behave in a business; especially with my generation, we do question a lot of things in terms of, well why are we doing things the same way that we used to do maybe 30 years ago. And you know, I think the questioning of why we're doing things in this way is a key source of innovation. So just questioning the why of, why we're doing things in the current way definitely drives people's behaviour in terms of the*

way they think and the way they'll come up with solutions, and the way they go about doing their work; trying to find efficiencies in every little thing that they do, trying to optimise here and there." - (Participant 3)

While not a key objective of this study, an interesting observation out of the research is the interaction between people and innovation within society. The data shows that innovation is tied to human behaviour and cannot be separated; the very need for innovation is to make humanity better and improve on society in some way or form and the two are inextricably linked. The ultimate aim of innovation within society is arguably to execute ideas that make humanity better (Kay, 2016).

"Regarding the impact of people and innovation; I think it's twofold, I think the majority of processes and systems in the world still have a big human impact, whether that's an input or an output. And I think innovation works very well on both sides; so, I think innovative solutions assist the end-user, as well as assisting users to input information and getting a new and better output. I think there will always be a human aspect with innovation, and I don't think you can divorce the two. Just because the way the world works is; effectively, everything that we should be doing and striving for from an innovation perspective should be to make humanity better and improve either the way that we work or the way that we consume and utilise products and services." - (Participant 6)

The data analysis supports the relationships depicted by arrow (a) and arrow (b) of the Structurational Framework of Fintech and FSPs. *Arrow (a) Innovation is a product of human action in its design, implementation and use; arrow (b) Innovation also shapes human action within organisations;* the data shows that innovation can change the way people behave, it shapes the way they go about their day to day interactions and the way they perform their jobs. The research supports that the concept of 'innovation' exhibits a form of 'duality' as well as 'interpretive flexibility' as an extension of Orlikowski (1992). 'Duality' is exhibited by the fact that innovation, like technology, can be both created and changed by human actors to accomplish a goal or action; innovation both shapes and is shaped by human action. 'Interpretive Flexibility' is exhibited in that, the process of innovation is inherently modifiable; a process can be changed and modified by different people, of different experiences and backgrounds who in turn shape the development and process of innovation in organisations. People are core to the process of innovation and as per the definition of Hellström (2004), innovation is something that is deeply rooted primarily in social interaction.

The data also supports that the concept of 'role' can be applied to that of 'innovation' as a theoretical extension of Orlikowski (1992). 'Role' is seen as the mutual, socially constructed interaction between people and technology (Orlikowski, 1992); retrofitting this to the concept of 'innovation', 'role' in innovation can be seen as the mutual socially constructed interaction between people and 'innovation'. However, while Orlikowski's (1992) concept of 'scope' is critical to the understanding and definition of technology, it does not offer significant value in answering the research question posed within this study, nor can it be logically applied to the concept of 'innovation' and has thus been omitted. 'Scope' within the Structurational Model of Technology is limited to material artefacts such as hardware and software within technology. Relating the concept of 'scope' to the research findings presented within this study, and the definition of 'innovation' by Baregheh et al. (2009) reveals the following: Baregheh et al. (2009) argue that 'innovation' can consist of more than just technological artefacts and can be anything from ideas to inventions, or

even creativity; 'scope' cannot be directly related to innovation as 'innovation' according to Baregheh et al. (2009) consists of more than just material artefacts like hardware and software, for example, an idea or creativity cannot be solely a material artefact. The concepts of 'scope' by Orlikowski (1992) can thus not be logically applied to the concept of 'innovation' from a theoretical perspective based on the scope of this research.

5.2.1.4 The institutional properties of organisations will influence human agents in the process of innovation or innovating (arrow c)

The 'institutional properties' of an organisation are those things that make it unique, things specific to that organisation like its culture, management style and strategy (Orlikowski, 1992). It should be noted that while the concept of 'institutional properties' forms a part of the core conceptual framework of this study, it proved extremely difficult to explain throughout the interview and data gathering process. The researcher was forced to explain this concept using real-life examples that make the organisation unique like the strategy, organisational structure and culture etc.

The data reveals that 'innovation' is dependent on many factors like the culture, leadership style and mindset of individuals within the organisation. Innovation is not something that occurs overnight, innovation requires significant thought, foresight and planning (Dobni & Klassen, 2018).

> *"Innovation is heavily dependent on a multitude of factors, including the culture of the business, its leadership, the mindset of the individuals and ultimately what it wants to achieve as an organisation. Yes, businesses can adopt ideas to become more innovative, but it doesn't just happen overnight." - (Participant 13)*

The data reveals that while there are many aspects that drive innovation, probably the most important is how it is driven by 'top management' through an organisation's 'institutional properties'.

> *"… innovation starts top-down; I mean it's people with decision-making ability that actually drive innovation. So, if you look at organisations that are so set in their ways, it normally comes down to higher management not wanting to respond to a new wave of innovation or technology." - (Participant 5)*

Top management needs to influence organisations to be flexible and adaptable around the implementation and execution of innovation and innovative ideas (Xue et al., 2008). The current strategic and operating environment of businesses requires them to adapt to rapid change; having a culture that is adaptable through the directive set by top management is an important driver of the innovation process (Xue et al., 2008). The data reveals that businesses that are seen to be rigid in adapting to new innovative solutions are going to struggle as the environment has evolved and is not the same as it was 5, 10 or even 20 years ago. Xue et al. (2008) argue that top management are the primary human agency that translates the influence of external events and pressures into managerial actions such as changing organisational structures and establishing policies based on the perceptions and beliefs of institutional practices. The views of Xue et al. (2008) are directly aligned to the data and participant responses around the influence of events that impact on the organisation as well as the role of top management.

> *"I think the management of business does influence on things; so, for example, people will have great innovative ideas, but if you're not in a flexible business environment and you do not have the ability to actually implement an innovation; just because the business is so rigid*

and not flexible at all to just adapt new innovative solutions; you can't just change the way things work overnight, that can impact on the way you develop your solutions as well. So, management through culture and influence definitely has an impact on innovation and the way people go about doing it too." - (Participant 2)

"Top management has a massive influence on innovation, and I guess it just speaks to what you ultimately want to achieve, it speaks to agility as an organisation*. I think we're also living in times where things change so rapidly. So, what is your culture to change and how do you adapt to things just always changing? Because if you were just to think about how the different financial institutions are operating today, you know it's different from how we were operating 5 years ago, 10 years ago, 20 years ago. How are you able to evolve when things change?" - (Participant 3)*

As participants have mentioned, the 'institutional properties' of the organisation are usually driven using a top-down approach i.e. they start with 'top management' and are driven through behaviours, cultures and strategy set by top management. This is largely supported within literature and multiple studies around 'top management' and its link to 'innovation'. Existing studies by Henry (2001), Howell And Avolio (1993), Howell And Higgins (1990), Dobni And Klassen (2018) and Xue et al. (2008) show that top management has a significant influence on product, market and organisational innovations. A further academic study by Elenkov And Manev (2005) also shows that sociocultural context within organisations has a direct impact on the extent of leadership factors, and also moderates the relationship between leadership and top management's influence on organisational innovation. The business environment of today has changed rapidly, and top management need to drive an innovative culture that is flexible, agile and which allows people to thrive in how they execute on innovation (Elenkov and Manev, 2005).

While participants believe that top management has a critical role to play in innovation and setting the culture and 'institutional properties' that drive the organisation, should they do so without consulting people at all levels, and getting input from different people, then their innovation agenda is also likely to fail. Innovation needs buy-in from people at all levels within the organisation (Thompson, 2004). Participant responses can also be linked to Giddens (1984) concepts of 'signification' (meaning) and 'legitimation' (norms) within innovation and how these structures may have shaped the perceptions and understanding of participants and their interaction with the organisation. The researcher recognises the relation between the data and structures of 'domination', or 'power' by Giddens (1984), along with the link to 'authoritative resources' and what Giddens (1984) refers to as the 'dialectic of control', which states that those that are potentially *less powerful* are also able to exert some control and influence over their superiors. The researcher would argue that a balanced 'dialectic of control' or 'authoritative power' is needed to drive successful innovation. Hierarchical organisations that fail to innovate and who make decisions without consulting people at all levels, along with listening to their day to day problems or issues are going to have a tough time in the modern business arena (Hellström, 2004; Hering et al., 2005; Thompson, 2004).

"Innovation is not driven by one person, it is driven by the culture of the business, to drive it in a certain direction. It's a buy-in effect, so everybody needs to be part of that mindset, part of that thinking. You can almost see an organisation as an organism, so every single living part of it needs to play its role in achieving what it can. I mean, if you look at the likes of

Amazon, and you look at some of their lesser competitors; I mean Amazon started off as an online bookstore, and look at where they are now, because of their way of thinking and the direction of leadership; it eventually trickles down to every single person in the organisation." - (Participant 13)

The data shows that creating an innovative environment shapes and changes human action and behaviour within organisations, it encourages people to think outside of the box and do things differently, to share ideas more openly and think of better ways to drive the organisation into the future.

"So, if you have, a culture and an attitude towards being receptive towards innovation; I think the adoption of changes also takes place a lot faster and it encourages people to think differently and to want to do things differently or more efficiently, or you know, just adding value." - (Participant 3)

"I think if people are encouraged to be innovative in their roles, as well as if organisations are being innovative in the way that they allow processes to happen, that will definitely change the way that people behave within the organisation, and the way that they provide input and receive, I guess a level of benefit from the working situation." - (Participant 6)

Within Delta Bank, participants believe that an innovative environment has completely changed the way people operate and potentially approach problems, solutions and innovation. It changes the focus from thinking about the now, to more of what the future holds and what can drive the organisation and its customers into the future.

"… definitely within our organisation innovation has changed the way we think and do things. I think people are more open to sharing their ideas within the organisation. I think it drives people to think in a futuristic way; so not thinking of the now but thinking of the future and what would assist us going forward. What would make things simpler and easier going forward; especially within our organisation as well as for our customer base."- (Participant 9)

The views of participants are supported by the research conducted by Hering et al. (2005) who argue that having the right people in the right roles, as well as creating an environment that is open to sharing ideas, potential failure, along with learning from this failure to drive innovative behaviour and creative thinking, will create a culture that encourages people to innovate and will change the way the organisation operates.

One of the participants suggests that when you feel like people are taking the time to listen to your ideas, and something materialises out of that, it gives people confidence and comfort that their ideas are valuable; this creates a ripple effect and makes participants want to come up with newer ideas, and spurs on others in the process.

"I think that when you feel comfortable, like once you've voiced one idea and someone has actually taken the time to listen to you, and something has come out from you speaking up; I think it gives yourself and so many other people the confidence to speak about their own ideas. And I think that's sort of like a ripple effect; like once you see that people respect your ideas or your voice and you perhaps you've implemented an innovation and you can see the change that you've created, I think that can spur you on and also maybe the side-line audience to also think, 'okay I can also do this', so I think the innovation breeds more innovation." - (Participant 7)

Complex structures, high levels of bureaucracy and old thinking can be a significant hindrance to innovation efforts as an organisation (Styhre & Börjesson, 2006). This is often the reason that newer organisations are potentially able to thrive with innovation as they have less bureaucracy and can come up with innovative ideas and execute them more easily than larger, older organisations (Styhre & Börjesson, 2006).

> *"If you have a very hierarchical system where only the top people like your top management make big strategic decisions, that is where innovation goes to die. I mean you're sitting with a handful of people that are left with old innovation, and sometimes I think in a very hierarchical organisation, the people on the ground that are actually facing the day-to-day problems aren't getting listened to. And I think in smaller organisations, sometimes I think that's what makes smaller organisations a lot more innovative or seem more innovative, because they don't have those high levels of bureaucracy that they need to go through. So, I think certain organisations just don't get it right because of bureaucracy." - (Participant 10)*

Studies conducted by Adler And Borys (1996) and Gobble (2019) on the topic of 'bureaucracy' and 'innovation' within the organisation show that it can be either 'enabling (positive)' or 'coercive (negative)'; balancing the need for innovation at multiple levels should be a key driver of organisational design, and in this instance for the drive for innovation. Gobble (2019) argues that there is often an extremely negative perception around the term bureaucracy with innovators. This is also shown in the response from participants and the researcher believes that the standards and procedures that enable the organisation positively may not necessarily be carried through within the opinions expressed.

Delta Bank and its employees are extremely pro the concept of innovation and new technology, and it can be clearly seen that this has been driven at all levels of the organisation. Participants believe it is the heart of the organisation, even within things that are not necessarily material in nature.

> *"Innovation within organisations needs to be at all levels, the way that they try to keep it alive is having it, day in, day out, in the buildings where people work or in the conversations they have." - (Participant 12)*

Some organisations drive a specific agenda around innovation which makes it a by-product of its day to day business and entrenches it at all levels (Dobni & Klassen, 2018); the data reveals that Delta Bank has followed a similar approach. One participant also points out that perception and marketing that you are innovative as an organisation can also play a role in how customers and potentially competitors perceive you within the market, which can be a driver of the innovation agenda.

> *"I think some organisations drive it as a topic which is interesting to me, our organisation does that; of having effectively innovation leads as people who are specifically trying to drive the agenda and topic of innovation. And in other organisations, it should just be a by-product of normal business as usual activities. I think marketing also does play quite a big role in it, in organisations that are trying to be seen as being innovative, from a human capital perspective as well as a product and solution perspective that they sell to their customer base." - (Participant 13)*

The research shows that there are multiple different reasons that innovation emerges and is driven within organisations, it is usually well thought out, planned and executed by people within the organisation and is a direct result of human action and the social interaction between people and

organisation. As pointed out by participants, innovation mainly emerges through the constant need for organisations to improve internally, it does not necessarily need to be brand new ideas, products or technologies; for many organisations, it can merely be re-engineering an existing solution a little differently, or a little better than the original innovation.

> *"I suppose, in two elements or two ways of it, it could be driven by the constant need to be a market leader in that particular area of the economy which you deal with, so the need to drive new thinking, new ideas in order to improve on the current services or products that you offer. And then the other flip side it could just be that you could be internally innovative in your organisation, in order to maintain relevance within the market. So, you may be providing specific products or services and your competitors are doing something completely different. You may obviously have or need the ability to innovate in order to keep up; so, I guess in my opinion, those are the two elements of what drives innovation in an organisation."* - (Participant 13)

> *"Innovation might not necessarily be something brand-new as well, but it could be just adapting an existing solution, possibly reengineering certain aspects of it."- (Participant 2)*

Multiple academic studies on innovation and competition within financial services by Aghion et al. (2005), Bos et al. (2013), Cornaggia et al. (2015) and Hashmi (2013) propose that innovation is in fact heavily driven by competitive pressure. This concept is explored further in section 5.3 External Environment Themes.

From the interview process, it is clear that the 'institutional properties' of the organisation have a significant impact on how innovation occurs within the organisation. The research shows that 'top management' has the largest influence on how innovation is shaped within the organisation through setting the 'institutional properties' of the organisation like culture, strategy, and management style etc. Organisations that want to be successful in innovation need to set cultures that encourage knowledge sharing between employees, flexibility and the freedom to come up with ideas and try to execute on these ideas (Hering et al., 2005). Businesses need to be flexible, adaptable, and agile; they need to empower employees at all levels to embrace innovation, generate new ideas, and execute on them (Baregheh et al., 2009; D. Elenkov & Manev, 2005; Hering et al., 2005; Howell & Avolio, 1993; Thompson, 2004). Eliminating complex structures and bureaucracy in an organisation can also help it on its journey to successful innovation (Adler & Borys, 1996). Organisations that execute on the innovation process extremely well also tend to drive a culture of innovation as a part of the 'institutional properties' of that organisation. Innovation is ingrained in its day to day activities at all levels and is not just something that is done as a once-off exercise (Howell and Higgins, 1990; Howell and Avolio, 1993; Adler & Borys, 1996; Thompson, 2004; Elenkov and Manev, 2005; Hering, Phillips and Corporation, 2005; Baregheh, Rowley and Sambrook, 2009; Bos, Kolari and van Lamoen, 2013; Hashmi, 2013; Cornaggia *et al.*, 2015).

The research thus supports arrow (c) of the Structurational Framework of Fintech and FSPs; *The Institutional Properties of* organisations *will influence human agents in the process of innovation or innovating*.

5.2.1.5 The interaction with innovation will influence the institutional properties of organisations through reinforcing or transforming the structures of signification, legitimation & domination of that organisation (arrow d)

The data shows that each new idea or innovation changes the status quo in terms of the strategic or operating position of the organisation. Executing on internal innovation may then leave room for something newer and more exciting to be introduced, and as innovation evolves so too does the organisation. This can have a significant influence on the way an organisation operates, and they may change their operating procedures and style of work into the future.

> *"If your institution or organisation changes due to an innovation, that will then leave room for something new to be created and that new space will be filled by something that needs to match up to the innovation that you expect. So as this thing sort of evolves and changes and grows, you have to then also grow and change and evolve the culture so that you can put back in that same energy, that came from the innovation." - (Participant 7)*

The data reveals that as organisations begin to execute on ideas, it starts to accelerate their strategy and the utilisation of tools and technologies to do things quicker. Participant 10 argues that due to the implementation of specific innovations, an organisation's longer-term plans can be executed a lot quicker and can potentially change the strategic position from what was originally envisaged.

> *"You start looking at more because you're innovating and can-do stuff quicker. I think from a strategic point of view you start accelerating throughout your strategy. So, your five-year plan might now be your three-year plan." - (Participant 10)*

The research also supports the notion that some organisations are seen as being more innovative than others, whether by perception and marketing or by the way they introduce products and services, there are organisations that are leaders in innovation and are constantly more innovative than others i.e. they exhibit higher levels of innovation. This shows specifically how innovation can influence the 'institutional properties' of the organisation, as innovation may influence the process of introducing products and services and may change the strategy around marketing that currently exists within the organisation.

> *"[I] often see organisations that follow; you often find frontline or frontrunners with innovation, and to stay within the market, some of their competitors have to follow what the others are doing. So yeah, there are definitely organisations that are more innovative, and constantly more innovative than others, and some organisations just follow to keep up with the market." - (Participant 1)*

> *"I wouldn't say some entities aren't innovating, but there are definitely some that are a little more innovative than others." - (Participant 3)*

As per the response by participant 9, while there are some organisations that merely replicate the actions of others, others lead the way in innovation or innovative ideas.

> *"… we see it happening quite often, so maybe another bank would come up with an innovation to assist their customers in their processes, and a lot of the time it's sort of replicated in another bank." - (Participant 9)*

While innovation and ideas can be replicated, participants believe that true innovation is when an idea or solution is enhanced to directly match the organisation and its customer, not merely copying what a competitor has done.

> *"It's a good idea is to replicate the process, but maybe even tweak it or enhance it further. That's where probably, in my opinion, that's where we see the true value behind that. So maybe enhance it so that it suits your organisation more in terms of the cultural aspects and strategy and leadership styles." - (Participant 4)*

While the problem statement may be the same for multiple organisations, the way it is solved and adds value is going to be inherently different; innovation should never be a copy-paste exercise for any organisation (Ortt & van der Duin, 2008). As per participant responses, for a company that may be seen as less innovative or not driving much in terms an innovative behaviour, merely copying an innovative solution product or idea is not a sound strategy that will drive long term benefit.

> *"The problem statement can be the same for two organisations, but the 'how' they solve it eventually would be very different. So, the solution and the real innovation is going to be quite different." - (Participant 10)*

The research provides a clear indication that competitors and the newer products or technologies they introduce spurs innovation across the industry, though for them to be truly valuable, innovation should be contextual; this is directly aligned to the concept of 'contextual innovation' or using a 'contingency approach' to 'innovation' as proposed by Ortt And van der Duin (2008). The data shows that there should be close alignment between the 'institutional properties' of the organisation along with its approach to innovation and the execution thereof in order for it to be successful.

Participants argue that older, larger organisations often hold on to existing practice and become comfortable with their ways of work. The data reveals that as an organisation, you need to be letting go of old technologies, processes or ideas and have to try newer things that may make you uncomfortable. Participants believe that the attitude towards potential failure needs to be very open, as if an innovation or technology is successful, it could change your environment completely. Organisations need to be willing to adapt, change, learn and improve.

> *"I think being comfortable with letting go of the old ways of doing things. I feel we as people, generally, just get comfortable with things that work and we tend to hold back on trying out new things, you know just that fear of the unknown. But yeah, I'd say just wanting to do more; I mean if you fail, you fail, it is what it is, and we'll try again. But I guess there are different attitudes towards that… 'let's try this and fail versus let's try this… what if we actually succeed?' So that viewpoint I think definitely does influence how some organisations are able to succeed over others." - (Participant 3)*

> *"The willingness of an organisation to adapt, change, learn and improve is something that can give it a competitive advantage." - (Participant 11)*

The data reveals that driving successful innovation using a programme approach, the support of top management, as well as communicating innovation both internally or through external marketing and public relation efforts could be used as strategic tools to drive the innovative behaviour and 'institutional properties' of the organisation. A specific topic raised by multiple participants is using a 'reward' or 'incentive' approach to drive innovation within the organisation. Participants believe that innovation is found within everyone, at all levels, and without an incentive or reward to drive

specific behaviour, people will merely go about doing the basics of what they need to do in their day to day routines. The data shows that people and organisations are driven by reward; incorporating reward into the 'institutional properties' of the organisation to drive behaviour, including innovative behaviour is something that can be used as a strategic driver for employee behaviour and output. Participants believe that finding a simple way to communicate innovation and couple it with reward can stimulate a long-term cultural shift.

> *"An innovative person can also be found in a company that isn't so innovative, and they need to push those barriers through. But in an innovative company or corporate, if those environments are there then I tend to believe that it encourages people to be innovative. But if I want to go maybe more deeply, is to say that then it also boils down to the individual, as well as the incentive behind that. So, a company can be very innovative, it can show its successes behind that, but if there's no intrinsic value for that person to start innovating, or if there's no incentive system to innovate for the person, what you could have is a whole lot of people just sitting and doing their jobs. There's no incentive to have that innovative behaviour, and I suppose it then talks to saying, well when we have these innovations, we should reward our employees accordingly, and then people start to understand; right, so I'm investing time and effort, but if I really make this fantastic in comparison to maybe other peers or teams that are also innovating, there's a genuine incentive behind it for me. So, I think that's probably what drives humanity as a whole; is that in anything that we innovate as a human or individual or as a corporate, there's got to be incentives behind it, and I think without the incentives it's very difficult for an innovative company in itself to get the individuals to be innovative. So, I think partly, it's the environment, so that environment can then be linked to saying 'okay, do you reward such behaviour to be innovative or don't you?'" - (Participant 4)*

> *"I think if you can get a simple way to communicate innovation within the organisation, along with some sort of reward, I think you can stimulate a culture shift to drive innovation long term." - (Participant 7)*

The research supports the current view within IS literature, as Nacinovic et al. (2009) argue in their study of 'Corporate Culture and Innovation: Implications for Reward Systems', there is a positive link between innovation and a corporate culture that supports innovation and reward. To see a real shift in innovative behaviour and activity, once you get the changes in culture and top management right, driving a reward-based innovation programme or an incentive around innovation can stimulate long term growth (Nacinovic et al., 2009). Having an incentive or reward behind innovation may drive people to put time and effort behind innovation and innovative ideas and go beyond the status quo (Nacinovic et al., 2009). There is an extensive body of knowledge within academic research that discusses the topic of intrinsic and extrinsic motivation; different people are motivated by different types of internal and external incentives and the researcher acknowledges that this can be very specific to the context and people in question (Benabou & Tirole, 2003; Ryan & Deci, 2000; Vallerand, 1997).

The research findings within this study are consistent with current literature around the topic of 'innovation' and studies around 'organisational design'. Driving innovation through the 'institutional properties' of the organisation should be a key driver for any modern organisation (Ortt & van der Duin, 2008; Singh, 2011). Driving 'contextual innovation' through 'top management' and the

'institutional properties' of the organisation, coupled with a strong programme to drive and incentivise or reward this innovation, along with hiring the right people and driving innovation at all levels can create a real competitive advantage for the modern organisation (Adler & Borys, 1996; Aghion et al., 2005; Baregheh et al., 2009; Bos et al., 2013; D. Elenkov & Manev, 2005; Hashmi, 2013; Henry, 2001; Hering et al., 2005; Howell & Avolio, 1993; Howell & Higgins, 1990; Nacinovic et al., 2009; Ortt & van der Duin, 2008; Singh, 2011; Thompson, 2004).

The data reveals that creating an innovation programme and innovative culture and driving them through an organisations 'institutional properties' is something that once in place can become difficult to stop as it becomes entrenched within the organisation. Participants believe that it creates a culture of continuous improvement which becomes hard to stop once in place. Once a company is on the successful path to innovation it becomes ingrained within the organisation and is difficult to stop, it causes a snowball effect as mentioned by participant 10. The data shows that once an innovative culture is driven through an organisation's 'institutional properties' it can reinforce or transform the structures of signification, legitimation and domination and spurs further innovation.

> *"I think constant juices flowing and constantly thinking of something new and innovative; as soon as you learn something, you're hungry for the next one, it creates constant innovative thinking, I feel." - (Participant 1)*

> *"Innovation is 100% a snowball effect, as long as the foundations are there, I think people will just try to improve, and you know once that cycle is going, it's almost like a virus that just spreads throughout the organisation. It's like you see these people developing new systems and while that might be nice, not a lot of people are in positions to actually do that; but you can still be innovative in your own job, and I think it, there is definitely a culture and once that you get that culture to grow, I think it it's very difficult to stop it." - (Participant 10)*

The views of participants are directly aligned with the literature around innovation. Adler And Borys (1996) argue that 'contextual innovation' can be a very positive driver for employees of the organisation as it becomes a part of their purpose; innovation spurs on newer ideas and drives further innovation along with long term strategic growth; innovative behaviour can become infectious.

