The impact of barriers to Inter-Company Innovation flows and Corporate Entrepreneurship at a Financial Services Organisation in Johannesburg.

Applied Research Project Proposal
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Declaration

I, Buyisile P Maseko, declare that this research article is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration in the Graduate School of Business Administration, University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

BPM 

Signed at Johannesburg

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Abstract

Background: Increasing stability and improving the quality of services are the main challenges facing the financial industry since the 2008 fiscal crisis. In this paper, we explored the barriers within large financial services firms that influence the effectiveness of disruptive and radical innovation. Providing quality services to customers is one of the pillars of financial services companies. It is imperative that they continuously innovate their services in order to sustain their revenue streams in tough macroeconomic times and amid rapid technological growth.

Research Purpose: This paper investigated the barriers that impact the inter-company innovation flow in the financial service sector and corporate entrepreneurship. In simple terms, we examined the link between corporate entrepreneurship and financial innovation and how barriers to these flows can impact inter-company innovation. As part of this study, we examined the factors that predict service innovation in the financial services sector such as management support, work discretion, rewards and reinforcement, and organisational boundaries.

Setting: A survey questionnaire was conducted with employees within a Financial Services Organisation in South Africa - across various designations.

Research Method and Approach: In order to gather responses from all levels of employees within one of the country's leading banks, a case study approach was adopted. To gather quantitative data, an online survey was conducted using scales for corporate entrepreneurship and service innovation. The inferential statistics were based on multiple linear regressions and factor analysis.

Main Findings: Several major barriers to innovation and change were identified in the emerging findings, including bureaucracy, poor communication, lack of engagement by employees, management challenges and risk aversion. Based on the study's findings, corporate entrepreneurship predicted certain dimensions of service innovation. There was a significant (p 0.05) correlation between rewards and recognition, management support, and time availability on the basis of service innovation. Service innovation was not significantly influenced by work discretion or organisational boundaries. Using employee perceptions of barriers to innovation and

change, this study provides managers and practitioners with insight into how to improve the organizational conditions to support innovation and change. Based on the results of this study, further research can be conducted in this field.

Value of Research: The insights gained from this study can help companies improve commercial services and build competitive advantage through corporate entrepreneurship and address inter-company innovation barriers**.** According to the results, the financial services industry is unable to innovate in response to society's demand for radical change. Identifying the internal barriers to potential disruptions and radical innovations in large financial services firms are the purpose of this study.

Key words*: Corporate entrepreneurship, innovation, corporate venturing, barriers to innovation, organisational culture, service innovation,*

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CHAPTER 1: Introduction

1.1. Background

The financial industry has had to innovate in response to the 2008 financial crisis to increase its stability and improve its quality. The digital age, however, presents a significant challenge to chief executive officers (CEOs), since it can transform the operating environment of businesses dramatically (Grosskopf et al., 2015; Hirt and Willmott, 2014). Digital technology, according to Hirt and Willmott (2014), can lower entry barriers, thus enabling new competitors to compete with large corporations. Furthermore, they indicated that companies would lose their competitive advantage if they failed to adopt technologies to enhance their competitive advantage. In order to respond to changes in the operating environment, most companies realise that their strategies need to be aligned with their cultures and leadership (Hirt and Willmott, 2014). However, as Kuratko and Morris (2018) state, they also need help to develop strategies encouraging employee innovation.

The financial sector faced unique challenges following the 2008 global financial crisis (Kuratko, Hornsby and Hayton 2015). A survey conducted by PwC Banking Banana Skins 2015 found that political and economic factors inhibit the growth of this industry. Consequently, CEOs need to reevaluate their missions and analyse their organisation’s operating environments, corporate strategies, and employee skills in light of the numerous external factors that threaten the growth and competitiveness of financial services companies (Grosskopf et al., 2015).

Kuratko, Hornsby and Covin (2014) and Yunis, Tarhini and Kassar (2018) recommend introducing corporate entrepreneurship into their organisations to address these challenges. In increasingly competitive and economically constrained environments, organisations that are not recognized as entrepreneurial, corporate entrepreneurship is becoming increasingly popular, according to Phan et al. (2009). There is a growing body of research demonstrating the value of corporate entrepreneurship in increasing a company's competitive advantage (Grawe, Chen and Daugherty 2009; Hornsby et al. 2009; Kuratko et al. 2015). Bloodgood, Schwens, Isidor and Kabst (2015) also examined their organizations' performance in this context.

The existing literature extensively discusses the barriers and challenges faced by established firms when it comes to fostering effective innovation. However, most of this research primarily examines obstacles related to product-oriented companies and research and development (RandD) teams within manufacturing firms. There is a noticeable gap in understanding the specific challenges associated with disruptive innovations within large financial services firms. This gap is particularly pertinent because these financial institutions constantly grapple with new regulations designed to enhance market stability and competitiveness. Additionally, with the aid of emerging technologies, new players in the market offer innovative services that were traditionally outside the purview of the financial industry. As a result, large financial services firms are compelled to incorporate new technologies and provide novel and competitive services. In contrast to product and manufacturing firms, established financial services firms typically lack a strong tradition of RandD and primarily focus on making incremental improvements to their existing offerings. Consequently, these firms need to develop "new to the firm" capabilities, establish new structures, and integrate processes to facilitate innovation. This transformation necessitates significant changes across various aspects of the organization, including IT, HR, sales, and marketing systems, and is often accompanied by profound organizational disruptions.

1.2 Problem Statement

The financial services sector is undergoing rapid transformation driven by digital technology, changing customer expectations, and evolving regulatory landscapes. As Sharikmaslat et al. (2022) states, in this dynamic environment, financial organizations face significant challenges related to inter-company innovation flows and the adoption of corporate entrepreneurship. Digital technologies are reshaping payments, lending, insurance, and wealth management a transformation accelerated by the COVID-19 pandemic. While this transformation enhances diversity, competitiveness, efficiency, and inclusion of financial services in many economies, it may also lead to greater concentration in markets. Across the board, FinTech start-ups are encroaching upon established markets and leading the charge with customer-friendly solutions that are free of legacy constraints. The problem at hand is the identification and understanding of the specific barriers and challenges that

hinder the seamless flow of innovation among different business units within financial service organizations and the successful implementation of corporate entrepreneurship initiatives.

Financial organizations recognize the critical importance of innovation to remain competitive and resilient in this era of disruption. However, despite this recognition, they often encounter obstacles that impede the effective exchange of innovative ideas and the adoption of entrepreneurial practices (Kraus et al., 2018). According to Das et al. (2018), these barriers not only limit their ability to adapt to changing market conditions but also hinder their capacity to deliver improved services and products to customers. Such barriers include

The existing literature extensively discusses the barriers and challenges faced by established firms when it comes to fostering effective innovation. However, most of this research primarily examines obstacles related to product-oriented companies and research and development (RandD) teams within manufacturing firms. There is a noticeable gap in understanding the specific challenges associated with disruptive innovations within large financial services firms.

To address these barriers, it is imperative to pinpoint the precise nature of these barriers and their impact on inter-company innovation and corporate entrepreneurship within financial service organizations. Additionally, understanding how these obstacles affect service innovation and the overall competitiveness of financial institutions is essential for developing strategies that foster a culture of innovation and entrepreneurship.

1.3. Research Purpose

Given the problem at hand, the purpose of this applied research proposal therefore, is to investigate the barriers that impact the inter-company innovation flow in the financial service sector as well as corporate entrepreneurship within the financial services sector, with a focus on financial organizations in Johannesburg.

A vital goal of this study was to identify the main types of barriers that strategic innovation implementation within financial organizations. This research investigated the barriers that impact the inter-company innovation flow in the financial service sector and corporate entrepreneurship. Additionally, it examines the connection

between corporate entrepreneurship and financial innovation and how barriers to these flows can impact inter-company innovation. This study also aimed to identify the dimensions of corporate entrepreneurship that predict service innovation in financial services organizations, including management support, work discretion, rewards and reinforcements, and organizational boundaries.

By identifying and comprehensively addressing these barriers, we can provide actionable recommendations for enhancing innovation and entrepreneurship in financial service organizations, ultimately ensuring their sustained growth and competitiveness in the ever-evolving financial landscape.

1.4. Research Objectives

1.4.1. Main Objective

The main objective of this applied research project was to investigate the barriers that impact inter-company innovation flows within a financial services organization in Johannesburg, with a focus on corporate entrepreneurship and its relationship with service innovation.

1.4.2. Specific Objectives

1) To determine the impact of management support in inter-company innovation within the financial services sector.
2) To determine the impact of management support in inter-company innovation within the financial services sector.
3) To determine how work discretion affects inter-company innovation within the financial services sector.
4) To determine the impact of management support in inter-company innovation within the financial services sector.
5) To determine the impact of management support in inter-company innovation within the financial services sector.
6) To determine how time availability influence the ability of financial services organizations to innovate in their services.
7) To determine how organizational boundaries influence the ability of financial services organizations to innovate in their services.

8) To determine how rewards and reinforcements influence the ability of financial services organizations to innovate in their services.
9) To determine recommendations and strategies for enhancing inter-company innovation flows within financial services organizations, ultimately promoting innovation and competitiveness in the sector.

1.5 Research Questions

1) To what extent does the type of innovation pursued by financial services organizations influence their degree of corporate entrepreneurship?
2) What are the key factors promoting service innovation within financial services organizations, and how do they relate to corporate entrepreneurship?
3) How does management support affect inter-company innovation flows and corporate entrepreneurship in the financial services sector?
4) How does work discretion affect inter-company innovation flows and corporate entrepreneurship in the financial services sector?
5) How does rewards and reinforcements affect inter-company innovation flows and corporate entrepreneurship in the financial services sector?
6) How does time availability affect inter-company innovation flows and corporate entrepreneurship in the financial services sector?
7) How does organizational boundaries affect inter-company innovation flows and corporate entrepreneurship in the financial services sector?
8) What strategies can be used to enhance inter-company innovation flows within financial services organizations?

1.6. Assumptions and Limitations of the Research

1) The financial services organizations included in the study were representative of the broader financial industry.
2) Participants in the study provided accurate and reliable information.
3) The variables used in the research were valid and measure what they are intended to measure.
4) The study assumed that regulatory frameworks and compliance standards remained relatively stable during the research period.

5) The research assumed that the identified barriers were exhaustive and representative of all potential obstacles.

Chapter 2: Literature Review

This chapter will delve into an extensive exploration of the existing literature regarding inter- company innovation flows and corporate entrepreneurship focusing on types of innovation, barriers to innovation, service innovation and challenges of corporate entrepreneurship. This chapter provides both a theoretical and practical foundation for understanding these subjects.

2.1 Inter-Company Innovation Flows

Inter-company innovation flows refers to the exchange of innovative ideas, practices, and technologies between different organizations within the financial services sector. These flows can occur through various channels such as partnerships, collaborations, acquisitions, or even informal networks (Das et al., 2018). The realm of innovation has witnessed a proliferation of concepts and terminologies, making it essential to delineate distinct types of innovation.

2.1.1 Types of Innovation

Scholars such as Christensen et al. (2015) have introduced various classifications of innovations in the corporate environment. There are four innovation types: sustaining innovation (Christensen et al., 2015), disruptive innovation (Dewar and Dutton, 1986), and incremental innovation (Christensen et al., 2015).

2.1.1.1 Sustaining Innovation

Sustaining innovation primarily revolves around improving established companies' products and services to cater to the needs of established customer bases, also called incumbents (Mitchell, 1991). As a result of such innovations, incumbents can sell more products to their most profitable customers and do not necessarily affect existing markets, since they involve releasing new products or improving services (Christensen et al., 2015). This innovation does not create new markets, but rather develops existing ones with better value.

2.1.1.2 Disruptive Innovation

The disruption innovation model fundamentally modifies the way an industry or business operates in order to make a product or service more accessible and/or affordable to a larger audience. Christensen and Bower (1995) argue that new markets are created by applying various values to users, and that these new markets eventually supplant existing ones. That market expansion leads to a transition over time where the disruptor comes to either directly challenge the established dominant brands, forces them to adapt or renders them obsolete.

2.1.1.3 Incremental Innovation

Dewar and Dutton (1986) define incremental innovations as improvements in current technology or adjustments to current technology that better price/performance, products, services, processes, and tools in accordance with ongoing technological advances. These minor adjustments aim to enhance the company's productivity and performance, as well as the products' and services' user experience (UX) (Gatignon et al., 2002). Utilising incremental innovation, businesses can reduce expenses and differentiate themselves from rivals. Businesses can use incremental innovation to strengthen their market position and attract a larger customer base attracted to their newly enhanced product features.

2.1.1.4 Radical Innovation

Radical innovation is one that incorporates different technology, involves a change in a company's trajectory, and provides more benefits to its customers than was previously available in the market (Dewar and Dutton, 1986; Gatignon et al., 2002; Chandy and Tellis, 1998). The distinction between radical products and radical ideas have been advanced by scholars more recently radical service innovations. It is possible to design a radical product innovation based on substantially modern technology and to target both mainstream and emerging markets in the initial stages (Govindarajan et al., 2011).

2.1.2. Barriers to Innovation

While many studies have emphasized the success factors of innovation processes, there has been a growing recognition of the need to comprehend and address the barriers that hinder innovation. Barriers to innovation can emanate from various

sources, including organizational structures, member dynamics, and external factors. It is imperative to explore the inherent nature of these barriers comprehensively.The primary exploration of the inherent nature of barriers to innovation offers an alternative to examining the success factors.

A number of studies have shown that formalisation and centralisation hinder the process of innovation and change in organizations (Damanpour and Aravind, 2012; Prajogo and McDermott, 2014; Eva et al., 2017; Gonzalez, 2021; Hameed et al., 2012; Iranmanesh et al., 2021). Organizations with centralized and formalized management do not involve lower-level managers in decision-making, with decision-making authority being concentrated at the top (Kaufmann, Borry and DeHart-Davis, 2019). An organization's members may lack access to information owing to a less participative approach, thereby restricting their knowledge, learning opportunities and potential contributions (Nieves and Segarra-Ciprés, 2015). Collaboration, on the other hand, enhances communication channels, facilitates knowledge sharing, and increases organizational members' involvement, motivation and opportunities to contribute (Damanpour and Schneider, 2006). Despite this, employees are more knowledgeable about existing problems and solutions than senior managers in regard to changes in the environment, growth prospects and potential deficiencies. By involving employees in innovation and change processes, fewer negative consequences are likely to result from the wide range of opinions and the variety of new initiatives (Nieves and Segarra-Ciprés, 2015).

