UNIVERSITEIT VAN PRETORIA
UNIVERSITY OF PRETORIA
YUNIBESITHI YA PRETORIA

Gordon Institute of Business Science
University of Pretoria

The impact of corporate entrepreneurship on service innovation in the financial services industry

Bhavesh Ravjee
15406921

A research project submitted to the Gordon Institute of Business Science, University of Pretoria, in partial fulfilment of the requirements for the degree of Master of Business Administration.

7 November 2016

Abstract

Financial services companies pride themselves on delivering quality services to customers. However, in order to sustain their revenue streams in challenging macroeconomic times and rapid technological growth, a shift in culture is required. The facets of corporate entrepreneurship (CE) are explored to determine whether or not it advocates worthy practices in driving service innovation (SI) in order to maintain the competitive advantage of financial services companies.

A case study approach was taken that gathered individuals' responses from a leading South African bank. This approach enabled the researcher to understand the state of CE within the organisation and how CE has influenced SI. The case study used quantitative data gathered through an online survey utilising scales for CE and SI.

A factor analysis on the gathered data was used to refine the number of data variables. Linear and multiple regression analyses were conducted against the resultant factors of CE and SI. The findings revealed that most of the underlying constituencies of CE are positively correlated to SI.

A true assessment of the financial services industry was not attained. However, the insights gained from this study are useful to companies that are looking to find methods to revive or improve their commercial services offered to customers.

Keywords

Service innovation; Corporate Entrepreneurship; Entrepreneurial Orientation; Intrapreneurship; Innovation

Declaration

I declare that this research project is my own work. It is submitted in partial fulfilment of the requirements for the degree of Master of Business Administration at the Gordon Institute of Business Science, University of Pretoria. It has not been submitted before for any degree or examination in any other University. I further declare that I have obtained the necessary authorisation and consent to carry out this research.

_____

Bhavesh Ravjee
07 November 2016

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1 Introduction to the research problem

1.1 Introduction

This chapter provides the justification for the research conducted regarding the impact of corporate entrepreneurship (CE) and service innovation (SI). The reasoning sourced from contemporary content included literature, reviews and media that advocate the imperatives of CE and SI. The perspectives taken include both literature and the business need. The researcher aims to formulate impetus through effective summation of these sources and to define the clear research aims and objectives.

1.2 Background to the research problem

Digital technology has the potential to radically change the operating environment of companies, thus substantiating chief executive officers (CEOs) to revisit the assumption in their strategies. It has the potential to lower the barriers to entry, giving new rivals the opportunity to compete with larger corporations. Failure to adopt technologies that go on to become the norm is to the detriment of the company (Hirt & Willmott, 2014). Despite companies' awareness to respond to changes in the operating environment, some companies fail to align any combination of their strategy, culture or leadership.

Information and communication technology (ICT) has changed the landscape in service-oriented businesses. ICT can be a resource to bring innovation to services. M-Pesa®, borne in Kenya, is a fitting example which transformed the exchange of money using mobile networks and devices together with infrastructure of financial services companies. M-Pesa® is radical in its service offering. Even those that were locked out of the financial institutions now make use of this banking infrastructure (Barret, Davidson, Prabhu & Vargo, 2015).

Since the aftermath of the 2008 global financial crisis, financial services companies have not returned to their original state. Results from the PWC Banking Banana Skins 2015 survey reveal that economic and political factors continue to hinder the growth in this sector and these elements are still prevalent today. Regulations, the threat of cybercrime and pace of technology threaten the core products and services that are offered by financial institutions. Along with concerns of the macroeconomic environment, banks are increasingly cognisant of the rise in financial technology (FinTech) companies who disrupt the status quo of operations and are able to do so of a relatively low cost base.(Grosskopf, Beyers, Van Velden, Roopnarain, & Stonebridge, 2015).

Given the multitude of external factors that have negatively affected financial service companies, it becomes incumbent on CEOs to revisit assumptions and analysis of the operating environment, corporate strategy, employee skills and organisational culture and design. The questions around these aspects should challenge the status quo and provide impetus to formulate renewal within the organisation. This research paper seeks to provide possible ways to overcome the challenges faced by financial service companies through corporate entrepreneurship (CE) and innovation that focuses on services. Both CE and service innovation (SI) have shown to improve the competitive advantage of companies. The realisation of the benefits is important given the difficult operating environment that has plagued financial services companies since 2008.

Financial institutions are not entirely laggard in their technology adoption but due to their bureaucratic nature, this has stifled their agility to bring novel technologies to market. FinTech companies do not have this challenge yet, due to their agility and relatively smaller size compared to financial institutions. However, financial institutions have responded in three ways to the rising competition. These were through acquisitions of Fintech companies, a wait-and-see approach (which seeks to identify emerging technologies before pursuing any development), or investment in information technology (IT). Neither of these approaches are effective as banks cannot match the agility of Fintech companies. Alternatively, banks should focus on their leverage points and utilise technology to deliver services and products to customers. This requires a shift in culture from current methods of holding onto existing technologies to implementing a practice of embracing and adopting new technology to effectively and efficiently meet the customers' needs. Employees can be used effectively to drive this initiative. However, C-level members need to embrace a technology orientation towards improving the organisation and not solely rely on organisations' technology department(s) (Davies, Kashyap, Roets, & Ruetschi, 2016).

Kuratko, Hornsby & Covin (2014) argue that to sustain a culture on innovation, CE is needed. CE can facilitate innovation within companies. It is built upon several constructs namely, management support, work discretion, rewards or reinforcement, time availability and organisational boundaries. As mentioned by Nagji and Tuff (2012), if companies have the need to do different things, they must be willing to do things differently. Bloodgood, Hornsby, Burkemper and Sarooghi (2015) argue that CE is associated with improved competitive advantage and organisational performance. Extant literature focuses on CE from a perspective that is internal to the organisation. Thus, CE is characteristic of creating

renewal, stimulating innovation or even creating new organisations by individuals. CE has strong links to innovation whether it is a product or service. Lekmat and Chelliah (2014) argue that the existence of an entrepreneurial orientation has shown to increase the competitive advantage of the firm as well as financial performance.

Despite services being a major contributor to gross domestic product, focus is placed on research and development in science and technology. Services ranged across industries have not been given the required attention to innovation as much as tangible products. This has left a weak, or no trail, of best practices that can contribute towards better services. Financial services companies rely predominantly on efficient and effective services to increase the value proposition to their customers. The true gap in better services is primarily the lack of knowledge rather than innovation. Over the past decades, more emphasis has been placed on a services-dominated logic rather than the traditional goods-dominated logic (Legrand & Ljoiem, 2013). The solutions or approaches used in the past may not be relevant in resolving problems presented to business currently. In light of this, organisations should look to design customer's needs rather than creating solutions to customer needs (Paunovic & Dima, 2014). The former is a proactive response whilst the latter can be considered as a reactive response.

In order to develop the competency to evolve services, companies are taking more frugal measures to introducing innovation as opposed to the traditional methods of market research. These frugal measures involve the use of open innovation techniques. One such example is the Hewlett Packard (HP) Moonshot Discovery Lab, which is an open innovation initiative that seeks to understand how customers utilise their product in a setting that closely resembles the customers setting. Through this approach, HP created the opportunity to understand the customer's needs. Furthermore, they also obtained valuable lessons from the customer through an interactive process. This process is referred to as customer co-creation which is a more efficient and cost effective method of understanding customer problems in order to provide the next generation of solutions (Mills, 2016).

Scholars have provided various definitions of service innovation and elaborated on various nuances of service innovation. Witell et al. (2015) argue that several dualities exist within the domain of service innovation. These dualities are "radical–incremental, product–process, new to the firm–new to the market, and technology–organization" (Witell et al., 2015, p. 437). Service innovation has the potential to create an impact at three different levels namely, individual, organisational and societal. When considering the implementation or design of

any service innovation, the impact to the customer should always be considered in conjunction with financial gain. Behind successful service innovations are failures which provide valuable lessons. In order to produce service innovations, successes and failures at all three levels must be considered. The risks associated with service innovation have different meanings at each of these levels. From individuals' point of view, risk encourages one not to adopt new services that easily. Companies are also reluctant to introduce innovation to services due to poor success rates. As a result, incremental innovations are chosen over radical ones in order to sustain any competitive advantage. The societal side share similar views.

The stigma associated with financial services companies is that of being risk averse and are thus likely to follow an incremental innovation strategy. However, is this sufficient given the current landscape of rapidly growing technologies? The Blockchain protocol for instance has revolutionised payment systems by introduction of crypto-currencies like Bitcoin. Such Blockchain networks reduce the need for financial intermediaries when performing payments thus posit that banks in their current state of operations will not be needed to facilitate the transfer of funds from buyer to seller. A service such as Blockchain has immense potential to challenge the status quo and allow services to be extended to the global community. Although this is one instance of technology that is likely to revolutionise current industry norms, the trend to evolve and improve the ways in which we do things remain as a common denominator. Companies in the financial industry need to acknowledge that innovation in services are increasingly becoming a source of revenue growth and an evaluation of their current capabilities is needed to ascertain if they are geared to take on this era of rapidly evolving technologies.

1.3 Research aim and objectives

The ensuing research aims to solidify the importance of corporate entrepreneurship in the work place and its reliance on creating a culture of service innovation. As mentioned earlier, financial services companies have been exposed to the threat of information and communication technologies. As a result, organisations show a growing interest in CE due to a multitude of benefits which include strategic renewal, increased competitive advantage and innovation (Kuratko & Audretsch, 2013).

This research paper aims to understand the relationship between the constructs of corporate entrepreneurship and service innovation among financial services companies. Furthermore, the researcher aims to formulate a rich perspective of CE and SI with the intention of providing service-based organisations with insights on culture and leadership.

The objective of this research is to:

(a) understand the state of corporate entrepreneurship in financial services industries.
(b) understand the relationship between corporate entrepreneurship and service innovation, and to,
(c) understand which antecedents of corporate entrepreneurship influence service innovation, and whether these are positive, negative or neutral

Chapter 2 of this report follows with an in depth literature review of innovation, service innovation and corporate entrepreneurship. Focus was placed on retrieving peer reviewed literature within the last five years and where necessary the researcher went beyond this period. Chapter 3 focuses on the formulation of the hypothesis. The hypotheses were formulated based on the dimensions of CE and SI. Chapter 4 elaborates on the research design and methodology and provides detailed descriptions of the researchers approach and experience through the data gathering process. Chapter 5 provides the justification and presentation of the statistical tests in order to accept or reject the hypotheses formulated in chapter 3. The researcher closed with chapter 6 and chapter 7. The former aims to corroborate findings from scholars with the findings of the report. The latter provides a summary of the report findings, followed by implications for management and proposals for future research.

2 Literature review

2.1 Introduction

This chapter focuses on recent literature on innovation, service innovation and corporate entrepreneurship. The intention is to provide a theoretical background of these subjects in order to formulate an understanding that is both theoretical and practical. The chapter begins with an overview of innovation before describing details of service innovation. Thereafter the focus shifts to corporate entrepreneurship.

2.2 Taxonomy of innovation

Product innovation is defined as,

> the introduction of a new product, service, or process to the external market or the introduction of a new device, system, program, or practice in one or more internal units. The intention to engage in innovation is to respond to the competitive or institutional environment and to help the organization cope with emerging external or internal contingencies. (Walker, Chen & Aravind, 2015, p. 408).

Innovation performance is an important measure as extant literature asserts that innovation is important in sustaining a competitive advantage and dealing with change in a competitive environment. Product innovation performance can be measured as financial and non-financial measures. The latter can be computed against “The number of innovations, the speed of innovation, the level of innovativeness and being the ‘first’ in the market” (Calisir, Gumussoy & Guzelsoy, 2013,p. 178).

According to Allegre, Lapiedra and Chiva (2006), product innovation performance can be described as two constructs, namely innovation efficiency and innovation efficacy. Innovation efficacy is a measure of how successful the innovation has been whereas the efficiency construct measures the effort involved in the delivering the innovation. These constructs are dependent on the internal environment of the organisation where aspects of strategy, leadership and culture play a significant role. Uzhurt, Kumar and Kizman (2013) describe innovation or innovativeness as the extent to which organisations generate, accept and implement innovations that result in new forms of product, technology or processes. This is in line with the innovation efficacy. Oke, Walumbwa and Myers (2012) describe innovation

performance as “the effectiveness of firms in developing new products relative to competitors” (Oke et al.,2012, p. 274). This is line with innovation efficiency.

Uzhurt et al. (2013) further maintain that innovation itself can also be comparatively described as administrative vs. technical; radical vs. incremental; product vs. process. Innovation can be categorised into technology, behaviour and product related classes. These three categorisations relate to the propensity of the firm to adopt technologies, ideas and products respectively into their existing environments.

Another dimension of innovation is the role played by human resources (HR) within organisations. HR is usually governed in their delivery through policy and hence this becomes bespoke to an organisation. Policies that are in place can serve to motivate employees toward driving innovation in organisations (Uzhurt et al., 2013).

Organisations need to be clear about their approach to innovation. Innovation must not be seen as a one-off exercise, but rather approached with strategic intent to develop products and services to be evolutionary as well as revolutionary. This can be achieved by adopting the correct innovation portfolio balance for the company, which essentially comprises core, adjacent and transformation innovation initiatives (Nagji & Tuff, 2012). Although such innovation portfolio structures may be prevalent in one form or another, Alegre, Lapiedra & Chiva (2006) argue that the efficacy and efficiency of innovation is also important to measure the innovation performance within companies. Grawe, Churn & Daugherty (2009) argue that innovation from a resource based view must be utilised to develop a competitive advantage.

The evidence presented by existing literature above describes what innovation is, and why it is needed by companies. In order to leverage of its benefits the researcher seeks to further understand how innovation can be applied to the services industry.

2.3 Service innovation

2.3.1 Background

Changes to the operational processes due to changes resulting from authorities such as regulatory bodies are not necessarily deemed as innovation. Instead, changes that bring about a positive notion to the underlying value proposition for both the service provider and service customer are considered innovation in services (Katzan, 2015).