> *"Innovation drives people, I think on a daily basis people dream of different things. Some of them may be too wild to even comprehend how you could bring it into reality, but some of them can be done, and some of them have been done for the greater good." - (Participant 8)*

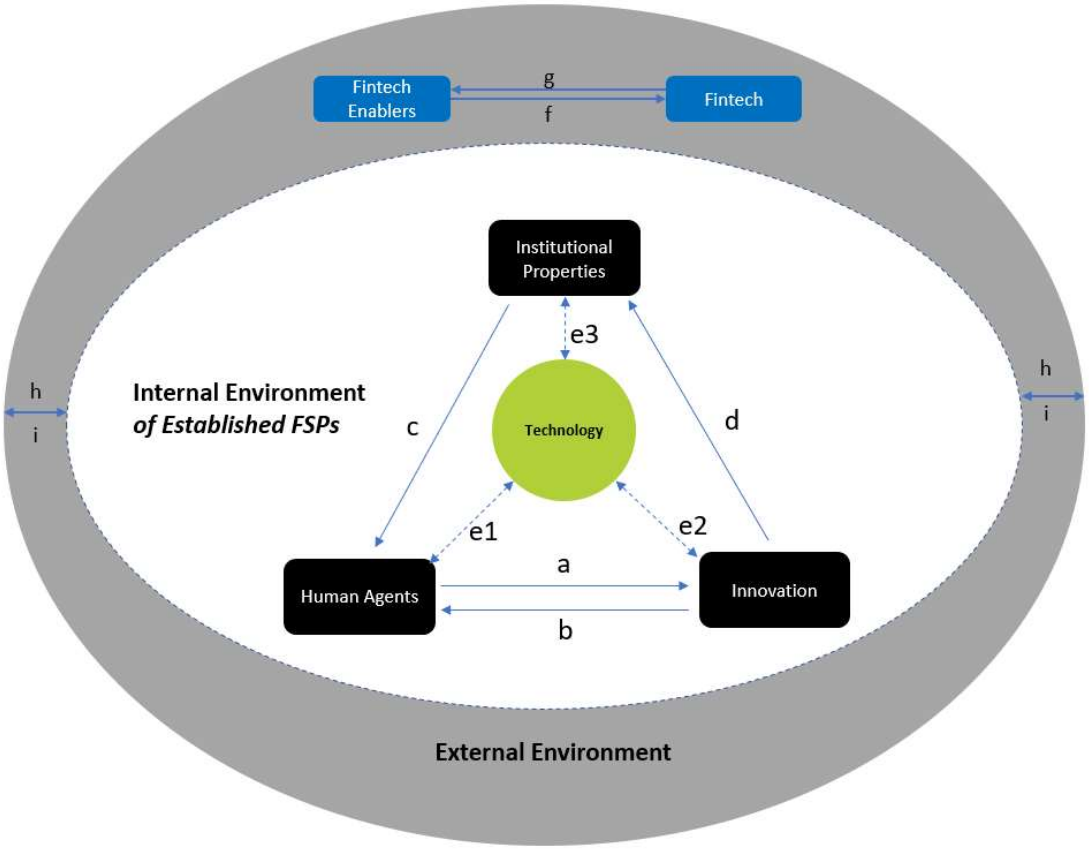
The research shows that 'innovation' can transform an organisation and its 'institutional properties' and vice versa. The research output thus supports the relationships depicted by arrow (d) of the Structurational Framework of Fintech and FSPs*; The interaction with innovation will influence the institutional properties of organisations through reinforcing or transforming the structures of signification, legitimation and domination of that organisation.* It should be noted that the research supports that both 'internal innovation' as well as 'external innovation' (by competitors and market pressure) both influence the 'institutional properties' of the organisation, this is discussed further in section 5.3 External Environment Themes. As per participant responses, each innovation that is executed leaves room for fresh ideas and new thought that can transform the 'institutional properties' of the organisation including its strategy, culture and even management style for example. Executing on innovative ideas keeps things dynamic within the organisation, it allows for

constant change where the organisation is evolving on an almost daily basis, evolving its structure, strategy, and organisational design (Ortt & van der Duin, 2008). As posited by Ortt And van der Duin (2008), the researcher believes that a contingency approach and executing on 'contextual innovation' is in fact needed within the current business landscape.

This reifies and further supports that 'innovation' exhibits a form of 'interpretive flexibility' and 'duality'. The research thus supports that the relationships depicted by arrow (c) and arrow (d) of the Structurational Framework of Fintech and FSPs as a valid theoretical extension. However, what cannot be fully ascertained from the research is whether the 'interpretive flexibility' of 'innovation' is limited or not; while it is assumed that the 'interpretive flexibility' of 'innovation' can potentially be limited by the institutional context and properties in which it is designed and implemented, innovation is not constrained only by material characteristics as technology may be. As per Baregheh et al. (2009), innovation can potentially be a technology, an idea, an invention, or creation, and for the 'interpretive flexibility' of 'innovation' to be validated, the extent each of these concepts would need to be explored. Unfortunately, based on the results obtained within the research, this could not be fully ascertained by the researcher and should be explored in future research.

While the views of participants are aligned to the literature on the topic of 'innovation', Delta Bank can already be seen as an innovative company, both based on the view of participants, as well as the many awards they have already received for their innovation efforts. As this study only consists of a single case, whose maturity in innovation is assumed to be quite high, a specific gap identified by the researcher is that the views expressed are those of an already innovative company. The path from being a non-innovative company to an innovative one is something that should be covered within future research, please see section 7.2.4 Suggestions for Future Research for further detail.

5.2.2 Theme 2: Exploring the concept of Technology within Organisations



5.2.2.1 Perceptions of Technology

While the interview findings show a shared perception of the concept of technology, it should be noted that participants found it difficult to initially define technology after discussing the concept of innovation. Many participants had to pause to think about the definition of technology and the difference between 'innovation' and 'technology', indicating a clear relationship between them.

From an organisational perspective, the research shows that technology can be machines or software that are used to make task execution and day to day job functions more efficient for people; technology is material in nature.

> *"So, technology is more like machines, like laptops, the technical side of it, stuff like system driven processes and those things. So basically everything, and I want to say new and technical but everything machine-related." - (Participant 1)*

> *"… my mind first goes straight towards some type of IT solution or some type of… yeah, so some type of IT system or solution that can be used in an existing business process or to be used in a business function. So, I think I think that's the first thing my mind sort of goes towards when we say the word technology. The way I also see it is, it's almost material and it's almost a material artefact that's either a physical technology or software implementation in terms of technological advancement as well." - (Participant 2)*

While not a key objective based on the scope of this study, an interesting view expressed by Participant 6 is how technology has been used within the context of humanity. Over the history of

humanity, technology has primarily been used for the betterment of society. From utilising new methods within agriculture to later the Industrial Revolution and how this may have enhanced the context of human life.

> *"… I've never really stopped to think about technology as a construct. I think technology is the piece of work that humanity has primarily used to better the lives of themselves over the history of humanity, utilising new methods of agriculture, processes and I guess computer and electrical equipment later on… or the Industrial Revolution in terms of steam power, of revolutionising the way that we transport, process and manufacture." - (Participant 6)*

Participant responses are aligned with the definition of technology provided by Orlikowski (1992). The researcher does however recognise that due to the paradigm adopted and the dismissal of technological determinism that there may be a form of bias within this response as the discussion and question posed would be influenced by the researcher. The conceptions of technology provided by participants and concepts of 'scope' and 'role' within the Structurational Model of Technology by Orlikowski (1992) are also present within the research: 'scope' is relevant in that technology as per participant responses is limited to material artefacts like hardware and software; 'role' is relevant as technology is seen as the mutual, socially constructed interaction between people and technology; this view was consistent with all participants.

5.2.2.2 Technology both shapes & is shaped by human agents (e1)

The research shows that technology is shaped by people who mould and fit it to their specific purpose or need, it can be redesigned and altered by people to fit their purpose.

> *"Technology is shaped by people, so we mould it and change it accordingly to fit the purpose. And then based on innovation or other uses, we can then redesign it and alter it accordingly." - (Participant 11)*

Technology is a product of human action and it assumes the structural properties of those who design and use it (Orlikowski, 1992). The data shows that newer technologies need to be shaped and influenced by the people that are designing and using them, else they could be rendered immediately redundant.

> *"… knowing what your customer wants, knowing what the market generally wants, and their mindset, we have to adapt technology accordingly as well, both externally and internally, I mean, just having our staff as the users of technology as well. Technology can be as brilliant as it wants to be, but if it's not user friendly, and if it's not shaped to be user friendly, and if it's not influenced by people, then your technology can almost be rendered useless." - (Participant 2)*

The views of participants are directly aligned to that of Orlikowski (1992) in that technology is a product of human action in its design and use. The 'use mode' and 'design mode' described within the Structurational Model of Technology are also shown within participant responses.

Technology is not only a product of human action, it also shapes the behaviours and attitudes of the people that design and utilise it (Orlikowski, 1992). An interesting notion mentioned by participants is that employees need to be receptive to the adoption of new technology and changes in technology, else the technology and investment thereof could fall flat. This is argued by Kim And Kankanhalli (2009) who posit that user resistance to the implementation of information systems and technology are a salient reason for the failure of new implementations.

"I think technology does shape the way people behave, but I think that the change in behaviour if at all, is primarily influenced by your attitude towards the adoption of new things. You need people to be receptive to change before you can even speak about the behavioural change. So, if you have those people that are set in their ways; so even if you were to introduce this amazing thing that does make you work a little bit more efficient; if the strategy within the organisation doesn't necessarily speak to... 'I'm quickly adapting to change' then even that change in behaviour will be delayed." - (Participant 2)

The data shows that the COVID-19 pandemic has had a massive influence on the adoption of new technologies like Microsoft Teams which allows the collaboration of employees within a virtual and online environment. It should be noted that while organisations have had access to such technology in the past, the environmental changes and shifts have almost forced the adoption of these technologies that were previously either not used or underutilised. The Microsoft Teams example was provided by all participants within this study and it shows how much technology can influence people within an organisation and the way they work. Participant 1 provides examples of how Teams has made their life more efficient since people have been forced to work from home during the pandemic.

"So, I mean everybody is constantly working on their laptops and I think Teams is something that everybody jumped on now with COVID. Everybody had Teams in the organisation for years and we barely used it, even when we were pushed to try and use it. But as soon as COVID came in and we were in lockdown we were almost forced to use it, and I was surprised to see how well it works. And for me, our productivity is better by using Teams than when we used to move between meeting rooms. I can attend more meetings by using teams and minutes are readily available, within minutes. We've got comments on the side, I mean we were in a meeting the other day and an Exco decision was made, and everybody just agreed on the side, on the meeting notes and then that was accepted as signed off. We didn't need to go and print a signed document or get everybody's signature to get something signed off. So, Teams, for example, is a great technology that we're using at the moment. It's just definitely boosted our performance." - (Participant 1)

Participant 10 also provides examples of how technology like Microsoft Teams has helped and shaped their current working environment and the impact on the employee and person. The technology has fundamentally changed the way employees operate and work. This can be related to Giddens (1984) concepts of structures of 'legitimation' (norms) which has completely changed due to a catastrophic event and has forced the use of new technology and also changed the structure of 'domination' (power relationship) by having less formality within the working environment.

"I definitely think technology influences people within the organisation. I mean, we're sitting here with teams opened, and I think even 12 months ago none of us would have thought that working from home would have been possible. I mean, I have to attend three excos later today and you know every time you have an exco you have to dress nicely, and it's a very formal meeting; and I think that technology has enabled us to think of these things differently. I mean, I don't have to go into the office, sit around the table and talk about things, I can sit around my own table at home and talk to the same people, make even better decisions because I've got more time to myself as well... so, I'm better rested, you know. So,

technology, I think has enabled and changed the way we work fundamentally as a corporate, or even you know any business." - (Participant 10)

The research responses support a key notion and concept within Orlikowski (1992) Structurational Model of Technology, that of the 'duality of technology'. Participant responses support that technology both shapes and is shaped by human action in its design and use. Technology can be both created or changed by human actors to accomplish a goal or action (Orlikowski, 1992).

Participants believe that while a technology may have been designed for a specific purpose, this can very much be changed by people within an organisation, who utilise and adapt these technologies over their shelf life to fit their purpose; this is an example of 'interpretive flexibility'. Different organisations may also use the same technologies in different ways to execute on their goals and objectives.

"So, in our space, I think technology is used for us to be able to connect and progress and so forth. I know with other institutions it's being used to actually micromanage for lack of a better word. I know employees are tracked, so there are reports that are sent to managers about 'how long I was online for, what did I do when I was online? was I actively working or not?' So, it's being used differently in different institutions, but essentially, we're all using it to be able to work at this point in time, but others are using it for other measures; I assume because of people salaries being cut and people losing their jobs. Maybe some organisations are looking for reasons to downscale, I'm not sure." - (Participant 11)

Technology is shaped by people of different experiences and backgrounds who also shape the development and use of that technology (Orlikowski, 1992). The example provided by participant 6 is that of a production line and how people may be forced to work in a specific way. If you are forced to use technology in a specific way, you will likely not see that it may have other uses; this is what Orlikowski (1992) refers to as limited or limiting the 'interpretive flexibility' of technology. Technology can be changed and altered to meet the needs of the user, it can potentially be used for purposes that it may not have been designed for, this is evidence of the 'interpretive flexibility' of technology.

"Going down to its simplest route of, or simplest piece of technology of a production line, in the sense of, if you are forced to do a specific task in a specific way, you will work in that specific way. If you are encouraged to identify new and better ways of doing things as a form of innovation, you will see the technology that's available is capable of much more and will try to find better ways of doing your individual process." - (Participant 6)

The data shows that hiring the right people to drive your agenda around technology can very much give you a competitive advantage as an organisation; this is something that could be driven through an organisation's 'institutional properties'. If you have the right calibre of people within an organisation they will drive your agenda around both innovation and technology (Hering et al., 2005; Howell & Higgins, 1990).

"… when you look at technology you put it against people, it's for people, that's how most people view technology. But I think if you've got the best people, the technology that you have in any organisation, those good people that you have will deliver something you didn't even think of because you've got the right calibre of people using the technology that you have. So, for me what gives a technological edge, or an edge over your competitors is the

type of people that you have because they come in, they formulate solutions, strategies and innovation and then they use the technology that's available. Sometimes it's actually the same technology that's been in front of people, but you need to have the right type of people trying to push the boundaries so that you are ahead. So, I still think it's the people who will give you a competitive edge." - (Participant 12)

The research output thus supports the relationships depicted by arrow (e1) of the Structurational Framework of Fintech and FSPs*; Technology both shapes and is shaped by human agents*. Participant responses support Orlikowski (1992) concepts of 'duality' and 'interpretive flexibility', along with the different iterative modes or perspectives that people have in their interaction with technology i.e. the 'design mode' which reflects the interpretive schemes built into technology by people, and the 'use mode' which reflects the shared meaning assigned to a technology which influences it and changes it over time; this shared meaning can also be related to Giddens (1984) concept of 'structures of signification'. However, what cannot be fully ascertained by the research is whether the 'interpretive flexibility' of technology is limited or not. Like 'innovation' that was explored in the previous chapter, it is assumed that the 'interpretive flexibility' of 'technology' can also potentially be limited by the institutional context and properties in which it is designed and implemented, though the research output does not fully support whether the 'interpretive flexibility' of technology is limited or not. 'Human Agents' are the most important part of driving both innovation and technology for organisations and shaping it throughout its lifecycle; it is ultimately people who will give an organisation the competitive edge within industry (Hering et al., 2005; Orlikowski, 1992).

5.2.2.3 Technology both shapes & is shaped by innovation (e2)

The research shows a clear relationship between technology and innovation in the modern organisation. As mentioned in the previous chapter, simply exploring the definitions of innovation and technology without clarifying a shared understanding, confused participants or made them pause to really think about the difference between the two concepts. The research and coding of data showed multiple relationships or links between the themes and codes of 'innovation' and 'technology'.

Participants believe that technology and innovation have become so intertwined that it is almost difficult to define or even discuss one without the other.

"I don't think you can think of the two separately anymore, I think you always need to think of them together." - (Participant 9)

The data reveals that technology is there to enable the process of innovation, and it can also be the end-product of the innovation process; though innovation does not always have to involve technology.

"I think technology is the end product of innovation." - (Participant 10)

"Innovation does not necessarily mean you need to have some kind of technological component to it." - (Participant 5)

Participant 12 provides an example of how technology currently enables innovation with the example of how Financial Product Z (pseudonym) is currently provided to customers and how it could still be done without the technology, though the technology has enabled it to be done more efficiently, often eliminating manual ways of work. Innovation is the process, though technology enables the process to be done at speed (Nootjarat et al., 2012).

"I think technology enables innovation; so, by that I mean, once you have the idea… so, for example, the idea is to provide Financial Product Z (pseudonym) to customers in the simplest way… it doesn't mean without that innovation that Financial Product Z would not be provided to customers, it could. It can still be provided, but it's not the simplest way it can be done. So now once you fully understand how you can do this, technology enables you to make it simpler and faster, you replicate it much quicker; so that's the technology part. So, the actual functions that are done manually today, maybe by a warm body; it does not mean they can only be done by a person or a warm body; but once you start, even that warm body, if they start to innovate and want to replicate things themselves, multiple times, and at speed, then the technology comes into play. Hence, I'm saying if innovation is the process, technology is the enabler of that process to be to reach the destination." - (Participant 12)

Participant 13 provides the example of IBM and how computer-based technologies have enabled the accuracy, speed and efficiency of solving problems for human beings; it has allowed us to venture into new avenues and facets of thinking. This example shows how the introduction of a technology has enabled future innovation, which is also posited by Nootjarat et al. (2012).

"I guess we can look at IBM and when they introduced the first computer. I mean if you want to look at the moon landing and a lot of the effective math and application was very paper-based. And if you look at how IBM has transformed in terms of allowing a computer-based technology to more accurately, speed up the efficiency of solving problems for human beings, that allowed us to then expand on new thinking and it became an enabler; it allowed us to venture into new facets of thinking." - (Participant 13)

Participant responses are aligned with the definition of 'innovation' put forward by Baregheh et al. (2009), as previously mentioned, in that innovation does not always need a technological component. Nootjarat et al. (2012) argue that technology is very much an enabler in the process of innovation or a by-product of it, which is aligned with the research and data collected.

The data shows that an intricate relationship exists between innovation and technology where they both constantly shape and are shaped by each other over time, the is a 'duality' between the two concepts. Technology has enabled specific innovations over time and without a specific technology being available at certain points in time, certain innovations may not have been possible. An interesting point mentioned by Participant 4 is that timing within both innovation and technology is essential, sometimes people are not ready to consume an innovation or technology, and sometimes the technology to execute on an innovation just simply does not exist yet; this is also supported by (Farzin et al., 1998). The example provided by participant 4 is that of Bill Gates and Microsoft, and how they would not be where they are today without another piece of technology that enabled their innovation. Wallace And Erickson (1992) show that Bill Gates initially got the idea to create Microsoft Windows on a trip to Xerox where he first saw the use of a mouse within an operating system; Microsoft Windows today is the most successful and widely used operating system in the world.

"I think there could be specific periods or time frames in humanity where innovation wasn't possible, due to maybe certain aspects of technology that wasn't maybe available at that particular point in time, but rather emerged later. I do believe there are certain materials or physical attributes without which innovation cannot occur, and that is technological in nature, but only when someone else has developed that kind of technology then you can start using it, and I suppose one of those examples if my memory serves right is something

like Bill Gates and Microsoft… from what I understood, Bill Gates and Microsoft wouldn't be where they are today without another piece of technology complementing what he was trying to do to say, 'okay well now I've developed a more innovative product'. So yes, innovations may not occur just simply because the person doesn't have access to those resources at that time, or purely that those resources haven't been fully developed. I think timing is also important as to when something is implemented; timing is essentially everything." - (Participant 4)

Technology provides the opportunity for newer innovation and it is a constant cycle where technology is introduced, which potentially leads to newer innovation (King et al., 1994). Participant 6 believes that they are both by-products of each other and create a constant cycle of influence.

"I think it's a cycle, I'd argue that it's a cycle in that new technology provides opportunities for new innovation in a similar way that innovation provides an opportunity to create new technologies. Technology might be a by-product of innovation in the same sense that innovation might be a by-product of technological advancement." - (Participant 6)

This is supported by a study conducted by King et al. (1994) who believe that there is a constant interaction between innovation and technology. The research output thus supports the relationships depicted by arrow (e2) of the Structurational Framework of Fintech and FSPs; *Technology both shapes and is shaped by Innovation.*

5.2.2.4 Technology both shapes & is shaped by the institutional properties of the organisation (e3)

This section explores the opinion of participants around how they currently see organisations shaping and being shaped by technology. A key observation by the researcher is that the COVID-19 pandemic has had a massive impact on the use of newer collaborative technologies, and Microsoft Teams was mentioned by almost all participants as a technology that is shaping Delta Bank; the researcher does however recognise that this specific technology may be unique to the context and organisation in question, as this was the primary technology being used by employees to communicate and collaborate during the pandemic.

The data shows that newer technologies emerge and become trendy quite often, and it has become natural for organisations to be adaptable and agile regarding the adoption and use of new technologies; this shows how the 'institutional properties' of organisations have been shaped by technology. There is a need to explore the 'external' environment and the impact it has on the 'internal' environment of modern organisations. This need was potentially not as pressing in 1992 when the original research of Orlikowski (1992) emerged, as technology was more in-house and less ubiquitous during this period, refer to section 5.3 External Environment Themes for a full analysis of this relationship. Customers often gravitate toward trending technologies and organisations often must change and adapt to this, along with carefully planning those technologies they do adopt (Baskerville & Myers, 2009).

"I have noticed with technology that it is sort of trending, so we'll always have some type or new form of technology that is introduced and then it creates a big amount of hype and we try to structure our innovative solutions around that. I think it's just natural customer behaviour now as well… it's just there, then they move on to something else and then businesses, in general, have to be very sort of on their feet in terms of; they have to be ready and adaptable to any form of what's trending next and being able to adapt to a new solution

because your customer base is always changing, and what they want is always changing as well. So, I think there's definitely an influence in that aspect as well, and businesses need to be more adaptable and flexible to the technologies that are out there and that are being introduced." - (Participant 2)

Baskerville And Myers (2009) argue that IS practice is characterised by 'fashion waves'; this is also shown within participant responses around trending technologies. The challenges faced by modern organisations are vast, technology is changing on an almost daily basis and organisations need to be flexible enough and innovative enough to adapt to these changes (Nygren et al. 2020); the business environment has changed drastically since the original paper by Orlikowski (1992). The use of technology and the adaptability of the organisation in regard to technology will help enable businesses to tackle the specific challenges they face well into the future; organisations should consider carefully those technologies they are potentially going to utilise, as many of these may turn out to merely be trendy or fashionable (Baskerville & Myers, 2009; Nygren et al., 2020).

The 'institutional properties' of the organisation are key to driving the organisation forward both strategically and operationally (Ortt & van der Duin, 2008; Singh, 2011). Participants believe that the institutional properties of an organisation and how they drive technology is extremely important. Creating a culture that encourages the innovative use of technology and using it to enable its employees can create a competitive advantage for the organisation that spurs on further creative and innovative thinking long into the future (Cardoso & Gomes, 2011). The 'institutional properties' of the organisation are key to shaping how technology is designed, used and enabled within an organisation at all levels.

"I think in an area where there is a culture in the leadership style of not facilitating and encouraging innovation and technology it's going to result in, just using the tools that are available and not progressing and being innovative; I think that culture and leadership style is very important in terms of identifying and then finding you alternative ways of consuming technology. And that can only be encouraged by the culture and leadership within an organisation." - (Participant 6)

Participants believe that organisations who encourage the use of technology as a part of their strategy and empower employees to use and change it are often those who can become more innovative. Technology can be used as a strategic driver in helping organisations make key strategic decisions (Berman & Hagan, 2006).

"So, organisations that encourage us to use technology and empower us to be able to use it, understand it, influence it, change it; then they can become more innovative in those environments. So, if the strategy is, we're not going to do anything until we've seen the numbers, we're not going to do anything until we understand what the impact is. All of that information is sitting in some data source, it's using technology to be able to make the right decisions; so, it does influence the strategy and helps us get closer to the solution just by understanding, 'what am I looking at and how do I interpret it?'" - (Participant 11)

The data shows that organisations can adopt many technologies though if there is never a culture to drive the understanding, utilisation, adoption and exploration of that technology, then they will never explore the next step or progression.

> *"… I mean a business can adopt a whole bunch of technology, but if the culture's never ready to drive the usage of it to the full extent and thereafter; once you adopt a technology and fully understand the utilisation of it, you can only then explore, 'what more do I need? what further enablement's do I need from the technology?' And then that spurs on further innovative thinking." - (Participant 13)*

Successful innovation and technology, as mentioned, starts with good leadership and culture, who drive down the message to the entire organisation. The researcher recognises the relation between the data and structures of 'domination', or 'power' by Giddens (1984), along with the link to 'authoritative resources' and how they drive both technology and innovation.

> *"I think it starts at the top, I guess with leadership and culture. I think when there is a message being driven down from top leadership, encouraging a culture of innovation and technological advancement, I think that is step one. If that doesn't exist, then I don't think it would happen. I think it's about making sure that the human capital, in terms of the people that you hire, are the right people to drive that innovation and technology agenda." - (Participant 6)*

The research responses support the original relationship identified by Orlikowski (1992), that the 'institutional properties' of the organisation shape how a technology is designed and used.

The research shows that technology can also have an impact on the organisation's institutional properties; once a technology is introduced it can significantly impact both the people within the organisation, along with the culture, top management behaviour, and strategic direction. Technology can change the way an organisation operates by both reducing cost and introducing efficiencies throughout its value chain; it can affect and transform both the strategy, culture and management style of an organisation (Berman & Hagan, 2006). The example provided by participant 5 is that of a production line, and how technology has shaped this and made it more efficient, though there are pro's and con's as this could possibly mean technology is replacing existing jobs and roles; organisations need to consider how they are going to repurpose specific roles once certain technologies are introduced. The concepts by Giddens (1984) are extremely relevant here, and the data supports that technology can change the structures of 'signification', 'legitimation' and 'domination' within an organisation.

> *"Technology can change the way organisations work, it takes away massive costs, like having people physically in buildings, or if you look at a supply chain or a production line, I mean the introduction of machines have actually had massive impacts on… it's been a plus for organisations cause they're saving on labour costs, but it's also had an impact on, job losses, so affecting people financially, so there are definitely pros to it but there's also cons with regards to job losses; so, I think organisations need to think of ways to repurpose specific roles. And yeah, empowering the people to try new and different things." - (Participant 5)*

The data reveals that there is also a fine balance that needs to be established with the type of technology introduced along with the strategic intent of the organisation. These both have an impact on each other as newer technologies can potentially enable the quicker implementation of organisational strategy.

"… your strategy needs to be balanced with the technologies that are available. It's like a flywheel effect; so, you need to develop the new technology that will enable your strategy to be implemented quicker and faster. So, it has a huge impact on strategy." - (Participant 10)

One of the participants specifically mentions that technology moves so quickly and there can be a lag in terms of the 'institutional properties' and changes thereof. This view is also supported by Leonard (2021) who argues that there is a tendency for organisational adjustment to lag behind technological change. The strategic direction, as well as the culture of the modern organisation, must change to adapt with new technologies. The researcher believes that organisations should be mindful of the speed of technological advancement, and the potential lag in changing their 'institutional properties' as these can potentially be mismatched. This is in line with a study conducted by Ciborra And Hanseth (1998) and what they refer to as 'the installed base'; the core argument put forward is that technology changes extremely quickly, but building and changing large infrastructures takes time; organisations must carefully consider how they integrate new technologies onto their older infrastructure (the installed base) and how this affects design and implementation. "Infrastructures develop through extending and improving the installed base" (Ciborra & Hanseth, 1998, p. 4). The example given by participant 3 is of how existing roles may have to be reshaped to accommodate existing employees; existing roles that currently require physical presence could be done virtually by employees and functions that currently require face to face interaction may be introduced digitally for customers. The researcher recognises the relation to Giddens (1984) 'structures of legitimation' or 'norms of behaviour'; while the process of executing a function is the same for employees and their role hasn't changed that much even though it may be performed virtually, the 'structure of legitimation' has evolved for customers as they could perform the same function digitally in the future.

"… I think the disadvantage we find ourselves in sometimes, is technology moves so fast, that all the other institutional things that have been built over the years take time to change, and there's a bit of a lag in terms of the adoption of certain things because you still have all these legacy things to consider. So, the example of people having to go to a branch vs doing banking digitally, now you must think about how you're going to switch up roles for people; so that employee that was previously customer-facing, that customer-facing role is no longer physical anymore, so now they need to be moved to like a virtual role. If you think about it, they'll still be doing the same thing, you would have still assisted me to do a payment, for example, had I come to the branch in person. The only difference now is I can do it on an app. But technology definitely does have an impact in terms of changing and transforming that organisation, but all these institutional things, unfortunately, tend to delay the adoption and changes of certain things." - (Participant 3)

The data shows that technology has had such a big influence on modern organisations that it has also introduced new roles as well as evolving existing roles within the organisation like Chief Data Officers and Imagineers. This is a clear indication of the way technology is changing modern organisations and the way they operate. Participant 12 provides multiple examples of new roles that have been introduced by current technological advancement and alignment of organisations with this change e.g. Chief Data Officers, Imagineers. The comment by Participant 12 and how roles are changing within Delta Bank, is a good example of the 'structure of domination' or 'power' by Giddens (1984) and how this is shifting to accommodate the dynamic business environment.