2.1.2.3 Barriers to Inter-Company Innovation Flows

2.1.2.3.1 Cultural and Organizational Differences

The organization, its members, and established routines can often serve as obstacles to or work against innovative efforts (Chandy, Hopstaken, Narasimhan, and Prabhu, 2006; Storey, 2000). Organizational culture refers to the shared values, beliefs, and underlying assumptions held by members of an organization. These shared values are the foundation of communication and mutual understanding and have an impact on employee behavior by fostering internal cohesion and coordination. Consequently, as articulated by Naranjo-Valencia et al. (2016), since

organizational culture has a direct influence on employees' conduct, it can shape their perception of innovation as a core organizational value and enhance their sense of involvement in it. For instance, a hierarchical culture tends to stifle innovation because it prioritizes values like control, stability, and an inward focus, while neglecting key innovation values such as creativity, autonomy, and a willingness to take risks. It is not uncommon for middle managers to face challenges in this role, considering that they are typically responsible for implementing senior management's change initiatives (Huy, 2002; Balogun and Johnson, 2005; Currie and Procter, 2005; Giangreco and Peccei, 2005). Managers have historically been stereotyped as resisting change while feeling that their privileges and roles are jeopardized, instead of acting as agents of change. According to Wooldridge and Floyd (1990) and Wooldridge et al. (2008), middle managers are responsible for significant contributions to innovation and change. Change initiatives and organizational performance are improved by involving middle management in strategy development.

2.1.2.3.2 Regulatory and Compliance Constraints

The financial services sector faces substantial regulatory constraints, and these compliance demands can pose substantial impediments to fostering innovation and collaboration among companies. The dilemma for financial regulators stems from the inherent nature of innovation, which inherently carries risks and the potential for errors – aspects that regulators frequently aim to minimize (Chiu, 2017). Consequently, regulatory bodies frequently suspend the development of innovative financial products and services that do not neatly align with predefined legal categories. Moreover, disputes often arise between state, federal, and international regulators regarding their respective jurisdictions in overseeing emerging financial applications.

2.1.2.3.3 Risk Aversion

Innovation and change are highly influenced by risk concerns, as innovation is a strategic decision that requires an organization to consider whether the risks associated with the innovation are reasonable (Hock-Doepgen, Clauss, Kraus and Cheng, 2020). Risk-seeking managers prefer innovation over low-risk organizational changes, while risk-averse managers prefer no change at all (Nicholson-Crotty et al.,

2019). Performing below aspirational levels fosters risk-taking, so organizations need to improve their performance before they can innovate (Manzaneque et al., 2020). The effect of risk aversion is therefore that people are less likely to launch innovations (Dias et al., 2021). As senior managers drive change initiatives, this study evaluates the challenges to change and innovation in a particular bank.

2.1.3. Preliminary framework of barriers to innovation

As a result of their study across different European countries, Hölzl and Janger (2011) identify five potential innovation barriers for firms (Table 1): "a restrictive mindset," "a lack of discovery competencies," and "an unsupportive organisational structure." We included all four internally oriented barriers, since one of them was externally oriented: "financial barriers to innovation," "skill barriers to innovation," "lack of information on markets," and "lack of information on technologies."

Table 1: Description of Barrier Sources

No. Description of barrier Source	
1 A restrictive mindset	Sandberg and Aarikka-Stenroos (2014)
2 A lack of discovery competences	Sandberg and Aarikka-Stenroos (2014)
3 An unsupportive organisational structure	Sandberg and Aarikka-Stenroos (2014)
4 Financial barriers to innovation	Hölzl and Janger (2011))
5 Skill barriers to innovation	Hölzl and Janger (2011)
6 A lack of information on markets	Hölzl and Janger (2011)
7 A lack of information on technologies	Hölzl and Janger (2011)

Disruptive innovation is becoming increasingly important to large financial services firms. As a result of internal and external barriers, realizing this poses several organisational challenges. The external barriers to the development and launch of

innovations are widely addressed, but empirical studies on the internal challenges are lacking. In order to generalise the results of this study to other large financial services organisations, the study empirically investigates the barriers to innovation within the financial services organisation.

Corporate success will be achieved by rejecting unpromising innovative ideas and proposals and limiting unreasonable expenses for innovation (Royer, 2003). Innovative ideas are processed, developed, and exploited more effectively through such regulations. By overcoming the barrier, the innovator can further increase their knowledge and motivation (Collinson and Gregson, 2003). Furthermore, failure will also increase motivation - though it will negatively impact motivation when it comes to failure.

2.2. Corporate Entrepreneurship

2.2.1 Definition and Evolution of Corporate Entrepreneurship

Corporate entrepreneurship is an integral aspect of organizational dynamics, focusing on the ability of organizations to foster entrepreneurial behaviors and innovation. As defined by Miller (1983), corporate entrepreneurship is an organization's willingness to allocate resources and endorse entrepreneurial behaviors to generate value-creating innovations (Kuratko and Audretsch, 2013, p. 325). It focuses on elements such as product innovation, proactiveness, and risk-taking as factors that allow organisations to take advantage of opportunities.

Corporate entrepreneurship has undergone significant conceptual development over time. Several decades of work have established corporate entrepreneurship as a well-established field of study (Bierwerth et al., 2015; Kuratko et al., 2015; Kuratko and Morris, 2018). (Kuratko and Audretsch, 2013) refer to the 1980s, 1990s, and 21st century as periods when it was defined and strengthened its theoretical foundation.

According to Guth and Ginsberg, 1990; Sharma and Chrisman, 1999, corporate entrepreneurship has two distinct yet complementary features: corporate venturing and strategic renewal. A popular definition of corporate entrepreneurship is:

"... process, whereby an individual or group of individuals in an association with existing organisations create a new organisation or instigate renewal or innovation that can facilitate innovation within the company. (Sharma and Chrisman 1999:18)"
There are many ways to define corporate entrepreneurship. Morris and Paul 1987 identified corporate entrepreneurship as a function of product innovation, proactiveness, and risk-taking. The process of creating or stimulating new organisations within existing organisations is clearly defined by Sharma and Chrisman (1999).

Authors	Definition	Dimensions
Miller (1983); Morris and Paul (1987)	Organisational renewal is explained as innovation, taking constructive risks, and conceptualizing and pursuing new opportunities, a process that often extends beyond the efforts of one key manager.	A proactive approach to product development and a willingness to take risks.
Guth and Ginsberg (1990); Zahra (1993)	This term refers to the creation of new companies within existing organisations, called internal innovation or venturing, as well as to the renewal of the ideas on which organisations are built, known as strategic renewal.	Established corporations need to innovate and renew their strategies.
Sharma and Chrisman (1999)	Creating a new organisation or instigate renewal or innovation within an existing organisation is a process that an individual or group of individuals performs in conjunction with an existing organisation.	Strategic renewal, innovation, and corporate venturing are the focus of the program.
Covin and Miles (1999)	In other words, it refers to the ability of the organisation to introduce new products or enter new markets on a regular basis, the organisation as a whole, its strategy for navigating its current environment, and the organisation's ability to create and exploit new product-market segments.	A sustained regeneration approach, an organisational renewal, a strategic renewal approach, and a redefinition of a domain will be tagged as these forms.
Lumpkin and Dess (1996)	Firms with entrepreneurial orientation enter new markets (with new or existing products) by entering into new markets (in new or existing markets with new or existing products).	It is important for the organisation to be autonomous, innovative, risk-taking, proactive, and aggressive with regards to competition.

Hornsby et al. (1999, 2002); Kuratko et al. (2014); Kuratko, Montagno and Hornsby (1990)	Developing and implementing innovative ideas in the organisation is broadly defined as part of it (Hornsby et al., 2002).	Organisational structure and boundaries, reward and resource availability, time availability, and management support for corporate entrepreneurship.
Kuratko and Audretsch (2013); Kuratko et al. (2011)	According to this process, managers' entrepreneurial behaviours are crucial regardless of whether the underlying reason for entrepreneurship corporate ventures or strategic entrepreneurship	The role of corporate venturing and strategic entrepreneurship

Hornsby, Kuratko, and Montagno (1999) explored organisational factors and elements that can be used to measure corporate entrepreneurship. A number of dimensions were identified, including management support, discretion and rewards, time availability and organisational boundaries. As a result, corporate entrepreneurship assessment instruments (CEAIs) have been developed based on these dimensions (Hornsby et al., 1999; Kuratko et al., 2014; Steyn, 2017) for measuring corporate entrepreneurship.

A brief summary of corporate entrepreneurship definitions and dimensions is shown in Table 2.

Table 2: Definitions and Dimensions of Corporate Entrepreneurship.

2.2.2 The Link Between Corporate Entrepreneurship and Innovation

Research on innovation in organisations has shown that corporate entrepreneurship can facilitate the development of both products and services (Calisto and Sarkar, 2017; Goodale et al., 2011). Corporate governance, however, has yet to be addressed in studies in the information and communication technology field, including finance, and the increasing technological innovation's impact on organisational performance is a function of entrepreneurship (Yunis et al., 2018, p. 334).

The main objective of corporate entrepreneurship is to create and pursue new venture opportunities as well as to renew the organisation's strategic direction (Dess and Lumpkin, 2005, p 147). Value chain activities can be viewed as sources of competitive advantage if they are viewed as sources of wealth creation. Entrepreneurial DNA is a term Burns (2004, p 53) uses to describe the characteristics of entrepreneurs and the implications of these characteristics for corporations. The focus has recently shifted to internal and external corporate entrepreneurship as well as managerial involvement in corporate entrepreneurship (Hornsby et al., 2009; Hornsby, Kuratko and Shaker, 2002; Kuratko and Audretsch, 2013). Kuratko, Morris and Covin (2011) add strategic entrepreneurship, which emphasises innovation that enhances a company's competitive advantage. It was observed by Covin and Miles (1999) that all forms of corporate entrepreneurship are characterised by innovation.

2.3 Service Innovation in Finance Sector

Innovation extends beyond products and processes to encompass services in order to compete effectively on global markets in the 21st century. According to Kuratko et al. (2014), services are not considered tangible products, it can be quite difficult to measure and define them. Service innovation, as described by Morrar (2014) is characterized by heterogeneity (non-uniformity in the end result), inseparability (consumers cannot be separated from service experiences), and perishability (services cannot be stored or exchanged, so are transitory). The four dimensions of service innovation are related to service concepts, client interfaces, service delivery systems, and technology, according to Katzan (2015). The goal is to create a seamless and engaging customer experience. Creating new services is part of service innovation, according to Barcet and Grant (1991).

One prominent example of service innovation in finance is the rise of digital banking and fintech services. This includes the development of mobile banking apps, digital wallets, peer-to-peer payment platforms, and robo-advisors. These services leverage technology to make financial transactions and services more accessible, convenient, and efficient for customers. The finance sector has also seen service innovation in the form of blockchain technology and cryptocurrencies. This innovation involves

creating secure and transparent systems for transactions, reducing fraud, and exploring new forms of digital assets and decentralized finance (DeFi) services. Service innovation includes the development of regulatory technology (regtech) solutions. These technologies help financial institutions automate compliance processes, monitor transactions for suspicious activity, and reduce the costs and risks associated with regulatory compliance.

2.3.1 Corporate Entrepreneurship and Service Innovation

Corporate entrepreneurship's impact on organizational performance extends to service innovation, as suggested by studies linking corporate entrepreneurship to financial and non-financial performance (Bierwerth et al., 2015). Financial indicators and corporate entrepreneurship have been found to be positively correlated in several studies. Some of the financial indicators include return on sales and growth in sales (Zahra, 1993); return on assets and return on sales (Zahra and Covin, 1995); market share, profitability, and growth in sales (Lumpkin and Dess, 1996) and market performance (Jancenelle, Storrud-Barnes and Javalgi 2017). (Yunis et al., 2018) have found a positive correlation between corporate entrepreneurship and non-financial measures such as competitive performance and product innovation. The effects of corporate entrepreneurship on organisational performance have also been hypothesized to extend beyond financial measures.

2.3.2 Factors Impacting Service Innovation in Corporate Entrepreneurship in Finance Sector

2.3.2.1 Management Support

Management support is a pivotal factor in fostering corporate entrepreneurship (Seshadri and Tripathy, 2006). Hornsby et al. (2009) describe management support as managers' willingness to facilitate entrepreneurial activities. It involves top-level management creating an environment that encourages entrepreneurial activities and innovation (Bloodgood et al., 2015; Hornsby et al., 2009; Lekmat and Chelliah, 2014). Senior management sets strategic imperatives, while middle-level managers play a crucial role in positioning and nurturing entrepreneurial initiatives (Hornsby et al., 2002). Middle managers serve as shepherds, championing and guiding these efforts, according to Kuratko and Audretsch (2013). Effective management support

values employees, nurturing their talents and efforts, leading to a more engaged workforce. If the needs of staff are accommodated, they will use their full potential and competencies, such as imagination and goodwill, towards uplifting the company. With proper management support, employees will be interested in the company's goals when they feel cared if Managers must maintain an optimistic attitude toward entrepreneurial initiatives. An optimistic attitude towards entrepreneurial initiatives is crucial across all management levels to prevent initiative stagnation.

2.3.2.2. Work Discretion

Work discretion promotes innovation and corporate entrepreneurship by allowing employees to make decisions freely and responsibly, organisations adopt a culture that permits them to accept failure as stated by Kuratko et al. (2014) and allow them to make decisions with freedom and responsibility.

Discretionary cultures are excellent for organisations seeking new ventures and promote innovation (Manroop, 2015). For corporate entrepreneurship to succeed, employees and managers need to trust each other, according to Registering and Weitzel (2013). The ability to exercise discretion must be present in the day-to-day activities of the employees (Bessant and Tidd, 2008: 66). It is recommended that corporate entrepreneurial projects have a two-year timeline, according to Fattal (2003). Moreover, according to Kuratko, Ireland, Covin and Hornsby (2005: 703), managers should evaluate workloads to ensure that individuals and groups have time to pursue innovations as well as that their jobs are structured so that short- and long-term organisational goals can be achieved.

2.3.2.3. Rewards and Reinforcement

A culture of corporate entrepreneurship and innovation is positively influenced by human resource managers who practice human-resource practices such as rewards and reinforcement as Giannikis and Nikandrou (2013) explained. The implementation of human resource practices that include rewards and compensation give an organisation a competitive edge over its competitors by encouraging creativity and innovation (Giannikis and Nikandrou, 2013). A reward system also encourages workers to take risks and be entrepreneurial, as Kuratko et al. (2014) argue. As an employee will naturally be motivated to participate in an enterprise through incentives, rewarding and recognising them is also important (Lekmat and

Chelliah, 2014). As a result, entrepreneurial behaviour will be enabled to self-create within an organisation, serving as a source of new opportunities (Sørensen and Fassiotto, 2011).