Services rendered are not thought of in terms of delivering a tangible product. This makes it somewhat difficult to measure and define. Services have been defined by scholars as interaction between consumers and service providers which changes the outcome material object, knowledge, information or individuals. Services definition by Morrar (2014), comprises of four attributes which include intangibility (products or processes that are not tangible), heterogeneity (non-uniformity in the end result), inseparability (consumers cannot be separated from the service experience), and perishability (services cannot be stored or exchanged and thus transitory). Similarly, Katzan (2015) mentions four dimensions to service innovation which comprise “the service concept, the client interface, the service delivery system, and technology options” (Katzan, 2015, p. 5).

Legrand and Ljoiem (2013) argue that one of the core differences between the types of innovation when contrasted with service innovation is that the latter has a strong focus on the customer. Here the customer is the focus of the innovation and all efforts are aimed at satisfying the customers’ needs. Other innovations such as those that arise from research and development produce products that may not necessarily have a high success rate in terms of development and commercialisation of the product.

Three important initiatives are looked upon by incumbents to address the call for innovation in services. The first being institutionalising services that aims to devote resources to improve existing services which ultimately benefit the customers (better customer satisfaction), the company (savings on labour), and employees (better employee satisfaction). Secondly personalisation of services offered can be attained through partnerships between companies from different industries to achieve mutual benefit. For example credit card providers and retailers collaborated to create tailor-made offerings to customers. Personalisation can be further extended by giving clients more control in the service value chain. Lastly, introduce simplicity by viewing things from a customers’ perspective is required but not easily attained. Incumbents need to employ these

imperatives, and simultaneously embrace and adopt new technologies. (D'Emidio, Dorton & Duncan, 2014).

Service innovation is different from production innovation. Services are made possible through an ecosystem of people, skills, processes and materials. Customers experience services in various forms which can be understood using a customer journey. The customer journey reveals various touch points of the customer and these touch points serve as leads to find potential to innovate (Katzan, 2015). Morrar (2014), argues that through customers' feedback, an information loop is created that allows incremental innovation and new services to be offered. Innovation in services is not reliant on technological research and development. Instead it relies on human capital to add dimensions of strategy and competitiveness (Morrar, 2014). Service innovation itself is not solely reliant on technology. Its accumulated knowledge of customers is also a source of bringing about innovation in services. The service industries are classified by scholars into categories. For small enterprises, the typology is classified by three categories, low innovation intensity, technology-intensive and knowledge-intensive service industries.

Opportunities serve as a trigger to innovation. The recognition of opportunities is described using a basic framework comprising of prior knowledge, alertness and active search. Prior knowledge is a key component to identifying the opportunities, whilst alertness and active search are mediating variables. Alertness can be motivated by the organisation that provides employees with incentives to identify opportunities. Knowledge should not be restricted to the business of the organisation, but contingent areas as well. The third component, search, is an active approach to find opportunities. Although the framework highlights these three aspects, a collaborative approach is needed to manage knowledge and activities that stimulate the recognition of opportunities (Fischer, 2011).

2.3.2 Tools and techniques of service innovation

To further understand innovation in services, several design methods exist that when applied can reveal components of the service delivery to the end customer. One that is extensively elaborated on by Katzan (2015) is the service blue print. This method is used to identify the interactions between the various components to better understand the service delivery model. These components are physical evidence, customer interactions, front stage provider actions, back stage provider actions and support processes. These components can be placed into context using an example of a bank customer that makes use of the branch infrastructure. The physical evidence refers to actions performed by the customer to trigger the service process such as - driving to the branch. Customer interactions refer to all interactions through the service experience that involve the customer, for example, establishing the customer's need for visiting the branch. Front stage provider actions are those actions visible to the customer, but performed by the service provider e.g. printing documentation for the client to complete. Back stage provider actions are those actions completed by the service provider, but not visible to the customer, for example, packaging of bank cards into envelopes for delivery to the customer. Support processes are those processes that are not internal to the service e.g. delivery of print paper to the branch, but are key enablers (Katzan, 2015).

Morrar (2014) highlights three perspectives to innovation in services, namely, assimilation, demarcation and integration. Assimilation is termed the traditional approach as it looks at visible modes to innovation and ignores modes that are invisible. In contrast, the demarcation perspective focuses on innovations that are invisible – innovations through new ways of doing things, new organisational structures. Invisible modes include "social innovations, organizational innovations, methodological innovations, marketing innovations, innovations involving intangible products or processes" (Morrar, 2014, p. 9). The integrative perspective combines those of the assimilation and demarcations perspectives thereby focusing on technological and non-technological innovations.

Service providers should focus more on the importance of the customer's experience. Several tools and frameworks are used to make services offered more transparent and understandable. The focus of such initiatives is to visualise the services from a customer experience perspective. Furthermore, effective tools will enable services to be measured in order to determine if the changes implemented had any impact. Such tools and techniques introduce design to the services domain, making services more visual and somewhat tangible. This element of service design allows one to visualise services from a customer's and cultural perspective (Jeknaker, Tellefsen & Luders, 2014).

The design of a service can be demystified by considering five lenses such as, actors, touch points, offerings, needs and experience (AT-ONE). These lenses are used in workshops involving the relevant stakeholders to bring about service innovation (Jeknaker et al., 2014). Service designs can be understood through observations and representations - the former through monitoring the roles of stakeholders of the process and the latter through focusing on design artefacts. In both instances, employees may not have the required skill of design practitioners to fully exploit the opportunity to bring about innovation. Several technology based solutions or methods have been utilised to provide guidance to employee driven innovation (Watanabe, Fukuda & Nishimura, 2015). The technology assisted design methodology utilised by Watanabe et al. (2015), used four phases. These phases are observation, analysis, design and application.

2.3.3 Evidence that supports a culture reform

Understanding service design is an important step to introduce innovation to services. However in order to bring about this innovation, organisations rely on employees to be driven towards this common goal. Watanabe et al. (2015) utilise a technology-driven approach to bring about innovation in service designs in order to drive service innovation. This approach may produce the expected outcome, however, the reality remains in motivating employees and creating a culture that sustains this behaviour (Watanabe et al., 2015).

Introducing innovation to services does not solely rest on management. Instead, this could be inspired by any employee within the organisation. Employees should be encouraged to produce service innovation ideas through reward systems or workshops that are designed specifically around creating attention (Watanabe et al., 2015).

Service design itself takes a human-centred approach and focuses on ethnographic methods to understand services offered. Such methods rely upon the skills of design practitioners. However, reliance on employees to drive innovation is a complementary method to service innovation. The employee driven approach is a bottom up approach to service innovation. The use of design practitioners and employees is referred to as a co-design approach to service innovation (Watanabe et al., 2015).

In a case study that looked at professional service firms (PSFs), Fischer (2011) identifies antecedents to service innovation. The first being corporate entrepreneurship (CE) and the second being knowledge management. Corporate entrepreneurs are individuals who understand the external environment variables and internal variables to the organisation. Such entrepreneurs are then capable of identifying opportunities that their organisation should use with the available resources. Opportunity recognition begins with identifying the problem and understanding the value in taking up the challenge to provide a solution. However, this is only innovation once commercialised.

Organisational factors play a key role in the success of innovation and these factors are critical despite having the required skilled individuals. These factors include leadership, culture, and processes. Existing practices within the organisations should also be looked at when adopting innovative thinking. Such practices have the potential to stifle innovative thinking, thus partially or fully negating innovation efforts (Legrand & Ljoiem, 2013).

Innovative thinking is a practice that embraces the complex nature of problems. This practice aims to understand the root cause of problems through questioning and understanding true nature of ambiguities. Only then are solutions proposed. In this era of a knowledge and information economy, this paradigm shift is necessary as we move away from the previous industrial economies (Legrand & Ljoiem, 2013).

2.3.4 Dimensions and benefits to service innovation

The topic of innovation has been further enhanced to include service innovation. Hertog, van der Aa and de Jong (2010) formulated the size dimensions to service innovation. The size dimensions are described below:

1. Combinatory services capabilities – the extent to which value is brought to customers by bundling together different service capabilities or unbundling existing services to offer niche or specialised services.

2. Customer interaction - the extent to which delivery of improved value to the customer is brought about via a new way of interaction with the service provider.

3. Business partners – utilisation of business partners (including the customer) to co-create the delivery of the service innovation.

4. Revenue models – cost and revenue models that fit the service innovation model which enable the sustained success of the service innovation.

5. Service delivery system – the extent to which innovation originates from within the organisation. Does the service company have employees with personal capabilities to deliver on the job? Is there enough latitude afforded to employees to perform their jobs properly and to innovate further?

6. Technological – the extent to which information and communication technologies are utilised to improve or offer a revolutionary service to customers.

These dimensions provide channels or tools through which companies can enhance their service innovation. Moreover, Grawe et al. (2009) argue that the contemporary form of innovation, known as service innovation, is seen to be a source of driving competitive advantage through market performance and efficiency. A broad definition of innovation, "is an idea, practice, or object that this perceived as new by an individual or organization" (Grawe et al., 2009, p283). Even though this can be applied into any context, it is also applicable in services offered by companies. Companies are often in competition to introduce products to market, but the services that are offered could deliver the differentiating factor. Service innovation has shown to be one of the reasons behind driving customer value. The analysis of the external environment that impact customers, plays a significant role in providing new knowledge, which will help to determine future needs of customers, thereby shaping service innovations of the future.

2.4 Corporate entrepreneurship

2.4.1 Introduction

As defined by Kuratko et al. (2014), the various elements that can be described as antecedents to CE are top management support (MS), work discretion (WD), rewards and reinforcement (RR), time availability (TA) and organisation boundaries (OB). In the case of MS, management needs to play the role of facilitator. It is further argued by Demirci (2013), that senior and middle management are responsible for creating a suitable environment for CE which is termed the "formal sponsorship". WD – delegation of authority – when afforded to employees provides them with latitude to make decisions. This power influences employee attitudes and requires tolerance of failures from management. TA should also be considered as a resource in order to come up with innovative ideas and perform innovative activities. Flexibility of the OB will enable information from the external environment to reach the internal environment of the organisation to facilitate innovative ideas.

Early stages of CE and Entrepreneurial Orientation (EO)

CE was first conceptualised as being entrepreneurial despite the bureaucratic nature of organisations, given that the organisation's CE was considered a form of renewal. In the 1990s, CE also brought about corporate venturing or renewal of existing business. The former resulted in the creation of new businesses. The objective during this era was to provide organisations with a competitive advantage and improved financial performance (Kuratko & Audretsch, 2013).

The entrepreneurial orientation (EO) of an organisation shapes the way entrepreneurship is exercised. EO mainly comprises of "innovativeness, risk-taking, and proactiveness" (Lekmat & Chelliah, 2014, p. 183). Innovativeness refers to the introduction of new products and processes, while risk taking involves the commitment of resources despite there being a chance of failure. Being proactive refers to the ability to utilise resources and identify opportunities that place the organisation ahead of its competitors (Lekmat & Chelliah, 2014; (Kuratko & Audretsch, 2013).

Corporate Venturing and Strategic Entrepreneurship

CE manifests itself as corporate venturing or strategic entrepreneurship. Corporate venturing can be differentiated by internal, external and cooperative corporate venturing. Internal corporate venturing is the creation of a new business entity within the existing organisation.

External corporate venturing involves equity investment in external companies. Cooperative corporate venturing is the start-up of new businesses with other external entities (Kuratko & Audretsch, 2013).

In contrast, strategic entrepreneurship is inward focused with the aim of achieving competitive advantage. When adopting the strategic entrepreneurship stance to CE, an organisation should benchmark against itself or the industry in order to ascertain the effectiveness of its renewal effort. The main focus of strategic entrepreneurship is to obtain a competitive advantage. This is achieved by taking advantage of opportunities as and when they present themselves. “Strategic entrepreneurship can take one of five forms - strategic renewal, sustained regeneration, domain redefinition, organizational rejuvenation, and business model reconstruction” (Kuratko & Audretsch, 2013, p. 332).

CE and Intrapreneurship

Corporate entrepreneurship introduces a multitude of benefits to an organisation. The benefits include improved financial performance as a result of strategic renewal and repositioning of the organisation. This provides the organisation with leverage to thrive in its current operating environment, and enter new target markets. The extent of CE can be ascertained by manifestations presented at various management levels in the organisation. CE is understood to be driven vertically in the organisation from the top down. This approach is taken to drive a culture reform within the organisation. Conversely, a bottom-up approach is possible but it is termed intrapreneurship with the focus on the employee. Extant literature utilises CE and intrapreneurship interchangeably, however differences exist that distinguishes these terms based on how it is exercised within the organisation (Rigtering & Weitzel, 2013)

2.4.2 Management support

For intrapreneurship to thrive, the climate for intrapreneurs must be created by top level management, intrapreneurial activism is needed, people trained to innovate, and an innovation process that moves ideas from intent to reality (Seshadri & Tripathy, 2006). Moreover, Bloodgood et al. (2015) argue that management support is critical in enabling entrepreneurial activity to transition its efforts into innovation. Corporate entrepreneurial behaviour is evident in organisations that adopt a vision, architecture and processes that are entrepreneurial in nature. Implementing CE in an organisation is disruptive as organisations

are systems that comprise of complex components that interact with each other with a great deal of sophistication. This view is synonymous with a systems dynamic perspective that is prevalent in organisations.

Lekmat and Chelliah (2014) found that management support and rewards or recognition were key influencers to EO. This means that the role of management support in creating an entrepreneurial culture is important and critical to an organisation. Rewarding and recognising employees is also significant to EO, as employees would naturally be motivated towards this ideal through lucrative incentives.