"[C]ompare five years ago to now, there are new roles that are coming through now in the organisation, and they are linked to technology. So, for example, we've got a Chief Data Officer that's now an executive role. We are used to having CEO, CFO's, those kinds of people sitting in executive roles, or on the board. Now you're starting to have Chief Data Officers coming through, you're getting new roles like an Imagineer coming through; this is all through the technology that we've been exposed to thus far. So now that means the structure that used to exist before, it would be maybe a COO that needs to be on the board or in the executive structure. But now you're starting to have people for innovation, sitting on that board. You're also starting to have people who work with data sitting on the board. The reason for that is, we've realised that many decisions lie in the data you have, but you need somebody who can break it down, in a manner that will make sense. So, we can see now, in Delta Bank space that data is such a big driver and that role has now become an executive role rather than a normal role for day-to-day, where maybe it was management level a while back, now you have a person sitting at the executive level." - (Participant 12)

An interesting point mentioned by one of the participants is that, even though technology can shape the institutional properties of the organisation, these are first driven by people who set the strategy, culture and direction of the organisation i.e. top management.

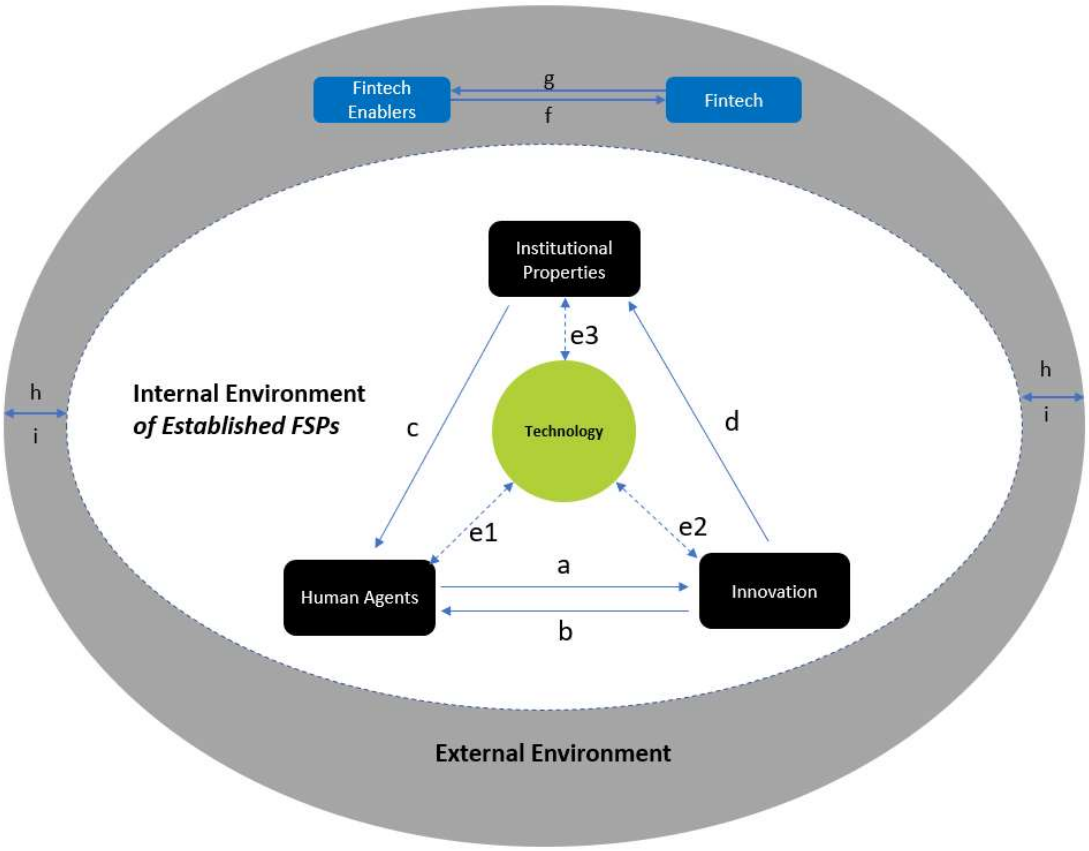
"… my opinion is that culture and strategy are typically driven by people first as opposed to by technology, but it does open up, I guess pieces within that strategy and within that culture, but I think it starts off with the people aspect first before the technology aspect." - (Participant 6)

The research responses support the original relationship identified by Orlikowski (1992) that technology can transform the 'institutional properties' of the organisation. The 'institutional properties' are shaped by many different concepts over time and are highly contextual, though to see a significant shift and change, 'top management' first has to set the 'institutional properties', then decide what kind of technology can be used to enable and support their proposed strategy (Al Shaar et al., 2015; Buyl et al., 2014; Durmuşoğlu, 2009; Lederer & Mendelow, 1988). This is related to the influence of 'human agents' and their impact on the 'institutional properties' of the organisation; technology cannot directly change the 'institutional properties' of the organisation without the influence of 'human agents'.

The research thus supports the relationships depicted in arrow (e1), (e2), and (e3) of the Structurational Framework of Fintech and FSPs in section 3.2 Conceptual Framework. *Technology both shapes and is shaped by human agents (e1), innovation (e2) and the institutional properties of the organisation (3).* From a theoretical perspective, the original relationships identified by Orlikowski (1992) have been expanded on within the Structurational Framework of Fintech and FSPs to include the concept of 'innovation' as a concept that influences and is influenced by 'human agents', 'technology', and the 'institutional properties' of the organisation.

5.3 External Environment Themes

5.3.1 Theme 3: Exploring the concept & background of Fintech and the relationship with Fintech Enablers



5.3.1.1 Perceptions & definition of Fintech

While innovation and technology are key to the modern organisation, a new entity emerging in the Financial sector is that of Fintech (Arner et al., 2016; Still et al., 2019). The data was analysed to gauge how well participants understood the concept of Fintech, as well as their opinions around the topic.

Senior managers within Delta Bank's Product and Pricing units were clearly very knowledgeable about Fintech, along with the fact that it is directly linked to both internal and external innovation and technology within financial services. All 13 participants had a shared understanding of what Fintech is and does.

The data shows participants understanding that the term 'Fintech' merely means 'finance' and 'technology' and refers to organisations both big and small that use digital technologies and solutions to solve specific problems or customer pain points that they have identified within financial services.

> *"So, Fintech to me is financial technology; so, it's basically a term used to describe technology within the financial sector and is something that would automate the delivery of financial products and services." - (Participant 5)*

> *"If you were to break the two up, you're talking about financial services and technology that's been put together. But it's something that has been set up for a particular reason, to solve a particular problem with technology obviously at the forefront of that and specifically in this instance in the financial services sector. So, I'd say technology that is there to solve a financial services problem." - (Participant 3)*

One of the participants mentioned that Fintech is often a slang word used for start-up organisations either creating or supplying financial technology, either in a Business to Consumer (B2C) or Business to Business (B2B) manner. Fintech firms use technology and digital tools, to provide services within the financial environment for organisations to operate more efficiently, or by providing these services directly to consumers for consumption.

> *"So, in my opinion, the definition of Fintech is literally financial technology, and that is typically the slang word used for start-up organisations that are primarily focused on creating and supplying financial technology solutions either B2C or B2B, so providing other businesses with technological tools to operate better in the financial environment or providing products and services directly to customers in an innovative and typically a digital manner, with the primary focus of Fintech being around IT or technology." - (Participant 6)*

As mentioned by participants the term Fintech is used extremely loosely in practice and often refers to start-up organisations in financial services. As per the response by Participant 10, what sets Fintech apart is the speed at which they are able to deliver solutions over a conventional financial services player. Participant 10 also mentions that while the term often refers to start-ups, larger organisations are also Fintech and the term should not be confused; the example provided is that of Omega Insurance (pseudonym).

> *"I think the term is used very fast and loosely for any company that's a start-up in the finance world. And I don't think it's necessarily correct, not all small organisations starting up are Fintech. So, I think it is financial organisations that develop or are embracing technologies much quicker because they don't have legacy systems to rely on. That said a bigger company can also be a Fintech. If you look at Omega Insurance (pseudonym), I think Omega Insurance is a great example of a big established corporate also playing in the Fintech market, they launched a full Financial Product B (pseudonym) and they don't have Financial Type C Products (pseudonym); so I think they're a Fintech as well, so I don't think people should confuse Fintech with you know a small one-man-band… or, you know, still sitting in a garage type of start-ups, it can be any size of company. I think it's just the way they embrace problems and how they solve their problem statements at the end of the day, so I think it's very closely related to innovation and I mean it's just I think the speed at which they do it, I think that that's almost the dividing line." - (Participant 10)*

The responses by participants are aligned to those explored within the literature review section of this study along with the various nuances. All definitions of Fintech provided by Arner et al. (2015), Arner et al.(2016), Ferenzy et al. (2017), Rizvi et al. (2018), and Saksonova And Kuzmina-Merlino (2017) match the responses of participants; though as per section 1.4 Delimitations of this Study, the definition used within this paper has been limited to organisations that initiate some form of business activity within financial services using technology, regardless of size. Participant perceptions directly match the literature and research scope; this shows that delimiting the scope as

per the definition of Fintech, was an important decision early in the research process and supports and that the literature review around the definition of the topic was covered succinctly.

5.3.1.2 Fintech Enablers will have an effect on Fintech (arrow f)

Fintech firms use technology and innovation to deliver services that exploit very specific needs or customer pain points, though participant perceptions around how and why they emerged within such a competitive and highly regulated industry are explored below.

Established financial institutions within South Africa have been around for hundreds of years and are very set in the way they do things (Gomber et al., 2018). The research shows that one way in which Fintech may have emerged is that a gap in the market was either identified by Fintech players, or by previous employees of these financial institutions.

> *"I think why they emerged is probably where, you know back in the day, a bank is a bank, is a bank, and I suppose it's… you know it offers the same services, it could have different systems in play, but I think Fintech came to be where former employees of these financial institutions saw an opportunity where they said 'Hey here's a problem that we can and need to resolve'. So, it is exploiting that gap where established institutions are, but are maybe very cost heavy from that perspective." - (Participant 4)*

Traditional and larger institutions often find it harder to innovate, they have expensive existing infrastructures which add to the cost of their products and services (Gomber et al., 2018). The view is also aligned to research on the 'installed base' by Ciborra And Hanseth (1998) who believe that organisational infrastructures develop through adapting their existing infrastructure and merging these with newer requirements. Relating this to the research findings, the larger and more complex the organisation, the more difficult it is to merge newer technologies into the 'installed base'. Fintech are free of these complexities as there is no 'installed base' for them being newer businesses, thus allowing them a degree of freedom and speed in delivering products and services.

> *"… for us traditional institutions if I can put it that way, it's very hard for us to innovate because of our infrastructure, because of our older ways of working; and Fintech are free of older technologies and methods." - (Participant 11)*

One of the participants mentioned that Fintech emerged for two specific reasons, one may be due to the market opportunity identified, which is mentioned above; and the second is due to the ease of development of the tools and technologies that enable Fintech like digital software development tools. This has made it very appetising for businesses and has also led to opportunities and alternate funding options.

> *"I think it's two primary factors, the first one being the market opportunity; I think organisations always evolve and become creative when there's an opportunity identified in the market, and I think that's primarily because large incumbents in the market might not have been as aware of opportunities within their own spaces that these smaller players identified. And the second and very important piece is the* ***ease of use or the ease of development*** *and creation of these technological tools. These are primarily software development and software tools which are very, very easily scalable as primarily a digital tool; so, having a small team who are able to develop a solution that can literally be consumed by billions of people is very, very appetising for businesses; which has then also created opportunities in the market for funding." - (Participant 6)*

Another participant specifically mentions that Fintech may have identified potentially grey areas around regulation or loopholes which can be exploited. The example given is that of cryptocurrency, where it may have emerged due to people wanting to remain unregulated or moving money out of the detected financial system.

> *"They emerged because there was a loophole, and I think within the financial industry it's so regulated, and there was a loophole where people wanted to be somewhat unregulated, either by moving of money, out of being sort of detected in the system. The perfect example is cryptocurrency." - (Participant 8)*

The research shows that Fintech are utilising smartphone technologies as a means to provide products and services to customers. Participant 4 believes that without these technologies as well as globalisation that Fintech would not exist.

> *"I would say that without globalisation and smartphone technology specifically that Fintech wouldn't exist. I think with globalisation what we've seen is an increase in the development of technology, and with that Fintech are able to then use this kind of technology as a means to provide products and services." - (Participant 4)*

Smartphone technology has enabled people instant access to a multitude of financial services and products that can be delivered at speed and at a lower cost (Amalia, 2016; Arner et al., 2015). The technology is able to reach a vast audience through distribution and enablement through globalisation and international trade and these products offer multiple platforms for all types and ages of customers from wealthy populations who enjoy the use of APP (Application-based) banking and services, or to rural populations who often only have access to USSD (Unstructured Supplementary Service Data, which is a protocol and service used by GSM providers to communicate with service providers via text messages) type services (Amalia, 2016; Arner et al., 2015).

> *"Almost every individual in the world has a smartphone which has allowed access to new products and services; and globalisation within the world has allowed these tools, products and services to be very easily exported. A perfect example being Uber, where the technology stack is relatively easy to copy and paste into almost every country in the world. So, globalisation has allowed access to technology for masses of people have also made a huge impact in terms of Fintech." - (Participant 6)*

The responses from participants are aligned with the literature review conducted within this study around the topic of Fintech, though the researcher does acknowledge that there may be a form of bias based on the questions posed to participants related to specific 'Fintech Enablers'. Globalisation and smartphone technology along with technologies such as API based banking have changed the way financial services are delivered and have allowed for the formation of multiple Fintech players worldwide; Fintech would not exist without them (Amalia, 2016; Beugré et al., 2006; Rizvi et al., 2018). This can also be related to the data mentioned earlier around the link between 'innovation' and 'technology', in that smartphone technology has enabled new innovation and ideas to be generated which could not previously have been conceptualized.

5.3.1.3 Fintech will have an effect on Fintech Enablers (arrow g)

The financial services industry is impacted heavily by the regulatory environment and regulator, who define the guidelines in which organisations are able to operate (Carnell et al., 2021). Fintech players have often bypassed or exploited gaps in regulation to offer products and services without, or with

minimal regulation or intervention (Rizvi et al., 2018). Participants believe that Fintech in South Africa have remained largely unregulated and have exploited many gaps in current regulation allowing them to create products and solutions that established FSPs may not be able to, due to stringent regulation imposed on them. Regulation can sometimes have a negative impact on innovation in not allowing innovative solutions, though at the same time is critical to keep a stable financial services sector and is very much required (Prasad, 2008). Participant 2 believes that is only a matter of time before some form of regulation is imposed on Fintech players within South Africa.

> *"I think we're defined by regulation now more than ever, we're defined more and more by the types of regulation implemented by government, and then what we can do and what we can't do. I think as government gives us sort of guidelines to work in, then Fintech firms have to adapt to that, even though everybody has to adapt to it, and sometimes regulation can very much limit innovation in a sense… I would say regulation is required because it needs to be fair. Fintech firms not being regulated or not being imposed with such strict regulations does allow them to release better solutions than we could, as for example, a big bank could have released, however, banks are imposed such strict regulations; and that allows Fintech firms to capture the market as they're not imposed with such regulation. So, I think Fintech have become very trendy lately and I think it's just a matter of time, where some type of policy or stricter regulations are imposed on Fintech firms as well." - (Participant 2)*

Participants believe that regulation is there to protect the financial system, it is there to avoid unethical behaviour and the exploitation of customers.

> *"I think it's always good to have some sort of regulation just to keep things in check; to say that you're not doing anything unethical; to say that you're not using this technology to exploit people, but rather it's putting it to good use, which is great, and it's servicing the needs of maybe a particular population in a particular country, but you maybe need to regulate it." - (Participant 4)*

All participants believe that government should and will encourage the growth of Fintech within South Africa, while 6 out of 13 participants also believe that some regulation will be discouraging to Fintech. The data shows that smaller organisations need to be encouraged to innovate as getting started within the industry is extremely difficult from a financial and capital requirement perspective, this view is also supported by Arner et al. (2017).

> *"So, governments need to encourage regulation and legislation for the market to be more competitive and enable smaller organisations to actually start innovating in financial services because I think that the capital requirements are quite difficult to get started in this industry." - (Participant 10)*

The data shows that various technologies such as API based banking as well as changes in regulation, and the sharing of information between participants have created an ecosystem of sharing data and information, through a secure platform that is able to further enhance existing products and services for customers and has enabled many Fintech players in different countries.

> *"Fintech were also enabled by various technologies that made it easier, and not just technologies but regulation as well; the example that I want to give is of Europe, the European central banks basically told all the participating European banks, you have to have one account number for customers and they defined a structure, to make technology simpler,*

or give Fintech that platform to actually build new technologies on. This regulation was later labelled as API based banking." - (Participant 10)

While Fintech is forcing both change and competition for established FSPs as they are potentially fighting for the same market share, all participants within this study believe that Fintech has a positive influence on the financial services sector, as it is customers who ultimately benefit. The change within market is challenging all organisations to look at better ways of doing things, which is having a positive impact on the industry and on newer technology.

"It's definitely a positive thing because it's encouraging guys that have been established for years to find better and more efficient ways of doing things. Also finding instances where just because something works doesn't mean it's working in the best way that it can. So, I think it's encouraging all these organisations to re-look how they're operating… are there better ways of achieving the same thing? I definitely think these Fintech are coming in and are resulting in a positive impact on the industry along with introducing new innovation and technology." - (Participant 3)

As per the response by participant 8, Fintech is giving rise to creative ideas, new entrepreneurs and exponential creativity within financial services.

"… it gives rise to entrepreneurs, it gives rise to people that are actually quite creative, and coming to the fore in creating magic almost, I feel like its creating magic… products and solutions that are readily available and accessible to a lot of people." - (Participant 8)

While Fintech is seen by all participants to have a positive influence on the industry, 8 of the 13 participants also believe that Fintech can also have extremely negative effects should they remain unregulated for much longer.

"If left unregulated it's definitely going to have a negative impact, more on customers than banks. But I definitely think it's a great thing." - (Participant 5)

Responses by participants are aligned to the literature review conducted for this study in that Fintech initially emerged due to the GFC of 2008, post which the market saw advances in technology, gaps in regulation, or identified market opportunities that were not being filled by larger institutions. Participant responses are more aligned to the periods of Fintech 3.0 and Fintech 3.5 and Fintech 4.0, as per the research conducted by Amalia (2016); Arner et al. (2016); Saksonova And Kuzmina-Merlino (2017); Arner et al. (2017), refer to section 2.1 A brief History of Fintech for further detail. An emergent finding however is that former employees of financial institutions may be the people exploiting those gaps identified within the financial services sector and forming new Fintech firms.

Participants believe that Fintech are responsible for many innovative solutions and government as well as regulation should definitely be there to encourage them; though at the same time Fintech need to be monitored as there are some Fintech firms currently exploiting certain regulation which could be detrimental to the entire sector (Arner et al., 2017). The type of regulation needed is going to require a fine balance in encouraging innovation within the industry, whilst also protecting customers and the existing financial system, Arner et al. (2017) refer to this as Smart Regulation. As per the study by Su And Si (2015) balancing innovation and financial stability should be a key agenda item for any country to drive economic growth. Due to the rapid change being introduced by

Fintech, the researcher believes that current methods and regulation may need to be reconceptualized.

> *"That's where it poses a very interesting question because Fintech are not really regulated by the South African Reserve Bank. I think there needs to be some sort of regulation just to say that Fintech are not exploiting customers. I think it's just important to say that there is an element of greed, which is in a very small world, but hence, the regulation is there is to protect people. So, a form of regulation is okay, but not too heavy otherwise it just discourages them to say, 'well, I'm going get this opportunity to then become a Fintech and offer services.'" - (Participant 4)*

The data shows that current technologies being developed by Fintech can often be ground-breaking, and government may not even know how to regulate them. While Fintech in South Africa may not be heavily regulated currently, government and regulators may be forced to develop rules and regulations behind them extremely quickly in the near future; financial technologies like cryptocurrency exchanges are already pushing the boundary in terms of regulation.

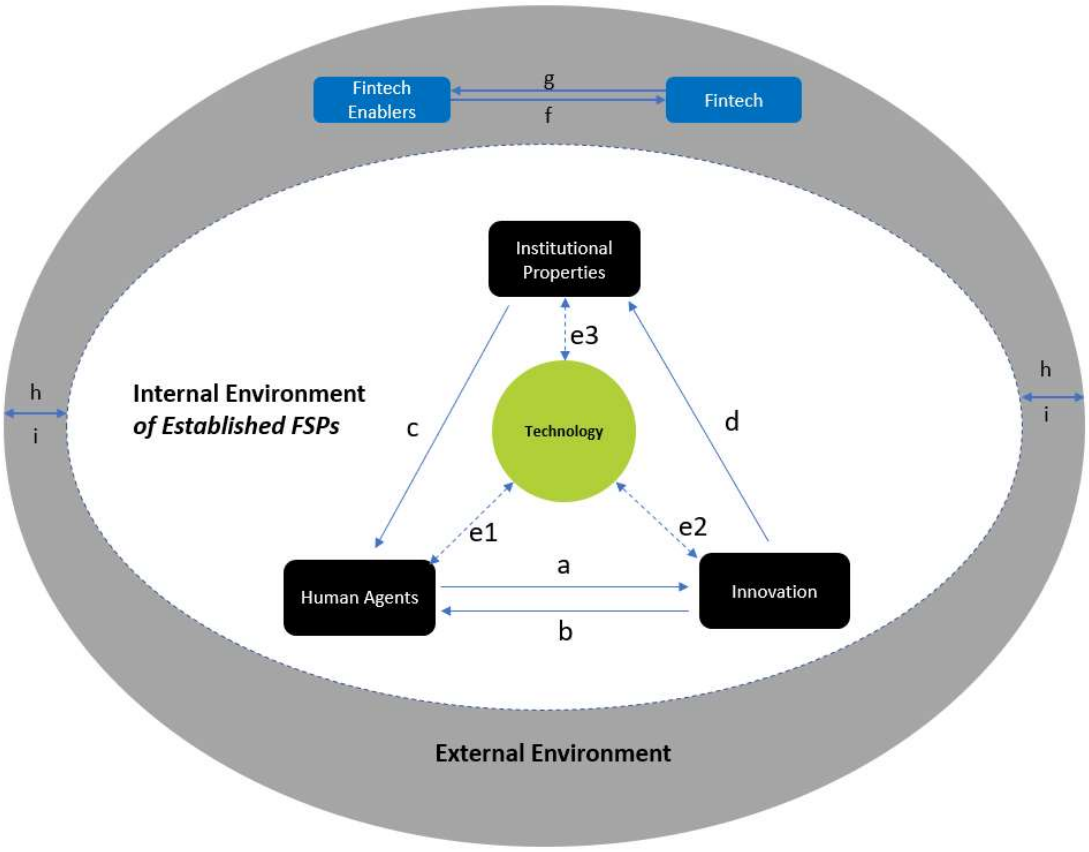
> *"I think Fintech definitely will force the hand of government, a perfect example is cryptocurrency exchanges, and governments are being forced to very quickly develop regulations to manage and regulate those industries. When it comes to Fintech, the underlying technology and innovation can be ground-breaking to a country and they don't necessarily know how or even whether they should regulate some of those things. It definitely forces the hand of countries and governments." - (Participant 6)*

The financial services sector is very much defined by regulation, and South Africa has a very robust system in place (Moloi, 2014). The researcher believes that governments have a difficult job ahead of them as they need to balance innovation with fair competition, and while Fintech have remained largely under their radar, they are soon going to be in the spotlight. As per participant responses, when Fintech do become regulated, a fine balance needs to be struck as to who, when and how to regulate, to both encourage new organisations and innovation, as well as fair regulation and the non-exploitation of customers. This is something that government and regulatory bodies should be looking into immediately to avoid Fintech players capitalising on loopholes found within existing regulation and the financial system while at the same time driving innovation and technology-driven financial solutions. NL4WorldBank (2019, p. 25) lists multiple risks of allowing the Fintech industry to go unregulated, along with many benefits that the growth of Fintech could bring. This is also shown within section 2.4 The Dark Side of Fintech as well as APPENDIX E: Advantages & Disadvantages or Risks of Fintech. This shows that Fintech firms will have an effect on Fintech Enablers, as the formation of newer Fintech firms will force changes in regulation as well as lead to newer innovation and technologies.

The research thus supports the relationships depicted by arrows (f) and (g) of the Structurational Framework of Fintech and FSPs. *Arrow (f) Fintech Enablers have already and will continue to have an impact on Fintech; arrow (g) Fintech will have an impact on Fintech Enablers.* The data shows that Fintech Enablers have and will continue to have an effect on Fintech; Fintech also have and will continue to have an effect on Fintech Enablers as the services they offer will shape newer technologies as well as regulations. There is a constant interaction between both Fintech and Fintech Enablers. This addresses the secondary research question posed by this study *'What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and*

Regulation) have on Fintech, and in turn on FSPs?', found in section 1.3 Research Objectives & Research Questions.

5.3.2 Theme 4: Exploring the effect of Fintech on the financial services sector and the relationship between Fintech & banks



The research shows that Fintech is clearly having a profound impact on newer technologies and innovative ideas. The effect Fintech is having on Delta Bank and the established financial sector in South Africa is explored within this section. It should be noted that the 'internal' environment and the focus thereof is highly dependent on the case in question. Consider Delta Bank for example, while the research focus is on the 'internal' environment of Delta Bank as the primary unit of analysis, Delta Bank also forms a part of the 'external' environment of other organisations, like Theta Bank (pseudonym). Should the 'external' environment force Delta Bank to change its 'internal' environment (for example 'competitive pressure' forces Delta Bank to create a new product), then changes that occur within the 'internal' environment of Delta Bank will also directly affect the 'external' environment as Delta Bank is also a part of the 'external' environment of all other organisations. There is thus a constant interaction between arrows (h) and (i) of the Structurational Framework of Fintech and FSPs i.e. 'duality' is also present between the 'internal' environment and 'external' environment. As this is very much an emergent topic, there is little academic literature to relate to; this section contains mainly the responses from participants and the researcher's interpretation of the findings and output.

Innovations that have a positive effect tend to push organisations forward to strive for more (Baregheh et al., 2009). This can influence both 'internal' innovations like process enhancements to

internal systems and technologies, as well as 'external' innovations like products or services offered to customers. Participants believe that the external environment also has an impact on how organisations innovate. The data shows that the current perception in the market is that customers are becoming more digital, and larger, older or more established organisations potentially need to force the transformation and adoption of newer innovation in order to stay competitive.

> *"I think a lot of organisations are sort of, output-driven, so whether they see a positive outcome coming out of some solution, then they'll only pick up onto it and push forward with more innovative solutions as well. I think the external environment can influence working styles within a business as well, both internally and externally as well, so it could be innovative solutions within a business and just its internal business policies, for example, HR and just general management and those kinds of things; or it could be how we work with external factors such as our customers and sales and those things as well, so it can be applicable to both too. So, the external environment that we work in also influences how much we innovate too; generally, the perception in the public is that customers are becoming more digital and becoming more tech-savvy. So, with older type businesses that aren't so tech-savvy, they're forced to transform and pick up new solutions and become more innovative with the offerings to stay competitive too." - (Participant 2)*

The data shows that technology and customer behaviour are changing rapidly in the current environment and businesses are being forced to be adaptable and flexible; a perfect example of this is the COVID-19 pandemic, along with how businesses have had to adapt to the current situation and status quo. The COVID-19 pandemic and external pressure have forced the adoption of specific technologies, which may or may not have previously existed. This shows the impact of an external event and how it can change the structures of 'legitimation' or norms within an organisation.