2.3.2.4. Time Availability

Employees should perceive there are resources available for entrepreneurship, according to Hornsby et al. (1999). A resource that employees must allocate to entrepreneurial activities in their work schedules is time (Kuratko et al., 2014). In their study, Bloodgood et al. (2015) introduced a system dynamics approach to corporate entrepreneurship, in which the opportunity is the focal point. As part of the system dynamics model, opportunities are recognized, assessed, legitimized and, if successful, implemented. Innovations arise from opportunities in a stage-gate process.

2.3.2.5. Organisational Boundaries

An organisation's internal and external boundaries are determined by how much information flows between them (Kuratko et al., 2014). Moreover, Kuratko et al. (2014) focus on building a culture of entrepreneurship by increasing information flow within organisations.The definition of entrepreneurial culture is summarized by Nayager and Van Vuuren (2005) is one that promotes creativity and innovation, experiments with new products, suggestions for improvements, risks, acceptance of responsibility and ownership of their creations. Such a climate encourages individuals to pursue attractive opportunities and fosters a culture of creativity and innovation (Ramachandran et al., 2006, p. 90). Encouraging information flow within the organization facilitates the creation of knowledge and innovation. Formal and informal initiatives are involved in generating new knowledge and translating existing knowledge into practice. Zahra (2015) describes how knowledge is generated within an organisation through entrepreneurial hubs. Innovation is promoted by flexible boundaries that facilitate information flow, as noted by Miller et al. (2007).

2.4: Research Hypotheses

From the literature review, hypothesis were generated. In each dimension, the null hypothesis was represented by HX_N , while the alternate hypothesis was represented by HX_A where X represents the dimension or hypothesis number.

Hypothesis 1: Management Support and Service Innovation

$H1_N$: No correlation exists between employee support and service innovation

$H1_A$: A lack of management support significantly hinders service innovation.

Hypothesis 2: Work Discretion and Service Innovation

$H2_N$: Service innovation is not significantly influenced by employees' work discretion.

$H2_A$: Employees' limited work discretion significantly hinders service innovation.

Hypothesis 3: Rewards and Reinforcement, and Service Innovation

$H3_N$: Service innovation is not significantly influenced by reward and reinforcement cultures.

$H3_A$: The absence of a reward and reinforcement culture significantly hinders service innovation.

Hypothesis 4: Time Availability and Service Innovation

$H4_N$: Service innovation is not significantly influenced by employees' time availability.

$H4_A$: Limited time availability for employees is a barrier of service innovation.

Hypothesis 5: Organisational Boundaries and Service Innovation

$H5_N$: The flexible organisational boundaries do not have significant impact on innovation in services.

$H5_A$: Flexible organizational boundaries significantly hinder innovation in services.

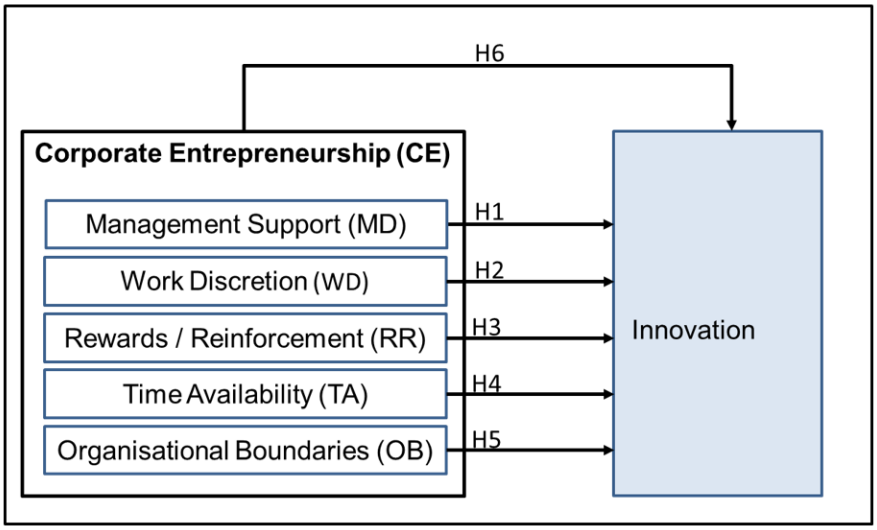


Figure 1: Summary of hypotheses formulation

Chapter 3: Research Design and Methodology

3.1. Study Setting

The study was conducted within the Financial Services sector in South Africa, with a specific focus on First National Bank (FNB), one of the leading banks in the region. FNB's headquarters and several branches across South Africa served as the primary settings for data collection.

3.2. Research Design

The research design chosen for this study was a mixed-methods approach, which combined both quantitative and qualitative research methods. A structured online survey was used as the primary data collection method for both the quantitative and qualitative data collection process. The mixed methods allowed for a comprehensive exploration of the research problem and provided a richer understanding of the barriers and challenges faced by FNB in terms of Inter-Company Innovation flows and Corporate Entrepreneurship.

3.3 Research Population and Sample

3.3.1 Study Population

The study population consisted of employees at various levels within FNB, including top-level executives, middle managers, and front-line employees directly involved in innovation and entrepreneurship activities.

3.3.3 Sampling Method

The sampling process for the quantitative phase of the research involved cluster random sampling. Financial services companies, primarily diversified banks, were selected as clusters. Companies with a wide range of business services that aligned with the study's objectives were considered suitable candidates and FNB was selected due to due to its willingness to participate. Within FNB, employees from various roles were targeted, including sales consultants, team leaders, managers, and executive members. A distribution list of email addresses was used to select respondents for the survey.

For the qualitative phase of the research, purposive sampling was used to select key stakeholders within the chosen financial services organization (FNB). Participants were selected based on their roles and expertise in the areas of innovation, entrepreneurship, and organizational dynamics. This approach will ensure that the provide relevant and valuable insights.

3.3.4 Sample Size

The online survey generated a total of 152 responses. The sample size was determined based on practical considerations, resource constraints, and the desire to obtain a representative sample of FNB employees.

The survey was distributed to employees of FNB, primarily through email. A distribution list of email addresses was obtained with the cooperation of FNB's human resources department. The email contained a brief introduction to the research, a link to the online survey, and a request for voluntary participation. Respondents were assured of the confidentiality of their responses.

3.4 Data Collection

3.4.1 Qualitative Data

Qualitative research was employed to gather in-depth insights into the specific challenges and barriers faced by financial services organizations. Respondents' answers to section 1 of the questionnaire (relating to barriers to innovation) were categorised, then explored for emergent themes by employing a comparative technique to uncover variations and similarities with the existing literature, thus

seeking to develop and refine emergent themes and patterns (Gioia, Corley and Hamilton, 2013). Categories relating to key barriers to innovation and change were classified and grouped to identify respondents' top barriers to innovation: these included hierarchical organisational structure (high bureaucracy), managerial and operational challenges (poor communication among hierarchical staff), lack of employee involvement, middle manager resistance (insufficient technical expertise or training of employees), and risk aversion. The questions were designed to delve deeper into their experiences and perspectives regarding inter-company innovation and corporate entrepreneurship, participants were given an option to expand on their thoughts and view on each question. This section provided rich qualitative data that complemented the quantitative findings.

3.4.2 Quantitative Data

A structured online survey was used as the primary data collection method for the quantitative phase of the research. The online survey instrument had two distinct sets of questions derived from the CEAI model and from innovation assessment in order to comprehensively assess both corporate entrepreneurship and innovation within the organization. The Corporate Entrepreneurship and Innovation Assessment (CEAI), adapted from Kuratko et al. (2014), aimed to gauge respondents' perceptions of corporate entrepreneurship within the organization. This set of Likert-scale questions covered dimensions such as management support, work discretion, rewards and reinforcements, time availability, and organizational boundaries. The responses ranged from Very Low, Low, Neutral, High, and Very High. The innovation assessment section, adapted from Grawe, Chen, and Daugherty (2009), focused on innovation-related aspects. Respondents were asked to rate their perceptions of innovation within the organization using a Likert scale.

3.5 Data Analysis Techniques

3.5.1 Qualitative Data Analysis

Qualitative data from the questionnaire was analyzed using thematic analysis. The data was grouped to identify recurring themes, patterns, and categories related to

inter-company innovation flows, corporate entrepreneurship, and barriers. This thematic analysis provided a deeper understanding of the qualitative findings.

3.5.2 Quantitative Data Analysis

Quantitative data collected through the online survey was analyzed using SPSS version 4 statistical software. Descriptive statistics, such as means, standard deviations, and frequencies, were used to summarize the survey responses. Inferential statistical tests, such as correlation analysis and regression analysis, were employed to examine the relationships between variables and test hypotheses.

3.6 Data Reliability and Validity

To assess the validity and reliability of the questionnaire, a factor analysis was performed iteratively to eliminate weak variables or items. Additionally, Cronbach's alpha coefficient was computed to ascertain the internal consistency of the dimensions within the scales.

Subsequently, factor scores were computed to enable a more in-depth analysis of the relationship between corporate entrepreneurship and service innovation. The final stage involved employing a multiple regression model, incorporating corporate entrepreneurship as the independent variable and service innovation as the dependent variable.

3.7 Ethical Considerations

1) Ethical approval for the research was sought from the WBS ethics committee, ensuring that the study complied with ethical standards.
2) A formal written request was submitted to FNB (FNB HR Centre of Expertise) to request their employees' participation in the study and survey.
3) Participants were provided with clear and comprehensive information about the study's purpose, procedures, and potential risks and benefits. They were asked to provide informed consent before participating.

4) All data collected, both quantitative and qualitative, was kept confidential and anonymized to protect the participants' privacy. Data was only be accessible to the research team.
5) Participation in the study was entirely voluntary, and participants could withdraw at any time without facing any consequences.
6) Measures were taken to ensure the security of data, including encryption of online survey responses and secure storage of interview transcripts with passwords.
7) The research was conducted with honesty, integrity, and transparency, and any conflicts of interest were disclosed.
8) Participants were given the option to consent to the recording of interviews (if necessary) and to withhold the disclosure of their personal information, including their names, to maintain confidentiality.

3.8 Limitations of the Research

1) The sample size, while representative, may not capture the entire diversity of the financial services sector.
2) Findings from this study may not be entirely generalizable to other financial institutions or regions, as they are specific to FNB and South Africa.
3) Respondents may have provided responses that align with societal norms or what they perceive as desirable, potentially leading to bias in self-reported data.
4) The research was conducted within a specific timeframe, limiting the depth and breadth of data collection and analysis.
5) Changes in the external environment, such as regulatory shifts or market dynamics, may have influenced the research findings.
6) The study may not have captured the full complexity of cultural and organizational differences.

3.9 Risk Mitigation and Addressing Conflict of Interest

There were several risks in the research study but all of them were mitigated to reduce their influence on the research findings.

- There was a risk of breaching the privacy and confidentiality of participants if their personal or sensitive information was mishandled but the research team ensured that all data collected, both quantitative and qualitative, was anonymized and stored securely. Personal identifiers were removed from transcripts, and access to data was restricted to authorized team members only.
- Respondents may have provided biased or incomplete responses, impacting the accuracy of survey results. To reduce the response bias, the research team emphasized the importance of honest and accurate responses in all communications with participants. Additionally, a diverse sample of employees from various departments and roles within FNB was selected to minimize bias.
- There was a risk of a low response rate in the survey, which could affect the representativeness of the data but the research team designed a user-friendly online survey that was easy to access and complete to mitigate this. Communication about the research was clear and engaging, and reminders were sent to encourage participation. A distribution list of email addresses provided by FNB's human resources department ensured that the survey reached a broad audience.
- There was a risk of sampling bias if certain groups of employees or stakeholders were overrepresented or underrepresented in the study. To mitigate sampling bias, the research team used both random and purposive sampling techniques. Random sampling was employed for the survey to ensure a diverse set of responses. Purposive sampling was used for interviews to capture insights from key stakeholders representing different roles and levels within FNB.
- The researcher, Buyisile P Maseko, being employed at FNB, could potentially introduce bias into the data collection and analysis process. To mitigate this risk, the conflict of interest was disclosed in the Conflict of Interest Disclosure Statement to ensure transparency.

Conflict of Interest Disclosure Statement

I **Buyisile Maseko** the author whose name is listed immediately below report the following details of affiliation or involvement in an organisation or entity with a financial or non-financial interest in the subject matter or materials discussed in this applied research paper.

Below I have specified the nature of the potential conflict of interest and affiliation:

Authors Name: Buyisile P Maseko

Relationship/Affiliation with organisation discussed in research paper: I am employed at FNB.

Employment Inception: 1 July 2017

Authors Signature: B.P Maseko

Chapter 4: Results Analysis

4.1 Descriptive statistics

There were 152 responses gathered from the online surveys conducted to gather quantitative data.