Management within an organisation are significant to the overall success of CE. The levels of management are not limited to senior levels, but also to middle and low-level management. Senior management provides direction to implement CE initiatives at a macro level focusing on strategic imperatives. Middle-level managers help to position the value of the CE initiative for implementation by first-level managers. Middle-level managers need to endorse the initiative and ensure sufficient resources are available. “Through the shepherding function, middle-level managers champion, protect, nurture, and guide the entrepreneurial initiative” (Kuratko & Audretsch, 2013, p. 327). Middle level managers play a critical role in the success of the entrepreneurial initiative. This critical role is justified as an understanding of the strategic reasoning of the entrepreneurial initiative. Furthermore, allocation of the resources based on business priority needs to be co-ordinated with the underlying first-level management. Although entrepreneurial initiatives are dependent on various levels of management to fulfil their responsibilities, managers must portray optimistic behaviour towards the initiative. Failure to do so is likely to lead to the demise of the initiative all together. The coordinated effort of managers across various levels is needed in order to convert entrepreneurial initiatives into competitive advantages for the organisation (Kuratko & Audretsch, 2013).

2.4.3 Work discretion

Organisations are not competitive due to any single attribute. Instead it based upon an array of resources. The resource based view (RBV) of organisations determines resources that would contribute to an organisation’s competitive advantage. Entrepreneurial traits amongst ethics, organisational culture, routines and learning are examples of non-tangible resources. The nurturing of such resources is influenced by the human resource systems at play within the organisation (Manroop, 2015).

Organisations achieve their competitive advantage by pursuing strategies that are different to their competitors. These strategies are achieved through a combination of resources that can be described as bespoke relative to competitors and are near free of attrition (Manroop, 2015).

Organisations that adopt an independent ethical climate enable management to entrust employees with freedom and responsibility. This discretionary culture serves as the breeding grounds for innovation and is suitable to organisations that are keen to delve into new ventures (Manroop, 2015). Rigtering and Weitzel (2013) argue that for intrapreneurship to be successful, employees need to establish the right levels of adequate trust between themselves and their direct managers. Once trust is established between the intrapreneur and their direct manager, the formalisation within the organisation does not serve as a hindrance. This two-way trust relationship in a formal organisation setting allows intrapreneurs to get on with their behaviours of ideation and implementation thus leading to innovation.

2.4.4 Rewards / reinforcement

Human resource management (HRM) that practice high-performance work systems (HPWS) have shown to positively influence a culture of corporate entrepreneurship within organisations. HRM practices that include rewards and compensation practices have shown to provide an organisation with a "competitive advantage by creating cultures of creativity and innovation" (Giannikis & Nikandrou, 2013, p. 3647).

Organisations provide the resources and incentives necessary to stimulate entrepreneurial behaviour. This shapes employee conduct to suit the strategic imperatives of the firm. Employees that fully take up the challenge to be entrepreneurs in the context of an organisation are defined as intrapreneurs. Intrapreneurs are infamous for generating ideas and exploiting opportunities that result in creative destruction or the creation of spin-off businesses. Most independent entrepreneurs were previously employed at organisations where entrepreneurial orientation of the organisation shaped their approach in one or more ways. Therefore organisations can be seen as the training grounds to drive intrapreneurial as well as entrepreneurial behaviour. Secondly, organisations also shape the values of their employees or at least have values that employees can relate. Thirdly, employers through their intentional structures, provide a network of interactive connections that enable

entrepreneurial behaviour to self-create entrepreneurial behaviour. Lastly, organisations serve as a source for new opportunities (Sørensen & Fassiotto, 2011). The benefits and incentives offered by such organisations provide the means to sustain and promote entrepreneurial behaviour among its employees. The examples mentioned above are forms of reinforcement within organisations and are inclusive or rewards.

2.4.5 Time availability

Kuratko et al. (2014) argue that employees should be afforded the time for entrepreneurial activity as part of their work schedule. Bloodgood et al. (2015), introduces a system dynamics view of corporate entrepreneurship (CE) which sees the focus point as the opportunity. A system dynamics model is heavily reliant on feedback as a mechanism through various stage gates, and in addition transition opportunities through various stages before considering implementation. In the context of an organisation, this enables learning for employees and plays an important role when operating in dynamic environments. Employees thus need to be afforded time to generate ideas and take advantage of opportunities.

The stage-gate process sees innovations that arise from opportunities. Opportunities are evaluated at various stages and are evaluated through various gates in the process. Opportunities that are not successful are not simply discarded but analysed for reasons why the advancement to the next level was not attained. The learning obtained through this analysis is used to generate further entrepreneurial insight. (Bloodgood et al, 2015). Moreover, the system dynamics perspective can be seen as a mechanism that reinforces entrepreneurial practices within the organisation. The stages in the system dynamics model comprises opportunity recognition, opportunity assessment, opportunity legitimation, and if successful, opportunity implementation. These are discussed in detail in the subsequent paragraphs.

Opportunity Recognition

Bloodgood et al. (2015) argue that opportunity recognition stems from entrepreneurial insight within the organisation where this insight “is organisationally embedded and influences the adaption of ideas into innovative practices” (Bloodgood et al 2015, p.389). At the centre of CE strategy is opportunity recognition (OR) which has shown to provide a competitive advantage to organisations. Once opportunities have been recognised, pursuing and

exploiting these are in line with CE strategy. These opportunities stem from individuals who are skilled with pro-entrepreneurial cognitions, prior knowledge and learning experiences. The former claims that individuals with such cognitive abilities utilise pattern recognition to identify opportunities and that such cognition could be autonomous (without external pressure) or induced (as a result of organisational strategy). The level or maturity of individuals' prior knowledge also influences opportunity recognition when combined with new knowledge. "Learning, intuiting, interpreting and institutionalizing" (Bloodgood et al. 2015, p.390), are characteristic of the learning process. Opportunity recognition therefore plays a significant role in converting entrepreneurial insight into opportunities.

Opportunity assessment

Opportunity assessment is the process of enhancing the identified opportunity so that it is of benefit to the organisation. Those opportunities that are in line with the strategic goals of the organisation are more favourable. Opportunities that fall outside the guidance and limits of the organisation will require more effort through explicit explanation to justify its perceived value. The assessment of opportunities requires convincing of key stakeholders. It is important that once these key stakeholders are identified, the framing or positioning of these opportunities are given careful thought in terms of the opportunity merits and goals (Bloodgood et al., 2015).

Opportunity legitimation

Opportunity legitimation involves key stakeholders who determine whether the opportunity suits the needs of the organisation. The positioning of the opportunity is important and should be marketed in business terms. Championing of opportunities is therefore needed whether bottom-up or top-down, in order to lobby for the opportunity to be implemented. Even at this stage of the opportunity, there is a risk that the opportunity may be turned down (Bloodgood et al., 2015).

Opportunity implementation

Opportunity implementation is largely dependent on motivation and capacity to act as well as entrepreneurial action. Organisations must be prepared to change and be dynamic as well as live up to the true sense of being strategic when implementing innovative ideas. Resistance to change plays a role as an inhibitor in organisations and innovation champions play a pivotal role in mediating the change and those affected by it. The internal environment

can also affect the implementation of the opportunity in its capacity to act. Factors such as team cohesiveness, organisation structure and innovation skill play a significant role in influencing an organisation's capacity to act. Organisations must be cognisant not to create reliance on activities that have worked in the past, thus becoming myopic. Instead, they should introduce evolutionary changes that are simplistic with the aim of improving skill levels of innovation practitioners. Even at this stage opportunities could be turned down, but must be placed in the feedback loop for revision. Should an opportunity be implemented, then this opportunity has traversed through the system dynamics model of the opportunity lifecycle in the context of CE.

The idea of transitioning opportunities from entrepreneurial insight through to implementation places emphasis on strategic renewal as well as entrepreneurial renewal within an organisation. Both these renewal constructs are facets of CE (Bloodgood et al.,2015).

Strategic assessment is the process of evaluating the outcome of strategy implementation. Where the strategy outcome was not in line with the expected result, remedial action is taken to correct existing practices (Bloodgood et al.,2015).

The internal environment could also play a role in working against strategy implementation through creating self-minded individuals who create power bases. These political forces have a tendency to work has inhibitors when making strategic changes. Also change that is too drastic is not well received. Rather implement subtle changes that are more readily accepted i.e. continuity rather than disruption. This can also serve as an inhibitor to re-assessing the strategy when the drastic nature of change that is actually needed cannot be easily adopted. Furthermore, the competencies that are accumulated over time eventually become the norm in terms of tried and tested methods, and the movement away from the norm is not always accepted. These effects result in amendments to the strategy being evolutionary rather than revolutionary (Bloodgood et al., 2015).

"Entrepreneurial renewal (ER) is the envisioning of opportunities and potential solutions" (Bloodgood et al., 2015, p. 394). Guidance and limits imposed by the organisation negatively influences ER. Reflection of lessons learned from past experiences enhances the entrepreneurial cognition.

From the model and discourse above, we find that both strategic and operational concerns are in contention with each other. Hence co-ordination between these two concerns needs to be well communicated. Organisations that delve into exploration activities can also use this

platform to inform both strategic goals as well as enrich the entrepreneurial insights. The exploration aspect together with exploitation makes organisations ambidextrous in nature. (Bloodgood et al., 2015).

2.4.6 Organisational boundaries

Organisational boundaries (OB) assess the extent to which information flows between the external environment and internal environment of the organisation. Moreover, OB also focuses on the extent to which information flows within the organisation in order to stimulate discourse that promotes entrepreneurial activity (Kuratko et al., 2014).

The practice of CE serves as a stimulant to knowledge building that permeates across business units within organisations. The knowledge gained from CE activities also provides the platform for organisations to enter into new markets. This is possible through management that works towards a common goal. CE initiatives span across formal and informal initiatives which serve as sources to generate knowledge. Knowledge creation is about generating new knowledge, while knowledge conversion is translating existing knowledge so that it can be applied practically. However, knowledge is only the basis for introducing reforms within organisations. The generation of knowledge does not reside on the shoulders of any one layer in the hierarchy of an organisation. Instead, it is achieved through pockets of work that permeate the organisation known as entrepreneurial hubs (Zahra, 2015).

Entrepreneurial hubs are seen to be more prevalent in multinational companies due to their dispersion across the globe. The members of these hubs span across various employees from management to specialists. Due to the mix of employees, these hubs generate an array of knowledge that serves as the basis for providing strategic insight. Informal discourses that originate from these entrepreneurial hubs grow the knowledge base of the organisation. Moreover, the result of such hubs is the generation of knowledge that is heterogeneous. This creates the opportunity for organisations to exploit the heterogeneity of this knowledge in order to pursue strategic objectives e.g. new markets, extension of existing offering etc. These opportunities though can be exploited if positioned carefully to obtain the approval of management. In order to gain the full benefit of such knowledge, organisations must develop the capability to enable the conversion of knowledge. This capability should also be extended to the entrepreneurial hubs where members portray the ability to interact using technical jargon (interaction memory) and convey learning from prior interactions in future

interactions (transactive memory). The hubs therefore serve as a means of inter-connecting people and sharing knowledge throughout the organisation (Zahra, 2015).

2.4.7 Top-down and bottom-up approach

Although the aforementioned description simplifies CE, scholars have elaborated further on the culture that is borne within organisations that adopt an entrepreneurial orientation. Also known as intrapreneurship, Seshadri and Tripathy (2006) explain that CE is inextricable with leadership, which is further corroborated by Karol (2015) that companies rely on entrepreneurial leaders to facilitate innovation to stay relevant in rapidly changing environments. In bringing innovative ideas to life, the concept has to be pitched to the audience that ultimately has to be convinced. Selling just the technical merit will not suffice, instead aspects such as perspective taking (understanding the customers' perspective) and the ability to influence people are crucial in getting the organisation to adopt the idea. These essential elements need to be packaged and show alignment with the business strategy and goals. To feed the aforementioned process, the manifestation of agility is needed. Agility in this sense is about "*having the right people, with the right skills, embedded in the right culture and following the right innovation process*" (Karol, 2015, p. 33), which will enable companies to stay competitive.

Although the "formal sponsorship" within organisations is needed to cultivate an intrapreneurial culture, a bottom-up approach is also needed. Demirci (2013) argues that CE is both a top-down and bottom-up approach. Mobilising individuals to participate in entrepreneurial behaviour is considered a bottom-up approach. This approach may be rendered futile without the formal sponsorship that is why these two approaches are inter-linked. In their empirical study, Seshadri and Tripathy (2006) explain that CE is needed for the mobilisation of people toward a different way of doing things in order for companies to thrive in uncertain times. From an employee perspective, a shift away from the employee mind set to the owner mind set is required. These employees have a clear sense or purpose of their lives as well as the role they need to play in the organisation. A long-term vision of their organisation is also formulated and communication with stakeholders is evident. Contrary to these traits, several factors play a role in inhibiting the intrapreneurial behaviour. These inhibiting factors include challenges outside of the organisation which are personal in nature. For instance health- or family -related challenges would be unfavourable. The level of individual maturity in the sense of experience and preparedness also plays a significant role.

In converging the top down and bottom up approach, Clargo and Tunstall (2011) maintain that entrepreneurs are latent within an organisation, and although these individuals (known as intrapreneurs) wish to operate with a sense of ownership, it is reliant on relevant structures to be in place. Although identifying entrepreneurs through specific traits might seem logical, it is not definitive in terms of specific traits that are unique to entrepreneurial behaviour. Instead, the skill set and the environment are important factors where in the case of the latter, stringent policies and procedures can inhibit entrepreneurial behaviour. Knowledge, skill and attitude are important when recruiting employees with entrepreneurial traits. The first two constructs are associated with a competency fit, while attitude is the realm in which entrepreneurial traits lie amongst others.

3 Hypotheses formulation

Extant literature looks at the strategic orientation of organisations with respect to service innovation. This research seeks to identify the corporate entrepreneurial nature of employees in relation to service innovation. Tantau, Chinnie & Carlea (2015) show a positive correlation between CE and innovation, while Grawe et al. (2009) find that customer and competitor orientation is positively correlated with service innovation. This paper seeks to understand the influence of corporate entrepreneurship and service innovation in order to contribute towards extant literature and clarify the way forward for companies in the financial services industry.

The formulation of the hypotheses is based on the dimensions that comprise the corporate entrepreneurship assessment index. The null hypotheses for each dimension are represented by HX_N and the alternate hypotheses will be represented as HX_A where X denotes the dimension or hypothesis number. Each of these dimensions are reflected in the sections that follow.