> *"I'd use COVID-19 as an example, and people being forced to work from home and forced to work remotely. I think that it has forced organisations, whether they wanted to or not to adapt to it. And the technology is available for them to utilise, which is quite nice, but I don't think it was necessarily the technology that led to the adoption. I think it was external pressure that led to the adoption, but the technology was easily consumable within the market, and because the technology is available and easily consumable it has changed the way that lots of organisations have worked." - (Participant 6)*

A study by Shklovski et al., (2010) around the forced adoption of technology in the aftermath of Hurricane Katrina in New Orleans, also shows that catastrophic events can lead to the forced adoption of technologies. The COVID-19 pandemic is a catastrophic world event, and as per the research, many organisations and people are being forced to use specific technologies to connect with one another in the absence of face to face interaction; this shows how an event in the 'external' environment is impacting both 'human agents' as well as 'technology' and the 'institutional properties' of the organisation. It should be noted that at the time of writing this thesis, South Africa has seen a national lockdown and implemented multiple social distancing measures to avoid further spread of the disease.

Participant 4 argues that when innovations are introduced, both internally and externally, organisations should continuously be analysing the effectiveness, along with their strategic and operating models. An innovation and strategy that is effective today could change in a matter of days, weeks or years; as participant 4 reveals with the example of Fuji Film and Kodak below, while

these organisations were market leaders, they potentially failed to recognise newer innovations and technologies and later lost revenue and market position to the digital camera industry.

> *"… from a strategic point of view; strategy is going from a particular point, A to D, and how we get there is probably what are defined as tactics to be employed; and I suppose if we don't allow for innovation to occur, you know the different kind of innovations that might come through, or even the ideas, they can change the strategy… I think it can drive the direction of where organisations maybe should be moving toward in a specific field. I mean if we maybe take an example where, a company is very innovative in maybe the mobile and app scene, and it might be the leader in terms of that, but if you don't continuously innovate or come up with reviewed processes, the strategy is going to be the same and what you'll find is that, maybe the company's progress or the future will be slowed down and kind of halted. So maybe one example that comes to mind is Fuji Film and Kodak, so you know very innovative in terms of having a camera, that uses film and it was very innovative at the time to the extent where they developed an innovation to say, here's a digital camera and I suppose that at the time the strategy was all-around normal cameras and they were the market leader. So, there was no need to review that strategy, but I suppose hindsight in 2020 when we look back now, Kodak and Fujifilm were left behind in terms of the digital camera aspect. And so, those little innovations that come through within an innovative company should drive the strategy to be different, to then take that risk to say that 'yes, we've developed this excellent product, but this is now maybe the new way of doing things for our customers'. I think that's one example that comes to mind of a company not changing or evolving its institutional properties." - (Participant 4)*

Digital transformation within industry, as well as changes in the 'external' environment, are shaping the strategy of existing organisations and the way they operate both now and in the future.

> *"… I think the external environment influences the strategy of organisations. If I think about our organisation, for example, we are going very much digital, internally as well as externally and I think it has a very big effect on the way we do things and how we think about the future. It also definitely affects the strategy of our business as well." - (Participant 9)*

The data shows that organisations should be aware of whether or not customers are ready to adopt newer technologies and processes.

> *"So, it's all well and good that you want to push out incredible product offerings through using technology. But if you have a customer base that's not really keen on using these new processes and channels then it's going to fail." - (Participant 5)*

Innovation and strategy should evolve constantly with both internal reflections as well as external as to where the market currently is and potentially should be going (Ortt & van der Duin, 2008). As Ortt And van der Duin (2008) argue, innovation has evolved drastically and there is a need for 'contextual innovation', which means that the practices, decisions and strategy need to also be adapted constantly; this approach is labelled as a 'contingency approach' to innovation management, where innovation is adapted to the specific needs, societal context, specific business context and emerging mainstream practice within innovation management.

The research shows that 'innovation' within the 'external' environment through technological advancement and competitive pressure has already forced banks to create new products and

services as well as consider the price of existing products to cater to customers at all levels. This type of innovation has massive benefits to customers as utilising technological solutions often drives down the price of these products and services, customers are the ones that ultimately benefit from this change (Gomber et al., 2018). Based on the data, the researcher posits that should the 'external' environment have an impact on the 'internal' environment of the organisation and lead to it creating newer innovations, technologies or products, then the 'internal' environment of the organisation will also in-turn have an impact on the 'external' environment i.e. there is a form of 'duality' present. The data shows that the 'internal' environment of the organisation is also a key driver of competitive pressure, market structures and customer behaviour in the 'external' environment. Organisations who choose to be more digitally savvy or who choose to replicate the services of Fintech will have an impact on the entire market and hence the 'internal' environment will also impact on the 'external' environment.

> *"Fintech have influenced us already to a point where we started to come up with products that cater for different types of customers, to try help customers as early as possible in their life cycle. So, without having Fintech, I think pushing through to have a product that caters for that specific type of customer, that product wouldn't have been possible without the existence of the Fintech firms, and that has done us wonders as well." - (Participant 12)*

> *"I think the fact that we're changing our strategy and we're changing our culture to be more digital and more aligned to what the Fintech are doing, I think it's a bit of a threat to them because we've already got the bigger market share and because we've got the trusted name that's already out there, so I think if we can change as rapidly as they do and innovate as rapidly as they do, then we're definitely going to be a bigger threat to them." - (Participant 1)*

The data shows that solutions delivered within the existing financial services landscape are heavily influenced by competitors and what they currently offer. Participants believe that innovation is not always new ideas but includes whoever can execute on a solution the best. The research shows that Fintech is causing disruption within banks as it is forcing them to constantly be agile regarding releases and technological advances emerging from 'competitive pressure', including Fintech. Newer technologies are influencing 'customer behaviour', as they have made it much easier to switch between organisations and solutions.

> *"[T]he solutions we implement in our spaces are very influenced by competitors and the solutions that they offer as well. So, a great deal of the solutions released are not only just new, or brand-new solutions, but it's whoever can do a certain process better. And I think with the launch of all these new Fintech, banks and all financial institutions have to be on their feet and have to be constantly innovating internally as well to remain competitive to customers… because customers are always looking for more, better and more innovative solutions. It's just become so much easier for customers to switch between organisations like this tomorrow. So, our customer could switch to another bank overnight, or just with a couple of clicks as well. So, I think it forced us to become more innovative and always be on our feet, and always be thinking, always be forced to question why we do things the way we do and always try to find optimisation opportunities within our business process as well." - (Participant 2)*

Participants believe that Fintech are challenging existing institutions, as they may have been resting on the products and solutions they had or previously offered or had been making small incremental

changes to them. Fintech are finding better solutions, often at lower costs than established institutions, and it is challenging the entire market ecosystem regarding the speed of implementation as well as the cost of products and services.

> *"I think we also find ourselves right in the middle if you think about the new entrants that are coming into the market; stuff that's always been around I guess for some time now but are now starting to make inroads on how we're definitely just operating as financial services… previously no one was ever challenging how you were doing things, and how you choose to do things. But there are those institutions now, those Fintech firms that are finding better ways of doing things, at a cheaper cost. Which does nothing but challenge the financial institutions that have been around for so long, and how they tend to do things, and at what cost they're doing things." - (Participant 3)*

While banks and existing providers may have potentially had these innovative ideas and solutions, Fintech has driven the speed of innovation within financial services at a pace never seen before. Not only do banks need to be concerned with internal systems and processes, they also need to keep a close eye on the 'external' environment in terms of changes to regulation, technological advancement, partnerships, as well as movements and partnerships of key players. While the overall strategy may not have changed, the speed of implementation has increased, and it has come to a point where organisations need to adapt, or they will soon find themselves being left behind. Based on the response from participant 3, while the 'institutional properties' may not have changed drastically in terms of the organisation's strategy, this could be unique to the case context and organisation in question as they are assumed to be a very technologically savvy and innovative organisation. For an organisation that was potentially not focussing very much on innovation and technological advancement, the effect and impact of Fintech may be more severe. As the 'external' environment impacts on the 'internal' environment and established FSPs begin to execute on innovation and technology faster, the 'internal' environment will have an impact on the 'external' environment as newer products and services may be introduced for customers which will also spur on competitive pressure in the 'external' environment.

> *"I think with our organisation it hasn't changed the core strategy; what has changed is the speed at which things need to be implemented. So, a lot of the innovations and ideas had been one of those on the pipeline, on a road map somewhere, you know someone was thinking about it. But we're at a point where, now, things need to be implemented, to the point where it's adapt or die, so it's all good and well to have all these great ideas, but what purpose are they going to serve if you're not going to implement them? So, I think for us it's literally been that it's just the go, go, go…. do, do, do, but the overall strategy for us hasn't necessarily changed. I think we've been very pro-innovation, very pro making use of the best technology that's out there and just improving on what we already have. But I guess it's just forced us to fast-track some of the things that had already been on the pipeline in terms of getting them done." - (Participant 3)*

> *"Fintech has driven the speed of innovation and technology within financial services. It has flipped the industry on its head." - (Participant 7)*

The research shows that FSPs have been doing things in the same manner for years with minimal change to how they offer solutions; this is also argued by (Gozman et al., 2018) who refer to established FSPs as incumbents. Fintech have disrupted the financial services sector both

operationally and strategically in how solutions are delivered to customers (Gomber et al., 2018). Newer technologies have allowed customers to switch between products and service providers a lot more seamlessly in recent years, which has encouraged competition within the market (Gomber et al., 2018; Gozman et al., 2018). The research shows that Fintech is forcing banks to relook their entire ecosystems, it is forcing them to reassess their entire strategic and operating model; it is forcing banks to be more innovative, offering new solutions through different mechanisms, and to continuously think of new ways of delivering products and services along with optimising existing business processes. The required speed of innovation for established FSPs and the established financial sector has increased due to the introduction of innovative solutions, products and services being offered by Fintech players. For those organisations that may already be innovative, while it might not change their direct strategy, it has changed the speed at which they implement that strategy, though this could be unique to the context and case in question. The 'external' environment is having a drastic impact on the 'internal' environment by driving the speed of innovation and technology. Change within the 'internal' environment will have a corresponding impact on the 'external' environment including new and emerging innovation and technology offered to customers, which will cause competitive pressure for other organisations and both influence and shape market structures. Consider for example, that Delta Bank now introduces three new technologically advanced products within 3 months, something that would normally have taken three years to execute on; this puts significant pressure on competitors within the external environment as they now potentially have to put forth new products and services to remain competitive; it will also impact the consumers of these new products as well as potentially newer innovation and technology.

The research shows that while Fintech are creating products and services to compete within the existing financial services landscape, simply looking at them as competitors is too broad a view. Fintech and banks can and are already leveraging off each other to combine their products and services and offer compelling solutions together, creating a mutually beneficial relationship (Gozman et al., 2018). Fintech can also be used to enable the products and services offered by traditional banks and open up potentially new markets to banks. Participants believe that looking at Fintech with a narrow lens and stating that they would merely be competitors is the wrong approach. Fintech can be enablers for traditional banks, and partnerships are something that would allow them to simplify their existing solutions or provide them access to new markets (Gozman et al., 2018).

> *"I guess you can see them as competitors, but I would rather refer to them as potential enablers. So, I think traditional banks need to take advantage of Fintech, in simplifying their technologies and platforms. Yeah, I don't like to think of it as something that would disable banks or a competitor, I think we need to look at it differently and think of them as enablers, to open up new markets for us and potentially partners as well, I think that they could help a lot in simplifying our platforms processes." - (Participant 9)*

Fintech are providing some very innovative solutions that can be leveraged off by existing banks, however, it is also heavily dependent on the underlying model and strategy of the Fintech i.e. whether they are offering services B2C or B2B. B2B solutions are created with the idea of supplying products and services directly to existing larger institutions like banks while going with a B2C strategy would mean you are competing for the same customers.

> *"I think Fintech as a concept is too broad to say that Fintech are competitors to the bank, I think some Fintech are competitors and I think some Fintech do provide really cool solutions and tools that are going to be utilised by banks; it depends on the underlying model of the Fintech, whether they are B2C or B2B, a lot of Fintech are creating solutions for banks and large corporates versus some Fintech are trying to specifically compete with the banks." - (Participant 6)*

While Fintech are offering services using digital technologies, participants believe that the current face to face interaction within branch banking environments is something that cannot be done away with. Gomber et al. (2018) argue that there is a strong business case for moving from traditional branch banking environments to a digital platform as it offers multiple cost efficiencies. While there is a strong business case to going digital, participants believe that the branch banking model is not going to become obsolete anytime soon, even during the current pandemic; the researcher believes that this is strongly related to the contextual environment and South African financial services landscape. That said, the data shows that traditional banks may not be investing in newer technologies that Fintech are such as artificial intelligence or cloud technologies, and they could very much benefit mutually from partnerships by utilising the type of products and solutions offered by each other.

> *"So obviously Fintech won't have everything… there won't be branches, for example, certain services won't be there, which are still needed right now. I don't think we can do away with branches or human interaction, so they would probably outsource the services from traditional banks and then in terms of banks leveraging off Fintech, I think they probably would… because if I'm not mistaken, they use a lot of like cloud systems and they have different ways of processing and they're probably moving into the whole AI space; which banks might not invest in at this point in time, but they might leverage off the software or the systems, or the codes that have been used in that space. So, you might find there might be some interoperable operations going on there between banks and Fintech." - (Participant 11)*

Another consequence of the potential relationship is that existing banks could buy the solutions of these Fintech providers and thus absorb them back into the traditional financial system through the bank. The data shows that the more Fintech players disrupt, the more they are potentially going to be identified by traditional banks and possibly bought out to bolster the offering of existing banks.

> *"Some banks have already started to buy these Fintech; and then instead of developing the new service on their existing rails, they would then buy that Fintech that's disrupting them, or that shows potential to grow, so they're buying them and putting them back into the normal or conventional financial services provider side of things. So, the more they disrupt the more they're going to get identified and some of them will be absorbed into formal banking, to bolster or improve the offerings of the different banks. So, they are on both sides, the more they disrupt the more they get noticed, the more they get noticed… if they do have the financial muscle to stand on their own, they can, but most likely if the bank approaches you, you're going to sell." - (Participant 12)*

The possible relationship between Fintech and banks is creating an emergent business model within the financial services sector. Banks and Fintech players could consider to 'partner', 'buy', or 'compete' with each other. Should they choose to compete, the bank would either need to offer

similar products and services to the Fintech or choose to ignore them completely. In buying or partnering with the Fintech, there is potential for the Fintech to become completely absorbed into the bank. While this is an emergent finding within Fintech literature, the researcher does recognise the relation to the concept of newer business models to enable open innovation. Open innovation requires collaboration with external partners in order to enhance an organisation's business model (Saebi & Foss, 2015). Saebi And Foss (2015) argue that open innovation and business model approaches have been linked to increased organisational performance and that creating an environment of collaboration could benefit both organisations. The relationships identified by the research are very much aligned to those identified by Rizvi et al. (2018) in terms of partnerships, though their study does not articulate all of the types of relationships and their potential impact. The 'partner', 'buy' or 'compete' model within Fintech literature can enable organisations to use an open innovation approach to identify relationships and business models.

Participant 5 provides an example of South African Banks as well as international banks that have already leveraged off of 'partner' and 'buy' relationships with a Fintech company instead of building these solutions themselves.

> *"South African banks are definitely leveraging off these solutions. A few years ago, I think it was Zeta Bank (pseudonym) who bought Ice Telco (pseudonym). But I think Ice Telco went under a few months later, so that was a bust for them. But Gamma Bank (pseudonym) recently merged with Xi Fintech (pseudonym), which is a Fintech company, so basically offering Financial Product C (pseudonym), to their business customers at the point of sale. And I know Theta Bank (pseudonym) is also trying to push out something very similar in their product space as well. So, banks are definitely leveraging or acquiring these organisations to fulfil that particular need rather than building it themselves." - (Participant 5)*

Participant 5 provides a further example of how competition is starting to cut across industries and how it may be forcing banks to respond.

> *"Psi Telco (pseudonym) is starting to do business lending and Pi Vehicle Finance (pseudonym) is doing personal loans. So, I mean these guys have years and years of experience so in that instance I don't see a partnership playing out. I think it's more; these organisations are changing and adapting to the current climate and environment, and they're going to come for our lunch. So, in that sense, we need to respond rather than partner." - (Participant 5)*

As the research shows, the relationships identified within this chapter, may not necessarily be unique only to the South African context. Multiple international examples of Fintech and banking partnerships are shown by Munro (2020), for example, Bank of America partnering with Zella, or the Bank of Montreal partnering with Blend, to name a few.

The data shows that Fintech has forced some banks to take an inward and honest look at how they are doing business. Those banking institutions that have not taken Fintech as well as newer financial technologies seriously or paid careful attention to the current ongoings within this market should carefully consider what they will do next; should they choose to ignore the current disruption and change being brought about within the financial services sector, then exiting the market could become a very harsh reality for some of the existing players.

> *"Fintech has forced us to look inward and introspectively to say, 'How can we make things cheaper? Or how can we facilitate things better?' So, it has to change the strategy and if it*

doesn't, then we must accept that we cannot play a major role in the industry. So, from what I've seen in my current position and in previous organisations, it has a major impact on strategy, and I think time will tell to say to investors that… are we cost-efficient and we are providing those returns as well as solutioning for society. And my gut feel is that if that doesn't come through, then the very real prospect of saying that we exited the market can become a reality. To say that we're no longer playing in that role has a very direct impact on the strategy of the business as we move forward." - (Participant 4)

While the context of this study is on the financial services industry, digital disruption is something that all organisations and industries are facing. The COVID-19 pandemic has accelerated the need for digital services and growth, and organisations need to have a clear path as to how they will be utilising digital technologies for years to come, else they may very well become obsolete.

"I think clothing, and food industries specifically, or just shopping in general has definitely been affected. I think we've seen that again with COVID, a lot of people doing more, or being forced to use more online services and fewer feet through the door. So, I mean, unless you can adjust and have a user-friendly website, and you can have the products or stock and those type of things available, then you're going to be falling behind." - (Participant 1)

Based on the data and reflecting upon the Structurational Framework of Fintech and FSPs as well as the Structurational Model of Technology, the researcher believes that based on the research output and findings that the 'external' environment can be expanded on to include the following concepts: 'customer behaviour', 'external innovation', 'external technology', 'external' events like the COVID-19 pandemic, and 'competitive pressure'. Each of the aforementioned concepts form a part of the 'external' environment and will have an impact on the 'internal' environment of the organisation and vice versa.

5.3.2.1 Assessing the relationships that may exist between banks & the different types of Fintech players

The research supports the relationships suggested by the literature on the topic of Fintech in that banks and FSPs could either 'partner', 'buy' or 'compete' with Fintech firms, although a key gap identified by the researcher is that current research views Fintech players with too broad a lens. The researcher seeks to examine whether different relationships exist between different sizes and types of Fintech players, these are SMEs, Unicorns, GAFA's, and Cross-Industry Convergents. The relationship between banks and each type of Fintech is examined in this section. It should be noted that while any type of relationship could potentially occur between Fintech and banks, participant perceptions around those relationships that could potentially occur are explored within the research.

5.3.2.1.1 SMEs (Small to Medium Enterprises)

The research shows that banks are likely to consider all three relationships with SMEs, including 'partner', 'buy' or 'compete'; many local banks have already introduced new products and technologies in order to directly compete with Fintech SMEs, and there have already been several partnerships, acquisitions and investments by banks within Fintech SMEs in South Africa. Participant 5 provides very specific examples of both local and international relationships between Fintech and banks. Fintech are also more likely to be partnering up or merging with banks as larger banking players offer the opportunity of immediate scale, access to a large customer base, and allows the Fintech access to a potentially trusted brand name and association.

"I think a Fintech SME would definitely change the way banks typically do business. So again, to go back to our Delta Bank example I mean, we've now implemented Financial Product T (pseudonym). So yeah, I think it changes the way that banks traditionally do business because if you think of the banking sector, the word tradition is so heavily embedded in every aspect of its business. Using Marcus as an example, I mean Goldman Sachs is an old traditional company; they've responded to the way they do business by embedding this entire Fintech department into their existing banking system. So, I do think it's really great for competition, I think a merger or a harmonious relationship between Fintech and banks would actually bring out the best for everyone. I see all three types of relationships materialising, it's great for competition, it brings in much more foot traffic if that particular SME has an existing solid customer base; so, a partnership would work well there too. I mean banking customers could also use the SMEs platforms, and if you're big enough to acquire an SME with a great reputation and great product offering, why not? So, it's definitely all three relationships between banks and SMEs." - (Participant 5)

Participants believe that funding is often a stumbling block for Fintech SMEs; while they offer industry-disrupting, innovative, and technology-driven financial products, they are unable to compete with larger established FSPs due to lack of funding and capital held. Though if Fintech SMEs are able to compete and have the resourcing and funding to scale their businesses, they can become a very real threat to existing FSPs. That said as per section 2.6 Fintech Insights, funding within Fintech is growing year on year without signs of slowing. Participant 6 provides multiple examples of the different types of relationships between banks and Fintech SMEs that have already come into play.

"SMEs definitely seem to be the most exciting in terms of their innovation and technology that they're delivering, and they have very much an approach of, they want to do business wherever they can because they tend to be very small and nimble and can easily pivot between different business models. So, I'll give an example of an international Fintech, Cabbage who started off as directed consumer selling loans, they have now partnered up with the big banks in order to process the lending piece on their behalf. Similarly, in South Africa, Zeta Bank (pseudonym) and Mu Fintech (pseudonym), Zeta Bank purchased significant shareholding within Mu Fintech to get access to the underlying technology, to see how they can use and leverage that within their existing customer base. And I think a lot of these Fintech in terms of access to capital are excited to partner up with whomever they can, and wherever they can identify market opportunities. So, a lot of them have tried competing directly with banks, and I think the ones that compete directly with banks have also typically been quite happy to engage with the banks in terms of a partnership as they understand that their market opportunities might be limited. They can get access to more customers, they can get access to a trusted brand name, and it might be a short-lived partnership, it might be a more long-term strategic partnership, and I think there is obviously some Fintech which have created… you could almost call it banking or financial services software specifically, and that they'd always partner up and sell almost like a customer relationship, or a customer-supplier relationship; except where some of the banks do have investment capabilities within the organisation *to purchase shareholding and partner up with them internally. And that's definitely happened before with many of the big banks where they've purchased some of these SMEs and have purchased significant shareholding within those SMEs so that they've*

got a controlling stake within them, using this in order to leverage their technology internally wherever possible." - (Participant 6)

Participants believe that the relationships likely to occur with SMEs are to 'partner', 'buy' and 'compete'.

5.3.2.1.2 Google, Apple, Facebook, Amazon (GAFAs)

The research shows that GAFAs are already organisations that have a worldwide reach with billions of people utilising their products and services; they have capital reserves to last them for years to come and are diversifying their products on an almost daily basis. Multiple participants discussed that GAFAs have tended to steer clear of direct-to-consumer type business models in markets like Africa, rather opting for partnerships potentially either due to the regulation within that market, or the complexity of establishing a physical presence within those countries; the example given by participant 6 is that of Apple's credit card solution. Participant 6 argues that GAFAs usually dominate negotiation proceedings due to the amount of power and influence they have and usually have a 'take it or leave it' type attitude.

"I think when a Fintech is of a large enough size, they don't necessarily want to go directly to customers, and you can see that with most of those big technology providers and you can call them Fintech if you want, the Microsoft's, Facebook's, Google's, Apple's; they typically aren't going direct to consumer in the different markets. They've tended to approach some markets like Africa with very much a partnering relationship; so Microsoft doesn't want to create the underlying support structure in terms of sales and after product support to sell directly to customers, so they would rather partner up with big corporates to resell their products on their behalf, almost as like a licensing agreement, and you could say the same thing has happened with Apple's credit card where they haven't specifically gone direct to consumer; they'd rather partner up with banks and utilised their infrastructure than developing that massive support infrastructure in-country. I think because of the nature of those organisation in terms of corporate negotiations, it's always the ones with more power and I guess ***power*** *is the best way to describe it; the ones with more power and influence possibly, tend to dominate negotiation proceedings and it's kind of a take it or leave it situation." - (Participant 6)*

Multiple participants also believe that GAFAs are strong competition and have already offered multiple innovative financial technologies like Apple and Google Pay. While the technologies these organisations offer are exciting and innovative, banks should also be wary of GAFAs as they could enter a market and completely dominate due to the resources they have. That said, cross-border banking licenses may not be available, which deters GAFAs from starting banks or entering financial services within these countries. The relationship here is very much 'partner' or 'compete' though initially the stance taken by GAFAs would be to partner and create innovative technologies that can be utilised by banks.

"GAFAs are definitely competition, I mean they've got billions in funding, so they could actually change the way we as consumers do financial services. I mean the Google Pay service is a form of Fintech; most of us use it because it's embedded into our phones and that's what we use like 90% of the day if you think about it. In a sense, we've already partnered with them for Google Pay and Apple Pay. I think we should be careful of that because of the partnerships there. What if they decide to enter into a full-on banking solution

within the country? I think we need to be careful, yes, but I don't think we've got cross-border banking licenses just yet. Each country has specific banking licences suited for their particular policies; so definitely not now, but policies change, policies never stay the same. So, if an international online policy could come about, then we're in trouble. But for the next few years, I think partnering with these organisations would be great, but definitely, they're a massive threat." - (Participant 5)

Participants believe that banks are likely to either 'partner' or 'compete' with GAFAs. Buying them out is not an option as GAFAs are organisations that are worth way more in market share than the banks themselves. The researcher believes that regulators should be extremely wary of GAFAs and keep strict regulation as these organisations may dominate local economies which could potentially impact negatively on their GDP as GAFAs currently exist in different countries, for example, the USA.

5.3.2.1.3 Unicorns

As Fintech grow they begin to look a lot like conventional banks in terms of their product offerings; traditional banks and Unicorns then begin to fight over winning the same customers (Rizvi et al., 2018). The research shows that banks are more likely to directly 'compete' with Unicorns, making partnerships and buy out potentially unrealistic and less likely to happen than with an SME. Participant 10 provides an example of how this competition with Unicorns is already playing out within the industry.

"… I think Unicorns are 100% a competitor, I don't think that there is any other relationship. Once they've gotten to that stage, there's no benefit in the Nu Fintech (pseudonym) or for the, you know massive Fintech to actually partner with banks, they only have a losing relationship. I mean what they could do is they could either partner with a like-sized bank, for instance, a Tau Bank (pseudonym); I'm just throwing out an example, so I mean it's a similar-sized company, they don't have a solution in the market. So, for them to have a partnership agreement or even amalgamate into a single company that might give Nu Fintech the advantage. But I don't think that Nu Fintech would ever partner with a bank that has an XYZ type solution (pseudonym) in place as they only can lose." - (Participant 10)

Participants believe that Unicorns are organisations that have built up good capital reserves, making it potentially easier for them to capture different markets. Unicorns have also managed to steer clear of regulation thus far, and the researcher believes that this is something that should be monitored extremely closely by the regulator, as these organisations are more likely to disrupt the market faster than other players and the 'Dark Side of Fintech' may loom sooner than expected.

"I see those guys starting to encroach on our side as your formal banks, maybe starting to do a bit of ABC Services (pseudonym). Yeah, so up until now, they haven't really played the other side for ABC Services (pseudonym). They have also managed to steer clear of regulation thus far. But I think once they start becoming a billion and billions of Rand type of business, I think they're going to start coming in to play in the ABC Services (pseudonym) space; so, I do see them starting to encroach on established banks." - (Participant 12)

Participants believe that the relationships likely to occur with Unicorns is pure competition.