Table 3: Designations:

Answer Choice	Response %	Role/Title
Channel Head	1%	2
Exco Member	5%	7
Growth Head	5%	7
Growth/Sales/Service Manager	23%	35
Regional Manager	8%	12

Sales/Service Consultant	20%	31
Specialist	34%	52
Team Lead	4%	6
Grand Total	**100%**	**152**

Figure 2: Roles/Titles

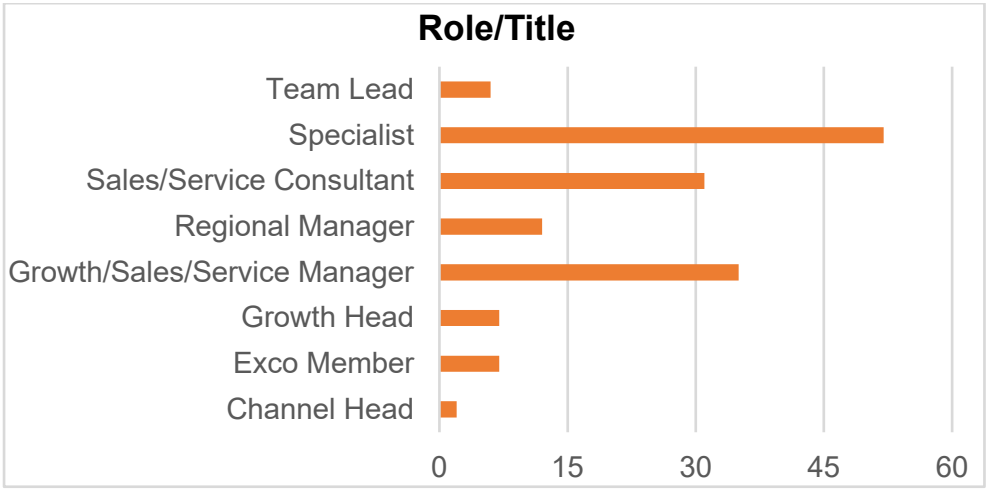
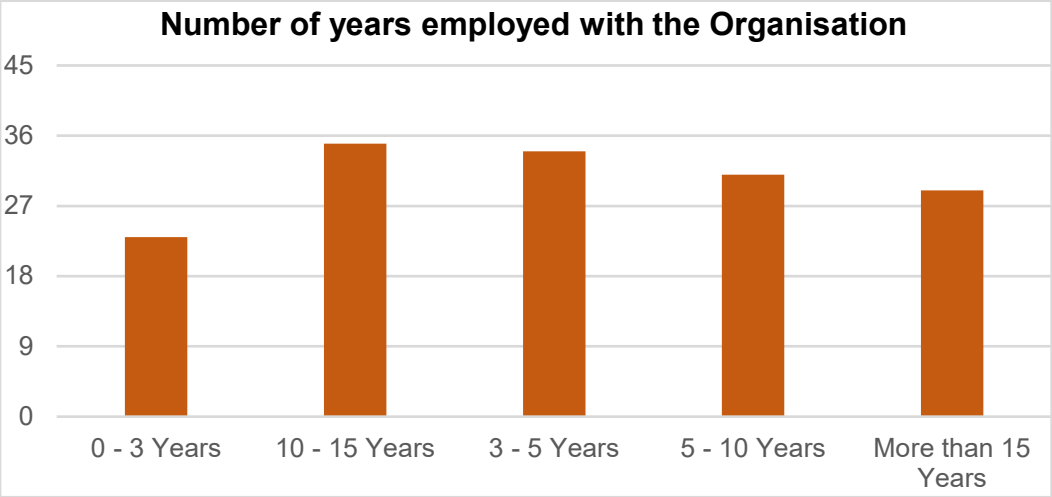


Table 4:Categories of work experience – time with the organisation

Answer Choice	Response %	Number of years employed with the Organisation
0 - 3 Years	15%	23
10 - 15 Years	23%	35
3 - 5 Years	22%	34
5 - 10 Years	20%	31

More than 15 Years	19%	29
Grand Total	**100%**	**152**

Figure 3: Number of Years Employed with Organisation



4.2.1 Part A: Barriers to Inter-Company Innovation flows

The research focused on the barriers with general consensus among the different respondents as shown by the table below (Table 5).

Table 5: Barriers to Inter-Company Innovation flows

Barriers to Inter-Company Innovation flows	**Top barrier according to respondents**	**% Response**
What do you think is the top barrier to Innovation in Banking?	Hierarchical organisational structure	33.50%
Indicate the biggest barriers to the application of financial innovations in your company:	Complex construction of financial innovations	28.20%

Barriers to innovation - Managerial and operational challenges	High complexity of managing open innovation, difficulty in balancing innovation with daily tasks	35%
Barrier to Innovation - Procedural and regulatory challenges	Low control of external resources compared to internal ones	25%
Barrier to Innovation – Human Resources	Insufficient technical expertise or training of employees	51%
Barrier to Innovation – Cultural Challenges	Employees lack interest to innovation and change	54%
Barrier to innovation – Business environment challenges	Insufficient expertise of partners and unavailability of competent external partners to provide the necessary knowledge and technologies	52.14%
At a staff and middle manager level what do you think may be potential barriers to innovation	A restrictive mindset by senior management	19.29%
	Skill barriers to innovation	19.29%

4.2.1.1 Hierarchical Organisational Structure

A significant 33.50% of respondents identified the hierarchical organizational structure as the top barrier to innovation in banking. This indicates that rigid hierarchies may hinder the flow of innovative ideas and initiatives within FNB.

4.2.1.2 Complex Construction of Financial Innovations

About 28.20% of respondents identified the complex construction of financial innovations as a significant barrier to their application within the company. This suggests that the intricacies of financial innovations pose challenges in their implementation.

4.2.1.3 Managerial and Operational Challenges

Approximately 35% of respondents highlighted high complexity in managing open innovation and difficulty in balancing innovation with daily tasks as barriers to innovation. This indicates that management-related challenges play a role in hindering innovation.

4.2.1.4 Procedural and Regulatory Challenges

25% of respondents identified low control of external resources compared to internal ones as a barrier to innovation. Regulatory hurdles may be limiting the company's ability to leverage external resources effectively.

4.2.1.5 Human Resources

An overwhelming 51% of respondents pointed out insufficient technical expertise or training of employees as a significant barrier to innovation. This highlights the importance of skill development within the workforce.

4.2.1.6 Cultural Challenges

A substantial 54% of respondents indicated that employees' lack of interest in innovation and change poses a significant barrier. This suggests that fostering a culture of innovation may be a critical challenge.

4.2.1.7 Business Environment Challenges

Approximately 52.14% of respondents cited insufficient expertise of partners and unavailability of competent external partners as barriers. Collaborative challenges may hinder the acquisition of necessary knowledge and technologies.

4.2.1.8 Restrictive Mindset by Senior Management and Skill Barriers

19.24 % of staff and middle managers identified a restrictive mindset by senior management as potential obstacles to innovation.

Additional insights and comments provided by survey participants:

- “I feel like FNB is rather innovative. But innovation isn't something you can just churn out at will even if the conditions are perfect. If the optimal way of doing something has already been found, then there is no room for innovation. And if there is a better way of doing something the solution may be difficult to discover if it is very different from how people typically approach the problem. There is nothing in the universe that can force a human to have a unique and useful idea. You just have to provide the environment that doesn't restrict them, and hope it happens.”

- “Culture. Recently joined, but the culture in the organisation is stifling.”
- “For an innovation to exist you need buy in and if you're not in the right circles or not part of the P and L teams doesn't matter how good your innovation can be it won't see the light of day.”
- “Limited capacity to execute new innovations resulting in backlog of implementation”
- “Low/ or no Priority on personal KPI + capacity issues”
- “A barrier that has not been noted here is the lack of recognition or 'stealing of ideas' ideas are put forward by staff.....then shut down for whatever reason and then 3 years later boom innovation is winning awards. The trust has now been broken, word spread and there is no longer interest. Especially if innovation sits outside your BU, you are sure to 'lose' out to the team in that area - in a nutshell better control over submitted innovations.”
- “Technology (Capacity) to develop on the back of innovations”

4.3 Part B: Inter-Company Innovation Flows and Corporate Entrepreneurship

4.3.1 Reliability and Validity Analysis

Determining Construct Validity of data collection instrument.

First, the researchers decided to run an exploratory factor analysis to determine the latent variables to be used within our study as well as to determine if construct validity is present. This was done with a fixed value of 6 factors as determined in the Literature Review. The result from the analysis was as follows:

Table 6: KMO and Bartlett's Test results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.788
Bartlett's Test of Sphericity	Approx. Chi-Square	292.544
	df	21
	Sig.	<.001

The KMO and Bartlett's test is used to determine whether the data is appropriate to be used in a factor analysis. For this requirement to be satisfied, we would require a Kaiser-Meyer-Olkin Measure of Sampling Adequacy test statistic of at least .60 and has to be statistically significant (p <.05). Our data is indeed adequate to be used within our exploratory factor analysis (KMO (21) = .788, p < .05).

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% Of Variance	Cum.%	Total	% Of Variance	Cum.%	Total	% Of Variance	Cum%
1	3.242	46.313	46.313	3.242	46.313	46.313	1.570	22.423	22.423
2	.928	13.255	59.568	.928	13.255	59.568	1.070	15.282	37.705
3	.763	10.904	70.472	.763	10.904	70.472	1.029	14.700	52.405
4	.670	9.565	80.036	.670	9.565	80.036	1.016	14.509	66.914
5	.609	8.695	88.732	.609	8.695	88.732	1.010	14.431	81.346
6	.483	6.897	95.629	.483	6.897	95.629	1.000	14.283	95.629

7	.306	4.371	100.000						
Extraction Method: Principal Component Analysis.									

Table 7:Total Variance Explained

Table 7 above shows the variances explained from each of the six factors that was obtained. However, since there were a selected fixed number of factors, the researcher decided to interpret and make use of all of the factors. This could also represent a limitation in the event they decide to use any of these factors for further data analysis. As seen in Table 7 above, the first factor was able to explain 46.31% of the variance in the overall factors.

Table 8:Rotated Component Matrix

	Component					
	1	2	3	4	5	6
In your opinion what is the level of knowledge and involvement by staff in innovations within your organisation	.890					
In your opinion what is the level of interest in innovations by staff within your organisation	.794	.406				

In your opinion how much support does the leadership and management of your organisation provide employees to drive innovation						.931
In your opinion what is the level of access to projects that drive innovation does staff have in your organisation					.943	
In your opinion how effective is collaboration interns of innovative projects/initiatives across Business Units and Product Houses				.939		
In your opinion do you think your organisation does enough to reward and reinforce innovation within your organisation			.927			

My organisation allocates enough time for me to work on innovation		.895				
Extraction Method: Principal Component Analysis. ***Rotation Method: Varimax with Kaiser Normalization.***						
a. Rotation converged in six iterations.						

The Rotated component matrix shows the questions that was used in the survey and how they have loaded together within each factor. Questions 1 and 2 loaded together and was named this factor *Service Innovation.* Moreover, all of the questions loaded individually under each factor. Due to this constraint in terms of data, reliability analysis cannot be performed but an assumption that construct validity was present was made. The factors and the variable names have been provided in the Annexures. However, the researcher did run a Cronbach's alpha on the *Service Innovation* factor (Factor 1) to evaluate for inter-rater reliability.

Table 9:Reliability Statistics

Scale	**Cronbach's Alpha**	**N of Items**
Perceived Service Innovation	.765	2

Table 6 shows the reliability statistics for the Service Innovation construct derived from the factor analysis measured within the study survey.

Cronbach's Alpha was usedto measure for inter-rater reliability. The results show that Service Innovation scale was dependable as it had a value that is greater than 70. The researcher then computed a Service Innovation variable by averaging the two responses that was part of the construct.

4.4. Qualitative Data

A total of 15 interviews were conducted. The interview transcripts were transcribed and a thematic analysis conducted to determine common themes.

4.4.1. Hypothesis Analysis

A multiple linear regression was used to determine the relationship between independent variables (Management Support, Employee Discretion and Employee Time Availability) and the dependent variable (Service Innovation).

$H0_A$*: Service Innovation is not impacted by any of our independent variables*

$H1_A$: A strong correlation exists between employee support and service innovation.

$H2_A$: Innovation in service is significantly influenced by employees' work discretion.

$H3_A$: Service innovation is significantly influenced by reward and reinforcement cultures.

$H4_A$: Service innovation is significantly influenced by employees' time availability.

$H5_A$: The flexible organisational boundaries have a significant impact on innovation in services.

Table 10: Results of hypotheses testing.

Hypotheses	***Results***
$H0_A$*: Service Innovation is not impacted by any of our independent variables*	*Control*
$H1_A$: A strong correlation exists between employee support and service innovation.	*Support, sig p = .015*
$H2_A$: Innovation in service is significantly influenced by employees' work discretion.	*Support, sig p<.01*
$H3_A$: Service innovation is significantly influenced by reward and reinforcement cultures.	*Not Supported, sig p = .097*

$H4_A$: Service innovation is significantly influenced by employees' time availability.	*Support, sig p = .015*
$H5_A$: The flexible organisational boundaries have a significant impact on innovation in services.	Statistically insignificant

4.4.2. Descriptive Statistics – Multiple Linear Regression Analysis

Table 11:Descriptive Statistics - Determinants of Service Innovation

	Mean	**Std. Deviation**	**N**
Service Innovation	3.35	0.920	140
Management Support*	3.46	1.214	140
Employee Discretion*	3.33	1.141	140
Time Availability*	3.63	1.219	140
Organisational Flexibility*	1.63	0.485	140

The descriptive statistics in Table 11 shows that Time Availability had the highest mean (M = 3.63, SD = 1.219) as well as the highest standard deviation. [This just shows that on average most of the people gave higher ratings towards Time Availability but also had the most inconsistent responses as seen by the high standard deviation].

4.4.3 Statistical Hypothesis Testing – Multiple Linear Regression with Service Innovation as the Dependent variable

The researchers ran a multiple regression analysis to determine whether the impact of independent variables (Management Support, Employee Discretion and Employee Time Availability) on the dependent variable (Service Innovation). The results were as follows:

Table 12: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.567[a]	.321	.302	.90927	2.084
a. Predictors: (Constant), Organisational Flexibility, Time Availability, Employee Discretion, Management Support					
b. Dependent Variable: Service Innovation					

Table 8 above shows that the predictors (independent variables) are able to explain 30.2% of the variance in the dependent variable which indicates a significant amount of explanatory power. Furthermore, the model was not suspect to autocorrelation as Durbin-Watson statistic lies within the range of 1.5 and 2.5. However, this is not of significant importance as the data was cross-sectional.

Table 13: ANOVA Table

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	57.437	4	14.359	17.368	<.001[b]
	Residual	121.535	147	.827		
	Total	178.972	151			
a. Dependent Variable: Service Innovation						

b. Predictors: (Constant), Organisational Flexibility, Time Availability, Employee Discretion, Management Support

The ANOVA shows that the model compliesd with the assumption concerning linearity. Furthermore, the model is a good fit (F (4,147) = 17.368, p<.01).

Table 14:Coefficients Table for independent variables

Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**Collinearity Statistics**	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	1.072	.264		4.056	<.001		
	Management Support	.157	.064	.193	2.455	.015	.745	1.342
	Employee Discretion	.167	.068	.194	2.472	.015	.752	1.330
	Time Availability	.206	.061	.258	3.361	<.001	.781	1.280
	Organisational Flexibility	.123	.073	.129	1.673	.097	.777	1.288

a. Dependent Variable: Service Innovation

Table 13 shows the individual impacts the predictors have on Service Innovation. Time Availability had the biggest impact concerning Service Innovation (β = .206, t = 3.361, p<.01) and was the most significant result. Management Support (β = .157, t = 2.455, p = 015) and Employee Discretion (β = .167, t = 2.472, p = .015) also proved to be statistically significant. Moreover, the study found that Organisational Flexibility proved to be statistically insignificant at the 95% confidence level.