Hypothesis 1: Management support and service innovation

$H1_N$: Management support afforded to employees has no relation to service innovation

$H1_A$: Management support afforded to employees is related to service innovation

Hypothesis 2: Work discretion and service innovation

$H2_N$: Work discretion afforded to employees has no relation to service innovation

$H2_A$: Work discretion afforded to employees is related to service innovation

Hypothesis 3: Rewards/reinforcement and service innovation

$H3_N$: Rewards / Reinforcement culture has no relation to service innovation

$H3_A$: Rewards / Reinforcement culture is related to service innovation

Hypothesis 4: Time availability and service innovation

$H4_N$: Time availability afforded to employees has no relation to service innovation

$H4_A$: Time availability afforded to employees is related to service innovation

Hypothesis 5: Organisational boundaries and service innovation

$H5_N$: The lack of organisational boundaries has no relation to service innovation

$H5_A$: The lack of organisational boundaries is related to service innovation

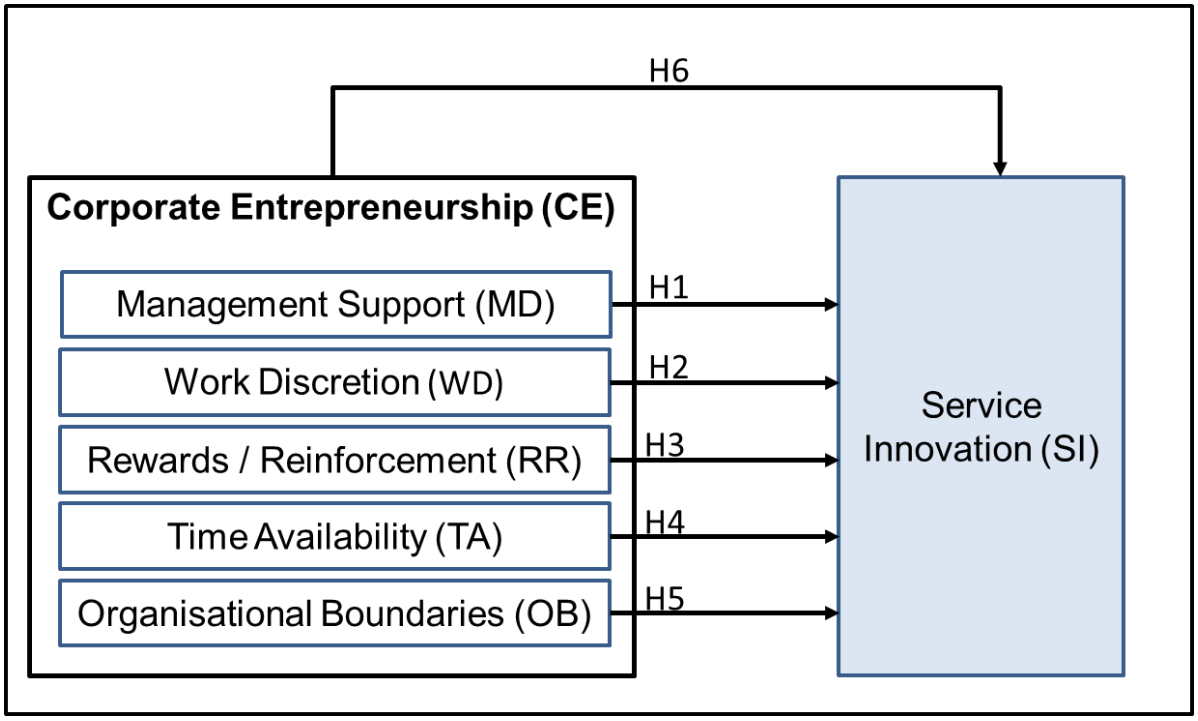
Hypothesis 6: Corporate entrepreneurship and service innovation

$H6_N$: A culture of corporate entrepreneurship has no relation to service innovation

$H6_A$: A culture of corporate entrepreneurship is related to service innovation

A diagrammatic representation of the hypotheses is depicted in Figure 1 below.

Figure 1 - Summary of hypotheses formulation



4 Research design and methodology

4.1 Introduction

This chapter places specific emphasis on the approach taken by the researcher in conducting this study. Thereafter, a detailed view of the research methodology is explained to elaborate on the basis of the analyses.

4.2 Research design

The researcher's philosophy was that of pragmatism which led to emphasis on the research question and objectives. The researcher adopted a deduction approach and made use of existing theories of corporate entrepreneurship (CE) and service innovation (SI). The dimension of CE (independent variable) was adopted from Kuratko et al. (2014) to establish if causal relationships existed with service innovation (dependent variable). The scale devised by Grawe et al. (2009), although relatively nascent, was adopted to measure the extent of service innovation in financial services companies.

The researchers aim was to establish the reasons, if any, as to why CE has an impact on SI and thus had taken an explanatory approach to this study. Explanatory studies go beyond what descriptive studies and reveal insights into the occurrences through causal relationships (Saunders & Lewis, 2012).

An online questionnaire was utilised to gather data from respondents. The questionnaire was first drafted in an online version and tested among a team of six specialists comprising business analysts and test analysts. These analysts are specialists who have an information technology and systems background. Results from the survey were observed to ensure that the data values captured were in line with the Likert scale parameters. Due to the few respondents available when testing the questionnaire, no preliminary statistical tests were conducted. The researcher applied corrections in the form of aesthetics before releasing the final version of the online survey.

4.3 Research methodology

4.3.1 Population and unit of analysis

The researcher looked to study financial services companies in South Africa to establish their level of CE and SI, and obtain their level of CE activity in response to the high degree of diversified services offered in this competitive sector. According to Market Wrap (2016), the classification of companies in the financial sector can be grouped as diversified financials and banks, which include insurance providers (non-life and life). The companies that were classified as diversified banks as per Market Wrap (2016) comprised the population of companies for this study. The sampling unit or unit of analysis for this study was financial services companies.

4.3.2 Sampling method

A probability sampling method was initially envisaged in order to select the required organisation (unit of analysis) and respondents from within the target population. As defined by Wegner (2012b), cluster random sampling, also known as two stage cluster sampling can be used to select samples that represent the target population.

The researcher's initial strategy was to target a sample of the companies in the financial services industry, predominantly companies that were classified as diversified banks. The intention was to target such companies due to the wide spectrum of business services which aligned fairly accurately with the objective of the study. Due to the lack of intent by companies to participate in this study, the researcher had chosen a case study strategy by focusing on a single organisation in order to gain the necessary findings and insights in line with the research objectives. The organisation that was chosen had met the criteria of being classified as a diversified bank, and was willing to allow its employees to participate in the survey.

Respondents were chosen through the use of email distribution lists which covered process engineers, business analysts, software test analysts as well as managers, including senior and middle management to name a few. A total of ninety seven responses was obtained through the online survey.

4.3.3 Research instruments

The research questionnaire was compiled by adopting scales formulated by scholars in the field of corporate entrepreneurship (CE) and service innovation (SI). The scale for CE was adopted from Kuratko et al. (2014), whilst the scale that measured SI was adopted from Grawe et al. (2009).

The CE scale comprised five dimensions namely, management support, work discretion, rewards and reinforcement, time availability and organisational boundaries. Each of these dimensions were measured through a set of questions which utilised a Likert scale for responses. The SI scale was relatively simplistic, and comprised five questions which also utilised a Likert scale for responses.

4.3.4 Data gathering process

Quantitative data was collected using an online survey which contained questionnaires that represented scales for corporate entrepreneurship (CE) and service innovation (SI). Upon receipt of formal consent from the authority within the organisation, the web site link to the online survey was distributed via email to employees performing roles that were not operational in nature. These included employees in roles of business analysts, test analysts, and product managers to name a few. The content of the email explicitly stated that details of all companies will be kept anonymous and the findings in the thesis will be reported without identifiers. The first email was distributed via email on 15 August 2016, signalling the commencement of the data gathering process. Subsequent to this email, a reminder email was distributed on the 1 September 2016 as a gentle reminder to respondents. The reminder email also conveyed gratitude to those that responded since the initial email. The official data gathering process concluded on 6 September 2016.

Each dimension of the CE and SI scales were communicated through the online survey providing guidance to the respondent in terms of their progress through the survey. Responses on the CE and SI scales were collected using a Likert scale. The values in the Likert scale ranged from strongly disagree to strongly agree. The depth of the scale for CE ranged from 1 to 5, whilst the depth of the scale for SI ranged from 1 to 7. The CE scale comprised five constructs which was adopted from corporate entrepreneurship assessment index as described by Kuratko et al. (2014). The SI scale adopted from Grawe et al. (2009), is a relatively new scale and covered one construct only. In addition to the data collected on the scales, the researcher sought to establish information regarding the respondents years

of experience in their current role, designation and level within the organisation in order to ascertain the profile of the respondents.

4.3.5 Analyses

Statistical analyses were conducted to test the reliability and validity of the scales adopted from extant literature. These tests conducted comprised of an iterative process of factor analysis eliminating weak variables or items, with the aim of mathematically depicting dimensions. A reliability test was conducted using Cronbach's alpha coefficient which further strengthened the dimensions derived from the factor analysis.

Each of the hypotheses formulated was tested through a simple regression or linear regression model in order to test for prediction between the newly formed (independent variable) CE and SI (dependent variable) dimensions. A multiple regression model comprising all dimensions of CE and service innovation was also formulated.

The researcher had chosen the IBM SPSS software package to conduct the aforementioned descriptive and inferential statistical analysis of the data

4.3.6 Limitations

Several limitations were encountered by the researcher during the period of formulating the research constructs as well as during the information gathering process. These limitations were:

a) Accessibility of key personnel and obtaining consent from organisations proved to be an obstacle in gathering data from financial institutions. Despite making successful acquaintances verbally, respondents from the various organisations failed to complete the survey.

b) Companies that were targeted were limited to South Africa and thus obtaining data from financial services companies beyond South African borders was not feasible.

c) The use of electronic surveys or e-surveys may also introduce low response rates. The lack of contact with the respondent would have prevented prompt responses to any clarification questions as well as a lack of control over who answers the e-survey (Wegner, 2012a)

d) The use of a relatively nascent scale for service innovation raised concerns on whether the questions that covered the dimension were robust and accurate. The use of the SI scale in other studies has not been established.

e) This study operated within a limited time frame leaving a short window period to obtain data from financial services companies and completion and finalisation of this research report.

f) Due to poor participation by majority of the organisations, a case study strategy was adopted with responses gathered from a single company. The view from a single company cannot form the basis for all companies within the industry.

g) Kuratko et al. (2014) indicate that CEAI is not designed for operational staff as the degree of freedom afforded to such employees is usually limited. Instead, this measurement tool should be completed by professional, managerial and technical positions. In order to target all employees of such designation was difficult without targeting designation that were within the ambit of the researcher's profession and professions within the informal network.

5 Results

5.1 Introduction

This chapter focuses on the tools, techniques and presentation of the results. The researcher endeavoured to provide detailed steps to illustrate how the results were obtained, the types of analyses, and reasoning behind the decisions made during the each analysis. Where possible, guidance was obtained from the literature of scholars who sought to perform similar tests, if not identical, to that of the researcher.

5.2 Approach

IBM SPSS software was utilised to perform various statistical analysis. Questions that formed part of the CE and SI scales were classified as ordinal data. The responses gathered from the CE scale ranged from “Strongly Disagree” to “Strong Agree” with values ranging from 1 to 5 respectively. The responses gathered from the SI scales also ranged from “Strong Disagree” to “Strong Agree”, but with values ranging from 1 to 7 respectively. Questions from each of these scales were coded as per the scholars that utilised the scale in prior research. The tables below depict the range of the Likert scales responses captured against each scale.

Table 1 – Corporate Entrepreneurship - Likert scale

1	Strongly Disagree
2	Disagree
3	Neutral
4	Agree
5	Strongly Agree

Table 2 - Service Innovation - Likert scale

1	Strongly Disagree
2	Disagree
3	Moderately Disagree
4	Neutral
5	Moderately Agree
6	Agree
7	Strongly Agree

Several variables within the CE scale required reverse coding. None of the variables within the SI scale required reverse coding.

A factor analysis was conducted jointly on the independent variables and dependent variables to statistically or mathematically identify groups or associated factors. Cronbach's alpha (α) coefficient was used to further strengthen the identified components. Through the above approach, several questions were omitted. Through this process new dimensions were formulated which described CE and SI constructs. Pearson's correlation tests were conducted between each dimension of the new CE and the SI dimensions. Finally, a multiple regression analysis was conducted utilising the new dimensions.

5.3 Descriptive statistics

The following descriptive statistics reflects the scores based on the original questions answered by ninety seven respondents via the online survey. None of the responses were incomplete which meant that no responses were eliminated from the data collected. The mean and standard deviations are presented in table 3 below.

Table 3 - Descriptive statistics

	Dimension	Mean	Standard Deviation
Corporate Entrepreneurship (scale 1 to 5)	**Management support**	2.7309	0.65604
	Rewards / reinforcement	3.4880	0.78257
	Work discretion	3.2278	0.79500
	Time availability	2.6082	0.77431
	Organisational boundaries	2.5626	0.57802
Service Innovation (Scale 1 to 7)	**Service Innovation**	4.2227	1.33506

From the above descriptive statistics, the mean values for corporate entrepreneurship depict scores between disagree and neutral which had Likert scale values of 2 and 3 respectively. An exception to this were CE dimensions rewards/reinforcement, and work discretion. The scale for corporate entrepreneurship ranged from 1 to 5. Standard deviations for the CE dimensions ranged from 0.57802 to 0.79500. As these values are less than 1, this indicated there were consistent responses from respondents on the state of entrepreneurship within the organisation.

The mean score for service innovation was at 4.227, close to the neutral score of 4.0. The standard deviation of 1.33506 indicated slight inconsistencies from respondents who rated the organisation state of service innovation.