5.3.2.1.4 Cross-Industry Convergents

The research shows that cross-industry convergence is becoming a very real concept for modern organisations in South Africa. While some organisations are looking at expanding into the financial

services sphere or banking, other organisations are also looking into industries like telecommunications, insurance and food and beverage. From an industry perspective, participants believe that Cross-Industry Convergents are seen more as competitors as they are already established brands with large capital reserves, who already have vast knowledge along with an existing customer base to sell their products onto. There would be very little point for an existing bank to partner or buy these organisations. If Cross-Industry Convergents move into the banking environment and it does not work out, they could always sell the solution and intellectual property as well as customer base to an existing bank as they have strong capital reserves to fall back on.

> *"So cross-industry players are a good position that they're currently successfully established in their existing business so that they can try to take on a new market segment; so for the likes of Omega Insurance (pseudonym) I mean they've always had financial solutions, but they never had an XYZ Solution (pseudonym) until recently, so I mean they didn't have legacy systems to rely on; they went out and they built from the ground up, and I think that was a very good approach for them to get a brand new XYZ System (pseudonym) to enable them to respond to any Fintech or even incumbent. I think they're in a very good position to be an established player in the future. I think they're 100% competition, I mean it's already an established corporate, they're trying to gain market share in a new market segment; so, I don't think that there would be any buyout or any partnering. I mean if they have an established business and they see that it's not profitable, they might be in a position to sell their intellectual property and the customers to a different bank. But I think it's going to be under a business failure scenario, not as something to gain, I mean they already have strong capital that they can fall back onto to make their solution profitable." - (Participant 10)*

The research shows that while Cross-Industry Convergents can make up ground in financial services, they should also be wary of banks, as banks could just as easily move into their industries and environments to offer products and services. Industry lines are becoming extremely blurred in the digital age and modern organisations are leveraging their brands to become a comprehensive provider of multiple products, driving these using specific data input (Accenture, 2020). Accenture (2020) argues that cross-industry convergence and unlocking new revenue opportunities in other industries is a key driver for South African organisations.

> *"… they can disrupt as much as they want until one of the big banks go in and says, 'I'm going to play in your space as well and compete within your market' as some banks have done already (Theta bank, for example, has moved into the telecommunications space and partnered up with Ice Telco). So, I don't see it stopping with one product, I think the only thing that's missing now is for banks to start selling food because the lines are becoming extremely blurred on who can do what. So, to me, it looks like organisations are going to start being like a one-stop shop where you get everything with one organisation. And all of this is driven by them having enough information about you." - (Participant 10)*

While organisations may move into multiple industries, competition becomes less of a product play and organisations start to leverage their strong brands and begin to compete on sentiments like brand power and integrity.

> *"Yeah, so you still have to become competitive… maybe then competition would be on the sentimental stuff that this brand holds, more power or integrity in the community than the other, but the service itself will become normalised or equalised." - (Participant 12)*

Banks should also be mindful of the cross-industry players they partner with; as per the example provided by Participant 1; Ice Telco utilised Zeta Banks technologies to offer products and services until they got to a point where they could do it themselves; they then began competing with Zeta Bank for the same customers using their own products.

> *"I mean we could see it when Ice Telco did partner up with Zeta Bank for a while with Financial Product D (pseudonym) and they used the platform and services to sell Financial Products (pseudonym) until they got to a point where they could manage it themselves and then pulled out. So, I think to a point and [un]til they can reach a certain point where they feel comfortable and they can do it better by themselves or cheaper. They could lean on the bank for a partnership, but in this example, they pulled out, and now they are doing their own thing and are doing it successfully." - (Participant 1)*

Participants believe that the relationships likely to occur with Cross-Industry Convergents is to 'compete', or 'partner'. Though based on the responses from participants, banks should be wary of partnerships as if a Cross-Industry Convergent's Fintech business becomes large enough, they could decouple this relationship and compete with the bank on similar products and services which the bank helped them grow.

5.3.2.2 Key Considerations around potential relationships between Fintech & Banks

The research shows that a relationship between Fintech and banks could be mutually beneficial for both organisations. Should these relationships materialise, there will be a constant interaction between the 'internal' environment of the bank and the 'external' environment.

The research shows that banking institutions have been around for many years, and they are now being forced to adapt processes that may have existed for just as long. The data shows that organisations, especially larger, older organisations that are able to adapt the quickest and launch a solution being first to market, can often have a competitive advantage over others. Participants argue that if organisations are not flexible in providing customers with a solution that might be wanted or needed at a specific point in time, then these organisations could potentially fall behind.

> *"I think we always refer to it as banks have hundreds of years of legacy… it's tough given you have so much history of using an existing business process and then now you're forced to adapt to new business processes sort of every six months because that's the way the world works. And that's how quickly it's moving onto newer innovative things out there in the market. So, whoever can adapt the quickest definitely has that edge and I think it's shown with several of our competitors as well; whoever can launch a solution first gets such an advantage over things in terms of capturing the market. I think time to market is quite a big one as well, especially with a bank. I think we may have identified a need early enough; you know we may have identified a need that we know customers want this type of solution and we've done all our research, and this is something we need to implement. But I think if you're not flexible enough to build something like that when it was needed by the customer during that time and you only get sort of a date two to three years from now; If you don't have that full end to end implementation on an innovation process… you know it's not just a matter of identifying the need and doing research, but it's a matter of also implementing and being first to market too. If you don't have that end-to-end process incorporating all those factors then yeah, it's not going to be effective." - (Participant 2)*

The data shows that banks are often perceived as older organisations that are set in their way of doing things, while Fintech are seen as younger, fresher organisations that are free to innovate under a different ruleset; one of the participants mention that Fintech owners in South Africa are generally male between the ages of 30 to 35, this is also confirmed by RMB (2021). In considering a relationship it is likely that banks would be the initiators and would want to keep the innovative mindset of the Fintech, while also utilising their products and services, though not hindering on the delivery of innovation should the bank decide to 'partner', 'buy' or 'compete' with them. Participants believe that it would be beneficial to only partially absorb a Fintech when making purchase decisions, as based on the criteria mentioned it would allow them to almost walk that fine line between innovating constantly, while also staying within the bounds of regulation. These are specific considerations for when the 'internal' environment of the bank starts to interact with the 'external' environment.

> *"Yeah, so banks are seen as these brick wall organisations that are normally headed up by suits, that dictate policy and protocol; where Fintech are seen as much more relaxed and definitely younger, I mean the average age of a Fintech owner is like 30 in South Africa… Fintech owners are predominantly male 30 to 35, I mean these guys are just young entrepreneurs looking to solve a need in the market. So, Fintech being acquired by banks could change the way they do business unless they still operate under a different ruleset; so, they're not basically absorbed by the bank to become just another division, but they're seen as, like a second-hand enabler or partner to the bank. So, if Fintech could hold onto that, it would actually help, it would be beneficial for them to actually not be fully absorbed but be a separate entity who has their own culture in a way and basically leverage off some of the banking capability. If they stay separate, they would still have that innovative mindset, where they're not really governed by banking policy; so they could come up with cool new ideas and ways to do business, and then that merger between them and the banks could actually help because banks have a larger customer footprint within South Africa; whereas these guys are very young, and* ***trust*** *could play a part there, so customers might not want to trust them. But if you could merge both those worlds together, I think it would have an amazing impact on the country itself." - (Participant 5)*

The research shows that in considering a relationship between them, the bank is looking to utilise the technology and newer services of the Fintech, while the Fintech wants access to the prestige, history, larger customer base and trusted brand that the bank has spent potentially hundreds of years building.

> *"I think it might have more impact on the underlying bank that the partnership is being done, because the Fintech wants access to, the prestige, history, and* ***trust*** *of that brand, typically in terms of the big bank. And the bank, in terms of the relationship wants access to this new technology stack, and it makes sense to work with each other for as long as possible."* - (Participant 6)

Considering the organisational structures to potentially put in place should be a carefully planned exercise as there are many nuances at play. The research has shown that you do not want a Fintech to lose that innovative culture when relationship agreements are drawn up and decided as the moment you buy out the Fintech, they adopt the culture of the bank. These structural considerations need to be carefully thought out as the interaction between these two organisations

would be vital in delivering the most innovative and technological financial solutions. By their mere interaction the 'internal' environment of these organisations will have an impact on the 'external' environment as a partnership changes and potentially combines the products they offer to customers, this also changes the competitive landscape for all other stakeholders within the financial economy. This shows that the 'external' environment is shaping the 'internal' environment by forcing changes to the market structure, and the 'internal' environment is also impacting on the 'external' environment. Partnership agreements and how they are going to be written up are critical in order to maintain a sound strategic relationship for both organisations as the 'internal' environments of these organisations shape the 'external' environment, though should they decide to partner up, they will also shape each other in many ways.

> *"Yeah, I think it's going to depend on the organisational structures, it will have to be a very difficult or very carefully planned thing. So, the moment you buy them out fully they become fully employed, they're just going to adopt the culture of the bank. I don't think within the Fintech that you want; you want to keep that innovative culture that you've built as a start-up. So, I think it's going to be very dependent on how the partnership agreement actually is written up, and I think it's a very important thing that they need to keep in mind." - (Participant 10).*

From the research examined, the researcher believes that what is going to be vital in how these relationships play out, is the strategy of the bank in question along with its current approach to Fintech, as well as the Fintech's' approach and future strategy to potential relationships. Delta bank and the case in question clearly has a very well-defined strategy around the capabilities of what it wants to achieve in its future, and how Fintech plays into that strategy of 'partner', 'buy' or 'compete'. As participants have already mentioned, should a Fintech decide to offer solutions from Business to Consumer (B2C), they will already be challenging existing banks and effectively competing for the same customers; in such instance's banks may choose to compete and build these solutions in-house. Should Fintech decide to approach their strategy from a Business to Business (B2B) type of model, it would be more likely that 'partner' or 'buy' relationships would materialise. Critically important, however, is the context of all organisations within this ecosystem; each organisation needs to assess what each other does in terms of the business offering, strategy, where they are in terms of their maturity as a business, and what would make the most sense for each of those businesses at that point in time. Fintech may also struggle to gain the 'trust' of customers in South Africa, and as such, the brand behind the bank remains extremely strong when customers consider whose services to utilise (Accenture, 2020). Gomber et al. (2018) argue that Fintech are at a disadvantage here and can be held to the 'power' relations that the bank has; customers are not merely going to move all of their products and services away from banks because of cool new Fintech and technologies as there is a trusted relationship here that has materialised over several years. A part of the reason people put their hard-earned money into these established banking institutions is due to the regulatory environment and rules that govern them (Moloi, 2014).

The researcher believes that should Fintech players decide to offer their services on a B2C basis and compete directly with banks, they should have an extremely compelling solution and value proposition for their customers, as customers are not merely going to move away from banks overnight. While the GFC of 2008 had a severely negative impact on the world financial system, South African banks remain highly regarded and trusted financial service providers (Moloi, 2014),

though it should be noted that each country would be extremely context-specific regarding their banking and financial landscape.

While there are four main banks in South Africa, and more than 200 Fintech players according to NL4WorldBank (2019), participants believe that what we are going to see in the future are four main banks and a lot fewer Fintech players than there are currently, as a lot of these B2C type Fintech could become absorbed into one of the existing four banks. Banks are also going to start playing in other industries and competing within different markets to diversify revenue opportunities.

> *"So, with the SMEs, Unicorns, GAFAs, and Cross-Industry players coming into play; in essence, instead of having 4 main banks and a few Fintech, we're just going to have 4 main banks merging with Fintech and a few other players. So, I just think it makes the pool bigger, and it's very interesting to see how the different banks are going to try to compete in other spaces." - (Participant 11)*

The researcher believes that while the bigger banks are extremely stable in South Africa, they should not become complacent in the products and services they offer as there are a few Fintech firms that are really starting to make up ground within the South African market. NL4WorldBank (2019) shows how multiple Fintech firms in South Africa have already begun establishing a sound customers base that would have previously been customers of one of the big 4 banks.

An emergent theme that was brought up by multiple participants, is for banks to be extremely wary of multiple Fintech players either partnering with each other or with a smaller bank within the industry. Bigger banks need to be constantly on top of the 'external' environment and competitive pressure with regard to both new products and services, as well as the on-goings regarding partnerships, sale agreements and mergers between all financial services players, including other banks and Fintech. Becoming complacent within this new digital economy could potentially make you obsolete as an organisation.

Participant 5 provides the example of PayPal (who is a world-renowned American Fintech) buying multiple smaller organisations to compete within international markets outside of their operating zone. This sort of competition is something that banks need to pay close attention to.

> *"So, I know PayPal actually paid billions for smaller payment Fintechs, especially in Europe; they went on a massive buying spree where they literally just blew much money on buying these little organisations. And PayPal is a Fintech themselves, so again it's competition and it's something that banks need to start paying closer attention to." - (Participant 5)*

Another example provided by participant 7 is that if Nu Fintech (pseudonym) partners with another bank in South Africa, it can help that bank strengthen their product and position, though it is something that other banks will need to follow very closely.

> *"So, if Nu Fintech (pseudonym) partners with another bank; and our guys already have a Financial Product E (pseudonym) with Nu Fintech, they could then easily switch their Financial Product F (pseudonym) over to the bank that Nu Fintech partnered with. So, we need to keep our ear very close to the ground on those guys, we're always checking what they're doing." - (Participant 7)*

The research thus supports the relationships depicted by arrows (h) and (i) of the Structurational Framework of Fintech and FSPs. *Arrow (h) The external environment will have an impact on the*

internal environment; arrow (i) The internal environment will have an effect on the external environment. The research also supports that a 'duality' is present between the 'internal' environment and the 'external' environment. This answers the primary research question posed by this study: *What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?* found in section 1.3 Research Objectives & Research Questions.

5.4 Conclusion

This chapter presented the case narrative and research finding from this study which has explored the relationship between Fintech and Financial Service Providers in South Africa. The primary as well as secondary research questions were linked to specific themes and relationships that arose from the conceptual framework, around which each of the interview questions were formulated. Each of the sections within this chapter are organisation based on the key themes, relationships, concepts and questions formulated within the research instrument.

The next chapter provides a discussion and interpretation of the results gathered and highlights key points as well as recommendations where appropriate.

6. Discussion

The aim of this chapter is to provide a discussion of the research findings in relation to the research questions posed by this study and data gathered in the previous chapter. The theoretical framework, core research questions, fundamental relationships and key research findings are re-examined.

6.1 A reflection on the Theoretical Framework & Core Relationships

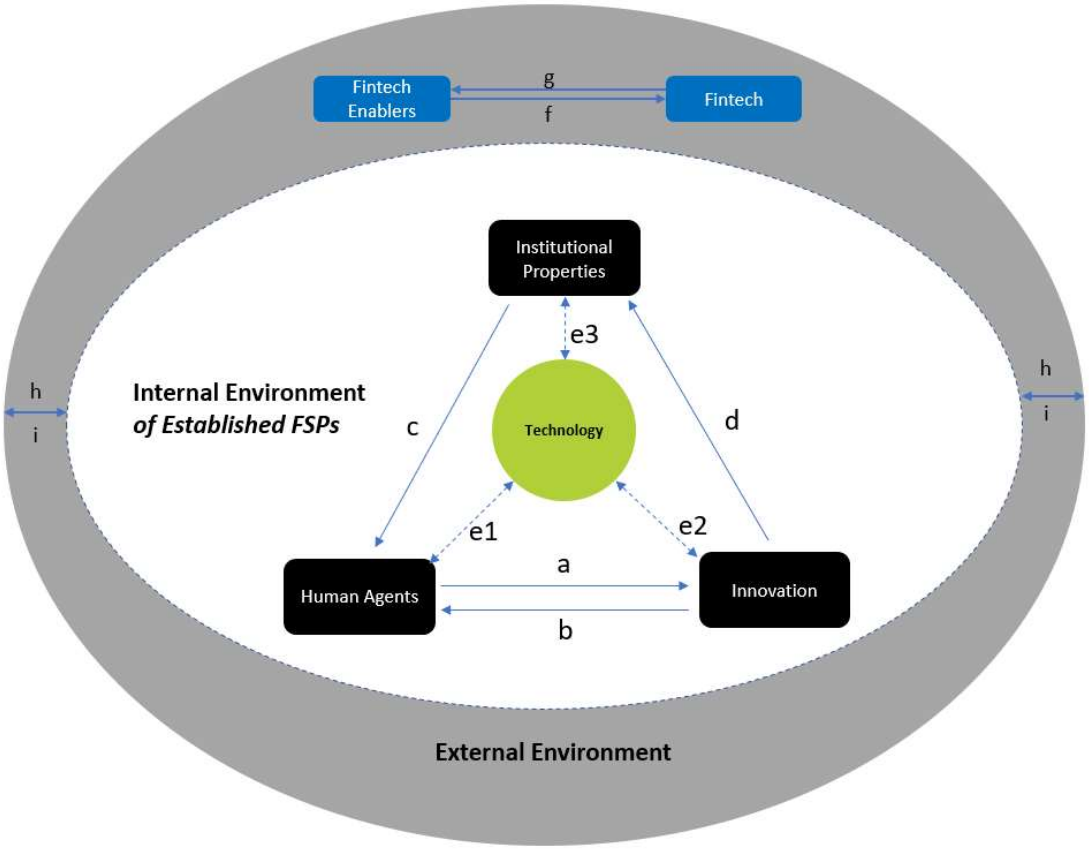


Figure 10: The Structurational Framework of Fintech and FSPs

Figure 10 above shows the original conceptual framework compiled for this study. The researcher believes based on the data collection and analysis, that the concepts depicted within the 'internal' environment remain as is, though multiple changes are proposed to the 'external' environment. The 'external' environment still consists of 'Fintech' and 'Fintech Enablers', though the following concepts should also be considered as a part of the 'external' environment:

- 'Customer behaviour'
- 'External innovation' as well as advances in external innovation and trends
- 'External technology' as well as advances in technology and trends
- 'Catastrophic events' like the COVID-19 pandemic
- 'Competitive pressure'

Each of these concepts depicted as a part of the 'external' environment will also have an impact on the 'internal' environment. These concepts will impact on the relationships depicted in arrows (h)

and (i) of the Structurational Framework of Fintech and FSPs; please refer to Figure 11: Revised Structurational Framework of Fintech and FSPs.

This study shows that the Duality of Technology Theory along with its core theoretical underpinnings of 'interpretive flexibility', 'duality', 'scope' and 'role' as well as the 'design mode' and 'use mode' are indeed useful in analysing the changing market structure within financial services. Utilising the core tenets put forward by Orlikowski (1992) as a theoretical base to compile the Structurational Framework of Fintech and FSPs allowed the researcher to thematically analyse the various relationships that may play out in this market evolution. The initial limitation put forward by Orlikowski (1992), is that the Structurational Model of Technology did not cater for newer business models. Orlikowski (1992) has been extended on in this research to include the concept of 'innovation', to position 'technology' as a central concept and to separate the 'internal' environment and 'external' environment in studying newer and emerging business models. By extending on the Structurational Model of Technology, the researcher was able to effectively study the change being brought about by Fintech within the financial services industry. Table 7 below depicts the fundamental relationships identified within the original conceptual framework, along with a description of the research results and data analysis from the case narrative. Not all research results are presented below, though those results that the researcher deemed to be critical findings are included. Table 7 covers all themes and relationships identified throughout the research process.

Arrow	Nature of Relationship
a	**Innovation is a product of human action in its design, implementation and use** The research has shown that 'innovation' is deeply rooted in social activity and is a product of 'human action' in its design, implementation and use. 'Innovation' is usually deliberate, well thought out, planned and executed and is the direct result of human action and social interaction between people and the organisation.
b	**Innovation also shapes human action within organisations** 'Innovation' is able to shape human action and the way human agents interact within the organisation. The research finds Orlikowski (1992) concepts of the 'design mode', and 'use mode' present in 'innovation'. The research also finds Orlikowski (1992) concepts of 'duality' and 'interpretive 'flexibility' present in 'innovation'. What could not be fully ascertained from the research is whether the 'interpretive flexibility' of innovation is limited or not.
c	**The institutional properties of firms will influence human agents in the process of innovation or innovating** The 'institutional properties' of the firm like the strategy, culture and organisational structures influence 'human agents' in the process of 'innovation' or innovating. The research finds that 'top management' is perceived to have the biggest influence in shaping the 'institutional properties' of the firm, which in turn influences 'human agents' in the process of 'innovation'. While Orlikowski (1992) concept 'scope' is present in innovation, the concept of 'role' cannot be extrapolated or logically applied to innovation.
d	**The interaction with innovation will influence the institutional properties of firms through reinforcing or transforming the structures of signification, legitimation and domination of that organisation** 'Human agents' interaction with 'innovation' will influence and transform the 'institutional properties' of the firm in many ways through the structures of signification, legitimation and domination within the organisation.
e	**Technology both shapes and is shaped by: human agents (e1); innovation (e2); and the institutional properties of a firm (e3)** 'Technology' both shapes and is shaped by 'human agents', 'innovation' and the 'institutional properties' of the firm. The research finds Orlikowski (1992) concepts 'duality', 'interpretive flexibility', 'scope' and 'role' present within technology. What could not be fully ascertained from the research, is whether the 'interpretive flexibility' of technology is limited or not.
f	**Fintech Enablers will have an effect on Fintech** The research finds that 'Fintech Enablers' like smartphones, the internet, and government and regulation have already had an effect on Fintech and will continue to into the future. The research shows that without advances in technology like smartphones and the internet, Fintech would potentially not exist and that these specific technologies have enabled future forms of innovation.

g	**Fintech will have an effect on Fintech Enablers** The research finds that 'Fintech' also has an effect on 'Fintech Enablers'. The formation of newer Fintech firms, as well as their advances in technology, influences newer technologies introduced into the market and will also potentially force the hand of government and regulatory bodies in the near future.
h	**The External environment will have an effect on the Internal Environment** The research shows that an intricate relationship exists within the 'internal' and 'external' environment of the organisation and that changes within either will directly affect the other i.e. there is a 'duality' between the two concepts. 'Fintech' and 'Fintech Enablers' will have an effect on the 'internal' environment of the firm and vice versa. Additional concepts like 'customer behaviour', 'external innovation', 'external technology', 'catastrophic events' and 'competitive pressure' will also have an effect on the 'internal' environment of the organisation in many ways.
i	**The Internal environment will have an effect on the External environment** The research shows that any changes to the 'internal' environment of the organisation also shapes the 'external' environment as it changes the overall landscape. For example, newer products and services introduced by Delta Bank will have an impact on, 'external innovation', 'external technology', 'competitive pressure' and 'customer behaviour', as well as potentially the current and future expectations of customers.

Table 7: Fundamental relationships in relation to the data analysis

Reflecting on the Structurational Framework of Fintech and FSPs post the data gathering and analysis the researcher has proposed multiple changes as discussed in the section above.

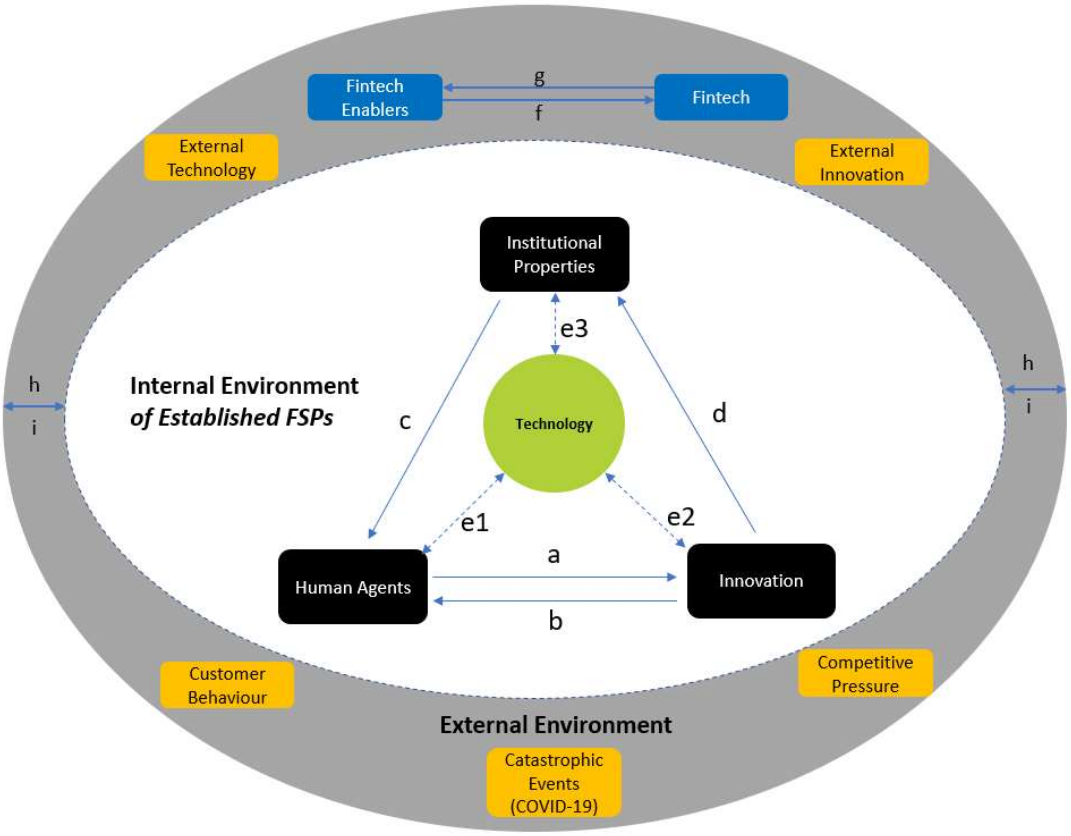


Figure 11: Revised Structurational Framework of Fintech and FSPs

Figure 11 represents the revised theoretical framework post the data gathering and analysis. Changes to the original framework are depicted in orange for ease of readability. The following changes have been added over the original framework; the 'external' environment now consists of: 'external technology', 'external innovation', 'customer behaviour', 'catastrophic events', and 'competitive pressure'. It should be noted that based on the research output that there is a complex relationship that exists between the 'internal' environment and 'external' environment and each concept within the 'external' environment will impact on each other, as well as with the 'internal' environment and vice versa i.e. a 'duality' exists between the two concepts. For example, 'external technology' can have an influence on 'Fintech Enablers'; 'catastrophic events could lead to 'competitive pressure' which could in turn change 'customer behaviour' with the introduction of new 'external innovation' and 'external technology', which can potentially also impact on the 'internal' environment of the firm.

Each of the above new 'external' environment concepts can be seen as an extension of Orlikowski (1992), though reflecting on the theoretical framework and concepts explored within this study, it becomes difficult as to where the line must be drawn in terms of the inclusion of 'external' environment concepts. The researcher believes that there are a multitude of 'external' concepts that organisations need to deal with and these could vary widely across industries. Only those concepts that the researcher deems applicable to the research topic and to answering the research questions posed by this study through the data gathered are reflected in Figure 11. The 'external' environment concepts above are key to the changing market structure and emerging business model that is shaping the Fintech Revolution and financial services landscape of today.

6.2 Re-examination of the Research Questions

This research thesis addresses the core research questions posed by studying the relationships between the 'external' environment of the firm (which consists of 'Fintech', 'Fintech Enablers', 'external innovation', 'external technology', 'customer behaviour', 'catastrophic events', 'competitive pressure') and the 'internal' environment of the organisation (which consists of 'human agents', 'institutional properties', 'innovation', and technology) through the perceptions of 'human agents' and the various complex social interactions between each of the core concepts.