Based on the results above, the null hypothesis was rejected in favour for hypothesis H1a, H2a and H4a. regarding Hypothesis H3a, the study faiedl to reject the null hypothesis. This means that while Management Support, Employee Discretion and Time Availability have a potential impact on Service Innovation, Organisational Flexibility did not as it was statistically insignificant.

$H0_A$: *Service Innovation is not impacted by any of our independent variables*

$H1_A$: A strong correlation exists between employee support and service innovation.

$H2_A$: Innovation in service is significantly influenced by employees' work discretion.

$H3_A$: Service innovation is significantly influenced by reward and reinforcement cultures.

$H4_A$: Service innovation is significantly influenced by employees' time availability.

$H5_A$: The flexible organisational boundaries have a significant impact on innovation in services.

4.5. Analysis of Potential Relationship between Perceptions Regarding Rewards and Reinforcement Cultures and Service Innovation

A Pearson's Correlation Analysis was ran to determine if there was a relationship between perceptions around rewards and reinforcement cultures as well as service innovation. The hypothesis for this test was determined as follows:

$H3_N$: Service innovation is not significantly influenced by reward and reinforcement cultures.

$H3_A$: Service innovation is significantly influenced by reward and reinforcement cultures.

Table 15: Descriptive Statistics - Pearson's Correlation Analysis Rewards and Reinforcement Perception and Service Innovation

	Mean	Std. Deviation	N
Rewards and Reinforcement Perception	3.04	1.376	152
Service Innovation	3.17	1.089	152

The descriptive statistics in Table 10 above shows that Service Innovation (*M* = 3.17, *SD* = 1.089) had the highest mean while Rewards and Reinforcement Perception had the highest variance (*M* = 3.04, *SD* = 1.376).

4.5.1. Statistical Hypothesis Testing – Pearson's Correlation Analysis

Table 16: Model Summary

		Rewards and Reinforcement Perception	Service Innovation
Rewards and Reinforcement Perception	Pearson Correlation	1	.316**
	Sig. (2-tailed)		<.001
	N	152	152
Service Innovation	Pearson Correlation	.316**	1
	Sig. (2-tailed)	<.001	
	N	152	152
***. Correlation is significant at the 0.01 level (2-tailed).*			

As seen in Table 11 above, Rewards and Reinforcement Perception displayed and Service Innovation were found to have a positive significant relationship ($r(152) = .316$, $p < .01$). The null hypothesis (H0) was rejected and conclusion that there is a positive relationship between Rewards and Reinforcement Perception displayed and Service Innovation was made.

4.6. Summary of the Process and Findings

A factor analysis to determine the construct validity of the variables that are to be computed was first conducted. It was found that only service innovation conformed to construct validity as all other factors only contained a single factor. Because of this, the study could only a reliability analysis on the service innovation variable. Construct validity was assumed for the other variables, and this presented a limitation concerning a data. In terms of inter-rater reliability, service innovation did prove to be statistically dependable. We then ran a multiple linear regression to determine whether management support, employee discretion, organisational flexibility as well as time availability had an impact on service innovation. It was found that all variables except for organisational flexibility did have an impact on service innovation. Moreover, it was found that time availability was the most significant factor. The study then evaluated to see if there was a meaningful relationship between service innovation and reward and reinforcement cultures, it was found that there is a moderate meaningful relationship between the variables

Chapter 5: Discussion and Recommendations

5.1: Discussion

Based on the research findings, part A of survey in this paper was used to identify and prioritise the main types of barriers to inter-company innovation flows and corporate entrepreneurship at a financial services organisation in Johannesburg. By examining the literature in detail and conducting empirical research to answer the first part of the research objective. The highest significance was assigned to the following barriers: (1) hierarchical organisational structure (high bureaucracy); (2) managerial and operational challenges (poor communication among hierarchical staff); (3) lack of employee involvement (High complexity of managing open innovation, difficulty in

balancing innovation with daily tasks); (4) middle manager resistance (insufficient technical expertise or training of employees); and (5) risk aversion.

The findings suggest that highly formalized systems can become excessively bureaucratic, necessitating parallel flexibility to foster additional innovations and changes. Banks must encourage employees to generate additional innovative ideas and initiatives, which must then be carefully managed if banks are to thrive. Risk aversion has been identified as one of the barriers to innovation and change in the banking sector.

In order to implement organizational change initiatives, staff were also found to be critical. Consequently, middle managers' resistance to innovations should be addressed when proposing these. Staff should be offered greater incentives, remain involved, be motivated to contribute to a change from the outset and serve as change leaders for employees.

In **Part B** of the survey intended to examine how barriers to corporate entrepreneurship impact service innovation within a financial services organisation and additionally determine whether innovation barriers improve where management support, work discretion, rewards and reinforcements, time availability, and organisational boundaries are present. We found that rewards and recognition, management support, and time availability are some of the dimensions of corporate entrepreneurship that predict service innovation.

5.1.1. Relation to Hypothesis

$H1_A$: A strong correlation exists between employee support and service innovation.

This study found evidence that management support in an entrepreneurial context impacts service innovation. In accordance with this notion, managers have specific functions from the top to the lowest levels, which facilitate the implementation of entrepreneurial behaviour and increase the organisation's competitiveness (Bloodgood et al. 2015; Seshadri and Tripathy 2006). Managing creates an environment that encourages employees to adopt a mindset and conduct that

encourages entrepreneurship (Hornsby et al. 2009; Hornsby, Kuratko and Shaker 2002). Managing and displaying entrepreneurial behaviour allows the organisation to sustain its entrepreneurial orientation in two ways. Researchers describe this approach as both top-down and bottom-up (Demirci 2013).

$H2_A$: Innovation in service is significantly influenced by employees' work discretion.

The t-value was 2.472 at p =.015 showing that H2a is supported. This indicates that work discretion and innovativeness have a meaningful relationship. A standardized beta value of 0.194, which measures the strength of the relationship, indicates that work discretion is a critical predictor of inventiveness. The higher the work discretion, the better the innovative behaviour among employees.

Work discretion and entrepreneurial orientation dimensions investigated in the study were found to have significant positive relationships, supporting Hypotheses 2a empirically. In conclusion, employees with greater work discretion are likely to engage in innovative actions in their organisations. A discretionary work environment also encourages employees to try risky tasks. Furthermore, employees with a sufficient level of work discretion tend to behave more proactively within the organisation. Schüler and Baum (2016) reported a similar finding that entrepreneurial orientation is associated with work discretion. According to Rutherford and Holt (2007) and Kuratko and Hodgetts (2007), employees are more likely to be engaged in entrepreneurial activities if there is freedom and latitude to make decisions. It creates a sense of ownership, which in turn encourages employees to invest their interest in generating innovative ideas (De Jong and Wennekers, 2008).

$H4_A$: Service innovation is significantly influenced by employees' time availability.

Time availability was found to be positively correlated with service innovation (Bloodgood et al. 2015; Kuratko et al. 2014). Employees at the FNB enjoyed an entrepreneurial culture, which promoted innovation and entrepreneurship (Bloodgood et al. 2015; Kuratko et al. 2014).

A core requirement of intrinsic motivation is autonomy, according to self-determination theory, which indicates that autonomy contributes to job motivation and job satisfaction by being able to cope effectively with challenging situations (e.g.,

high workloads and long hours) (Deci and Ryan, 2008). Considering that work time control is a form of work autonomy, it can improve work motivation, increase job satisfaction, improve employee retention, improve work efficiency, and encourage innovation (Hoskins, 2014; Madrid and Patterson, 2020). Tucker et al., 2015 and Virtanen et al., 2021 demonstrated that a higher level of work time control improves sleep quality, reduces depression symptoms, reduces diseases, and improves employees' tiredness. By controlling work hours, employees have a better chance of achieving job satisfaction, balancing work and life and thereby getting more time and will to be creative and innovative in an organization (Virtanen et al., 2014).

$H5_A$: The flexible organisational boundaries have a significant impact on innovation in services.

In this hypothesis, employees were evaluated for their freedom and autonomy, the opportunity to utilize their own abilities, the freedom to work in a non-conventional manner, their independence in making judgments and decisions, and their freedom from being punished for making mistakes.

Flexible organisational boundaries were not associated with service innovation in the study. This finding contradicts Kuratko et al. (2014) who argue that flexible organisational boundaries are important for the sharing of information and innovation. There may be a reason for this due to the notion that banks have standardised procedures, written rules, and procedures for completing tasks. There could be a problem with flexible boundaries in some of the participant's roles since some of them worked in specialist roles. The correlation between service innovation and a negative correlation cannot be answered, however. Within the boundaries of regulated rules and procedures, service innovation is also possible. Furthermore, it is possible that employees would become uncertain about what is expected of them if boundaries were loosened too much (Yavas et al. 2003) as they would not have sufficient information for their jobs. Investing in future research can help explain this finding.

5.2 Recommendations

In order for the organisation to succeed in the future, it must continuously innovate its services, products, and business model. Technological innovations and firm renewal are often driven by entrepreneurship and corporate entrepreneurship (Menzel, Aaltio and Ulijn, 2007: 733). The ability of an organisation to identify and exploit opportunities deteriorates when it moves from an entrepreneurial phase to a growth phase. It is, however, essential to maintain this ability in the highly competitive and dynamic environment most organisations are operating in today (Ramachandran, Devarajan, and Ray, 2006: 85).

The findings of this study can therefore be applied to management in several ways. In the emerging findings, it was clear that a lack of communication and continuing engagement between employees and managers is a significant barrier to change. It is considered vital for gaining employee commitment to organizational change and innovation that communication should be an integral component. The results also indicated that senior managers should prioritize the development of avenues for free and open communication. This is significant because it contributes to greater employee involvement in change initiatives, which reduces employee resistance.

Under the weight of size, bureaucracy, complex processes, and hierarchy, these organisations often long for some of the spark, innovation, speed, and risk-taking they once possessed. The concept of corporate entrepreneurship refers to activities, attitudes, and actions that can help large organisations regain some of their lost magic (Thornberry, 2001: 526).

According to the literature review, top management's support and commitment is vital for creating and fostering an entrepreneurial atmosphere in any organisation. It is only by demonstrating the benefits of corporate entrepreneurship that top management will achieve commitment.

5.2.1 Management support

It is important for management to play a more people-oriented or intangible role, according to Kuratko and Hodgetts (2004: 65). The organisation must value people, nurture talents, and acknowledge efforts made when appropriate. The ability to meet the needs of employees increases their likelihood of using their full potential and competencies for the benefit of the company, such as imagination and goodwill. A company's goals can only be accomplished if employees feel cared for, and this can only happen with proper management support (Powell, 2004: 8).

5.2.2 Sponsors/champions for projects

The importance of a support structure is especially important when corporate entrepreneurship is not the primary focus. Support for entrepreneurs is essential if they are to succeed. Corporate entrepreneurs could benefit from a mentorship program. We recommend identifying and assigning influential mentors and coaches to help them thrive. As a result, barriers linked to employee interest in innovation and change, insufficient technical expertise, or employee training will be addressed. According to Burgelman (1983: 1353), middle-level manager champions are as important to the implementation of current ideas as operational-level product champions. The sponsor shares the corporate entrepreneur's vision and provides resources and information. Corporate entrepreneurs should have high-level sponsors.

5.2.3 Resource availability and accessibility (Expertise)

The ultimate aim of corporate entrepreneurship is to raise operational efficiency, but specialists' time will be occupied by corporate entrepreneurial activities in the short run, increasing short-term manpower utilisation. Furthermore, other resources will be used to deviate from their strictly operational focus to work on innovative but uncertain projects. Consequently, additional resources and manpower must be provided.

5.2.4 People development

By understanding their roles and responsibilities, employees can be committed to the organisation. To achieve this, their performance contracts must incorporate the correct measures aligned with FNB's overall vision. It is imperative for managers to recognize that they achieve through their employees in order to treat them

appropriately and reward them appropriately. Insufficient credibility is one of the main factors that contribute to low morale. A social network should be created to facilitate timely communication within the organisation.

5.3 Conclusion

This case study of a South African financial institution finds that service innovation predicts several dimensions of corporate entrepreneurship. The results showed that entrepreneurship dimensions such as rewards and reinforcements, management support, and time availability were positively correlated with service innovation. Service innovation is strongly influenced by management support. To transform organisations and promote corporate entrepreneurship, management must realize that leadership is necessary. Employees who demonstrate an entrepreneurial culture, for instance, should be supported by managers without waiting for upper management to provide the necessary support.

References

Agarwal, N., and Brem, A. (2012). Frugal and reverse innovation - Literature overview and case study insight from a German MNC in India and China.

Agarwal, N., and Brem, A. (2015). Strategic business transformation through technology convergence: implications from General Electric's industrial internet initiative. International Journal of Technology Management, 67(2/3/4), 196 - 214.

Amin, H., Hamid, R., Lada, S. and Anis, Z. (2008), "The adoption of mobile banking in Malaysia: the case of Bank Islam Malaysia Berhad (BIMB)", International Journal of Business and Society, Vol. 9 No. 2, pp. 43-53.

Arner D., Barberis J.N., Buckley R., 2015, The Evolution of FinTech: A New Post-Crisis Paradigm? University of Hong Kong Faculty of Law Research Paper 47, Hong Kong.

Arner, D. W., Barberis, J. and Buckely, R., 2015. The evolution of FinTech: A new post-crisis paradigm? [Online] Available at: https://hub.hku.hk/bitstream/10722/221450/1/Content.pdf

Bahiti, R., and Shahini, B. (2010). strengthening innovation and Technology policies for sme Development in Albania. Contemporary Economics, 4(1), 191–205.

Bank for International Settlements 2019 "Big tech in finance: opportunities and risks" BIS Annual Economic Report, June

Barcet, A., 2010, 'Innovation in services: A new paradigm and innovation model', in F. Gallouj and F. Djellal (eds.), *The handbook of innovation and services: A multidisciplinary perspective*, pp. 49–67, Edward Elgar, Cheltenham.

Barnett H.G., 1953, Innovation the Basis of Cultural Change, McGraw-Hill, New York.

Batiz-Lazo, B. and Wood, D., 2002. An historical appraisal of Information Technology in Commercial Banking. Electronic markets, pp. 192-205.

Beck, T., Chen, T., Lin, C., and Song, F. M. (2016). Financial innovation: The bright and the dark sides.