5.4 Factor analysis

Principle axis factoring was used to assess the reliability of the both the CE and SI scales adopted. Principle factor analysis is better suited for scales that are new in relation to scales that have been proven over time (Hakimi, Triki, & Hammami, 2014). The CE and SI scales utilised were adopted from journals published in 2014 and 2009 respectively. Although the SI scale was published in 2009, Grawe et al. (2009) indicate that the scale utilised was newly developed for their study.

Yong and Pearce (2014), indicate the factor analysis is designed to identify variables that can be grouped together. Furthermore factor analysis is also aimed at reducing the number of variables to key factors or groups, and eliminating those variables that are trivial. Once a factor is reduced to two or less variables, the factor is only considered significant if the correlation between these variables are above 0.7 i.e. $r > 0.7$.

The factor analysis was executed over 7 iterations in order to arrive at the set of 9 factors or components. Where the factors comprised a single variable, the items were removed in preparation for the next iteration of the factor analysis. The Kaiser-Meyer-Olkin measure and Bartlett's Test of Sphericity was observed through each iteration of the factor analysis in order to assess if the data was fit for factor analysis (Hakimi et al., 2014). In addition, the scree plot graphs produced were observed for the point of inflection. Any items with absolute value below 0.40 were omitted from the factor analysis. An eigenvalue of 1.0 was utilised in the analysis as well. Table 5.3a depicts the results after each iteration of the factor analysis.

Table 4 - Factor analysis iterations

Iteration	Number of Items	Factors Identified	Factors with single or nil variables*	Kaiser-Meyer-Olkin	Bartlett's Test of Sphericity (p value)	Factors by scree plot inflection
1	53	13	3	0.755	0.00	6
2	50	12	2	0.772	0.00	6
3	48	11	1	0.774	0.00	6
4	47	11	1	0.777	0.00	6
5	46	10	1	0.786	0.00	6
6	45	10	2	0.788	0.00	6
7	43	9	0	0.790	0.00	6

*Items were deleted

The rotated factor matrix shown in table 5 below illustrates the factor loading after the seventh iteration of the factor analysis

Table 5 - Rotated Factor Matrix

Variable	Factor								
	1	2	3	4	5	6	7	8	9
CE_MS_13	0.777								
CE_MS_15	0.708								
CE_MS_14	0.678								
CE_MS_16	0.653								
CE_MS_3	0.582								
CE_MS_9	0.574								
CE_MS_4	0.459								
CE_MS_17	0.458								
SI_05		0.757							
CE_MS_2		0.695							
SI_04		0.688							
SI_01		0.672							
CE_MS_1		0.660							
SI_03		0.636							
SI_02		0.636							
CE_WD_27			0.674						
CE_WD_28			0.708						
CE_WD_26			0.679						
CE_WD_25			0.620						
CE_WD_24			0.552	0.411					
CE_WD_29			0.542						
CE_WD_23			0.529	0.494					
CE_WD_22			0.506						
CE_RR_32				0.720					
CE_RR_35				0.693					
CE_RR_33				0.670					
CE_RR_34				0.601					
CE_OB_48					-0.621				
CE_OB_47					-0.609				
CE_OB_46					0.600				
CE_RR_30				0.494	0.503				
CE_OB_45					-0.472				
CE_OB_44					0.441				
CE_TA_38						0.855			
CE_TA_37						0.682			
CE_TA_41						0.497			
CE_TA_39							0.708		
CE_TA_40							0.581		
CE_MS_6							0.440		
CE_OB_43								0.640	
CE_OB_42								0.614	
CE_WD_21									-0.512
CE_MS_7									0.429

Table 5 above depicts the variables that were grouped together. Where a variable was associated across more than one factor, the highest factor loading took precedence. Post the factor analysis the following items were grouped to form the new factors or components. These are listed in table 6 below.

Table 6 - Factor items

Factor	Items
1	CE_MS_3;CE_MS_4;CE_MS_9;CE_MS_13;CE_MS_14;CE_MS_15;CE_MS_16; CE_MS_17*
2	CE_MS_1;CE_MS_2;SI_01;SI_02;SI_03;SI_04;SI_05*
3	CE_WD_22;CE_WD_23;CE_WD_24;CE_WD_25;CE_WD_26;CE_WD_27; CE_WD_28;CE_WD_29*
4	CE_RR_32;CE_RR_33;CE_RR_34;CE_RR_35*
5	CE_OB_44;CE_OB_45;CE_OB_46;CE_OB_47;CE_OB_48;CE_RR_30*
6	CE_TA_37; CE_TA_38; CE_TA_41*
7	CE_TA_39; CE_TA_40; CE_MS_6*
8	CE_OB_42; CE_OB_43*
9	CE_WD_21; CE_MS_7*

*Refer to Appendix B for a full explanation of the items

5.5 Test for reliability and validity

Each of the above factors were assessed against Cronbach's alpha coefficient. Where the Cronbach alpha was below 0.65 these factors were removed. The removal of certain items was also assessed to establish if the Cronbach alpha would improve to levels above 0.65 before the entire factor was eliminated. The table below depicts the Cronbach Alpha pre and post any item or factor removal.

Table 7 - Cronbach's alpha coefficient results

Factor	Cronbach Alpha	Items removed to increase alpha > 0.65	Cronbach Alpha post items removal	Factor Removed/ Retained
1	0.871			Retained
2	0.907			Retained
3	0.890			Retained
4	0.805			Retained
5	0.132	Removal of any one item does not increase alpha beyond 0.65		Removed
6	0.759			Retained
7	0.629	Removal of CE_MS_6 improved alpha	0.658	Retained
8	0.603	Removal of any one item does not increase alpha beyond 0.65		Removed
9	-0.291	Removal of any one item does not increase alpha beyond 0.65		Removed

From the table above, the 9 factors were reduced to only 6 factors after utilising the Cronbach alpha coefficient. However the removal of CE_MS_6 has reduced factor 7 to only 2 variables i.e. CE_TA_39 and CE_TA_40. Once a factor is reduced to two or less variables, the factor is only considered significant if the correlation between these variables are above 0.7 i.e. $r > 0.7$ (Yong and Pearce, 2014). A bivariate linear regression analysis between these two variables revealed a correlation of 0.490 thus eliminating construct 7. The table depicts the final constructs from this survey data. The constructs were also labelled based on the grouping of the items.

Rigtering and Weitzel (2013) elaborate that the reliability of a scale is established if Cronbach's alpha coefficient is above 0.7. Where the coefficient is above 0.8, this is an indication that the scale encompasses "strong internal consistency" (Rigtering & Weitzel, 2013, p. 340).

Table 8 - Final factor definition

Factor	Factor Name	Items	Items Labels	Variable Type
1	Management Support	8	CE_MS_3;CE_MS_4;CE_MS_9;CE_MS_13;CE_MS_14;CE_MS_15;CE_MS_16;CE_MS_17*	Independent
2	Service Innovation	7	CE_MS_1;CE_MS_2;SI_01;SI_02;SI_03;SI_04;SI_05*	Dependent
3	Work Discretion	8	CE_WD_22;CE_WD_23;CE_WD_24;CE_WD_25;CE_WD_26;CE_WD_27;CE_WD_28;CE_WD_29*	Independent
4	Rewards & Reinforcement	4	CE_RR_32;CE_RR_33;CE_RR_34;CE_RR_35*	Independent
5	Time Availability	3	CE_TA_37; CE_TA_38; CE_TA_41*	Independent

*Refer to Appendix B for a full explanation of the items

Before performing the factor analysis and the tests for reliability and validity, the CE scale adopted from Kuratko et al. (2014) comprised 5 dimensions namely management support (MS), work discretion (WD), rewards and reinforcement (RR), time availability (TA) and organisational boundaries (OB). This CE scale represented the independent variables. From Table 8 - Final Factor Definition, the number of independent variables were reduced to four, namely MS, WD, RR and TA. Various items from the original scale were omitted as a result of the factor analysis and test for reliability and validity as explained above. The remaining items and dimensions are depicted in the table above.

The dependent variable, service innovation, retained all items from the service innovation scale adopted from Grawe et al. (2009). In addition to this scale two other items were added from management support i.e.CE_MS_1 and CE_MS_2 (refer to questionnaire for details on the associated question).

5.6 Correlation and regression analysis

A linear regression was performed using IBM SPSS statistical software in order to determine if any of the independent variables were likely predictors of the dependent variable. The mean value for each of the new factors above was computed in order to reduce each factor to a single figure. The mean values presented a single variable for each of the new dimensions in the CE and SI scale. Table 9 depicts the Pearson correlation coefficients for each of the CE dimensions against the SI scale.

Table 9 – Pearson's correlation coefficient

	CE Scale →	MS	WD	RR	TA
Service Innovation →	Pearson Correlation (R)	0.634	0.521	0.427	0.382
	Sig	0.000	0.000	0.000	0.000

From the table above, it is evident that management support is the strongest predictor of service innovation, followed by work discretion, rewards and recognition, and lastly time availability. All correlations revealed significant variables which informs the hypothesis testing in the following section.

Collectively using all dimensions of the independent variable to represent the CE scale, a multiple regression analysis was performed on IBM SPSS. The coefficients computed are depicted in table 10 below.

Table 10 - Multiple regression – correlation coefficients

Model	R	R Square (R^2)	Adjusted R Square
1	0.714	0.510	0.489

The multiple correlation coefficient R was 0.714 proving that the independent variables comprising corporate entrepreneurship as a collective are good predictors of dependent variable service innovation. The R^2 was computed as 0.510 with the adjusted R^2 computed as 0.489. Given the size of the population was determined by ninety seven respondents, the R square value was utilised to explain the variance in the dependent variable that was attributable by the independent variables. From the above table, fifty one percent of the variance in service innovation was attributable to corporate entrepreneurship.

Results from the ANOVA test shows that the model proposed which comprised of CE and SI variables was a good fit for the data. As shown in the table below the sig value is less than 0.05 at a ninety five percent confidence interval.

Table 11 - Multiple regression - analysis of variances (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	65.846	4	16.462	23.934	0.000
Residual	63.276	92	0.688		
Total	129.122	96			

From the coefficient data generated by SPSS in table 12 below, we are able to derive an equation to the model on the basis of the B (beta) column under the unstandardised coefficients.

Table 12 - Coefficients

	Unstandardised Coefficients		Standardised Coefficients			95% Confidence Interval for B	
Model	B	Std Error	Beta	t	Sig	Lower Bound	Upper Bound
Constant	-0.810	0.452		-0.180	0.857	-0.979	0.816
Management support	0.674	0.128	0.452	5.259	0.00	0.420	0.929
Work discretion	0.210	0.129	0.153	1.630	0.107	-0.046	0.466
Rewards / Reinforcement	0.209	0.120	0.149	1.737	0.086	-0.030	0.448
Time Availability	0.257	0.96	0.210	2.668	0.009	0.066	0.449

Dependent variable = Service Innovation

The model equation can be written as:

Service Innovation = **-**0.81 **+** 0.674 (Management support) **+** 0.210 (Work discretion) **+** 0.209 (Rewards / reinforcement) **+** 0.257 (Time availability).

From the above model the researcher also established the significant contributors to service innovation by identifying the sig values that are less than 0.05 for independent variables. Based on the results present in table twelve above, the researcher identified that

management support and time availability (independent variables) were the two significant predictors of service innovation (dependent variable). The remaining independent variables, rewards or reinforcement and work discretion, were not significant predictors of service innovation. Therefore not all of the independent variables were significant predictors of service innovation.

5.7 Hypothesis testing

Through the application of factor analysis, the organisational boundaries dimension was omitted from the corporate entrepreneurship construct. Although the remaining dimensions of CE were retained, these dimensions were reduced in size in terms of their associated questions. The SI construct also inherited two other questions from the management support dimension of CE.

Cronbach's alpha coefficient revealed a few unreliable dimensions from the factor analysis. As a result, the initial 9 factors identified were reduced down to 5. CE comprised management support, work discretion, rewards or reinforcement and time availability, while the SI dimension retained all questions in addition to 2 other questions adopted from management support.

Based upon the linear and multiple regression results, the researcher concluded on the hypothesis which depicted in table 13 below:

Table 13 - Results of hypothesis testing

Hypothesis 1: Management support and service innovation	**Result**
$H1_N$: Management support afforded to employees has no relation to service innovation	Reject the null hypothesis Sig = 0.00 R* = 0.634
$H1_A$: Management support afforded to employees is related to service innovation	
Hypothesis 2: Work discretion and service innovation	**Result**
$H2_N$: Work discretion afforded to employees has no relation to service innovation	Reject the null hypothesis Sig = 0.00 R* = 0.521
$H2_A$: Work discretion afforded to employees is related to service innovation	

Hypothesis 3: Rewards/reinforcement and service innovation	**Result**
$H3_N$: Rewards / Reinforcement culture has no relation to service innovation	Reject the null hypothesis Sig = 0.00 R* = 0.427
$H3_A$: Rewards / Reinforcement culture is related to service innovation	
Hypothesis 4: Time availability and service innovation	**Result**
$H4_N$: Time availability afforded to employees has no relation to service innovation	Reject the null hypothesis Sig = 0.00 R* = 0.382
$H4_A$: Time availability afforded to employees is positively related to service innovation	
Hypothesis 5: Organisational boundaries and service innovation	**Result**
$H5_N$: The lack of organisational boundaries has no relation to service innovation	Eliminated via factor analysis
$H5_A$: The lack of organisational boundaries is related to service innovation	
Hypothesis 6: Corporate entrepreneurship and service innovation	**Result**
$H6_N$: A culture of corporate entrepreneurship has no relation to service innovation	Failed to reject the null hypothesis Only two significant variable i.e. MS and TA Multiple Regression Sig = 0.000 Adjust R^2 =0.489
$H6_A$: A culture of corporate entrepreneurship is related to service innovation	

*Pearson's correlation coefficient

The results from hypothesis 1 through to 4 revealed sig values of 0.00 indicating that correlation coefficient computed were statistically significant. On the basis of these results, the null hypotheses were rejected. Therefore the researcher accepts an existence of a relationship between management support, work discretion, time availability and rewards / reinforcement to service innovation in their individual capacity. The independent variables of organisational boundaries, was eliminated through the factor analysis method and was not considered for further testing.