Secondary Research Question

> *What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?*

Fintech firms emerged through the complex interaction of multiple events. As the literature states, the GFC of 2008 had a massive part to play in the emergence of Fintech, as people lost faith in the traditional financial system. While this might be true Fintech has also emerged through the introduction of ground-breaking new technologies like Bitcoin, the internet, smartphone technology and through the complex interaction of events that took place through globalisation efforts, as well as to solve for very pressing contextual and societal issues within developing countries. As the research reveals, Fintech would not exist if it were not for the internet and smartphone technologies, as they have allowed organisations to reach consumers and businesses on a scale never before imagined.

While the GFC had an extreme effect on the financial services sector and the trust between customers and FSPs, South African banks still retain high levels of trust from the customers they serve. That said, the majority of the established South African banks have been around for hundreds of years and are bound in an inextricable web of complex legacy systems, regulation, and general complexity along with the speed at which they can execute. This has allowed a specific gap within the market that Fintech players have seen and are aiming to fill. Many of the existing Fintech players within South Africa are either owned by ex-employees of these banking institutions, by people within the financial services industry, or people that see a gap or specific problem that can be solved by utilising technology. As per statistics presented by NL4WorldBank (2019), South Africa has already seen the emergence of around 200 Fintech firms within multiple different sectors and segments. With the emergence of newer Fintech, the research has shown that we will most certainly see changes to 'Fintech Enablers' and an evolving market ecosystem. The input of government and regulators on Fintech is currently quite remiss in South Africa, and this is something that needs to change, as if left unregulated the Fintech sector could be quite dangerous and create disarray within the economy. That said, government and regulators could play quite a critical role in the creation of newer jobs and industry growth by allowing smaller Fintech firms to thrive with the types of regulation they introduce. 'Fintech Enablers' will have a very influential effect on Fintech firms and vice versa; new technologies, as well as globalisation, could lead to the formation of newer and better types of Fintech firms and the formation of these organisations will in-turn drive Fintech well into the future.

Fintech	Bank
Little or no regulation	Extremely stringent regulation
New agile systems	Older legacy systems
Less than 100 employees	Thousands of employees
No existing revenue (any revenue generated is beneficial)	Millions of Rands in revenue as organisations listed on the JSE (Johannesburg Stock Exchange) with increasing stakeholder revenue demands
Able to keep product and system costs low	Need to increase costs to cater to stakeholder demands
Limited 'trust' from customers	Have built up hundreds of years of trusted relationships and brand loyalty. Note: This is context-specific to South Africa
Ability to execute on innovation quickly	Take time to innovate as there are hundreds of initiatives to execute on including multiple regulatory initiatives

Table 8: Key Characteristics of Fintech and banks

Table 8 lists the key characteristic of Fintech and banks that have emerged from the case narrative in relation to the research question.

The 'external' environment of organisations has changed rapidly within the past few years, efforts to introduce newer technologies have also been accelerated by the COVID-19 pandemic and many organisations that have not increased their efforts in digitisation have seen disastrous effects in the past year. Within the financial services space newer technologies, more stringent regulations, the formation of newer Fintech firms, competitive pressure and many other 'external' environment concepts have driven the speed of innovation within banking. The industry has quite literally been flipped on its head and is forcing existing firms to change the way they do business by focussing on newer technologically based products that are cheaper and offer the ability to scale rapidly to all markets. While digital was well on its way to becoming the status quo, the COVID-19 pandemic is forcing the use of more digital products and servicing due to the implementation of social distancing measures. External pressure is shifting the thought process within banking and the formation of newer Fintech firms is beginning to impact heavily on existing banks. If existing banks do not currently have a strategy as to how they are going to tackle Fintech firms and the 'external' environment, then they are likely to sustain heavy pressure and become obsolete. Banks need to carefully consider their approach on how they are going to tackle 'external' pressures including that of Fintech. A potential consequence of the impact of the 'external' environment on banks, is for them to consider a relationship with Fintech firms, as some firms have already done within South Africa.

Primary Research Question

> *What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?*

The research has already shown that certain banks within South Africa have already considered relationships with Fintech firms.

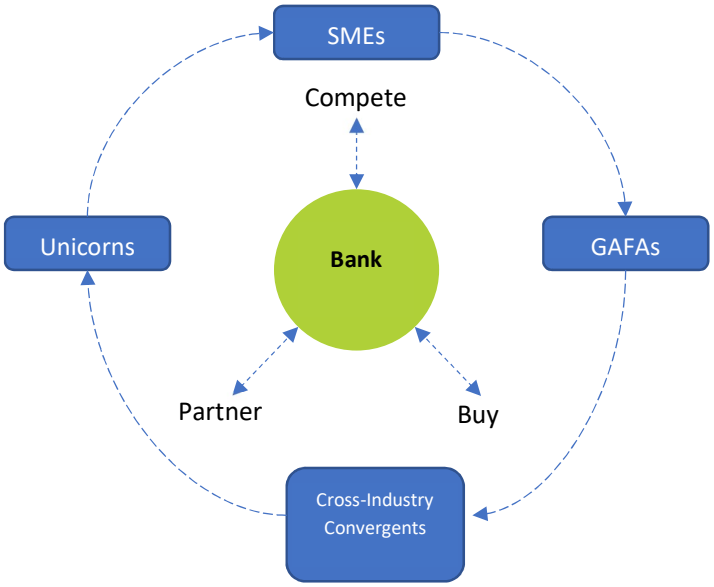


Figure 12: The different types of relationships between Banks and Fintech firms

Figure 12 summarises the different types of relationships that may exist with the different types of Fintech firms. Banks can either 'partner', 'buy' or 'compete' with Fintech firms; and should they decide to compete, it will require them to potentially become more innovative in offering products and services similar to that of the Fintech. The choice of relationship chosen is highly dependent on the strategy of the organisations in question.

Type of Fintech	Type of relationship and likelihood	Explanation of potential relationship
SMEs	Banks are more likely to consider partnerships or the purchase of Fintech SMEs	Fintech SMEs offer services that banks could potentially benefit off and many SMEs are currently offering B2B (Business to Business) services for banks to utilise.
Unicorns	Pure Competition	Unicorns are direct competition as they are often competing with similar products for the same customer base as banks.
GAFAs	Partnership or Competition	Current legislation does not allow the Googles and Facebooks of the world banking licenses outside of their operating regions, though governments and regulators should monitor these organisations closely. That said, their services are currently more aimed at partnerships with banks and creating mutually beneficial relationships. Banks also do not have the capital to purchase these types of organisations as GAFAs have large capital reserves and are successful world-renown technology organisations.
Cross-Industry Convergents	Competition	Cross-Industry Convergents are likely to be pure competition as they are usually strong brands that already exist in the same operating country as banks. This is becoming a very real outcome of modern industry as strong brands are offering multiple products in new and different markets. Cross-Industry Convergents should also be aware of the fact that the organisations and industries that they attack, could also do the same and expand into their industries as well.

Table 9: Key relationships between banks and different types of Fintech

Table 9 above summarises the most likely types of relationships that may occur between Fintech and banks. This is an extension on the existing body of knowledge as it reduces the gap identified by the researcher in section 2.7 Shortcomings of existing Research on Fintech.

The emergent relationships between Fintech and banks show that new business models are indeed emerging in the financial services sector. Banks can 'partner' or 'buy' Fintech to bolster their current market offerings, or they could mimic some of the services being offered by Fintech firms in order to strengthen their position and 'compete'. Some banks have already begun creating products and services to compete with Fintech firms. The research has shown that some international banks have also created Fintech divisions within their own organisations.

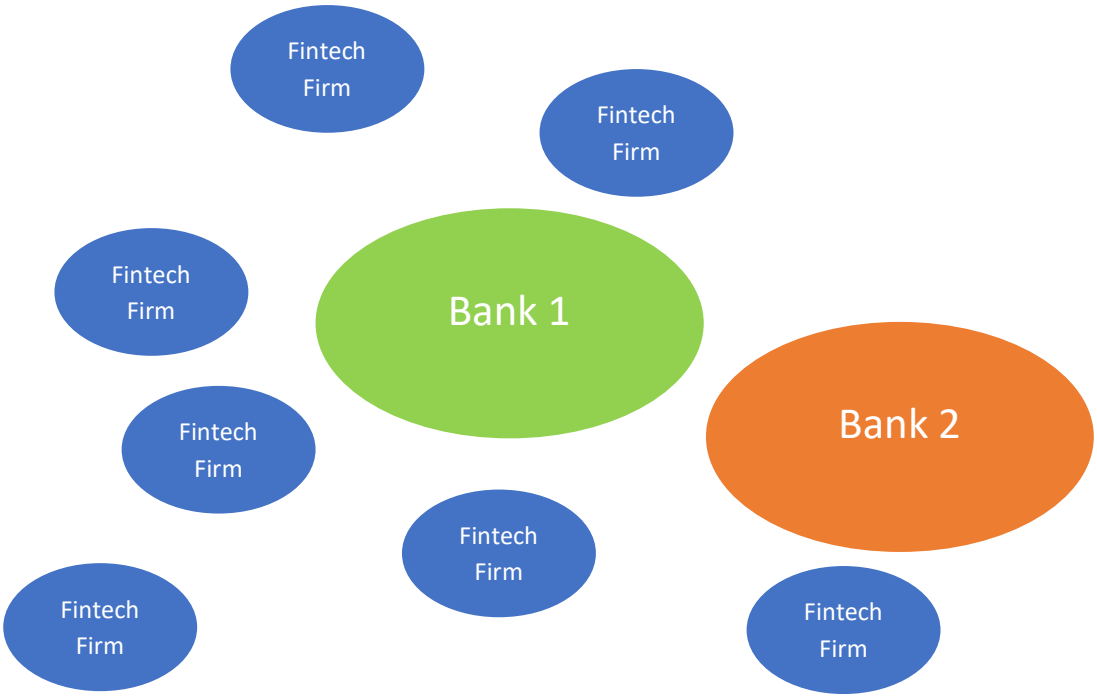


Figure 13: The current dispersed ecosystem

Figure 13 above depicts the current financial services sector, where every organisation is dispersed and competing for the same market share.

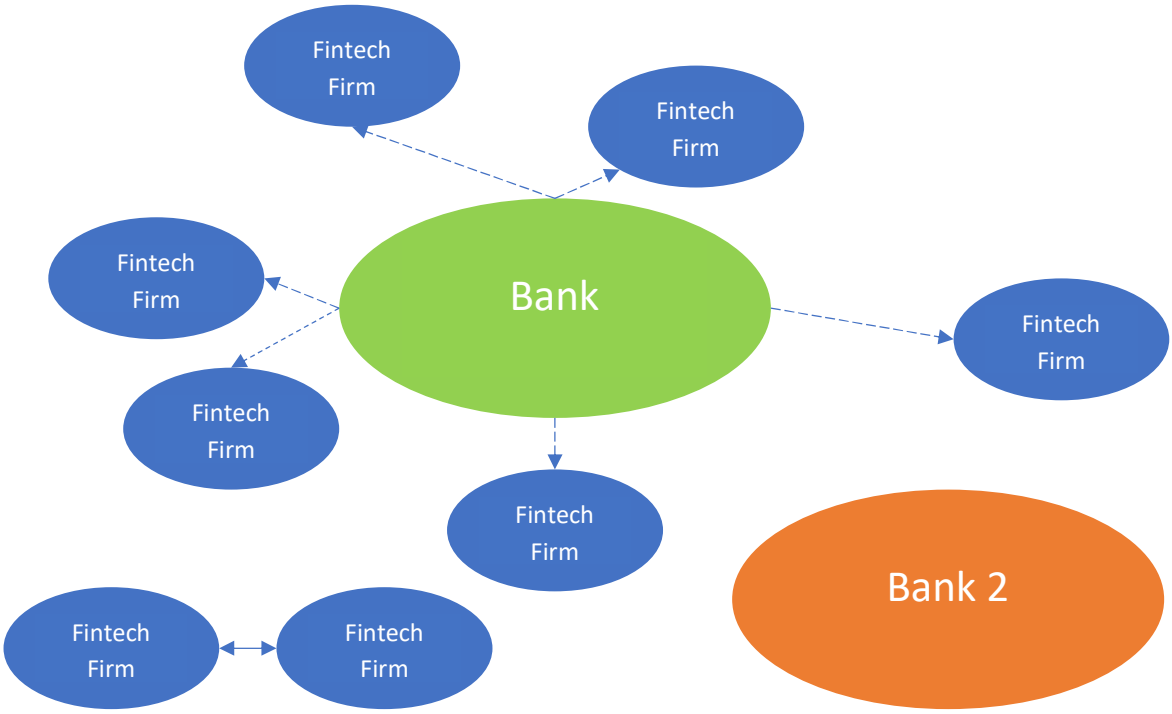


Figure 14: The future collaborative business model

Figure 14 above depicts the possible future financial services sector, where there is mutual collaboration and competition in the market through partnership agreements. A potential finding that emerged from the case narrative however is that organisations want Fintech firms to remain innovative and agile and thus should carefully consider this when newer relationships emerge, and

partnership agreements are being considered. Banks and regulators should also be extremely cautious regarding Fintech partnering with Fintech to create larger entities that resemble traditional banks; this is a relationship that has yet to emerge in South Africa, though the researcher believes that it is only a matter of time before we see this. As these organisations have potentially not been regulated at all they could push the boundaries of the Dark Side of Fintech very quickly, and regulatory bodies should take heed and be extremely cautious with these organisations as well as monitoring the growth of these organisations.

Change within the 'external' environment, including the emergence of Fintech, are clearly forcing existing banks to become more innovative, either in their partnership agreements or in creating new products and services. The 'external' environment and emergence of Fintech is forcing the speed of innovation in banking. While banks may have previously thought through some of the ideas that external pressure and Fintech firms bring to the fore, they may not have previously implemented these due to the many constraints they face. Fintech and the 'external' environment have forced the speed of innovation and is forcing banks to relook their 'internal' environment including their strategic intent, culture, and people within the organisation as well as how these organisations drive innovation and technology. Change is being driven across the value chain and established organisations that are not already considering their Fintech strategy, digitisation strategy, people strategy, along with their innovation and technology strategy which is backed by top management could potentially become obsolete.

External environmental pressure often forces organisations to replicate emerging solutions within the market to keep up with market trends. Organisations should also not merely copy the products and services that 'external' environmental pressures are forcing upon them, they should carefully analyse how specific innovations and technology would best suit their customers and existing ecosystem and drive these through a strong cultural shift aligned with their 'institutional properties', and potentially a reward-based innovation programme. A shift needs to happen from product and revenue-focused solutions, to solutions that have customers at the front of mind. Creating a culture and employing the right people to drive this culture will be key to driving forward the modern organisation.

The researcher does not see Fintech completely replacing traditional banking in South Africa. South African banks remain largely trusted entities and service providers, while Fintech provide valuable customer-focused solutions. Multiple relationships are likely to materialise where both Fintech and banks will utilise each other's services to co-exist and offer stronger technology-based financial services products. It should be noted however that the way these relationships materialise will be different across countries, as every country will have contextual differences that may affect this market evolution. At the centre of all this disruption is people; the technologies produced and innovations that materialise are of no use without purposeful action and use by people both within organisations as well as those customers consuming products and services. Innovation can be produced, and technology can be changed, though without the people who consume these they can potentially be rendered useless. In the end, disruption within the industry will drive competition, create collaboration and drive down pricing, all of which will ultimately benefit customers.

6.3 Conclusion

This research explored the relationship between Fintech and FSPs in South Africa. This chapter has discussed, interpreted and presented key findings from the data presented in the previous chapter.

The chapter provides a reflection on the conceptual framework used within this study as well as the core concepts and relationships. The researcher then proposes multiple changes to both the conceptual framework as well as the relationships and core concepts of the research, based on the insight gained from the data gathering process. The chapter concludes with a re-examination of the research questions and presents key insights that relate to both the secondary and primary research questions.

The next chapter will conclude this research thesis by summarizing the critical research findings, the contributions offered (both theoretical and practical), the limitations of this study and suggestions for future research. The chapter then concludes with the researcher's reflections on this research thesis.

7. Conclusion

The motivation to conduct this research arose out of the specific research gaps and shortcomings on existing Fintech literature identified by the researcher. The researcher believes that the revised Structurational Framework for Fintech and FSPs provides a firm foundation for Fintech business model research, as it describes the complex changes occurring within this market evolution as well as the new business models emerging.

This thesis examined existing literature on the topic of Fintech in developing countries. While the literature on the topic of Fintech shows that it has been growing steadily within the past five years there has been a severe lack of structure and existing research has been extremely dispersed. Based on the various research gaps identified, this research was conducted to address the following objectives: a specific focus and research agenda was created to address research gap 1 identified by Kavuri And Milne (2019, p. 2) around "the changing industrial structure and organisation of financial services". Gomber et al. (2018) also argue that a specific research gap is how business models will be affected by the developments occurring in the Fintech sector. A qualitative study on the topic of Fintech, its changing market structure and emerging business model was completed; a theoretical framework on the topic of Fintech within developing countries was compiled to answer the core research questions and potential gaps identified within the research; the core research questions were addressed; specific gaps identified within the research were explored.

The objective of this research was to gain a deeper understanding of the relationship between Fintech and established FSPs in South Africa by addressing the following research questions.

Secondary Research Question

> *What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?*

Primary Research Question

> *What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?*

Based on the shortcomings of existing Fintech examined in section 2.7 Shortcomings of existing Research on Fintech, the following were key considerations to be explored in relation to the research questions posed: a key output of this study was to create a theoretical framework that could be used to create structure to the topic of changing and emerging business model research

within Fintech; a key research gap identified by the researcher was to separate the different types of Fintech firms identified within the literature i.e., SMEs, Unicorns, GAFAs and Cross-Industry-Convergents, and examine the relationship of each in relation to the primary research question.

By re-examining each of the research questions and how they are addressed by the case narrative and interpretation, along with the shortcomings of existing research on Fintech identified by the researcher, it is demonstrated that research questions posed within this study as well as the shortcomings identified were indeed worthy of empirical investigation. Studying the research questions posed within this study through the experience of human agents within the organisation and the theoretical foundation on which this study was conducted was indeed suitable as it allowed the researcher to thematically collect and analyse the data in a manner that could address the core research questions posed within this study.

7.1 A Brief Summary of the critical research findings

Changes within the 'external' environment including ('Fintech Enablers', 'external technology', 'external innovation', 'customer behaviour', 'catastrophic events', and 'competitive pressure') and the formation of Fintech are forcing the speed of innovation within banks and the financial services industry. Banks that are not already closely monitoring the 'external' environment, and who do not have a specified and detailed strategy around Fintech should be carefully considering one. A potential consequence of this strategy is for banks to consider specific relationships with Fintech firms including 'partner', 'buy' or 'compete'; in doing so there are multiple different types of Fintech that offer varying degrees of products, services and scale. This relationship is going to shift the balance within the existing ecosystem and form newer types of business models; while today there are a few big banks and a few Fintech, many of these organisations may consider merging and competing on different types of products and services. The change being brought about by Fintech is extremely positive as it brings about newer innovation, technology, organisations, potential economic growth, lower prices and many other benefits, with customers ultimately benefiting from this change. What still needs to be considered is the approach of government and regulators, as they play a key role in both enabling Fintech, pushing economic growth and ensuring stability in the financial sector. There is currently little to no regulation on Fintech in South Africa, and many different approaches need to be thought through to ensure that Fintech grows, along with innovation, though also restricting certain types of Fintech to ensure that we do not see the Dark Side of many of these organisations as this is ultimately what caused the GFC of 2008 in the first place. Please refer to APPENDIX E: Advantages & Disadvantages or Risks of Fintech for further insight.

7.2 Contribution

The research contribution can be broadly classified into two categories, these are theoretical and practical. Zhou et al. (2017) describe theoretical contribution as the advancement of existing theory based on certain logic and fact; while a practical contribution refers to the relevance of the research to industry and how the research findings add value for various participants.

7.2.1 Theoretical Contribution

The use of an extended framework using the Duality of Technology Theory has allowed the researcher to understand the relationship between Fintech and FSPs through the perspective of 'human agents' within the organisation. The theoretical framework compiled within this paper has been labelled the Structurational Framework of Fintech and FSPs. Orlikowski (1992) clearly

articulates that her Structurational Model of Technology does not deal directly with different organisational forms and business models. Orlikowski (1992) also suggests that future research could very much benefit from analysing the relationship between different organisational forms and the interaction of technology and human agents. This research attempts to fill this specific research gap put forward by Orlikowski (1992).

The first theoretical contribution made by this research was to include the concept of 'innovation' within the Structurational Model of Fintech and FSPs. The research supports that this is indeed a justifiable extension as innovation is a critical component of the change being brought about by Fintech both within the 'internal' and 'external' environment.

The second theoretical contribution was to apply the core theoretical underpinning of the Duality of Technology Theory i.e., the concepts of 'scope', 'role', 'duality' and 'interpretive flexibility', 'the design mode', and the 'use mode' to the concept of 'innovation'. It should be noted that all concepts that formed a part of Orlikowski (1992) were supported by the research aside from that of 'scope', which could not be logically applied to the concept of 'innovation'. As a theoretical extension, the research supports the following: innovation is a product of human action in its design, use, development, appropriation and modification; innovation has the ability to both aid and inhibit human action through its interpretive schemes, facilities and norms; the institutional properties of an organisation have the ability to influence human agents in the way they interact with innovation or influence innovative behaviour; and the interaction with innovation can influence the institutional properties of an organisation through reinforcing and transforming the structures of signification, domination and legitimation.

A third theoretical contribution made was to verify those relationships explored by Orlikowski (1992) around the concept of technology. The research supports the original concepts identified by Orlikowski (1992) of 'scope', 'role', 'the use and design modes' of technology, 'duality' and 'interpretive flexibility'. This research supports that technology both shapes and is shaped by 'human agents' and the 'institutional properties' of the organisation.

A fourth theoretical extension was to show that 'technology' both shapes and is shaped by 'innovation' and there is a constant interaction and 'duality' between the two concepts.

The fifth and potentially most important theoretical contribution made by this study is the separation of the 'internal' and 'external' environment of the organisation. The data analysis revealed that the 'external' environment is having a significant impact on the 'internal' environment of the organisation and that the 'internal' environment is also shaping the 'external' environment along with giving rise to potential new technologies and business models. There is a constant interaction between the 'internal' and 'external' environment of the organisation and a form of 'duality' exists between the two.

A sixth theoretical contribution that was emergent from the data, was to expand on those relationships initially identified as a part of the 'external' environment within the original conceptual framework in section 3.2 Conceptual Framework. The 'external' environment was expanded on to include 'external innovation', 'external technology', 'catastrophic events', 'customer behaviour' and 'competitive pressure'. This is an extension to the original framework by Orlikowski (1992).

A further theoretical contribution made was to analyse the relationship between the different types of Fintech and banks separately; the research has indeed shown that these relationships may differ based on the type of Fintech in question.

While generalisability is not a core driver of this research, the researcher believes that all extensions made are justifiable based on the research conducted, and while the research topic has focused on the topic of Fintech, the researcher suggests that the 'Structurational Framework of Fintech and FSPs' may be applied to any industry. Multiple industries are being heavily disrupted including food, clothing and telecommunications to name a few, it is only a matter of time before we see the effects that the 'external' environment and Fintech have had within financial services occur in other industries. The future collaborative business model depicted in

Figure 14: The future collaborative business model, may become a staple of the future modern organisation. The researcher thus views the extensions made to Orlikowski (1992) Structurational Model of Technology as justifiable extensions that should be considered by future research.

This research is an attempt to fill the various gaps in existing Fintech research identified, by examining the core research question using an interpretive paradigm and a qualitative approach with the ultimate aim of building upon theory. This helps in creating the foundation around research gap 1 identified by Kavuri And Milne (2019, p. 2) regarding "the changing industrial structure and organisation of financial services"*;* the research gap identified by Gomber et al. (2018) who argue that a current gap within Fintech literature is how business models will be affected by developments in the Fintech sector*;* as well as the research gap originally identified by Orlikowski (1992) to cater for the study of emerging business models.

7.2.2 Practical Contribution

The overall practical contribution of this study is that it assists all stakeholders to understand the complex change being brought about by Fintech firms within the Financial economy. The emergent findings reveal multiple considerations being brought about by Fintech and the evolving market structure.

Becoming an innovative, technology-driven company is extremely difficult and there is a myriad of tasks that an organisation needs to consider doing to drive this behaviour and transform itself. Organisations should be very clear around the cost element and problem statement around innovation as it can be a costly exercise to execute on something that may or may not be successful. Innovation should be backed up by a strong business case and should be well thought out, planned and executed. Driving this through a programme approach could significantly help organisations in their innovation drive. Marketing and perception around innovation and creating a positive view can be used as a strategic driver. Using a reward-based innovation programme can be used as a strategic tool to drive successful innovation in the long term. People are inherently driven by reward and this can be used to drive specific behaviour.

Innovation and technology are very much driven by competitive pressure. Replicating what others are doing can also be seen as innovation, though an organisation should never just copy ideas from other organisations without applying solutions to contextually fit the organisational environment and needs of their customers. Changing an innovation or idea even slightly can give one a competitive advantage, this is known as 'contextual innovation' as per Adler And Borys, (1996). Organisations should constantly analyse both their internal and external environment; their strategy

around innovation and technology should never be stagnant. Being first to market can help with driving both innovation and technology; though organisations need to ensure that their solutions are robust, as other organisations might be able to copy their ideas and perhaps do them better.

People are the main drivers of innovation and technology. Organisations should carefully consider the people component to innovation and technology as without people these are potentially useless. The following are key considerations: hiring the right people to drive the agenda and execution around innovation and technology; top management and how they drive innovation and technology are vital.

Top management should drive the right culture within the organisation by:

- Creating an environment and culture that is opened to new ideas. Accepting that failure is a part of the road to success.
- Innovation should be driven by people at all levels; engaging people and listening to their day to day issues is important. Listening to each other's ideas and being open to change.
- Eliminate bureaucracy and hierarchical structures which can hinder progress is important.
- Innovation and technology need to be ingrained within the day to day activities of the organisation not be done as a one-off.
- Organisations need to ensure that people are receptive to the adoption of new technology; they should also ensure that if a technology is introduced for a specified use, that the objectives of why they set out to use it are executed on, as people can change the design and use of a technology.

The following can also be seen as key behaviours to drive successful innovation and technology: how flexible and adaptable organisations are to change, especially for organisations that have been around for a long time and have specific ways of doing things; a willingness to adapt; constantly questioning current process and looking for ways to improve; speed in implementation and execution; timing in implementation and execution; avoiding trendy types of technology and carefully planning those the organisation does and does not use. Organisations should also know what their customers want and ensure they are able to deliver those products and services that ultimately add value to customers' lives when they need them. Within the modern business environment, technology moves so fast that the 'institutional properties' can often take time to catch up; forward-thinking organisations should always be thinking of the 'what's next'?

This research thesis suggests that government look carefully into the current regulatory body and if not already, to start including Fintech within their scope. Government and regulators have a difficult task ahead and need to strike a fine balance of protecting the financial services ecosystem as well as spurring innovation and technology. This thesis provides a view of some of the specific issues or key focus points that governments need to take into consideration. Fintech players are challenging the current ecosystem; the different players along with the effect they may have on the existing financial system is explored within this thesis and should provide governments and regulators with an entry point on those things they need to consider. The risks that Fintech may introduce are also discussed in this thesis and government and regulators should be aware of these along with the 'Dark side of Fintech'. Based on the results of this research, the researcher advises that a clear regulatory framework be put in place on how to tackle Fintech and the financial service industry; this

market is evolving daily and if left stagnant for too long, then the regulation being conceptualized could become obsolete and ineffective very quickly due to the very nature of Fintech.