Bhandari, B. (2009). Frugal innovation. Business Standard.

Bharadwaj, S. (2000). A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation. MIS Quarterly, 24(1), 169–196.

Bierwerth, M., Schwens, C., Isidor, R. and Kabst, R., 2015, 'Corporate entrepreneurship and performance: A meta-analysis', *Small Business Economics* 45(2), 255–278. https://doi.org/10.1007/s11187-015-9629-1

Bloodgood, J.M., Hornsby, J.S., Burkemper, A.C. and Sarooghi, H., 2015, 'A system dynamics perspective of corporate entrepreneurship', *Small Business Economics* 45(2), 383–402. https://doi.org/10.1007/s11187-015-9634-4.

Bracking, S. and Sachikonye, L. (2010). Migrant remittances and household wellbeing in urban Zimbabwe, International Migration, 48 (5), pp. 203-227.

Buckley, P. and Carter, M. (1999) 'Managing cross-border complementary knowledge: conceptual developments in the business process approach to knowledge management in multinational firms', International Studies of Management and Organisation, Vol. 29, No. 1, pp.80–82.

Business Dictionary, Banking system [online]. Available at:

Calisto, M.L. and Sarkar, S., 2017, 'Innovation and corporate entrepreneurship in service businesses', *Service Business* 11(3), 581–600. https://doi.org/10.1007/s11628- 016-0321-6

CBK, 2015, 'Payment Systems Statistics', Mobile Payments, from https://www.centralbank.go.ke/index.php/nps-modernization/mobile-payments

Ch. Pass, B. Lowes, L. Davies, Collins Dictionary of Economics, 4th ed., Glasgow: Her Collings (2005)

Chandler, J.D. and Vargo, S.L., 2011, 'Contextualization and value-in-context: How context frames exchange', *Marketing Theory* 11(1), 35–49. https://doi.org/10.1177/1470593110393713.

Chandy, R. K. and Tellis, G. J. 1998. Organizing for radical product innovation: The overlooked role of willingness to cannibalize. Journal of Marketing Research, 35(4): 474-487.

Chandy, R. K., Hopstaken, B., Narasimhan, O., and Prabhu, J. 2006. From invention to innovation: Conversion ability in product development. Journal of Marketing Research, 68(8): 494-508.

Chen, C-J. (2004) 'The effects of knowledge attribute, alliance characteristics, and absorptive capacity on knowledge transfer performance', RandD Management, Vol. 34, No. 3, pp.311–321.

Chen, Y., Wang, Y., Nevo, S., Benitez-Amado, J. and Kou, G., 2015, 'IT capabilities and product innovation performance: The roles of corporate entrepreneurship and competitive intensity', *Information and Management* 52(6), 643–657. https://doi. org/10.1016/j.im.2015.05.003.

Chibba, M. (2009). Financial inclusion, poverty reduction and the millennium development goal, European Journal of Development Research, 21 (2), pp. 213-230

Cohen, W.M. and Levinthal, D.A. (1990) 'Absorptive capacity: a new perspective on learning and innovation', Administrative Science Quarterly, Vol. 35, No. 1, pp.128–152.

Collinson, S. and Gregson, G. 2003. Knowledge networks for new technology-based firms: An international comparison of local entrepreneurship promotion. R and D Management, 33(2): 189-208.

Conway, P. P. (1999). Lessons learned in managing change. Best's Review, 100(2), 111.

Cooper, R.G. and Edgett, S.J. (2012), "Best practices in the idea-to-launch process and its governance", Research Technology Management, Vol. 55 No. 2, pp. 43-54.

Corrocher, N., and Zirulia, L. (2010). Demand and innovation in services: The case of mobile communications. Research Policy, 39(7), 945–955. doi: 10.1016/j.respol.2010.04.008

Corsi, S., and Di Minin, A. (2014). Disruptive Innovation ... in Reverse: Adding a Geographical Dimension to Disruptive Innovation Theory. Creativity and Innovation Management, 23, 76–90.

Cracknell, D., 2012, Policy innovations to improve access to financial services in developing countries: Learning from case studies in Kenya, viewed 06 May 2012, from http://www.cgdev.org/doc/LRS_case_studies/Cracknell_Kenya.pdf

DBS group research, 2019. Super apps in financial services: Business models and opportunities. [Online] Available at: https://www.dbs.com/aics/templatedata/article/generic/data/en/GR/092019/190912_in sights_superapps.pdf

De Clercq, D. D., Menguc, B., and Auh, S. (2009). Unpacking the relationship between an innovation strategy and firm performance: The role of task conflict

and political activity. Journal of Business Research, 62(11), 1046–1053. doi: 10.1016/j.jbusres.

Demetriades, P.O. and Andrianova, S. (2005). Sources and effectiveness of financial development: what we know and what we need to know. Research Paper, UNU-WIDER, United Nations University (UNU). Available at: http://www.econstor.eu/handle/10419/63527.

Demirgüç-Kunt, A. and Klapper, L.F., 2012, Measuring financial inclusion: The global findex database, from http://elibrary.worldbank.org/doi/abs/10.1596/18139450-6025.

D'Este, P., S. Iammarino, M. Savona, and N. von Tunzelmann. 2012. "What Hampers Innovation? Revealed Barriers Versus Deterring Barriers." Research Policy 41(2): 482–488. doi: 10.1016/j.respol.2011.09.008

DeYoung, R., Lang, W. and Nolle, B. (2007), "How the internet affects output and performance at community banks", Journal of Finance and Banking, Vol. 31 No. 4, pp. 1033-1060.

Didier, T, E Feyen, R Llovet Montanes and O P Ardic Alper 2021 "Global Patterns of Fintech Activity and Enabling Factors." World Bank Group Fintech and the Future of Finance report.

Digital Check, 2017. Case study: Security First Bank the networked branch of tomorrow, today. [Online] Available at: https://www.digitalcheck.com/wpcontent/uploads/2017/11/Security-First-Bank-Networking-Rev110117.pdf

Dougherty, D. and Hardy, C. 1996. Sustained product innovation in large, mature organisations: Overcoming innovation-to-organisation problems. Academy of Management Journal, 39(5): 1120 -1153.

Drucker P.F., 1992, Innowacja i przedsiębiorczość: praktyka i zasady, PWE, Warsaw. European Innovation Scoreboard 2017, 2017, European Commission, http://ec.europa.eu/DocsRoom/ documents/24829 (21.06.2018).

Eisenhardt, K.M. (1989), "Making fast strategic decisions in high-velocity environments", Academy of Management Review, Vol. 32 No. 3, pp. 543-576.

Eisenhardt, K.M. and Graebner, M.E. (2007), "Theory building from cases: opportunities and challenges", Academy of Management Journal, Vol. 50 No. 1, pp. 25-32.

EIU, 2012, Global microscope on the Micro finance business environment 2012, from http://www.eiu.com/public/topical_report.aspx?campaignid=microscope2012.

EIU, 2015, Global Microscope 2015 The enabling environment for financial inclusion, from http://www.eiu.com/public/topical_report.aspx?campaignid=MicroscopeDec2015.

Enders, A., Konig, A., Jelassai, T. and Hungenberg, H., 2006. The relativity of disruption: EBank as a sustaining innovation in the banking industry. Journal of Electronic Commerce Research, pp. 67-77.

Feyen, E, RR Heffernan, H Natarajan, M Saal and A Sarkar 2021 “World Bank Group Global Market Survey: Digital Technology and the Future of Finance” World Bank Group Fintech and the Future of Finance report.

Fiedor B., 1979, Teoria innowacji, PWN, Warsaw. Financial Stability Implications from FinTech, 2017, Financial Stability Board, http://www.fsb.org/wpcontent/uploads/R270617.pdf (25.06.2018).

Financial Stability Board (FSB) 2020 “BigTech in emerging market and developing economies”

Frame, W. Scott, and Lawrence J. White. 2014. Technological Change, Financial Innovation, and Diffusion in Banking. NYU Working Paper 2451/33549. New

Leonard N. Stern School of Business, Department of Economics. [CrossRef]

Freeman Ch., Soete L., 1997, The Economics of Industrial Innovation, Continuum, London.

Frost J 2020 “The Economic Forces Driving Fintech Adoption Across Countries” In M King and R Nesbitt (eds), The Technological Revolution in Financial Services, Toronto: University of Toronto Press.

Frost, J, L Gambacorta and HS Shin 2021 “From Financial Innovation to Inclusion” IMF Finance and Development, Springfield.

Frost, J, L Gambacorta, Y Huang, HS Shin, and P Zbinden 2019 “BigTech and the changing structure of financial intermediation” Economic Policy, 34(100), 761–99

Gai K., Qiu M., Sun X., 2018, A survey on FinTech, Journal of Network and Computer Applications 103.

Galia, F., and D. Legros. 2004. "Complementarities between Obstacles to Innovation: Evidence from France." Research Policy 33(8): 1185–1199. doi: 10.1016/j.respol.2004.06.004.

Gartner (2011). IT and Operational Technology: Convergence, Alignment, and Integration. February 2011.

Gebert, D., Boerner, S., and Kearney, E. (2010). Fostering team innovation: Why is it important to combine opposing action strategies? Organisation Science, 21(3), 593–608.doi:10.1287/orsc.1090.048.

Gerardi, K., Rosen, K. and Willen, P. (2010), "The impact of deregulation and financial innovation on consumers: the case of the mortgage market", Jounal of Finance, Vol. 65 No. 1, pp. 333-360.

Glapiński A., 2003, Kapitalizm, demokracja i kryzys państwa podatków. Wokół teorii Josepha Aloisa Schumpetera, Oficyna Wydawnicza SGH, Warsaw.

Govindarajan, V., Kopalle, P. and Danneels, E., 2011. The effects of mainstream and emerging customer orientations on radical and disruptive innovations. Journal of product and innovation managemnt, pp. 121-132.

Grawe, S.J., Chen, H. and Daugherty, P.J., 2009, 'The relationship between strategic orientation, service innovation, and performance', *International Journal of Physical Distribution and Logistics Management* 39(4), 282–300. https://doi.org/10.1108/ 09600030910962249.

Grosskopf, J., Beyers, S., Van Velden, L., Roopnarain, R. and Stonebridge, D., 2015, Growing in turbulent times – major banks analysis – South Africa, PricewaterhouseCoopers, South Africa, from http://www.pwc.co.za.uplib.idm.oclc.org/ en/assets/pdf/major-banks-analysis-march-2016.pdf

Gupta, A.K. and Govindarajan, V. (2000) 'Knowledge flows within multinational corporations', Strategic Management Journal, Vol. 21, No. 4, pp.473–496.

Gust-Bardon N.I., 2012, Innowacja w myśli ekonomicznej od XVIII do XX wieku: analiza wybranych zagadnień, Acta Universitatis Nicolai Copernici – Economy, Wydawnictwo Naukowe Uniwersytetu Mikołaja Kopernika, Torun.

Hadjimanolis, A. 2003. The barriers approach to innovation. In L. V. Shavinina (Ed.), The international handbook on innovation: 559-573. Oxford: Elsevier.

Harman A.J., 1971, The International Computer Industry. Innovation and Comparative Advantage, Harvard University Press, Cambridge.

Harris, E., and Woolley, R. (2009). Facilitating innovation through cognitive mapping of uncertainty. International Studies of Management and Organisation, 39(1), 70–100. doi:10.2753/IMO0020-882539010.

Harryson, S. and Lorange, P. (2005) 'Bringing the college inside', Harvard Business Review, Vol. 83, No. 12, pp.30–32.

Harryson, S.J. (2008) 'Entrepreneurship through relationships navigating from creativity to commercialisation', RandD Management, Vol. 38, No. 3, pp.290–310.

Henard, D. H. and Szymanski, D. M. 2001. Why some new products are more successful than others. Journal of Marketing Research, 38(3): 362-375.

Heyer, A. and Mas, I., 2009. Seeking fertile grounds for mobile money. Bill and Melinda Gates Foundation [Online] Available at: https://www.gsma.com/mobilefordevelopment/wpcontent/uploads/2012/03/fertile_grounds_mobile_money55.pdf

Hirt, M. and Willmott, P., 2014, 'Strategic principles for competing in the digital age', McKinsey Quarterly 5, 1–13.

Hölzl, W., and J. Janger. 2012. "Innovation Barriers across Firms and Countries." WIFO Working Papers, No. 426. Vienna: Austrian Institute of Economic Research (WIFO).

Hon W.K., Millard C., 2018, Banking in the cloud: Part 1 – banks' use of cloud services, Computer Law and Security Review, 34.

Hornsby, J.S., Kuratko, D.F. and Shaker A.Z., 2002, 'Middle managers' perception of the internal environment for corporate entrepreneurship: Assessing a measurement scale', *Journal of Business Venturing* 17(3), 253–273. https://doi.org/10.1016/ S0883-9026(00)00059-8

Hornsby, J.S., Kuratko, D.F., Shepherd, D.A. and Bott, J.P., 2009, 'Managers' corporate entrepreneurial actions: Examining perception and position', *Journal of Business Venturing* 24(3), 236–247. https://doi.org/10.1016/j.jbusvent.2008.03.002.

Hottenrott, H., and B. Peters. 2012. "Innovative Capability and Financing Constraints for Innovation: More Money, More Innovation?" Review of Economics and Statistics 94(4): 1126–1142.

http://www.businessdictionary.com/definition/banking-system.html (2017)

https://www.globalinnovationindex.org/gii2017-report (21.06.2018).

https://www.nbp.pl/aktualnosci/wiadomosci_2016/20160530_Raport_innowacyjnosc.pdf (21.06.2018).

Hubbard, R. G. 1998. "Capital-Market Imperfections and Investment." Journal of Economic Literature 36(1): 193–225.

Jack, W. and Suri, T., 2011. Mobile money: The Economics of M-PESA. [Online] Available at: http://faculty.georgetown.edu/wgj/papers/Jack_Suri-Economics-of-M-PESA.pdf

Jancenelle, V.E., Storrud-Barnes, S. and Javalgi, R.R.G., 2017, 'Corporate entrepreneurship and market performance: A content analysis of earnings conference calls', *Management Research Review* 40(3), 352–367. https://doi.org/10.1108/MRR-01- 2016-0019.

Katzan, H., 2015, 'Design for service innovation', *Journal of Service Science* 8(1), 1–6.