6 Discussion and results

6.1 Introduction

This chapter seeks to establish whether the findings from the results are in favour or against what scholars have claimed. The researcher evaluated the analysis technique utilised and whether the approach was suitable to this case study report.

6.2 Review of analysis techniques

The use of an exploratory factor analysis proved to be interesting in that the scales adopted were streamlined in relation to the original volume of variables. “Exploratory factor analysis is a useful tool for understanding the dimensionality of a set of variables and also for isolating variables that do not represent the dimensions well” (Dobni, 2008, p. 550). The technique reduced the dimensions of each scale and served to confirm similarities in responses. Given that the service innovation scale presented by Grawe et al. (2009) is a new scale, the factor analysis proved to be a worthy technique to understand the commonality between the various dimensions inclusive of corporate entrepreneurship. The results from this technique also served as grounds for future research by understanding the relevance of questions that were omitted.

Factor analysis must be carefully chosen when conducting analysis of quantitative data. In conjunction with the computation of Cronbach’s alpha coefficient, it serves as a tool that confirms the dimensions and the validity of the dimension proposed by scholars.

Linear regression and multiple regressions were used to test each dimension of CE and CE as a whole against service innovation respectively. This technique assisted in rejecting and accepting the hypothesis formulated in section 3 above.

6.3 Service innovation

Katzan (2014) and Morrar (2014) argue that the customer's needs are an important aspect to acknowledge when efforts are geared towards innovation in services. The reliance on human capital in service innovation is high, in order to drive strategy to attain a competitive advantage (Morrar, 2014). Legrand and Ljoiem (2013) emphasise that leadership and culture are needed in order to drive service innovation.

The scale adopted from Grawe et al. (2009), is synonymous with extant literature that focuses on the customer, as well the role of management to establish the state of service innovation. The area of service innovation though could still be researched further to strengthen future scales used in quantitative studies in order to capture elements of the aforementioned literature.

6.4 Management support and service innovation

The residual questions that define the management support dimension focuses on the role of upper management, their receptiveness to new ideas as well as innovation. What is also evident from the questions that make up this dimension is the risk appetite of management in particular is needed in relation to the employee ideas.

Cronbach's alpha coefficient for management support was computed at 0.871 indicating strong internal consistency of the management support scale (Rigtering and Weitzel, 2013). The result from the Pearson correlation coefficient of management support to service innovation was 0.634. This indicated a strong correlation between the two constructs and is supportive of extant literature.

The result from the correlation analysis and the narrative from extant literature provides the reasoning to reject the null hypothesis ($H1_N$) and accept the alternate hypothesis ($H1_A$). Management support within the organisation has a positive influence over service innovation.

Furthermore, management support from the top level is required in order to create a culture of innovation. Employees at management levels are entrusted with creating a culture and vision that is conducive for entrepreneurial and innovative behaviour to be sustained within organisations (Bloodgood et al., 2015; Seshadri & Tripathy, 2006).

Kuratko and Audretsch (2013) explicitly argue that all levels of management have specific roles to play in creating culture of entrepreneurship and innovation with specific focus on middle level managers. Middle level managers serve as a hub in driving such initiatives as they are in tune with the strategic imperatives of the organisations and simultaneously have to understand resource constraints. Middle level managers therefore play a significant role in balancing resources via their underlying first level managers in order to meet strategic imperatives.

6.5 Work discretion and service innovation

Cronbach's alpha coefficient for work discretion was computed at 0.890 indicating strong internal consistency of the work discretion scale (Rigtering & Weitzel, 2013). The result from the Pearson correlation coefficient of work discretion to service innovation was 0.521. This indicated a moderately strong correlation between the two constructs and is supportive of extant literature. Employees' discretion should be considered with serious thought if strategic goals require organisations to be innovative.

The result from the correlation analysis and the narrative from extant literature provide the reasoning to reject the null hypothesis ($H2_N$) and accept the alternate hypothesis ($H2_A$). Work discretion within the organisation has a positive influence over service innovation.

Tolerance for failure is one of the major characteristics needed by organisations. As described by Witell et al. (2015), failures in service innovation must be expected as much as successes. Failures can occur at the individual, organisational and societal level. Learning gained from failures is important in order to improve on the delivery of services.

This is also synonymous with organisations that portray entrepreneurial orientation. Lekmat and Chelliah (2014) explain that an entrepreneurial orientation requires a level of tolerance when it comes to risk taking. Employees working with discretion would work with the freedom to explore giving rise to ideas and that create opportunities. Affording this level of discretion should not be a luxury instead a necessity in order to drive innovation from the initial idea through to implementation. The positive correlation of affording employees work discretion to service innovation is supportive of the findings in this case study.

6.6 Rewards / reinforcement and service innovation

Organisations that portray an entrepreneurial orientation have 3 main facets, namely, risk taking, innovation and proactiveness. In order to sustain this orientation, employees need to be motivated through a form of reward and recognition (Lekmat & Chelliah, 2014).

The corporate entrepreneurship assessment index provided 6 questions to understand the extent of rewards and reinforcement within an organisation. After conducting the factor analysis and test for reliability and validity, this dimension was reduced to 4 questions as depicted in the table 20 (See Appendix C – Final Research Constructs).

The Cronbach's alpha coefficient for rewards and reinforcement was computed at 0.805 indicating strong internal consistency of the rewards and reinforcement scale (Rigtering & Weitzel, 2013). The result from the Pearson correlation coefficient of management support to service innovation was 0.427. This indicated a moderate correlation between the two constructs and is supportive of extant literature.

The result from the correlation analysis and the narrative from the extant literature provides the reasoning to reject the null hypothesis ($H3_N$) and accept the alternate hypothesis ($H3_A$). Rewards and reinforcement within the organisation has a positive influence over service innovation. The corroborating evidence from literature and the case study findings makes reward and recognition an imperative not only for management, but can be extended to human resource practitioners as well. Ultimately though, the driving force behind rewards and reinforcements must rest with senior level management in order for it to be pervasive within the organisation.

6.7 Time availability and service innovation

The result from the Pearson correlation coefficient of management support to service innovation was 0.382. This indicated a moderate correlation between the two constructs and is supportive of extant literature. Granting employees the time to ascertain and position innovative ideas is an important aspect during the early stages to ensure the idea moves through to implementation.

The system dynamics model to corporate entrepreneurship as described by Bloodgood et al. (2015), is an example of what employees would be subject to in order to have opportunities implemented. The stage gates of opportunity recognition, opportunity assessment,

opportunity legitimation and opportunity implementation is an illustration of the scrutiny that employees would be subject to. Employees that move through the stage gates have to ensure that the positioning of the idea is well thought of so that it makes business sense to implement and not an idea that has no merit other than the novelty it brings.

The result from the correlation analysis and the narrative from extant literature provides the reasoning to reject the null hypothesis ($H4_N$) and accept the alternate hypothesis ($H4_A$). Time availability within the organisation has a positive influence over service innovation. Organisations should look to have frameworks in place in order to grant employees the required time to dedicate themselves to the learning process of being entrepreneurial. This assurance will serve to encourage employees to find new ways and new opportunities to drive innovation within the organisation.

6.8 Organisation boundaries and service innovation

Kuratko et al. (2014) argue that organisational boundaries play a significant role in sharing information which leads to innovation. This information could either serve as a stimulant from the external environment as well as the internal environment. In the case of the latter this refers to the extent to which inter-departmental knowledge sharing occurs to stimulate innovative ideas.

Zahra (2015) explain that the creation of knowledge within organisations is stimulated through pockets of discussion forums known as entrepreneurial hubs. This creates the platform of generating heterogeneous information and thus the potential to convert this information into a practical form. Entrepreneurial hubs serve as a means to generate new knowledge which can then be used in innovative ways either to enter new markets or improve the organisation's position in existing markets.

The result from this case study was contrary to extant literature. The factor analysis revealed two factors comprising questions related to organisational boundaries. In the case of the first factor, although the factor analysis revealed a strong set of variables to comprise the dimension for organisation boundaries, the test for reliability and validity (Cronbach's $\alpha = 0.132$) did not allow of the dimension to be considered worthy. Refer to table 21 for questions that make up the first dimension for organisational boundaries within the realm of corporate entrepreneurship.

The second factor for organisation boundaries comprised just only questions. These are depicted in the table 22. The Cronbach's α coefficient of 0.603 was below the benchmark of 0.65. Hence, this resulted in this dimension being removed altogether.

6.9 Corporate entrepreneurial culture and service innovation

The factor analysis had reduced the amount of questions on the CE scale. The effect of this reduction process resulted in 1 less dimension, leaving only 4 dimensions that define CE. The remaining 4 remaining dimensions were management support, work discretion, time availability and reward or reinforcement. As mentioned in the prior section(s), the organisational boundaries did not qualify as a valid dimension and hence was omitted. The remaining 4 dimensions were used in a multiple regression analysis. These 4 dimension were the constituents that make up the CE construct. The researcher sought to determine whether CE has a relationship to SI or not.

Using the four dimensions, a multiple regression analysis revealed an adjusted r square (r^2) of 0.489 meaning that 48.9% of the variance in service innovation (dependent variable) can be attributed to the dimensions of corporate entrepreneurship as a collective. In addition, based on the multiple regression analysis of the remaining dimensions of corporate entrepreneurship, management support and time availability were the two significant predictors of service innovation. These findings are synonymous with the recommendations provided by Watanabe et al. (2015) on service innovation, who argue that sole reliance on management support is not ideal. Work discretion and rewards or reinforcements were not significant independent variables and therefore as a collective of independent variables, CE cannot be classified as a predictor of service innovation. These findings are contrary to those of Watanabe et al. (2015) who argue that the inclusion of a rewards system is needed to motivate employees in order to intensify attention towards service innovation.

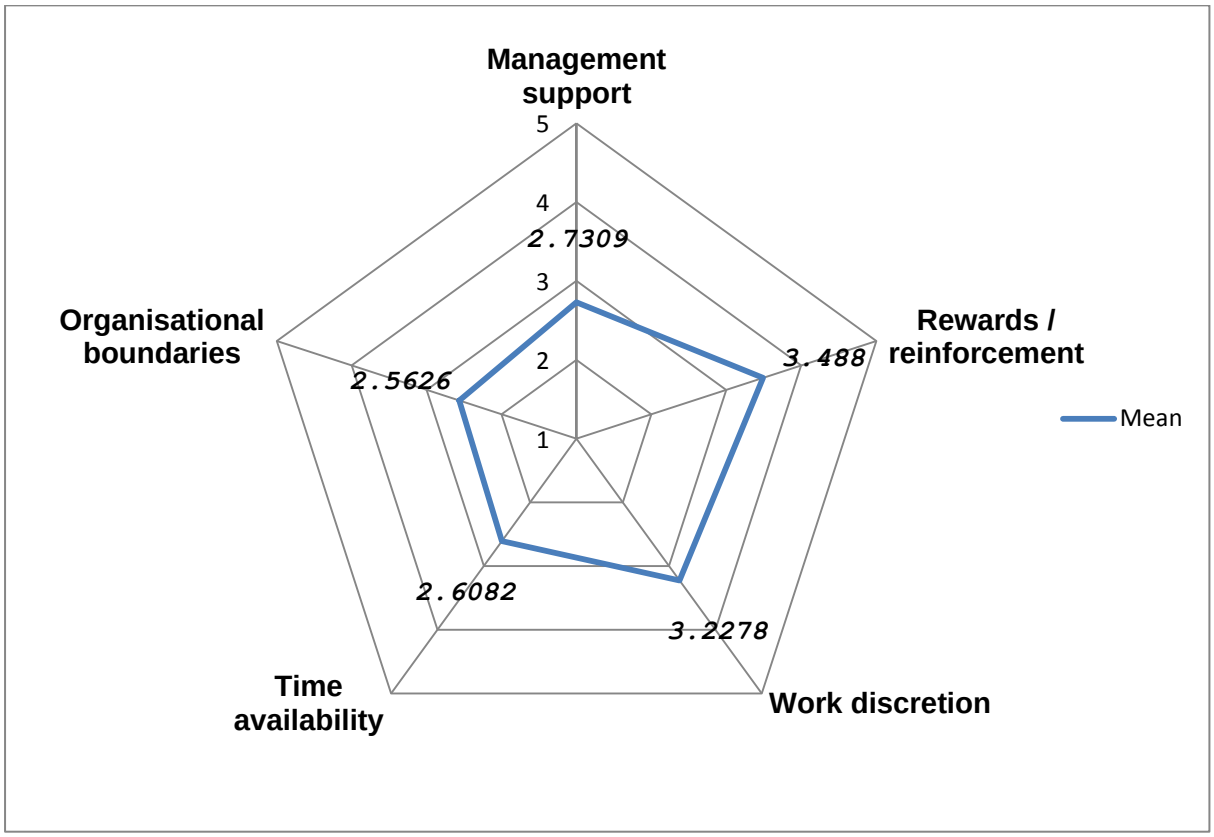
Management support itself is a driver for creating a corporate entrepreneurial culture and is considered a top-down approach. This approach can be intensified through encouraging an intrapreneurial behaviour which is considered a bottom-up approach to a corporate entrepreneurial culture (Demirci, 2013).

The commonality that is argued by scholars between service innovation and corporate entrepreneurship is the rise in competitive advantage and financial performance. This case study has shown that elements of CE promote a culture that drives service innovation which will provide benefits for the long term sustainability of organisations (Kuratko & Audretsch, 2013; Grawe et al., 2009).

6.10 Corporate entrepreneurship assessment index score

Figure 2 below depicts the corporate entrepreneurship assessment index score (CEAI) score of the organisation from which data was gathered for this case study research paper. The data utilised was based on the original data that was gathered from respondents for each of the CEAI dimensions. The mean scores for each dimension were computed where each dimension had a minimum score of 1 (strongly disagree) and a maximum score of 5 (strongly agree).