This thesis also provides key considerations around the relationship between both Fintech and banks that could be used as drivers for each organisation when considering a potential relationship. The traditional business model in financial services has been disrupted and all organisations within this field should be considering their potential futures, future relationships and strategy. Multiple views are provided on how to effectively collaborate with each other within the new financial economy and those that do not have a strategy on how they are to collaborate within these emerging business models are potentially going to be left behind. While the specific relationships between Fintech and banks explored within this study were specific to the context of South Africa, the researcher believes that other countries could also see similar relationships emerging.

While the focus of this thesis is on the financial services landscape, the researcher believes that the effects of digitisation, as well as emerging business models, is something that organisations in all industries should be considering.

7.2.3 Limitations

One of the main factors that have influenced the chosen research design, strategy and method is the duration of this study. As this submission is for a master's thesis, the time to completion was twelve months. Thus, a cross-sectional study using a case study strategy to examine a single case was utilised. A longitudinal study that examines multiple cases would address the research question posed within this study better, as it would allow for multiple perspectives and enable the researcher to view how the relationship between Fintech and FSPs evolves over time. One of the major research gaps within Fintech research identified by Kavuri And Milne (2019) are that existing studies are very much focused on the short-term with little focus on analysis in the long and medium-term; a longitudinal study would allow the researcher to fill this specific gap. Future research should also examine the relationship posed within the research question of this study from the perspective of Fintech firms. This would potentially strengthen or evolve and build upon the conceptual framework developed within this research. Future research should also use multiple FSPs as a unit of analysis as this could also influence and evolve the framework developed within this study.

From a methodological perspective, the researcher does recognise some of the limitations that apply to a case study research strategy. While interpretive case studies allow the researcher to produce theory that is rich in detail, the theory constructed may lack parsimony and perspective in terms of capturing important relationships between concepts (Eisenhardt, 1989). Due to the fact that only a single case is studied, the resulting theory may be very narrow and idiosyncratic to the particular case and environment in which the study is conducted (Eisenhardt, 1989). The unit of research used within this study, was studied from the perspective of those currently within the banking environment; as such employees of Fintech firms were not interviewed as a part of this research.

As this study only consists of a single case, whose maturity in innovation is assumed to be quite high, a specific limitation identified by the researcher is that the views expressed are those of an already innovative company.

Another limitation identified is that the researcher was an employee of the organisation in which the research conducted. By already having created rapport and relationships with participants, this may have influenced how they approached and answered questions within the interview process.

7.2.4 Suggestions for Future Research

Multiple practical contributions are presented within this study around driving innovation and technology. Future research should assess the journey and case, from being a non-innovative company to an innovative one. This is something that could be covered within multiple cases and potentially a longitudinal study to show the effects of change in innovation and technology over time. Future research should also assess whether the specific drivers of innovation and technology shown within this study are in fact relevant and can be useful within both academia and practice.

Unfortunately, the researcher could not fully ascertain whether the initial view proposed by Orlikowski (1992), to show that the 'interpretive flexibility' of 'technology' is in-fact limited; as well as the theoretical extension within this study to apply the concepts identified by Orlikowski (1992) to 'innovation', and show that the 'interpretive flexibility' of 'innovation' is also limited, could not be shown by the researcher. It can be assumed as per Orlikowski (1992), that the 'interpretive flexibility' of both 'innovation' and 'technology' can potentially be limited by the institutional context and properties in which it is designed and implemented. Upon reflection, the researcher recognises that this assumption may be a potential limitation of the inherent theory used as opposed to a flaw within the study design and application. This is something that should be explored within future research.

Future research could use the theoretical framework developed within this study as a basis for studying emerging business models within multiple industries. The researcher believes that the theoretical framework developed within this study could be used across industries as the disruption felt by all stakeholders within the financial services industry is going to make its way into other industries in the near future as well.

While this research was conducted with the ultimate aim of generating theory, an exploratory study was used in order to create a foundation around the research topic. As the researcher has identified multiple *a priori* fixed relationships, future research could apply the framework depicted in Figure 11: Revised Structurational Framework of Fintech and FSPs, using a quantitative approach to test the relationships identified statistically; it would be useful to identify any mediating or moderating relationships between the core concepts within the Structurational Framework of Fintech and FSPs.

The researcher does recognise the research of Xue et al. (2008) and how the concepts of 'mimetic forces', 'coercive forces' and 'normative forces' could potentially be related to the 'external' environment and pressure within this research, along with the impact of how 'top management' may mediate this relationship, though due to time constraints this could not be fully explored and should be explored within future research.

The researcher does also recognise the research of Saebi And Foss (2015) around business models for open innovation and how these may potentially relate to the concepts explored around the relationships between Fintech and banks of 'partner, 'buy' and 'compete'. Saebi And Foss (2015) explore and propose multiple different types of business models which could be directly related to the Fintech environment, though unfortunately due to time constraints these could not be explored. Exploring these concepts could make for interesting future research.

7.3 Researcher's Reflections

This has been a very interesting study to conduct as the topic is very much an emerging topic within academia and practice. Utilising the initial framework identified by Orlikowski (1992) has allowed me

to reflect critically on my own experience, both as a researcher and as a practitioner. Thankfully I did not struggle with the data collection process or access to participants, even though I did experience a delay of a few months in obtaining approval to conduct the research. Participants were extremely willing to share their experiences, and I have the utmost respect for their knowledge when reflecting on the responses within this research. The data analysis process proved possibly the most difficult part of this thesis due to the sheer amount of data collected.

I have become extremely attached to the academic process; it is something I have grown to respect, fear and love all at the same time. I am fascinated by the work of Wanda Orlikowski, and her contribution to the field of Information Systems, and I was proud to find out that while she is currently a Professor of Information Systems at MIT, she was also an ex master's student at the University of Witwatersrand. The work of Anthony Giddens around Structuration theory is also inspiring; it has influenced and has been the catalyst for so many valuable ideas and theoretical contributions to the field of Information Systems. I have grown immensely in conducting this research topic and it has been an experience that I will not easily forget.

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APPENDIX A: Process used in compiling the systematic literature review

1. Determine research topic, research objective, research question (including secondary and primary RQs where applicable)
2. Compile PICOS framework and database list for SLR
3. Search for relevant literature based on selective inclusion and exclusion criteria (Review title searches and abstracts, reread abstracts to confirm relevance, include further material found in reference lists)
4. Review literature
    a. Read final literature list
    b. List and compile key concepts including concept matrix
    c. List key structure and refine structure based on each piece of literature
    d. Provide a visual representation based on each piece of literature review. Refine visual representation throughout the literature review. Use as an aid to understand the literature
    e. Refine Research Question if necessary
5. Synthesize the literature
6. Compile bibliography
7. Review multiple times

APPENDIX B: Detailed search criteria using the PICOS framework

	Population	Intervention	Comparator	Outcome	Study Design
	Banks OR Banking OR Financial Services **Context:** Emerging Markets OR Developing Countries OR Africa	Fintech OR Financial Technology OR Financial Innovation	***Potential Comparator*** Banks Vs Fintech's Vs Other (Cross industry convergence)	***Macroeconomic:*** Regulation, Competition ***Organisational:*** Buy, Partner, Compete ***Individual:*** Adopt, Use, Ignore	Empirical OR survey OR qualitative ***(NOT USED IN SEARCH)***
Core Databases	EbscoHost	ProQuest	ScienceDirect	JSTOR	

PICOS Framework and Core Search Databases

Though the study design includes key search terms for the type of research being selected, these were purposely left out of the search criteria, a decision was taken to rather focus on specific articles and their findings to gain insight on the topic rather than excluding articles based the data collection methods utilized. Based on the specific database being used, the search criteria may have been adapted for the suitability and purpose of the Systematic Literature Review (SLR) chapter. The table below details each of the keywords and criteria used. An initial filter search yielded a total of 68 papers from the four core search databases.

Keyword Search	Database	Number of results	Constraints or Filters applied
		Search 1	
(Fintech OR "Financial Technology" OR "Financial Innovation")) AND ((Banks OR Banking) AND ("Developing Economy" OR "Emerging Market" OR "Africa")	ProQuest	1918	Initial filters • Full Text, Peer Reviewed, Scholarly Journal, English • Last 5 years
ab((Fintech OR "Financial Technology" OR "Financial Innovation")) AND ((Banks OR Banking) AND ("Developing Economy" OR "Emerging Market" OR "Africa"))	ProQuest	58	Second set of filters • Full Text, Peer Reviewed, Scholarly Journal, English. • Abstract search filter on primary keywords (FinTech OR Financial Technology OR Financial Innovation)
ab((Fintech OR "Financial Technology" OR "Financial Innovation")) AND ((Banks OR	ProQuest	32	Third set of filters • Addition filter added to date range (Last 5 years)

Banking) AND ("Developing Economy" OR "Emerging Market" OR "Africa"))			
Search 2			
(Fintech OR "Financial Technology" OR "Financial Innovation") AND (Banks OR Banking) AND ("Developing Economy" OR "Emerging Market" OR "Africa")	EbscoHost	7	• Full Text, Peer Reviewed Journal, Academic Journal, English • Date Range (Last 5 years)
Search 3			
(Fintech OR "Financial Technology" OR "Financial Innovation")) AND ((Banks OR Banking) AND ("Developing Economy" OR "Emerging Market" OR "Africa")	Science Direct	27	• Abstract search filter on primary keywords (FinTech OR Financial Technology OR Financial Innovation) • Date Range (Last 5 years) • Review and research articles only
Search 4			
(ab:((Fintech OR "Financial Technology" OR "Financial Innovation")) AND ((Banks OR Banking) AND ("Developing Economy" OR "Emerging Market" OR "Africa")))	JSTOR	2	• Date Range (Last 5 years) • Journals only

Keyword Search, Results and Applied Filters

APPENDIX C: Data extraction template

	Article	Author	Year of publication	Rating		Main Idea
1	The Fintech Book: The Financial Technology Handbook	Amalia	2016	Very Good	Fintech history, definition, developing countries, digital and financial innovation, education, SMEs, Challenges, Risk	Is a summary of the book "The Fintech Book". Summarizes key parts to Fintech in developing countries
2	150 YEARS OF FINTECH An evolutionary analysis	Arner et al.	2016	Good	History 1-3, Africa, Asia, china, regulation and Regtech	Gives the history of Fintech and puts forward the case of Africa and China as developing countries
3	FinTech and RegTech Enabling Innovation While Preserving Financial Stability	Arner et al.	2017	Very Good	Regulation, Regtech, Smart Regulation, Sandboxing, Developing Economies,	Strong paper on the regulation of Fintech (RegTech)
4	A Pragmatic Assessment of Disruptive Potential in Financial Services	Deloitte (World Economic Forum)	2017	Very Bad	Market competition and analysis of Fintech around the world	Strong analysis of existing Fintech companies and players. Not much information specific to developing countries
5	Evolution of Fintech: A new post paradigm approach	Arner et al.	2015	Very Good	History 1-3, Africa, Asia, China, Regulation, Regtech, GFC	Gives a more detailed view of "150 Years of Fintech: An Evolutionary Analysis" by providing more in-depth studies and data

6	Comparison of banking innovation in low-income countries	Fontin and Lin	2019	Bad	Financial innovation, Competition, Financial Inclusion, Developing Countries, Policy and Regulation	Evaluates cost reducing innovation within 9 low income countries. Mainly quantitative in nature
7	The emergence of the global fintech market economy	Haddad et al.	2018	Very Bad	Types of Fintechs, Categories and technologies, Financial inclusion	Analyses economic and technological determinants that encourage the formation of Fintechs. Mainly quantitative in nature
8	Finance for All Executive summary (September-2016)	Mckinsey Digital	2016	Very Good	Digital finance, emerging markets, Africa, Middle east, Asia, China, Latin America, SMEs, Individuals, FSPs	Strong statistical analysis of Fintech and digital finance in emerging markets
9	Is Pakistan Ready to Embrace Fintech Innovation	Rizvi et al.	2018	Very Good	Fintech, Pakistan, Emerging Markets, Regulation, Banks, Financial Exclusion, Government, Fintech Risks, Types of Fintechs, Smartphones and digital technology, GFC, Challenges for Pakistan	Strong paper giving the background around Fintech in Pakistan as a primarily cash based economy with good infrastructure
10	Fintech as Financial Innovation – The Possibilities and Problems of Implementation	Saksonova et al.	2017	Good	Banks vs Fintech, Macro Vs Micro, Advantages and Disadvantages of technology types, Latvia, Incubators, Competition	Analyses the Fintech market in Latvia. Some quantitative data
11	Indonesian Fintech Business: New Innovations or Foster and Collaborate in Business Ecosystems?	Teja	2017	Very Bad	Indonesia, Fintech, Difficulties for Fintech	Gives a view of Fintech in Indonesia, use qualitative data. Quality of writing outside of the abstract is extremely poor
12	What Motivates Financial Innovation Across Countries? The Influences of Performance	Su & Si	2015	Very bad	Financial innovation across countries	Seeks to test financial innovation and hypothesis formulated. More

	Aspiration and Economic Freedom					quantitative and statistical in nature and not specific to developing countries.
13	The Promise of Fintech in Emerging: Markets: Not as Disruptive	Zalan and Toufaily	2017	Very Good	SMEs, Financial inclusion, Education, Disruption, Regulation, Key obstacles to Financial Inclusion, Cash Based economies, Hybrid platform/Conceptual framework offered, emerging markets	The use of disruptive innovation theory to measure innovation in emerging markets

APPENDIX D: A brief summary of the literature on fintech in developing countries

The table below aims to give a snapshot view of the development of Fintech in multiple developing economies.

Continent or Country	Statistics or Country	Background
Africa	20% of the population access to formal or semi-formal financial services (Arner et al., 2016). *Mckinsey (2016) state that almost 61% of the rural population in Africa and the Middle east are financially excluded.*	Telecommunications companies have taken the lead in Fintech Development in rural Africa. Mobile money has spurred economic development. M-Pesa in Kenya is the most well know success story. Payments through M-Pesa now account for more than 43% of Kenya's GDP. Consumers are of the opinion that banking is necessary, though banks are not (Arner et al., 2016).
Asia	*60% of the population access to formal or semi-formal financial services* (Arner et al., 2016).	
	The Asia Pacific (APAC)	APAC market shows that growth in the Fintech sector is mainly attributed to: Slow IT spend by local banks, distrust in banks, limited branch networks and high penetration of internet and mobile devices (Arner et al., 2016)
	China *Mckinsey (2016) state that at least 21% of the population in China are financially excluded.*	China has a limited banking infrastructure and extremely high smartphone and internet penetration. Digital banking and Fintech are already showing high growth rates. Alibaba now processes more than 1 million transactions a day with Alipay (Arner et al., 2015, 2016).
	Indonesia	Fintech in Indonesia usually refers to mobile payments. There are multiple banks, brokerages and ecommerce platforms currently developing Fintech based products (Teja, 2017).
Pakistan	85% of the population are financially excluded (Rizvi et al., 2018).	Pakistan is a heavily cash based economy with high banking infrastructure cost. There are multiple threats and barriers to entry for Fintech. Internet and mobile

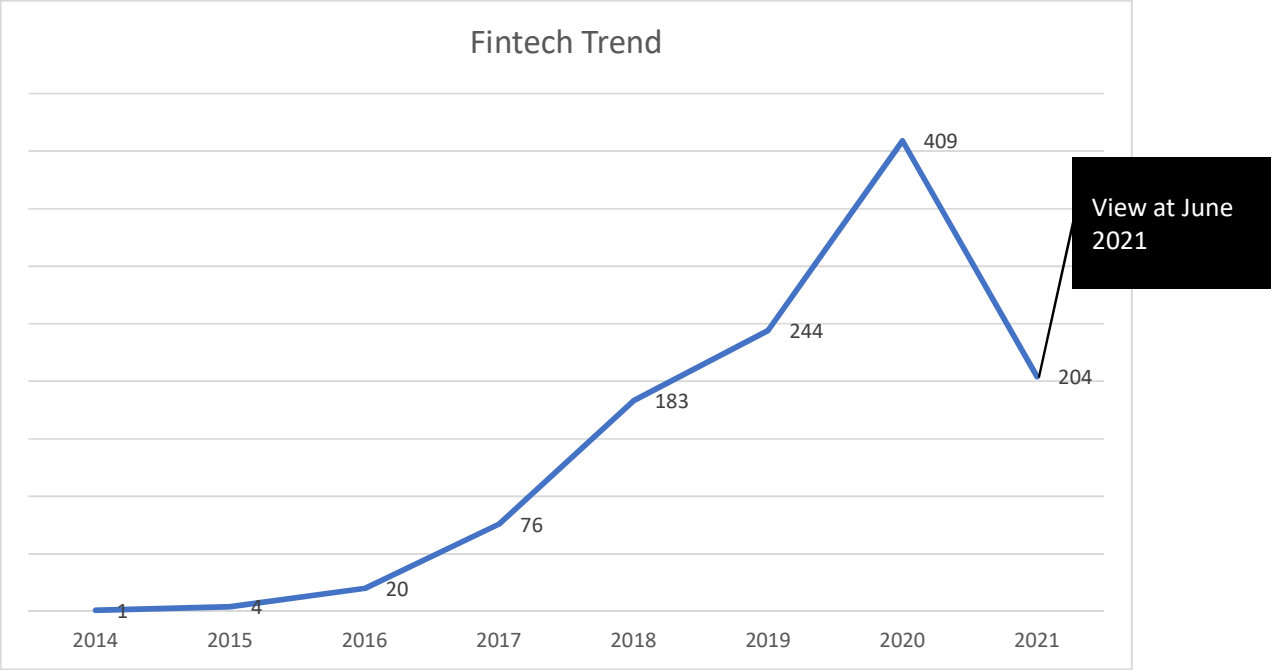
		penetration are as well as the ecommerce are booming in Pakistan making it the perfect melting pot for the entry of Fintech.
Latvia		Development in Latvia has been relatively slow due to access to credit faced by start-ups. Research shows that a large percentage of people do not know about Fintech's. Regulation and government intervention is needed to spur growth of the Latvian Fintech industry (Saksonova & Kuzmina-Merlino, 2017).

APPENDIX E: Advantages & Disadvantages or Risks of Fintech

Advantages	Disadvantages/Risks
Fintech and financial innovation can be used as a strategic instrument to influence the financial sector, spur economic growth and in turn solve for financial inclusion within developing economies (Fontin & Lin, 2019; Rizvi et al., 2018).	Collaborative models may bring the risk of data sharing between Fintech and FSPs; careful consideration is needed around data privacy (Mckinsey, 2017).
Fintech creates the opportunity for new business and the potential to stimulate the economy with growth in SMEs; Fintech can provide alternative funding platforms for these SMEs, as well as low-cost innovative solutions, which are beneficial to both organisations as well as their suppliers and customers (Amalia, 2016; Rizvi et al., 2018; Zalan & Toufaily, 2017)	FSPs and Fintech need to carefully consider who owns what, should there be an emerging relationship; as this could open both parties up to significant risk (Ferenzy et al., 2017).
Fintech will lead to more customer-centric and bespoke solutions due to changes in the competitive environment (Accenture, 2016).	Confidence within established FSPs falls, as SMEs are able to provide similar services at a lower cost (Ferenzy et al., 2017)
It allows the potential to embrace new technologies (McKinsey, 2016).	GAFAs offer products at a lower cost outside of their operating country though they also move funds across borders. This could limit the potential for economic growth and limit employment opportunities within the country of consumption. Cross-border implementation should be carefully monitored (Rizvi et al., 2018).
Fintech firms offer innovative solutions to existing problems with the ability to react quickly to changes in market structure (Amalia, 2016; Rizvi et al., 2018; Zalan & Toufaily, 2017).	Unicorns need to be subject to the same regulation as established FSPs (Rizvi et al., 2018).

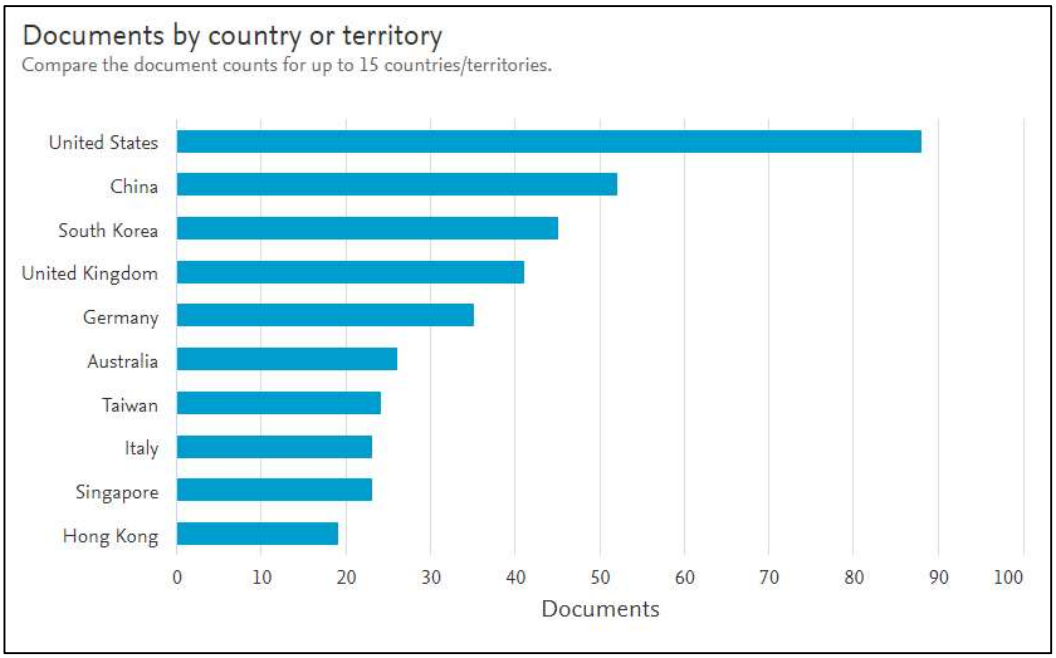
APPENDIX F: Fintech Insights

Bibliographic Analysis using the Scopus Database



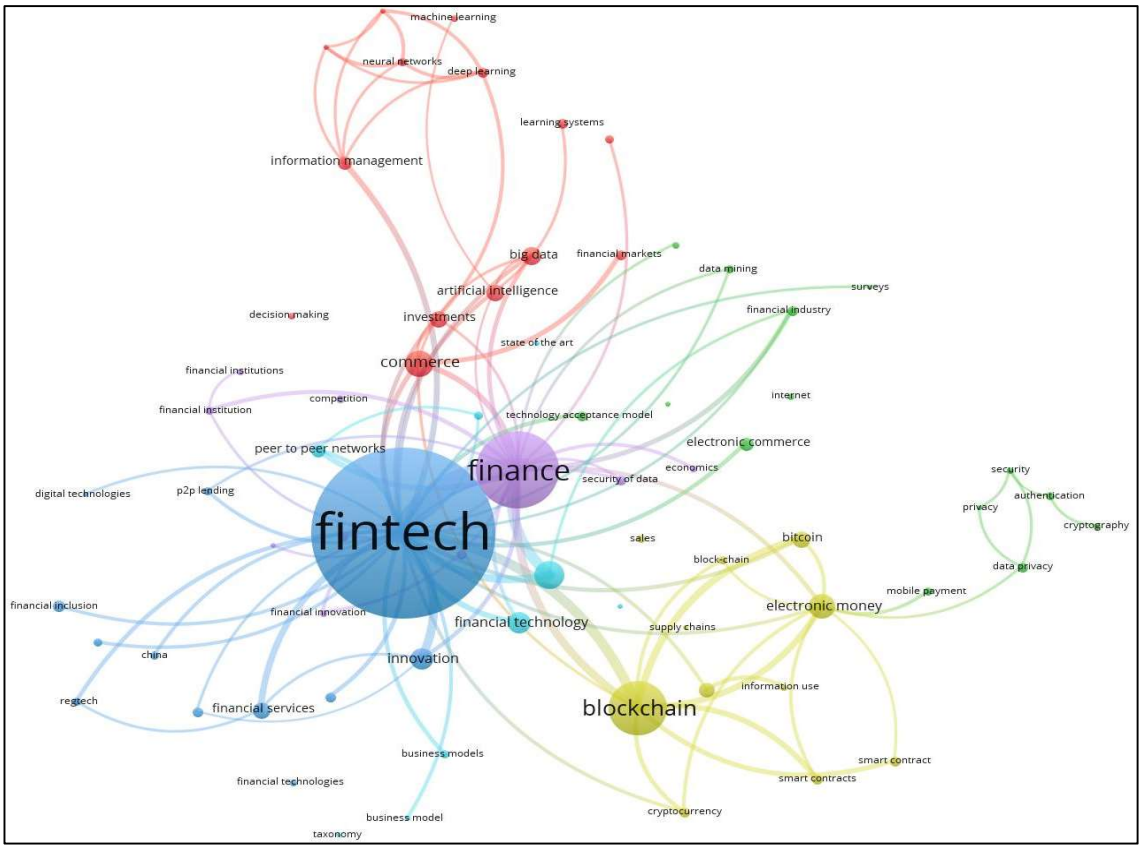
The figure above shows a view of the total number of articles published since 2014 on the topic of Fintech. A literature search was done using the Scopus database and limited to an abstract search on the keyword of "Fintech". Articles from the year 2008 to 2013 have been removed as they are statistically insignificant (1 per year). As can be seen, there was a significant spike post the year 2016 indicating the novelty of the term Fintech. A Google trend search on the topic of Fintech reveals similar results and trends.

Territory Analysis using the Scopus Database



The figure above is a visual representation of the articles published per country on the topic of Fintech. It is interesting to note that the top countries investing in Fintech directly correlate to the top countries or regions publishing articles on the topic of Fintech e.g. (USA, Asian Pacific and the United Kingdom).

Cluster Analysis using VosViewer



The figure above represents a term map on the topic of Fintech using a bibliometric analysis tool called VosViewer. VosViewer was used to analyse and visualise key terms using bibliographic and cluster analysis. While it does not provide deep insight, it does show key relationships within the field of Fintech. The scope was limited to articles that mention the topic of Fintech at least 3 times to enhance consistency and remove anomalies. The term map above reveals that the field of Fintech is extremely scattered, and articles often do not cite one another. Six core clusters were found and are represented by the different colours (blue, red, green, yellow, and purple). The main core cluster (blue) reveals the following key topics within Fintech literature: 'Fintech'; 'innovation'; 'business model'; 'crowdfunding'; 'banking & financial services'; 'financial regulation & RegTech'; 'financial inclusion' and 'P2P lending'. While terms and relationships are somewhat scattered, it is clear that the clusters found within this term map do directly correlate with current topics and key areas highlighted within practitioner research on the topic of Fintech.

APPENDIX G: Research Instrument

This research follows the interview protocol and instrument development set out in (Jacob & Furgerson, 2012). Jacob And Furgerson (2012, pp. 2–9) contend that the following protocol should be followed in order to compile a successful interview research instrument:

- "Pick a topic that is interesting to you
- Research should guide your questions
- Use a script for the beginning and end of your interview
- Questions should be open-ended
- Start with the basics
- Begin with easy to answer questions and move towards ones that are more difficult or controversial
- The phrase tell me about… is a great way to start a question
- Write big, expansive questions
- Use prompts
- Be willing to make on the spot revisions to your interview protocol
- practice with a friend
- Make sure that you have set up a second shorter interview to help you clarify or ask any questions you missed after you have transcribed the interview

If needed, clear your project with your school's Institutional Research Board (IRB)"

Introduction

Good day Participant,

Thank you very much for your time today, and for agreeing to be a part of this research topic, I really do appreciate it. As you know my name is Dylan Virasamy; I am a student at the University of Witwatersrand. I am currently doing my master's thesis on the topic of Fintech within South Africa and wish to further explore the relationship Fintech between Established FSPs. The aim of this research is to gain a deeper understanding of the relationship between Fintech and FSPs in South Africa as it is very much an emerging topic in both practice and academic research; and I feel your insight on this topic in relation to the innovation process and technological advancement regarding the development of Fintech would very much benefit the current body of knowledge.