Kimenyi, M.S. and Kibe, J., 2014, Africa's powerhouse, viewed 10 November 2015, from http://www.brookings.edu/research/opinions/2013/12/30-kenya-economy-kimenyi

Koleśnik J., 2017, Piaskownica regulacyjna jako akcelerator innowacyjności w polskim systemie bankowym, Prace Naukowe Uniwersytetu Ekonomicznego we Wrocławiu 475, Wrocław.

Kondraciuk P., Kurkliński L., 2018, Innowacyjny fenomen fintechów a konkurencja z sektorem bankowym, [in:] Pietrewicz J.W., Sobiecki R. (eds), Innowacyjna fala w społeczeństwie i gospodarce, Oficyna Wydawnicza SGH, Warsaw.

Kotliński G., 2016, Information innovations in banking, quantitative and qualitative approach, Publisher of the University of Economics in Poznań, Poznań.

Kuratko, D.F. and Morris, M.H., 2018, 'Corporate entrepreneurship: A critical challenge for educators and researchers', Entrepreneurship Education and Pedagogy 1(1), 42–60. https://doi.org/10.1177/2515127417737291.

Kuratko, D.F., Hornsby, J.S. and Covin, J.G., 2014, 'Diagnosing a firm's internal environment for corporate entrepreneurship', *Business Horizons* 57(1), 37–47. https://doi.org/10.1016/j.bushor.2013.08.009.

Kuratko, D.F., Hornsby, J.S. and Hayton, J., 2015, 'Corporate entrepreneurship: The innovative challenge for a new global economic reality', *Small Business Economics* 45(2), 245–253. https://doi.org/10.1007/s11187-015-9630-8.

Kuznetz S., 1959, Six Lectures on Economic Growth, The Free Press of Glencoe, Illinois.

Lange O., 1973, Dzieła, tom 1, PWE, Warsaw.

Lee I., Shin Y.J., 2018, Fintech: Ecosystem, business models, investment decisions, and challenges, Business Horizons, 61.

Lee, M., McGoldrick, P. and Keeling, K. (2003), "Using ZMET to explore barriers to adoption of 3G mobile banking services", International Journal of Retail and Distrubution Management, Vol. 31 No. 6, pp. 340-348.

Lerner, Josh, and Peter Tufano. 2011. The Consequences of Financial Innovation: A Counterfactual Research Agenda. Working Paper 16780. Cambridge: National Bureau of Economic Research. [CrossRef].

Levine, R. (1997). Financial development and economic growth: views and agenda, Journal of Economic Literature, 35, pp. 688-726.

Liao, S. S., Shao, P. Y., Wang, H. and Chen, A., 1999. Adoption of virtual banking: empirical study. International Journal of Information Management, pp. 63-74.

Lumpkin, G.T. and Dess, G.G., 1996, 'Clarifying the entrepreneurial orientation construct and linking it to performance', *Academy of Management Review* 21(1), 135–172. https://doi.org/10.5465/amr.1996.9602161568.

Lumpkin, S. (2010). Regulatory issues related to financial innovation, OECD Journal: Financial Market Trends, 2009 (2), pp. 1-31

Makore, P., 2014. Exploring the use of mobile banking services: Case study of Wizzit Bank, South Africa.

Mangi, J. and Mwakio, L., 2018. Recent technological history education for leapfrogging in defining tomorrow's workplace with disruptive technology. International Journal of ICT and Management, pp. 1-10.

Mansfield E., 1968, Industrial Research and Technological Innovation, W.W. Norton, New York.

Markham, S. K. 2000. Corporate championing and antagonism as forms of political behavior: An randd perspective. Organisation Science, 11(4): 429-447.

Marshall A., 1920, Industrial Organisation, Continued. The Concentration of Specialized Industries in Particular Localities, [in:] Principles of Economics, Macmillan and Co., London.

Master's Thesis in Development Studies in the School of Built Environment and Development Studies, University of KwaZulu-Natal, Durban. [Online] Available at: https://pdfs.semanticscholar.org/9a24/6ebc0ef2028053c0d866f03014136b7deb7a.pdfga=2.18898684.553854851.1572855820-582211033.1564739118

Mata, J., Fuerst, J, and Barney, J. (1995). Information Technology and Sustained Competitive Advantage: A Resource-Based Analysis. MIS Quarterly, 19(4), 487-505.

Miesing, P., Kriger, M.P. and Slough, N. (2007) 'Towards a model of effective knowledge transfer within translational: The case of Chinese foreign invested enterprises', The Journal of Technology Transfer, Vol. 32, No. 1, pp.109–122.

Mill J.S., 1874, Of the Laws of Interchange Between Nations; And the Distribution of The Gains of Commerce Among the Countries of The Commercial World, [in:] Essays on Some Unsettled Questions of Political Economy, Longmans, Green, Readers, and Dyer, London.

Miller, D., 1983, 'The correlates of entrepreneurship in three types of firms', *Management Science* 29(7), 770–791. https://doi.org/10.1287/mnsc.29.7.770.

Millman, A. F. 1982. "Understanding Barriers to Product Innovation at the RandD: Marketing Interface." Management Decision 20(3): 10–22. doi: 10.1108/eb001291.

Minbaeva, D., Pedersen, T., Bjorkman, I., Fey, C.F. and Hyeon Jeong, P. (2003) 'MNC knowledge transfer, subsidiary absorptive capacity, and HRM', Journal of International Business Studies, Vol. 34, No. 6, pp.586–599.

Mlachila, M., Park, S.G. and Yabara, M. (2013). Banking in sub-Saharan Africa: the macroeconomic context, Banking in Sub-Saharan Africa, 7.

Modigliani, F., and M. H. Miller. 1958. "The Cost of Capital, Corporation Finance, and the Theory of Investment." American Economic Review 48(3): 261–297.

Molyneux, P., and N. Shamroukh. 1999. Financial Innovation. Chichester: Wiley

Montoya-Weiss, M. M. and Calantone, R. 1994. Determinants of new product performance: A review and meta-analysis. Journal of Product Innovation Management, 11(5): 397-417.

Moogk, D.R. (2012), “Minimum viable product and the importance of experimentation in technology startups”, Technology Innovation Management Review, Vol. 2 No. 3, pp. 23-26.

More, R. A. 1985. "Barriers to Innovation: Intraorganisational Dislocations." The Journal of Product Innovation Management 2(3): 205–207. doi: 10.1016/0737-6782(85)90039-6.

Morrar, R., 2014, ‘Innovation in services: A literature review’, *Technology Innovation Management Review* 4(4), 6–14. https://doi.org/10.22215/timreview/780

Myers, R. L. 1984. "Lowering Barriers to Innovation." Journal of Business Strategy 5(1): 80–82. doi: 10.1108/eb039050.

Nicoletti B., 2017, The Future of FinTech: Integrating Finance and Technology in Financial Services, Palgrave Macmillan, Basingstoke, New York.

O. I. Lavrushin, Деньги, кредит, банки [Money, credit, banks], 15th ed., KnoRus, (2016).

Ortt, J. R., and Smits, R. (2006). Innovation management: Different approaches to cope with the same trends. International Journal of Technology Management, 34(3), 296–318. doi:10.1504/IJTM.

Oslo Manual. Guidelines for Collecting and Interpreting Innovation Data. Third Edition, 2005, OECD, European Commission, https://www.oecdilibrary.org/docserver/9789264013100en.pdf?expires=526143498andid=idandaccname=guestandchecksum=10D3DD36FDF5F08B037B3056B067CC70 (21.06.2018).

Paap, J., and Katz, R. (2004). Anticipating disruptive innovation. Research-Technology Management, 47(5).

Pazarbasioglu, C, A Garcia Mora, M Uttamchandani, H Natarajan, E Feyen, and M Saal 2020 Digital Financial Services World Bank April 2020.

Petrick, I. J. (2011). Innovation in Emerging Markets. Research Technology Management, 54(4), 8-9.

Phan, P.H., Wright, M., Ucbasaran, D. and Tan. W., 2009, ‘Corporate entrepreneurship: Current research and future directions’, *Journal of Business Venturing* 24(3), 197–205. https://doi.org/10.1016/j.jbusvent.2009.01.007.

Piatier, A. 1984. Barriers to innovation (1. ed.). London: Frances Pinter.

Pigou A.C., 1932, Inventions and Improvements, [in:] The Economics of Welfare, Macmillan and Co., London.

Potencjał innowacyjny gospodarki: uwarunkowania, determinanty, perspektywy, 2016, Narodowy Bank Polski,

Powell, C., and Dent-Micallef, A. (1997). Information technology as competitive advantage: the role of human, business, and technology resources. Strategic Management Journal, 18(5), 375-405.

Prahalad, C. K. (2005). The fortune at the bottom of the pyramid: Eradicating poverty through profits, Pearson Prentice Hall, 2006.

Prior, F. and Santomá, X. (2010). Banking the unbanked using prepaid platforms and mobile telephones in the United States. Available at: **http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1550722**.

Ravjee, B. and Mamabolo, M.A., 2019, 'The impact of corporate entrepreneurship on service innovation: A case of a South African banking institution', *Southern African Journal of Entrepreneurship and Small Business Management* 11(1), a155. https://doi.org/10.4102/ sajesbm. v11i1.155

Ricardo D., 1821, On Machinery, [in:] On the Principles of Political Economy and Taxation, John Murray, London.

Rogers E.M., 2003, Diffusion of Innovations, Free Press, New York, London, Toronto, Sydney.

Rossignoli, Bruno, and Francesca Arnaboldi. 2009. Financial innovation: Theoretical issues and empirical evidence in Italy and in the UK. International Review of Economics 56: 275–301. [CrossRef]

Royer, I. 2003. Why bad projects are so hard to kill. Harvard Business Review, 81(2): 48-55.

Rutherford, M. W., and Holt, D. T. (2007). Corporate entrepreneurship: An empirical look at the innovativeness dimension and its antecedents. Journal of Organisational Change Management, 20(3), 429-446

Sandberg, B. and Aarikka-Stenroos, L. (2014), "What makes it so difficult? A systematic review on barriers to radical innovation," Industrial Marketing Management, Vol. 43 No. 8, pp. 1293-1305

Saraf, D. (2009). India's Indigenous Genius: Jugaad. The Wall Street Journal.

Say J.B., 1855, Of the Labour of Mankind, of Nature, and of Machinery Respectively, [in:] Biddle C.C. (ed.), A Treatise on Political Economy, Lippincott, Grambo and Co., Philadelphia.

Schiantarelli, F. 1996. "Financial Constraints and Investment: Methodological Issues and International Evidence." Oxford Review of Economic Policy 12: 70–89.

Schüler, J., and Baum, M. (2016). The antecedents of the entrepreneurial orientation - A metaanalytical review. Academy of Management Proccedings. Retrieved from http://proceedings.aom.org/.

Schumpeter J.A., 1939, Business Cycles: A Theoretical, Historical and Statistical Analysis of the Capitalist Process, McGraw-Hill, New York.

Schumpeter J.A., 1960, Teoria wzrostu gospodarczego, PWN, Warsaw. Schumpeter J.A., 1994, Capitalism, Socialism and Democracy, 6th edition, Routledge, London, New York

Shariq, M., 2012. Factors affecting ATM usage in India: an empirical analysis. UTMS Journal of Economics, pp. 1-7

Sharma, P. and Chrisman, J.J., 1999, 'Toward a reconciliation of the definitional issues in the field of corporate entrepreneurship', *Entrepreneurship Theory and Practice* 23 (3), 11–27. https://doi.org/10.1177/104225879902300302.

Shepherd, D.A., Covin, J.G. and Kuratko, D.F., 2009, 'Project failure from corporate entrepreneurship: Managing the grief process', *Journal of Business Venturing* 24(6), 588–600. https://doi.org/10.1016/j.jbusvent.2008.01.009.

Shqipe, G., Gadaf, R., and Veland, R. (2013). Innovation Strategies and Competitive Advantage. Современная Экономика: Проблемы, Тенденции, Перспективы, (8 (1)). Retrieved from http://cyberleninka.ru/article/n/innovation-strategies-and-competitive-advantage

Siciliani P., 2018, Staff Working Paper No. 728. Competition for Retail Deposits between Commercial banks and Non-Bank Operators: A Two-Side Platform Analysis, Bank of England, London.

Singer, D., Avery, A. and Baradwaj, B. (2008), "Management innovation and cultural adaptivity in international online banking", Management Research News, Vol. 31 No. 4, pp. 258-272.

Ślązak E., Guzek E., 2012, Innowacyjna bankowość internetowa – Bank WEB 2.0, Wolters Kluwer, Warsaw.

Smith A., 1904, Of the Division of Labouré, [in:] Canaan E. (ed.), An Inquiry into the Nature and Causes of the Wealth of Nations, Methuen and Co., London.

Štreimikienơ, D. (2014). World economic forum 2012. Available at: http://www.mruni.eu/lt/mokslo_darbai/ie/archyvas/dwn.php?id=310859

Subbarao, D., 2017. Disruptive innovations in the financial sector. IJBT, pp. 85-88

Szulanski, G. (1996) 'Exploring internal stickiness: Impediments to the transfer of best practice within the firm', Strategic Management Journal, Vol. 17, No. Special issue, Winter, pp.27–43.

Szulanski, G. (2000) 'The process of knowledge transfer: A diachronic analysis of stickiness', Organisational Behavior and Human Decision Processes, Vol. 82, No. 1, pp.9–27.

Tang, H.-K. and Yeo, K.-T. 2003. Innovation under constraints: The case of singapore. In L. V. Shavinina (Ed.), The international handbook on innovation: 873-881. Amsterdam et al: Elsevier.

Teece, D., Pisano, G., and Shuen, A. (1997). Dynamic Capabilities and Strategic Management. Strategic Management Journal, 18, 509–533.

The Global Competitiveness Index 2017-2018, 2017, World Economic Forum, http://www3weforum.org/docs/GCR2017-2018/05FullReport/TheGlobalCompetitivenessReport2017–2018.pdf (21.06.2018).

The Global Innovation Index 2017: Innovation Feeding the World, 2017, Cornell University, INSEAD, and the World Intellectual Property Organisation.

Tinnila, D. M., 2012. Impact of future trends on banking services. Journal of Internet Banking and Commerce, pp. 2-15.

Tippens, J., and Sohi, S. (2003). IT competency and firm performance: is organisational learning a missing link? Strategic Management Journal, 24(8), 745-761.

Tufano, Peter. 1996. How Financial Engineering Can Advance Corporate Strategy. Harvard Business Review 74: 136–46.

Tufano, Peter. 2003. Financial Innovation. In The Handbook of the Economics of Finance. Edited by George M. Constantinides. Amsterdam: Elsevier, vol. 1A.

uncertainty.