Figure 2 - CEAI score



From the figure above, the state of corporate entrepreneurship rated by specialist and management revealed a picture that deserves fair acknowledgement and remedial actions. As mentioned in table 3, standard deviations were below 1.0 which gives an indication of consistent responses from the survey participants.

7 Conclusion

7.1 Principal findings

The findings from this case study (based on a financial institution in the South African market) conclude that the dimensions of corporate entrepreneurship (CE) have a positive influence on service innovation. The dimensions, which are management support, time availability, rewards or reinforcements, and work discretion, formulated the CE construct. These dimensions were evaluated individually through a linear regression analysis. The results from this analysis revealed a positive correlation to service innovation. Through the factor analysis, the organisational boundaries dimension was eliminated. Furthermore, the multiple regression analysis only revealed two significant independent variables of CE resulting in no conclusive finding between CE and SI. Each dimensions of CE are concluded in the paragraphs that follow and elaborate on its efficacy as well as its relation to service innovation.

The role of management support

Scholars have elaborated a common message that management within the organisation play a key role in sustaining a culture of entrepreneurship. The role of managers from the top level down to first level has specific functions that facilitate the implementation of entrepreneurial behaviour (Seshadri & Tripathy, 2006; Bloodgood, 2015). This facilitation role must be conducted with the foresight to build the competitive advantage of the organisation. Management, as a support function creates a suitable environment for employees to adopt an intrapreneurial mind-set and conduct. The result of entrepreneurial behaviour portrayed by management and employees creates a two-pronged approach to sustaining the entrepreneurial orientation of the organisation. Scholars refer to this as a top down and bottom up approach (Demirci, 2013). The findings through this study established conclusive evidence that management support in an entrepreneurial context influences service innovation in organisations. This was established using Pearson's correlation coefficient. The researcher also identified that those organisations that do not portray an entrepreneurial orientation require leadership to make the transition towards this ideal. The leadership in such organisations need to acknowledge the necessity of this orientation and act accordingly. Leadership itself is not sufficient as employee skills and attitude need to match the expected outcome.

The role of work discretion

Work discretion advocates that employees must be given the freedom to make decisions and that management must have a tolerance for failures. The idea of adopting a tolerance for failure is not the norm in organisations, but it is certainly needed if insight is to be gained. Secondly the reciprocity of trust between employees and management is an important component which allows for intrapreneurs to thrive in their ideation and implementation of innovative ideas. Work discretion demonstrated a positive correlation to service innovation and should be considered an important attribute that management should afford to their direct reports.

The role of rewards or reinforcement

Incentivising employees and recognising employee efforts are important to drive entrepreneurial behaviour. Moreover, the reinforcement of this behaviour through communication of corporate values and vision, allowing employees to create formal and informal networks, and access to opportunities that may not necessarily be obvious outside the operating environment, creates the required motivation for intrapreneurs to thrive. Human resource systems play a significant role in facilitating and realising rewards and reinforcement. The study confirmed that rewards and reinforcement positively influenced service innovation and is a prerequisite to motivate employees to drive innovation in services.

The role of time availability

Time availability also proved to show a positive correlation to service innovation. Scholars argue that giving employees time to be innovative and entrepreneurial promotes an entrepreneurial culture. Based on the finding from this case study, the researcher identified that time availability is a valid scale and that it positively influences service innovation.

The role of organisational boundaries

Organisation boundaries, refers to the extent at which information flows both internally and externally to the organisation, and whether employees have access to this data. Based on the factor analysis, the scale utilised in this case study did not identify any organisational boundary questions that were worthy of being included as an independent variable. For this reason the organisational boundaries dimension was excluded from the linear regression and multiple regression analyses. However this finding could very well be limited to this case study research and hence cannot conclusively be eliminated without a more inclusive study comprising respondents from other financial institutions.

7.2 Implications for management

Employees at management levels will find it difficult to change the culture of the organisation as it requires the majority of employees to be convinced without any doubt. Management need to come to the realisation that leadership is needed in order to transform organisations and its employees. Middle level managers may also find a culture shift to be somewhat difficult. For instance, if employees portray an intrapreneurial culture, managers, although not obliged, should be supportive of such employees without receiving the necessary supporting from upper management.

The word innovation continues to be used in discourse as we continue to witness product innovations by large multinational organisations. Service innovation is innovation that relies on knowledge to drive better ways of delivering services to the customer. The customer should be the focal point after which work efforts can be planned. Management should therefore be vigilant that service innovation practitioners follow processes to ensure the right information is made available in order to deliver better ways of resolving service related issues.

The relationship between management at all levels should be improved in order to develop better relationships with employees. This will serve as the medium to drive an entrepreneurial orientation both from the top-down and bottom-up. The use of balanced score cards can be used to mould employee behaviour towards an entrepreneurial orientation.

7.3 Limitations of the research

The case study approach only provides a view from a single organisation thus is not representative all companies in the financial services industry in South Africa. Moreover, with only ninety seven responses obtained from various levels in the organisation, this provided a limited sample size from which to draw inferential statistics that were representative of the entire organisation.

The development of scales to measure service innovation is in its infancy. Therefore the identification and utilisation of extant scales are rare to find and if they do exist, the researcher found that such scales have not been used extensively to prove reliable and valid.

The CE scale formulated by Kuratko et al. (2014) proved to be time consuming to respondents due to the number of questions used to measure each dimension of corporate entrepreneurship. This served as a hindrance as the average time taken to complete the survey was approximately fifteen minutes. Given the time pressures of the work environment, respondents found it difficult to complete the survey.

7.4 Suggestions for future research

Measuring organisational innovation portfolios

Although the service innovation scale in this study proved to be reliable, scholars have not developed the scale to measure the extent to which services are innovated within an organisation. Based on service design practitioners' tool and techniques, service innovation scales can be enhance through focus on innovation and the extent of focus on the customer. According to Legrand and Ljoiem (2013), this is an important focus due to economic trends that are moving away from a goods dominated logic towards service dominated logic. Furthermore, at a high level, the scale could also be architected to focus on visible aspects as well invisible aspects (Morrar, 2014) in order to develop a service innovation framework.

Financial service companies should also establish their portfolio of innovation to establish the extent to which emphasis is placed on production innovation compared to service innovation. Neither of these innovation types should be neglected, however a fair balance needs to be maintained. In addition, congruence between these two innovation methods should be attained to personify efficacy of the overall innovation efforts, with the primary focus placed on the customer. The establishment and alignment of product and service innovation could serve as a generic tool to assess the state of innovation in financial service companies. Future research in this regard will contribute to the development of scales to measure these innovation types and the level of integration in efforts to achieve alignment. Hertog et al. (2010) have established frameworks in service innovation which can serve as a base to further enhance and mature measurement methods and tools.

References

Alegre, J., Lapiedra, R., & Chiva, R. (2006). A measurement scale for product innovation performance. *European Journal of Innovation Management, 9*(4), 333-346. doi:10.1108

Barret, M., Davidson, E., Prabhu, J., & Vargo, S. L. (2015). Service innovation in the digital age: Key contributions and future directions. *MIS Quarterly, 39*, 135-154.

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

Büschgens, T., Bausch, A., & Balkin, D. B. (2013). Organizational culture and innovation:A meta-analytic review. *Journal of Product Innovation Management, 30*(4), 763-781. doi:10.1111/jpim.12021

Calisir, F., Gumussoy, C. A., & Guzelsoy, E. (2013). Impacts of learning orientation on product innovation performance. *The Learning Organization, 20*(3), 176-194. doi:10.1108/09696471311328442

Chiba, M. D. (2015). *Test for prediction.* (Issue Brief).

Clargo, P., & Tunstall, R. (2011). Leading an entrepreneurial workforce: Development or decline? *Education and Training, 53*(8), 762-783. doi:10.1108/00400911111185071

D'Emidio, T., Dorton, D., & Duncan, E. (2014, February). Service innovation in a digital world. *Mckinsey Quarterly,* , 1-8.

Davies, S., Kashyap, M., Roets, M. & Ruetschi, J. (2016). 2016 financial services trends - disruption & ecosystem. Retrieved from http://www.strategyand.pwc.com/perspectives/2016-financial-services-trends

Dobni, C. B. (2008). Measuring innovation culture in organizations - the development of a generalized innovation culture construct using exploratory factor analysis. *European Journal of Innovation Management, 11*(4), 539-559. doi:10.1108/14601060810911156

Fischer, A. (2011). Recognizing opportunities: Initiating service innovation in PSFs. *Journal of Knowledge Management, 15*(6), 915-927. doi:10.1108/13673271111179280

Giannikis, S., & Nikandrou, I. (2013). The impact of corporate entrepreneurship and high performance work systems on employees job attitudes: Empirical evidence from greece during the economic downturn. *The International Journal of Human Resource Management,* *24*(19), 3644-3666. doi:http://dx.doi.org.uplib.idm.oclc.org/10.1080/09585192.2013.778316

Gliem, S., Klabuhn, J., & Litwin, N. (2014). The promoting force of technology for service innovation in high-tech industries. *Technology Innovation Management Review, 4*(5), 40-49.

Grawe, S. J., Chen, H., & Daugherty, P. J. (2009). The relationship between strategic orientation, service innovation, and performance. *International Journal of Physical Distribution & Logistics Management, 39*(4), 282-300.

Gregg, B., & Esber, D. (2016). Discussions on digital: How large and small companies build a digital culture. Retrieved from http://www.mckinsey.com/business-functions/digital-mckinsey/our-insights/discussions-on-digital-how-large-and-small-companies-build-a-digital-culture

Grosskopf, J., Beyers, S., Van Velden, L., Roopnarain, R. & Stonebridge, D. (2015). Growing in turbulent times - major banks analysis - south africa. Retrieved from http://www.pwc.co.za.uplib.idm.oclc.org/en/assets/pdf/major-banks-analysis-march-2016.pdf

Hakimi, W. B., Triki, A., & Hammami, S. M. (2014). Developing a customer knowledge-base measure for innovation management. *European Journal of Innovation Management, 17*(3), 349-374. doi:10.1108/EJIM-02-2013-0019

Hirt, M., & Willmott, P. (2014). *Strategic principles for competing in the digital age.* ().McKinsey&Company.

Jevnaker, B. H., Tellefsen, B., & Luders, M. (2014). Front-end service innovation: Learning from a design-assisted experimentation. *European Journal of Innovation Management, 18*(1), 19-43. doi:10.1108/EJIM-09-2013-0089

Karol, R. A. (2015). Leadership in the context of corporate entrepreneurship. *Journal of Leadership Studies, 8*(4), 30-34. doi:10.1002/jls

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

Kuratko, D. F., & Audretsch, D. B. (2013). Clarifying the domains of corporate entrepreneurship. *The International Entrepreneurship and Management Journal, 9*, 323-335. doi:10.1007/s11365-013-0257-4

Kuratko, D. F., Hornsby, J. S., & Covin, J. G. (2014). Diagnosing a firm's internal environment for corporate entrepreneurship. *Kelly School of Business, 57*(1), 37-47. doi:10.1016

Laxmikant, M. (2015). Human resource systems and competitive advantage: An ethical climate perspective. *Business Ethics: A European Review, 24*(2), 186-204.

Legrand, C., & LaJoie, R. (2013). How service innovation boosts bottom lines. *Technology Innovation Management Review,* , 20-25.

Lekmat, L., & Chelliah, J. (2014). What are the antecedents to creating sustainable corporate entrepreneurship in thailand? *Contemporary Management Research, 10*(3), 181-202. doi:10.7903/cmr.11741

Market wrap. (2016, July 15). *Business Day*, pp. 14-14.

Mills, A. (2016). Customer co-creation: A deeper path to empathic understanding. Retrieved from http://innovationexcellence.com/blog/2016/10/14/customer-co-creation-a-deeper-path-to-empathic-understanding/

Morrar, R. (2014). Innovation in services: A literature review. *Technology Innovation Management Review, 4*(4), 6-14.

Nagji, B., & Tuff, G. (2012, May). Managing your innovation portfolio. *Harvard Business Review,* , 67-74.

Oke, A., Walumbwa, F. O., & Myers, A. (2012). Innovation strategy, human resource policy, and firms' revenue growth: The roles of environmental uncertainty and innovation performance. *Decision Sciences, 43*(2), 273-302.

Paunovic, S., & Dima, I. C. (2014). Organizational culture and corporate entrepreneurship. *Annals of the University of Petroşani, Economics, 14*(1), 269-276.

Rigtering, J. P. C., & Weitzel, U. (2013). Work context and employee behaviour as antecedents for intrapreneurship. *International Entrepreneurship and Management Journal, 9*, 337-360. doi:10.1007/s11365-013-0258-3

Saunders, M., & Lewis, P. (2012). Choosing your research design. *Doing research in business & management* (pp. 102-117) Pearson Education Limited.

Seshadri, D., & Tripathy, A. (2006). Innovation through intrapreneurship: The road less travelled. *Vikalpa, 31*(1), 17-29.

Sørensen, J. B., & Fassiotto, M. A. (2011). Organizations as fonts of entrepreneurship. *Organiszation Science, 22*(5), 1322-1331. doi:http://dx.doi.org.uplib.idm.oclc.org/10.1287/orsc.1100.0622

Tantau, A., Chinie, A., & Carlea, F. (2015). Corporate entrepreneurship and innovation in the renewable energy field. *Procedia Economics and Finance, 22*, 353-362. doi:10.1016/S2212-5671(15)00302-0

Todorovic, Z. W., Todorovic, D., & Ma, J. (2015). Corporate entrepreneurship and entrepreneurial orientation in corporate environment: A discussion. *Academy of Entrepreneurship Journal, 21*(1), 82-92.

Uzkurt, C., Kumar, R., Kimzin, H. S., & Eminoglu, G. (2013). Role of innovation in the relationship between organizational culture and firm performance. *European Journal of Innovation Management, 16*(1), 92-117. doi:10.1108/14601061311292878

Walker, R., Chen, J., & Aravind, D. (2015). Management innovation and firm performance: An integration of research findings. *European Management Journal, 33*, 407-422. doi:doi:10.1016/j.emj.2015.07.001

Watanabe, K., Fukuda, K., & Nishimura, T. (2015). A technology-assisted design methodology for employee-driven innovation in services. *Technology Innovation Management Review, 5*(2), 6-14.