Before we continue, I would like to re-iterate some of the information contained within the participant information sheet shared over email. This research along with your identity will be kept strictly confidential and your name will be masked with a pseudonym or fake name within my final research report. All data gathered from this interview will be stored on a secure server and backed up to my personal laptop with password protection, no unauthorised access to the data will be allowed. You are free to withdraw from this interview at any time or not answer any question that you are not comfortable answering. Please note that I do require you to digitally sign the research consent form that has been shared with you over email. With your permission, I would like to record this interview in order to help me transcribe our discussion. You are free to choose either video or audio for this Microsoft teams meeting. Please note that should you choose video, I will only use this to help me transcribe the output of this interview and for no other purpose. Thank you very much participant, are you happy for us to continue?

The table below contains a list of all demographic questions and general questions posed to participants.

Demographic and General Questions
1. What is your current position within this institution? (Specialist, Junior-Middle-Senior Management)
2. What does your role entail?
3. How long have you been within the organisation?
4. How long have you been performing this role?

The table below contains a list of interview questions, along with the related concepts from which these questions were derived, as well as the specific research questions that these questions aimed to collect information on.

Arrow from Conceptual Framework	**Related Concepts from Conceptual Framework**	**Interview Questions**	**Specific research question this will inform and be informed by**
Internal Environment Themes			
a	Innovation is a product of human action in its design, implementation and use	**1. What do you understand by the term innovation?** **a) How do you think innovation materialises within organisations?** **b) What impact do people have on innovation?** **c) Do you feel that it is primarily a social activity?** *Context set by the researcher: Explain that innovation is a process, that initiates out of the identification of a problem as per the conceptual framework.*	What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?
b	Innovation also shapes human action within organisations	**2. Why do you feel that some organisations are more innovative than others, and can this be replicated?** **3. Do you feel that innovation within an organisation can shape people's actions within that organisation?** **For example, consider an organisation that you believe is innovative in nature, do you**	What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?

		feel that it can shape the way people behave in their thought process and interactions? If so why, and if not then why not?	
c	The institutional properties of organisations will influence human agents in the process of innovation or innovating	**4. Do you feel that the institutional properties of an organisation like culture, management style etc can influence the way people innovate?** *Consider for example a company you believe to be an innovative company; do you think it influences and changes the employees of this company and the way they innovate* *Context set by the researcher: Explain what institutional or organisational properties are.*	What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?
d	The interaction with innovation will influence the institutional properties of organisations through reinforcing or transforming the structures of signification, legitimation and domination of that organisation	**5. Do you feel that an innovative environment pushes people to become more innovative?** **6. Do you feel that an innovative environment can have a transformative effect on the organisation changing its structural properties like culture, management style etc?**	What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?
e	Technology both shapes and is shaped by: human agents (e1); innovation (e2); and the institutional properties of the organisation (e3)	*Context set by the researcher: Explain to the participant the difference between technology and innovation. The following questions are based primarily on technology which is inherently different to innovation.* **7. What do you understand by the term technology? Do you think technology and innovation are the same thing?** **8. Do you think that technology is shaped by people within an organisation?** **a) How do you see this happening within your organisation and how do you interact with technology on**	What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa?

		a day to day basis? Please could you give me examples? **b) Discuss the interpretive flexibility of innovation and technology with participants.** **9. Do you think that technology can be a by-product of an innovative environment? For example, once an innovation is introduced, a new technology may be the result of the innovation process. Can you give me an example of this; an innovation you were involved in or your company has introduced that may have introduced a new technological artefact?** **10. Do you think that the innovation process is also shaped by technology? Can you give me an example of this from your experience?** **11. Do you think the institutional properties of an organisation can influence how a technology is designed?** **12. Do you think the institutional properties of an organisation can influence how a technology is used?** **a) Consider the culture, management style, leadership, process of innovation etc of your organisation; do you think they have an influence on how your technology is designed and used?** **b) Do you feel that it is different from other organisations in your field of expertise?** **c) What do you think can give organisations an edge in technological competence and advancement?** **13. Do you think that technology can shape and influence the way people behave in**	

		an organisation? *If so, discuss further with an example* **14. Do you think that the innovation process is also shaped by technology? Can you give me an example of this from your experience?** **15. Do you think that technology can have a significant influence on an organisation and the way it operates?** **a) Do you think that technology can transform an organisation and its structures or institutional properties?** *Context set by the researcher: give an example of a technology that may have an impact on the organisation. Ask the participant to provide an example*	
External Environment Themes			
f	Fintech Enablers will have an effect on Fintech.	**16. Can you tell me what you understand about Fintech, and specifically Fintech in South Africa?** **17. How and why do you think Fintech firms emerged?** a) Do you think that globalisation, smartphone and internet penetration has had a part to play? If so then in what way, if not then why not? b) Do you think government and regulation can have an effect on encouraging or discouraging Fintech? If so then in what way, if not then why not?	What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa? What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?
g	Fintech will have an effect	**18. Do you think that the formation of newer Fintech firms can lead to**	What is the relationship between

	on Fintech Enablers.	**advances in technology and innovation; and if so, then in what way; if not then why not?** **19. Is Fintech a positive or a negative thing for financial services?** **20. Do you think the formation of more Fintech firms will force the hand of regulators and government; and if so, then in what way; if not then why not?** *Context set by the researcher: There is currently no regulation around Fintech firms within South Africa*	Fintech and FSPs, specifically in the area of Transactional Banking within South Africa? What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?
h	The external environment will have an effect on the internal environment	*NOTE: While the below questions were quite short and concise, the conversation was expanded upon drastically as these questions were core to answering the research questions posed by this study. This is reflected in the amount of information as well as coding gathered for this specific theme as well as the next theme.* **21. Is Fintech or the formation of newer Fintech firms a positive or a negative thing for the financial services sector? Please could you tell me why you believe this is so?** **22. Do you think Fintech has an effect on FSPs?** a) Do you think of Fintech as competitors? b) Do you think the size and type of a Fintech company will have an effect on the relationship between Fintech and FSPs? *Explain the different types of Fintech and discuss the relationship of each with the participant (GAFAs, SMEs, Unicorns, Cross-Industry Convergence)* c) Has this had an impact on the core strategy and operational environment of your organisation? If so, what has this changed? Context set by the researcher: Explain the different types of Fintech firms: (SMEs, GAFAs,	What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa? What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?

		Cross-industry convergence). *Probe on the question above is this is core to the research question and theoretical contribution* **23. Do you think FSPs can leverage off some of the solutions offered by Fintech firms and how?**	
i	The internal environment will have an effect on the external environment	**24. Can the relationship between Fintech and FSPs be mutually beneficial? What sort of effect will the institutional properties of an FSP like technology, innovativeness etc have on Fintech?**	What is the relationship between Fintech and FSPs, specifically in the area of Transactional Banking within South Africa? What impact do Fintech Enablers (Globalisation, Smartphones, The Internet, Government Intervention and Regulation) have on Fintech, and in turn on FSPs?

Closing

'Participant A', thank you very much for your participation in this research. It has been an absolute pleasure discussing this with you. Would you be open to further discussion should I have further questions and need for your expertise?

YES/NO

If so, I may set up further meetings to discuss, based on your availability.

APPENDIX H: Link between Concepts, Themes and Interview Questions

Arrow	Concept or relationship	Overarching Coding Theme	Related Interview Questions
a	**Innovation is a product of human action in its design, implementation and use**	INO	1
b	**Innovation also shapes human action within organisations**	INO	2,3
c	**The institutional properties of organisations will influence human agents in the process of innovation or innovating**	INO	4
d	**Interaction with innovation will influence the institutional properties of organisations through reinforcing or transforming the structures of that organisation**	INO	5,6
e	**Technology both shapes and is shaped by human agents, innovation and the institutional properties of an organisation.**	TECH	7,8,9,10,11,12,13,14,15
f	**Fintech Enablers will have an effect on Fintech**	FIN	16,17
g	**Fintech will have an effect on Fintech Enablers**	FIN	18, 19, 20
h	**The external environment will have an effect on the internal environment**	REL	21, 22, 23

i	**The internal environment will have an effect on the external environment**	REL	24

APPENDIX I: Document Coding

Category	Code	Description	Count	% Codes	Cases	% Cases	Participant information emerged from data
Participant Information	PART-INFO	Participant Background and Information	13	1.90%	13	100.00%	
INNOVATION (INO)							
Innovation	INO-DEF	Innovation Definition	14	2.00%	13	100.00%	Literature, Conceptual Framework, Data
Innovation	INO-BUSMOD	Changing business models	1	0.10%	1	7.70%	Data
Innovation	INO-PHA	Innovation as a product of human action/Social Activity	21	3.00%	13	100.00%	Literature, Conceptual Framework
Innovation	INO-EMERGE	How innovation emerges	20	2.90%	13	100.00%	Literature, Conceptual Framework
Innovation	INO-MLR	Are some organisations more or less innovative than others, can it be replicated?	20	2.90%	13	100.00%	Data
Innovation	INO-SHA	Innovation shapes human action/ Innovation influencing or transforming human action	10	1.40%	9	69.20%	Literature, Conceptual Framework
Innovation	INO-IP	Innovation can transform the Institutional Properties of an organisation	12	1.70%	10	76.90%	Literature, Conceptual Framework
Innovation	INO-SHA-EG	Example of innovation shaping human action	1	0.10%	1	7.70%	Literature, Conceptual Framework
Innovation	INO-IP-SHA	Institutional properties (IP) shape human action in the process of innovation	19	2.70%	13	100.00%	Literature, Conceptual Framework
Innovation	INO-DRIVES	Innovation drives further innovation/ Innovation breeds innovation	18	2.60%	13	100.00%	Data
Innovation	INO-REWARD	Rewarding Innovation	4	0.60%	4	30.80%	Data
TECHNOLOGY (TECH)							
Technology	TECH-DEF	Technology Definition (What is Technology)	18	2.60%	13	100.00%	Literature, Conceptual Framework
Technology	INO-VS-TECH	Innovation Vs Technology	9	1.30%	8	61.50%	Data
Technology	TECH-PHA	Technology as a by-product of human action/	19	2.70%	13	100.00%	Literature, Conceptual Framework

		Technology being shaped by people					
Technology	TECH-PINO-EG	Example of an innovation that introduced technology/Technology as a by-product of innovation	8	1.20%	7	53.80%	Literature, Conceptual Framework
Technology	TECH-SHA	Tech shaping human action Technology shaping the way people behave and work	12	1.70%	10	76.90%	Literature, Conceptual Framework
Technology	TECH-SHA-EG	Example of technology shaped by people (MS teams)	12	1.70%	8	61.50%	Literature, Conceptual Framework
Technology	TECH-PHA-EG	Example of technology as a product for human action	3	0.40%	3	23.10%	Literature, Conceptual Framework
Technology	INO-SB-TECH	Innovation shaped by technology	14	2.00%	12	92.30%	Data
Technology	TECH-INTFLEX	Interpretive Flexibility	12	1.70%	9	69.20%	Literature, Conceptual Framework
Technology	TECH-IP-SHAPE	Institutional properties shaping how a technology is designed and used	12	1.70%	11	84.60%	Literature, Conceptual Framework
Technology	TECH-SHA-YC	Technology shaping the way people behave (Your company vs others/in different organisations)	15	2.20%	13	100.00%	Literature, Conceptual Framework
Technology	TECH-EDGE	What can give organisations an edge in technological advancement	14	2.00%	12	92.30%	Data
Technology	TECH-SHAPE-ORG	How technology is influencing the way organisations operate	14	2.00%	11	84.60%	Literature, Conceptual Framework
Technology	TECH-ADOPT	Forced adoption of technology	1	0.10%	1	7.70%	Data
Technology	IP-PHA-NOTTECH	Institutional properties are a product of human action rather than technology (Social Action)	2	0.30%	2	15.40%	Literature, Conceptual Framework
Technology	TECH-BYP-INOEN	Technology is a by-product of an innovative environment	13	1.90%	11	84.60%	Data
Technology	TECH-IP	Technology transforming institutional properties	8	1.20%	8	61.50%	Literature, Conceptual Framework
FINTECH (FIN)							

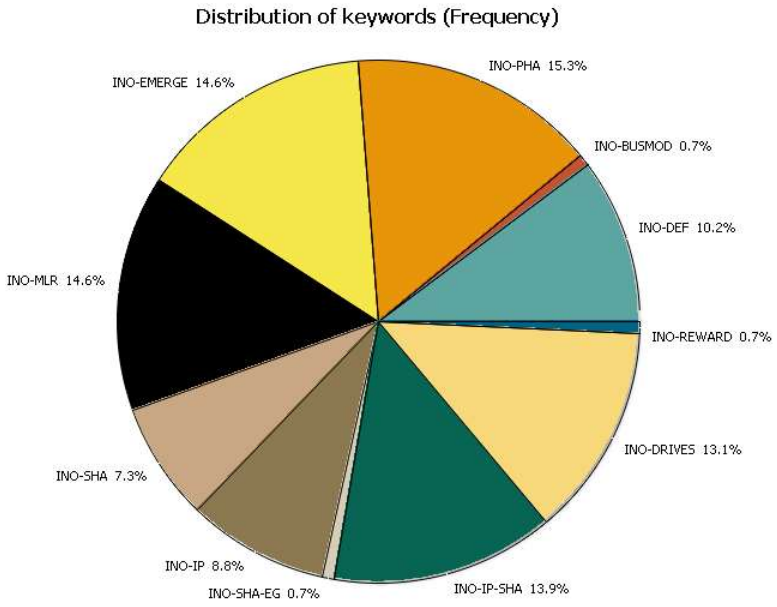
Fintech	FIN-DEF	What is Fintech?	13	1.90%	13	100.00%	Literature, Conceptual Framework
Fintech	FIN-EMERGE	Why did Fintech come about?	15	2.20%	13	100.00%	Literature, Conceptual Framework
Fintech	FEN-EMERGE	Fintech Enablers and their role in the emergence of Fintech	14	2.00%	12	92.30%	Literature, Conceptual Framework
Fintech	FEN-EG	Example of an enabling technology	4	0.60%	4	30.80%	Literature, Conceptual Framework
Fintech	FIN-GR-EN	Government/regulation encouraging Fintech	13	1.90%	12	92.30%	Literature, Conceptual Framework
Fintech	FIN-GR-DISC	Government and regulation discouraging Fintech	9	1.30%	7	53.80%	Literature, Conceptual Framework
Fintech	INO-TECH-INTERACT	Innovation & Tech feeding off each other	N/a	N/a	N/a	N/a	Literature, Conceptual Framework, Data
Fintech	FIN-IMPACT-GEN	Impact of Fintech on the world and in general: Fintech leading to further advances in innovation and technology	20	2.90%	13	100.00%	Data
Fintech	FIN-REG	Fintech forcing regulation from government	14	2.00%	11	84.60%	Data
Fintech	FIN-GOOD	Opinion of whether Fintech is good	13	1.90%	13	100.00%	Data
Fintech	FIN-BAD	Opinion on whether Fintech is bad	3	0.40%	3	23.10%	Data
RELATIONSHIP BETWEEN FINTECH AND BANKS (REL)							
Relationship - Fintech Vs Banks	REL-FINIMPACT-BANKs	Impact of Fintech on banks	25	3.60%	13	100.00%	Data
Relationship - Fintech Vs Banks	REL- PARTNER	Partner	35	5.10%	13	100.00%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-BUY	Buy	23	3.30%	12	92.30%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-COMPETE	Compete	39	5.60%	13	100.00%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-STRAT	Strategy and underlying model	17	2.50%	10	76.90%	Data

Relationship - Fintech Vs Banks	REL-FINDRIVES-INO-TECH	Impact of Fintech on banks - forcing innovation	6	0.90%	5	38.50%	Data
Relationship - Fintech Vs Banks	REL-Part-EG	Partner Example	1	0.10%	1	7.70%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-BUY-EG	Buy example	1	0.10%	1	7.70%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-BANKSIMPACT-FIN	Banks impact on the Fintech	9	1.30%	8	61.50%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-FINTYPE-GAFAs	GAFAs	17	2.50%	13	100.00%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-FINTYPE-SMEs	SMEs	16	2.30%	12	92.30%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-FINTYPE-UNI	Unicorns	9	1.30%	9	69.20%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	REL-FINTYPE-XIND	Cross-Industry Convergents	13	1.90%	12	92.30%	Literature, Conceptual Framework
Relationship - Fintech Vs Banks	TRUST	What gives banks a competitive advantage Trust....	3	0.40%	3	23.10%	Data
Relationship - Fintech Vs Banks	FIN-PARTNER-FIN	Fintech Partnering with Each other or other Banks	4	0.60%	4	30.80%	Data
Relationship - Fintech Vs Banks	OTHER-IND-DISRUPTION	Disruption in other industries	1	0.10%	1	7.70%	Data
Relationship - Fintech Vs Banks	FIN-IMPACT-YO	Fintech impact on your organisation	18	2.60%	13	100.00%	Literature, Conceptual Framework

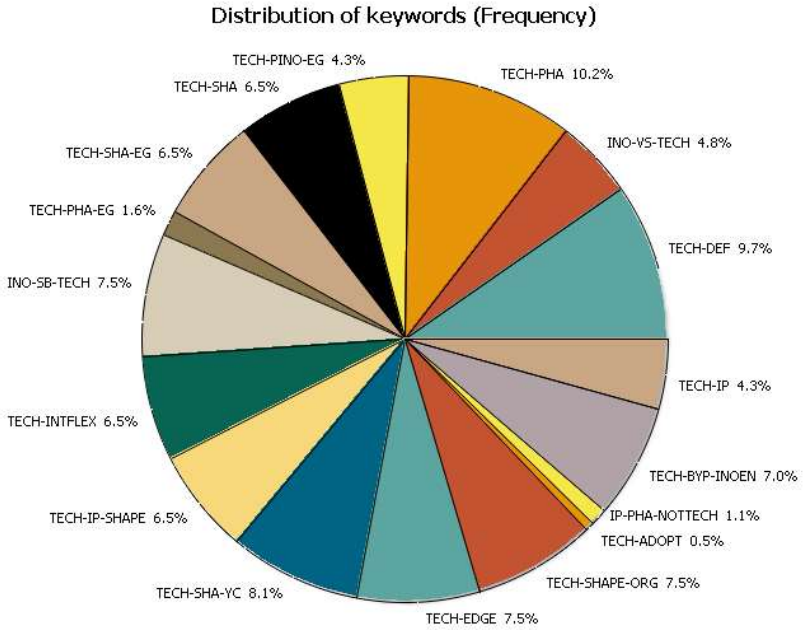
APPENDIX J: Visual Representation of the Coding Frequency

This section provides a visual representation of the coding and frequency of the distribution of codes used within this research. The following diagrams represent the coded keywords that emerged from the literature, data and conceptual framework of this study.

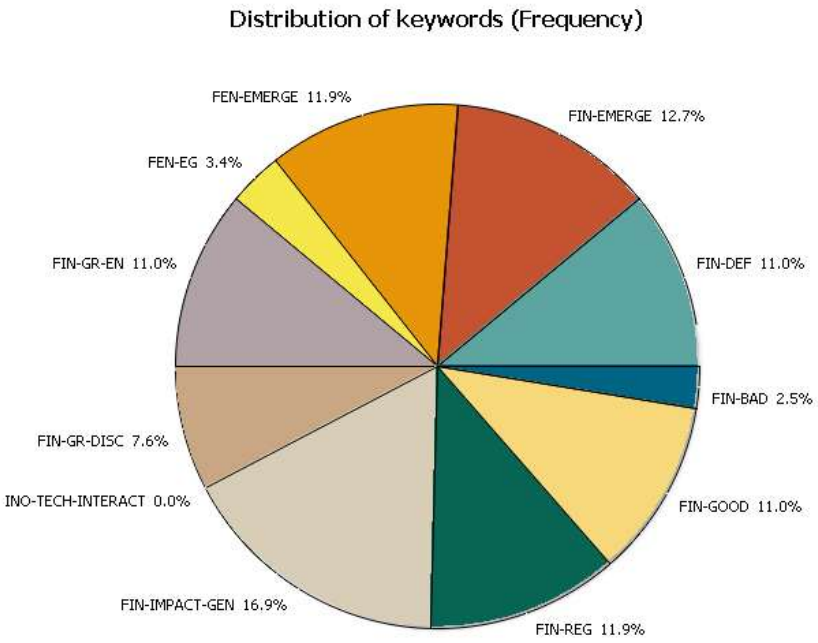
Innovation (INO)



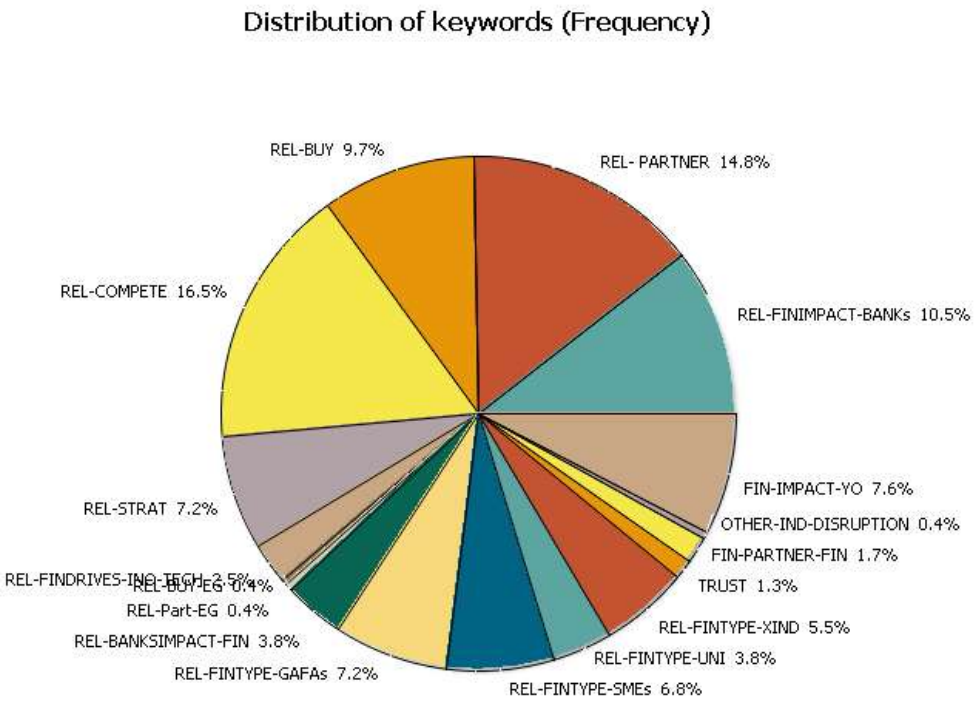
Technology (TECH)



Fintech (FIN)



The relationship between Fintech and Banks (REL)



APPENDIX K: Ethical Clearance Certificate

UNIVERSITY OF THE WITWATERSRAND, JOHANNESBURG

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

CLEARANCE CERTIFICATE	**PROTOCOL NUMBER: CBUSE/1592**
PROJECT TITLE	Exploring the relationship between Fintech and Financial Service Providers in South Africa: An extension of the Duality of Technology Framework
INVESTIGATOR	Mr Dylan Virasamy
SCHOOL/DEPARTMENT OF INVESTIGATOR	School of Business Sciences
DATE CONSIDERED	5 August 2020
DECISION OF THE COMMITTEE	Approved unconditionally
RISK LEVEL	LOW RISK
EXPIRY DATE	31 December 2020

ISSUE DATE OF CERTIFICATE 6 August 2020 **CHAIRPERSON** _____
(Neetu Ramsaroop)

cc: Supervisor: Dr Emma Coleman

DECLARATION OF INVESTIGATOR

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

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

_____ 07/08/2020
Signature **Date**

PLEASE QUOTE THE PROTOCOL NUMBER ON ALL ENQUIRIES

APPENDIX L: Participant Information Sheet

Information Sheet for Participation in Research

Dear Sir/Madam,

My name Dylan Virasamy and I am a master's student in Information Systems at the University of the Witwatersrand, Johannesburg. As part of my studies, I have to undertake a research project, and I am investigating The Relationship between Fintech and Financial Services Providers (FSPs) in South Africa, under the supervision of Dr Emma Coleman. The aim of this research project is to gain a deeper understanding of the relationship between Fintech and FSPs in South Africa as it is very much an emerging topic in both practice and academic research.

As part of this project, I would like to invite you to take part in an interview. This activity will involve discussing your personal and professional knowledge around the topic of Fintech and the relationship with FSPs and will take around sixty minutes. With your permission, I would also like to record the interview using a Dictaphone or Microsoft Teams, as this will help me in transcribing responses and the conversation between ourselves. Unfortunately, if the COVID-19 pandemic continues to limit face to face interaction, the use of online video or audio interviews will need to be used. Video's will however not be shared and will only be used to aid the researcher in transcribing the information from the interview process; in order to keep your participation anonymous. However, should you not be comfortable with a video interview, then only audio recording will be utilised.

There will be no personal costs to you if you participate in this project, you will not receive any direct benefits from participation but there are no disadvantages or penalties if you do not choose to participate or if you withdraw from the study. You may withdraw at any time or not answer any question if you do not want to. The interview will be completely confidential, and your details will be anonymised within the final research report; I will be using a pseudonym (fake name) to represent your participation in my final research report. The information you give to me will be held securely, all interview data stored on my personal storage will be coded and password protected, and all data backup will be held on a secure server with no disclosure to any third parties. If you experience any distress or discomfort at any point in this process, we will stop the interview or resume another time.

If you have any questions during or afterwards about this research, feel free to contact me on the details listed below. This study will be written up as a final master's Research report. If you wish to receive a summary of this report, I will be happy to send it to you. The data collected from this research

project will be stored on my personal laptop as well as Microsoft OneDrive on a secure server and will be kept for a period of 5 years, after which it will be deleted and destroyed. With your permission, the data collected from this research project may be used by other researchers for future academic research within the field of Fintech, though your input will be kept strictly anonymous as mentioned. If you have any concerns or complaints regarding the ethical procedures of this study, you are welcome to contact the University Human Research Ethics Committee (Non-Medical), telephone +27(0) 11 717 1408, email hrecnon-medical@wits.ac.za

Yours sincerely,

Dylan Virasamy

Researchers Details:

Name: Dylan Virasamy, **Email Address**: 307488@students.wits.ac.za

Supervisors Details:

Name: Dr Emma Coleman, **Email Address**: Emma.Coleman@wits.ac.za

APPENDIX M: Participant Consent Form

Participant Consent Form

Research Topic: Exploring the relationship between Fintech and Financial Service Providers in South Africa

Researcher: Dylan Virasamy

I, ……., agree to participate in this research project. The research has been explained to me and I understand what my participation will involve. I agree to the following:

(Please circle or highlight the relevant options below).

I agree that the researcher may use anonymous quotes in his / her research report	Y	N
I agree that the interview may be audio recorded	Y	N
I agree that the interview may be video recorded	Y	N
I agree that the information I provide may be used anonymously after this project has ended, for academic purposes by other researchers, subject to their own ethics clearance being obtained.	Y	N

…… (signature)

…… (name of participant)

…… (date)

…… (signature)

Dylan Virasamy…… (name of person seeking consent)

…… (date)