Technovation, 28(6), 349–363. doi: 10.1016/j.technovation.Institute of Technology, Cambridge, Massachusetts.

Wang, C. H., Lu, I. Y., and Chen, C. B. (2008). Evaluating firm technological innovation capability under.

Wang, P., Tong, T.W. and Koh, C.P. (2004) 'An integrated model of knowledge transfer from MNC parent to China subsidiary', Journal of World Business, Vol. 39, No. 2, pp.168–182.

Wang, P., Tong, T.W. and Koh, C.P. (2004) 'An integrated model of knowledge transfer from MNC parent to China subsidiary', Journal of World Business, Vol. 39, No. 2, pp.168–182.

Waresa M.A., 2014, Polityka innowacyjna, PWN, Warsaw.

Witell, L., Anderson, L., Brodie, R.J., Colurcio, M., Edvardsson, B., Kristensson, P. et al., 2015, 'Exploring dualities of service innovation: Implications for service research', *Journal of Services Marketing* 29(6), 436–441. https://doi.org/10.1108/JSM-01- 2015-0051.

Wziątek-Kubiak, A., and M. Pęczkowski. 2011. The Heterogeneity of Firms' Response to Obstacles to Innovation: Persistent versus Occasional Innovators. Paper presented at the DIME Final conference.

York, J. G., and Venkataraman, S. (2010). The entrepreneur–environment nexus: Uncertainty, innovation, and allocation. Journal of Business Venturing, 25(5), 449–463. doi: 10.1016/j.jbusvent.

Yunis, M., Tarhini, A. and Kassar, A., 2018, 'The role of ICT and innovation in enhancing organisational performance: The catalysing effect of corporate entrepreneurship', *Journal of Business Research* 88, 344–356. https://doi.org/10.1016/j.jbusres.2017. 12.030.

Yunis, M., Tarhini, A. and Kassar, A., 2018, 'The role of ICT and innovation in enhancing organisational performance: The catalysing effect of corporate entrepreneurship', *Journal of Business Research* 88, 344–356. https://doi.org/10.1016/j.jbusres.2017. 12.030.

Yunis, M., Tarhini, A. and Kassar, A., 2018, 'The role of ICT and innovation in enhancing organisational performance: The catalysing effect of corporate entrepreneurship', *Journal of Business Research* 88, 344–356. https://doi.org/10.1016/j.jbusres.2017. 12.030.

Zahra, S.A. and Covin, J.G., 1995, ‘Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis’, *Journal of Business Venturing* 10(1), 43–58. https://doi.org/10.1016/0883-9026(94)00004-E.

Zahra, S.A., 1993, ‘Environment, corporate entrepreneurship, and financial performance: A taxonomic approach’, *Journal of Business Venturing* 8(4), 319–340. https://doi. org/10.1016/0883-9026(93)90003-N.

Zahra, S.A., 2015, ‘Corporate entrepreneurship as knowledge creation and conversion: The role of entrepreneurial hubs’, *Small Business Economics* 44(4), 727–735. https://doi.org/10.1007/s11187-015-9650-4.

Zaleska M., 2014, The Polish banking sector – per aspera ad astra, Studia z Polityki Publicznej/Public Policy Studies 4, Oficyna Wydawnicza SGH, Warsaw.

Zaleska M., 2018a, Blockchain technology will revolutionise the world, Polish Market, 5.

Zaleska M., 2018b, Innowacyjna bankowość, Gazeta Bankowa, 7.

Zeschky, M., Widenmayer, B., and Gassmann, O. (2011). Frugal innovation in emerging markets. Research Technology Management 54 (4), 38–45.

Das, P., Verburg, R., Verbraeck, A. and Bonebakker, L. (2018), "Barriers to innovation within large financial services firms: An in-depth study into disruptive and radical innovation projects at a bank", *European Journal of Innovation Management*, Vol. 21 No. 1, pp. 96-112. https://doi.org/10.1108/EJIM-03-2017-0028

Appendix 1- Research Questionnaire

Select 1 options of the below questions

1. What do you think is the important contributor to innovation within the Financial Services Sector/Banking?
    - Capabilities – The abilities and resources an organisation has for creating and managing innovation, such as skills, knowledge, and financial capital.
    - Structures- The organisational structure and processes that enable the effective use of capabilities.
    - Strategy – The plan an organisation has for achieving long-term success.
    - Culture – How things are done in an organisation, organisational values, ways of working, etc

Please use this box to share additional thought/comments:

2. Why do you think innovation matter within the Financial Services Sector/Banking
    - Provides competitive advantage and market relevance
    - Increases sales and revenue
    - Supports Economic Growth
    - Supports Environmental and Social Sustainability

Please use this box to share additional thought/comments:

3. How do we measure successful innovations in the market?
    - Increased sales, profitability, and market share (ROI)
    - Market acceptance and customer feedback
    - Brand awareness and popularity
    - Employee feedback and advocacy (support and promotion of products/services among family and friends)

Please use this box to share additional thought/comments:

4. How would you rate the effects of the application of financial innovations in your company (past experience)?
    - Negative
    - Rather negative
    - Difficult to assess
    - Rather positive
    - Positive

Please use this box to share additional thought/comments:

5. What do you think is the top barrier to Innovation in Banking?
    - Hierarchical organisational structure
    - Lack of innovative culture within the organisation
    - Lack of talent and skills
    - Technology
    - Regulations
    - Competition

Please use this box to share additional thought/comments:

6. Indicate the biggest barriers to the application of financial innovations in your company:
    - unclear tax law and accounting regulations related to financial innovations
    - complex construction of financial innovations
    - high transaction costs and fees related to the application of financial innovations
    - difficulties in assessing the efficiency of application of financial innovations
    - limited understanding of financial innovation
    - high costs of implementation of financial innovation
    - inadequate knowledge of current market offers of financial innovation
    - lack of trust in financial innovations

For the purpose of this survey the challenges and barriers to the application of financial innovations are divided into **managerial and operational, human recourses, processual and legal, cultural, business environment and financial** – indicate the biggest barrier to Innovation under each category.

Please use this box to share additional thought/comments:

7. Barriers to innovation - Managerial and operational challenges
    - High complexity of managing open innovation, difficulty in balancing innovation with daily tasks
    - Managers do not promote an open organisational mind set and applied group ware that supports increased openness
    - Structural change may be required
    - Traditional Project Management are insufficient for Innovation
    - Limited capability in Research and Development planning and management
    - Collaboration objectives may not be met due to poor quality of partners or poor management of partnerships

Please use this box to share additional thought/comments:

8. Barrier to Innovation - Procedural and regulatory challenges
    - Fear of disclosing own IP to external partners
    - Technology leakage to rivals
    - Knowledge spill over and non-existence of formal contracts
    - Volatile and ambiguous industry regulations
    - Low control of external resources compared to internal ones
    - Ethical challenges due to leaking critical internal resources and disclosure of core competencies

Please use this box to share additional thought/comments:

9. Barrier to Innovation – Human Resources
    - Insufficient technical expertise or training of employees
    - Frequent turnover human resources
    - Difficulty to find suitable HR in the market
    - Employees resistance to innovation and changes

Please use this box to share additional thought/comments:

10. Barrier to Innovation – Cultural Challenges

- Limited innovative culture within the organisation
- Employees lack interest to innovation and change
- Limited support of top management for innovation
- Limited innovative culture internally within the organisation

Please use this box to share additional thought/comments:

11. Barrier to innovation – Business environment challenges

- Conflicting interests of partners, developing dependencies
- Insufficient expertise of partners and unavailability of competent external partners to provide the necessary knowledge and technologies
- Lack of trust and communication among partners, collaboration suddenly dissolved due to partner leaving

Please use this box to share additional thought/comments:

12. At a staff and middle manager level what do you think may be potential barriers to innovation
    - A restrictive mindset by senior management
    - A lack of discovery competences
    - An unsupportive organisational structure
    - Financial barriers to innovation
    - Skill barriers to innovation
    - A lack of information on markets
    - A lack of information on technologies

Please use this box to share additional thought/comments:

13. How has your organisations digital experience initiatives changed in the last 2 years
    - Progress/interest have accelerating
    - Progress/interest have slowing
    - Progress/interest have stopped
    - Progress/interest = same as before

Please use this box to share additional thought/comments:

Part B -

Questions	Very Low	Low	Moderate	High	Very High
In your opinion what is the level of knowledge and involvement by staff in innovations within your organisation					
In your opinion what is the level of interest in innovations by staff within your organisation					
In your opinion how much support does the leadership and management of your organisation provide employees to drive innovation					
In your opinion what is the level of access to projects that drive innovation does staff have in your organisation					
In your opinion how effective is collaboration interns of innovative projects/initiatives across Business Units and Product Houses					

In your opinion do you think your organisation does enough to reward and reinforce innovation within your organisation					
Does your organisation allocate enough time for you to work on innovation					

Appendix 2 - Questionnaire/Survey and Interview consent form

Questionnaire/Survey and Interview consent form Consent Form #:_____

Date and Time of Interview: _____

Dear _____,

RE: INFORMED CONSENT TO CONDUCT INTERVIEW AND PARTICIPATE IN SURVEY, INCLUDING THE USE INFORMATION OBATINED THROUGH INTERVIEW PROCESS

My name is Buyisile Maseko, and I am a final year MBA student at the Wits Business School. As part of the requirement for the completion of my studies, I am required to conduct applied research on an academic subject. First National Bank (FNB) has been kind enough to permit me to conduct a case study on FNB. My research will be focusing on **the impact of barriers to Inter-Company Innovation flow at a Financial Services Organisation in Johannesburg.**

The study will examine the impact of barriers on Inter-Company innovation flows to understand various product centric innovation approaches in context of emerging markets and to provide a consolidated framework of these overlapping innovation approaches.

The interview and survey are expected to last between one and two hours and will help us ascertain the key driver of innovation flows within FNB.

Your participation is voluntary, and you can withdraw at any time without penalty. Of course, all data will be kept confidential.

Please tick the boxes below if you agree to the following aspect of the interview and the use of the information:

- ☐ I agree to conduct the interview with Buyisile Maseko on the research topic as described above
- ☐ I agree that the interview may be tape recorded, a copy of which will be electronically stored by myself in compliance with university requirements
- ☐ I agree that my name may be used in the case study (no agreement means that names will be omitted from the research outcome).

If you have any concerns, please contact either myself or my supervisor.

Our details are provided:

Buyisile Maseko (Researcher)

E: 1891265@students.witsac.za

C: 073 574 3618

Dr Manamela Matshabaphala (Supervisor)

E: Manamela.matshabaphala@wits.ac.za

T: +27 11 717 3668

Signature of participant: _____

Date: _____

Signature of researcher: _____

Date: _____

Appendix 3 - Consistency Matrix

Research Hypotheses	Literature Review	Data Collection Tool	Analysis
Barriers to Innovation	(Sandberg and Aarikka-Stenroos, 2014) (Hölzl and Janger, 2011)	Part A	
Hypothesis 1: Management support and service innovation	(Kuratko et al., 2014) ;(Seshadri and Tripathy,2006) ;(Bloodgood et al., 2015). (Lekmat and Chelliah, 2014) (Katzan, 2014) ;(Morrar, 2014) ;(Legrand andLjoiem, 2013) ;(D'Emidio, Dorton and Duncan,2014) ;(Fischer,2011) ;(Jeknaker, Tellefsen	Part B	Factor Analysis Linear Regression
Hypothesis 2: Work discretion and service innovation	Fukuda and Nishimura,2015) ;(Hertog, van der Aa and de Jong,2010) (Grawe, Churn and Daugherty, 2009) (Kuratko et al., 2014) ;(Rigtering and Weitzel,2013) ;(Manroop, 2015)	Part B	Factor Analysis Linear Regression
Hypothesis 3: Rewards and reinforcement, and service innovation	(Katzan, 2014) ;(Morrar, 2014) ;(Legrand andLjoiem, 2013) ;(D'Emidio, Dorton and Duncan,2014) ;(Fischer,2011) ;(Jeknaker, Tellefsen andLuders,2014)) ;(Kentaro et al., 2015) ;(Watanabe, Fukuda and Nishimura,2015) ;(Hertog, van der Aa and de Jong,2010) (Grawe, Churn and Daugherty, 2009)	Part B	Factor Analysis Linear Regression

Hypothesis 4: Time availability and service innovation	Kuratko et al., 2014) (Bloodgood et al., 2015) (Katzan, 2014) ;(Morrar, 2014) ;(Legrand andLjoiem,2013) ;(D'Emidio, Dorton and Duncan,2014) ;(Fischer, 2011) ;(Jeknaker, Tellefsen andLuders, 2014) ;(Kentaro et al., 2015) ;(Watanabe, Fukuda and Nishimura, 2015);(Hertog, van der Aa and de Jong,2010) (Grawe, Churn and Daugherty, 2009)	Part B	Factor Analysis Linear Regression
Hypothesis 5: Organisational boundaries and service innovation	Kuratko et al., 2014); (Zahra, 2015) (Katzan, 2014) ;(Morrar, 2014) ;(Legrand and Ljoiem, 2013) ;(D'Emidio, Dorton and Duncan, 2014) ;(Fischer, 2011) ;(Jeknaker, Tellefsen and Luders, 2014) ;(Kentaro et al., 2015). (Watanabe, Fukuda and Nishimura, 2015);(Hertog, van der Aa and de Jong,2010) (Grawe, Churn and Daugherty, 2009)	Part B	Factor Analysis Linear Regression

Appendix 4 - Ethics Clearance Certificate

Graduate School of Business Administration
University of the Witwatersrand, Johannesburg

Wits Business School Ethics Committee
Constituted under the University Human Research Ethics Committee (Non-Medical)

Ethics Clearance Certificate

Ethics protocol number: WBS/BA1891265/904
This certificate is only valid with a legitimate ethics protocol number and signed by the Researcher (below)

This certificate is only valid if accompanied by formal permission from the relevant stakeholder(s).

Project title	Barriers to inter-company innovation flows at a financial services organisation in Johannesburg.
Investigator / Researcher	Ms Buyisile Maseko
Nature of Project	MBA (Research Article)
Decision of the Committee	Approved, provided stakeholders and participants are guaranteed confidentialty.
Issue Date of Certificate	25 09 2022
Expiry date	Date of submission of the project / research report
Chairperson	Prof Anthony Stacey ☎ +27 11 717 3587 +27 82 880 4531 anthony.stacey@wits.ac.za