Wegner, T. (2012a). Data collection methods. In Paul Carter (Ed.), *Applied business statistics* (3rd ed., pp. 14-17) Juta & Company.

Wegner, T. (2012b). Sampling and sampling methods. *Applied business statistics* (Paul Carter ed., pp. 154-154) Juta & Company.

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

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

Appendix 1: Consent letter

Dear Respondent,

I am conducting research on the state of corporate entrepreneurship (CE) in your organisation and the impact of this orientation on service innovation (SI). CE itself comprises five dimensions namely management support, work discretion, rewards and reinforcement, time availability and organisational boundaries. Service innovation is a growing concept that is seen to be a key differentiator amongst competitors who emulate each other's product offering. The research aims to understand if service innovation is prevalent in financial services companies that adopt a corporate entrepreneurial orientation.

To help us better understand CE and SI in your organisation, we request your participation in completing an online survey which should take no more than 20 minutes of your time. The survey focuses on the CE and SI dimensions to which responses shall be provided using a Likert scale. We seek personal information which is limited and non-intrusive.

The results of the survey will be shared with your organisation as well as a benchmark assessment report against other organisations in the financial services industry. Note that details of all companies will be kept anonymous and the findings in the thesis will be reported without identifiers.

Your participation is voluntary and you can withdraw at any time without penalty. By completing the survey, you indicate that you voluntarily participate in this research. If you have any concerns, please contact my supervisor or myself. Our details are provided below.

Kind regards
Bhavesh Ravjee

Bhavesh Ravjee
Researcher
E: RavjeeBhavesh@gmail.com
T: 078 459 1628

Anastacia Mamabolo
Research Supervisor
E: MamaboloA@gibs.co.za
T: 071 407 6294

Appendix 2: Questionnaire

The questionnaire will comprise three parts, namely respondent demographics, assessment of corporate entrepreneurship and lastly the assessment of competitor innovation performance

Respondent Demographics

Section: Personal Details	
Please provide the number of years you're working for this organisation	1 = 0 to 5 years 2 = 6 to 10 years 3 = 11 to 15 years 4 = 16 to 20 years 5 = more than 20 years
Please provide the number of years you're working in total	1 = 0 to 5 years 2 = 6 to 10 years 3 = 11 to 15 years 4 = 16 to 20 years 5 = more than 20 years
Please select the closest match in terms of rank to your current work function	1 = Non Managerial 2 = Team Leader 3 = First Line Manager 4 = Middle Manager (e.g. Department Head, Director) 5 = Top Level Management (e.g. CEO, Managing Director)
Please provide your highest level qualification attained to date	1 = High School 2 = Diploma or Certificate 3 = Degree / Honours 4 = Masters

Corporate Entrepreneurship

Sections 1 to 6 below of the questionnaire have been adopted from Kuratko, Hornby, and Covin (2014). A Likert marking system will be applied ranging from 1 to 5, where 1 = “strongly disagree”, 2 = “disagree”, 3 = “not sure” , 4 = “agree”, 5 = “strongly agree”.

Table 14 - Corporate Entrepreneurship Questionnaire

Identifier	Section1: Management support for corporate entrepreneurship
CE_MS_01	1. My organization is quick to use improved work methods.
CE_MS_02	2. My organization is quick to use improved work methods that are developed by workers.
CE_MS_03	3. In my organization, developing one’s own ideas is encouraged for the improvement of the corporation.
CE_MS_04	4. Upper management is aware and very receptive to my ideas and suggestions.
CE_MS_05	5. A promotion usually follows from the development of new and innovative ideas.
CE_MS_06	6. Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.
CE_MS_07	7. The ‘‘doers on projects’’ are allowed to make decisions without going through elaborate justification and approval procedures.
CE_MS_08	8. Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.
CE_MS_09	9. Many top managers have been known for their experience with the innovation process.
CE_MS_10	10. Money is often available to get new project ideas off the ground.
CE_MS_11	11. Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts.
CE_MS_12	12. There are several options within the organization for individuals to get financial support for their innovative projects and ideas.
CE_MS_13	13. People are often encouraged to take calculated risks with ideas around here.
CE_MS_14	14. Individual risk takers are often recognized for their willingness to champion new projects, whether eventually successful or not.
CE_MS_15	15. The term ‘‘risk taker’’ is considered a positive attribute for people in my work area.
CE_MS_16	16. This organization supports many small and experimental projects, realizing that some will undoubtedly fail.
CE_MS_17	17. An employee with a good idea is often given free time to develop that idea.

CE_MS_18	18. There is considerable desire among people in the organization for generating new ideas without regard for crossing departmental or functional boundaries.
CE_MS_19	19. People are encouraged to talk to employees in other departments of this organization about ideas for new projects.
Identifier	**Section 2: Work discretion**
CE_WD_20	20. I feel that I am my own boss and do not have to double check all of my decisions with someone else.
CE_WD_21	21. Harsh criticism and punishment result from mistakes made on the job.
CE_WD_22	22. This organization provides the chance to be creative and try my own methods of doing the job.
CE_WD_23	23. This organization provides the freedom to use my own judgment.
CE_WD_24	24. This organization provides the chance to do something that makes use of my abilities.
CE_WD_25	25. I have the freedom to decide what I do on my job.
CE_WD_26	26. It is basically my own responsibility to decide how my job gets done.
CE_WD_27	27. I almost always get to decide what I do on my job.
CE_WD_28	28. I have much autonomy on my job and am left on my own to do my own work.
CE_WD_29	29. I seldom have to follow the same work methods or steps for doing my major tasks from day to day.
Identifier	**Section 3: Rewards/Reinforcement**
CE_RR_30	30. My manager helps me get my work done by removing obstacles and roadblocks.
CE_RR_31	31. The rewards I receive are dependent upon my innovation on the job.
CE_RR_32	32. My supervisor will increase my job responsibilities if I am performing well in my job.
CE_RR_33	33. My supervisor will give me special recognition if my work performance is especially good.
CE_RR_34	34. My manager would tell his/her boss if my work was outstanding.
CE_RR_35	35. There is a lot of challenge in my job.
Identifier	**Section 4: Time availability**
CE_TA_36	36. During the past three months, my workload kept me from spending time on developing new ideas.
CE_TA_37	37. I always seem to have plenty of time to get everything done.
CE_TA_38	38. I have just the right amount of time and workload to do everything well.
CE_TA_39	39. My job is structured so that I have very little time to think about wider organizational problems.
CE_TA_40	40. I feel that I am always working with time constraints on my job.
CE_TA_41	41. My co-workers and I always find time for long-term problem solving.
Identifier	**Section 5: Organizational boundaries**

CE_OB_42	42. In the past three months, I have always followed standard operating procedures or practices to do my major tasks.
CE_OB_43	43. There are many written rules and procedures that exist for doing my major tasks.
CE_OB_44	44. On my job I have no doubt of what is expected of me.
CE_OB_45	45. There is little uncertainty in my job.
CE_OB_46	46. During the past year, my immediate supervisor discussed my work performance with me frequently.
CE_OB_47	47. My job description clearly specifies the standards of performance on which my job is evaluated.
CE_OB_48	48. I clearly know what level of work performance is expected from me in terms of amount, quality, and timelines of output.

Note. Adapted from “Diagnosing a firm’s internal environment for corporate entrepreneurship”, by D.F. Kuratko, J. S. Hornsby and J. G. Covin, 2014, Business Horizons, 57, p. 40, Elsevier

Product Innovation Performance

Sections 6 of the questionnaire below has been adopted from Grawe, Churn & Daugherty (2009). A Likert marking system will be applied ranging from 1 to 7, where 1 = “much worse than competitors”, and 7 = “much better than competitors”.

Table 15 - Service Innovation Questionnaire

Identifier	Question
SI_01	Innovation is readily accepted in program/project management
SI_02	Our firm’s top management gives special emphasis to service innovation
SI_03	Our firm constantly seeks new ways to better service our customers
SI_04	Our firm is able to change/modify our current service approaches to meet special requirements from customers
SI_05	Compared to our competition, our firm is able to come up with new service offerings

Note. Adapted from “Diagnosing a firm’s internal environment for corporate entrepreneurship”, by S. J. Grawe, H. Chen and P. J. Daugherty, 2009, International Journal of Physical Distribution & Logistics Management, 39, p. 291, Emerald

Appendix 3: Final research constructs

Table 16 - Post factor analysis: Service innovation dimension

Variable	Variable Description
SI_01	Innovation is readily accepted in program/project management
SI_02	Our firm's top management gives special emphasis to service innovation
SI_03	Our firm constantly seeks new ways to better service our customers
SI_04	Our firm is able to change/modify our current service approaches to meet special requirements from customers
SI_05	Compared to our competition, our firm is able to come up with new service offerings
CE_MS_1	1. My organization is quick to use improved work methods.
CE_MS_2	2. My organization is quick to use improved work methods that are developed by workers.

Note. Adapted from "Diagnosing a firm's internal environment for corporate entrepreneurship", by D.F. Kuratko, J. S. Hornsby and J. G. Covin, 2014, Business Horizons, 57, p. 40, Elsevier

Table 17 - Post factor analysis: Management support dimension for CE

Variable	Variable Description
CE_MS_3	3. In my organization, developing one's own ideas is encouraged for the improvement of the corporation.
CE_MS_4	4. Upper management is aware and very receptive to my ideas and suggestions.
CE_MS_9	9. Many top managers have been known for their experience with the innovation process.
CE_MS_13	13. People are often encouraged to take calculated risks with ideas around here.
CE_MS_14	14. Individual risk takers are often recognized for their willingness to champion new projects, whether eventually successful or not.
CE_MS_15	15. The term ''risk taker'' is considered a positive attribute for people in my work area.
CE_MS_16	16. This organization supports many small and experimental projects, realizing that some will undoubtedly fail.
CE_MS_17	17. An employee with a good idea is often given free time to develop that idea.

Note. Adapted from "Diagnosing a firm's internal environment for corporate entrepreneurship", by D.F. Kuratko, J. S. Hornsby and J. G. Covin, 2014, Business Horizons, 57, p. 40, Elsevier

Table 18 - Post factor analysis: Time availability dimension for CE

Variables	Variable Description
CE_TA_37	37. I always seem to have plenty of time to get everything done.
CE_TA_38	38. I have just the right amount of time and workload to do everything well.
CE_TA_41	41. My co-workers and I always find time for long-term problem solving.

Note. Adapted from "Diagnosing a firm's internal environment for corporate entrepreneurship", by D.F. Kuratko, J. S. Hornsby and J. G. Covin, 2014, Business Horizons, 57, p. 40, Elsevier

Table 19 - Post factor analysis: Work discretion dimension for CE

Variable	Variable Description
CE_WD_22	22. This organization provides the chance to be creative and try my own methods of doing the job.
CE_WD_23	23. This organization provides the freedom to use my own judgment.
CE_WD_24	24. This organization provides the chance to do something that makes use of my abilities.
CE_WD_25	25. I have the freedom to decide what I do on my job.
CE_WD_26	26. It is basically my own responsibility to decide how my job gets done.
CE_WD_27	27. I almost always get to decide what I do on my job.
CE_WD_28	28. I have much autonomy on my job and am left on my own to do my own work.
CE_WD_29	29. I seldom have to follow the same work methods or steps for doing my major tasks from day to day.

Note. Adapted from "Diagnosing a firm's internal environment for corporate entrepreneurship", by D.F. Kuratko, J. S. Hornsby and J. G. Covin, 2014, Business Horizons, 57, p. 40, Elsevier

Table 20 - Post factor analysis: Reward and recognition dimension for CE

Variable	Variable Description
CE_RR_32	32. My supervisor will increase my job responsibilities if I am performing well in my job.
CE_RR_33	33. My supervisor will give me special recognition if my work performance is especially good.
CE_RR_34	34. My manager would tell his/her boss if my work was outstanding.
CE_RR_35	35. There is a lot of challenge in my job.

Note. Adapted from "Diagnosing a firm's internal environment for corporate entrepreneurship", by D.F. Kuratko, J. S. Hornsby and J. G. Covin, 2014, Business Horizons, 57, p. 40, Elsevier

Table 21 - Post factor analysis: Organisational boundaries dimension for CE (1)

Variable	Variable Description
CE_OB_44	44. On my job I have no doubt of what is expected of me.
CE_OB_45	45. There is little uncertainty in my job.
CE_OB_46	46. During the past year, my immediate supervisor discussed my work performance with me frequently.
CE_OB_47	47. My job description clearly specifies the standards of performance on which my job is evaluated.
CE_OB_48	48. I clearly know what level of work performance is expected from me in terms of amount, quality, and timelines of output.
CE_RR_30	30. My manager helps me get my work done by removing obstacles and roadblocks.

Note. Adapted from "Diagnosing a firm's internal environment for corporate entrepreneurship", by D.F. Kuratko, J. S. Hornsby and J. G. Covin, 2014, Business Horizons, 57, p. 40, Elsevier

Table 22 - Post factor analysis: Organisational boundaries dimension for CE (2)

Variables	Variable Description
CE_OB_42	42. In the past three months, I have always followed standard operating procedures or practices to do my major tasks.
CE_OB_43	43. There are many written rules and procedures that exist for doing my major tasks.

Note. Adapted from "Diagnosing a firm's internal environment for corporate entrepreneurship", by D.F. Kuratko, J. S. Hornsby and J. G. Covin, 2014, Business Horizons, 57, p. 40, Elsevier

Appendix 4: Research project plan

May	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	R									D1														ECo								Sd
	G																															
June	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	R										Sf			Ecs C1d				C1f										GW ECr				
	G		E1	E1	E1	E1																		E2	E2	E2	E2				E3	
July	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	R											QN			DCo											C2d C3d				C2f C3f		
	G	E3	E3	E3																												
August	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	R					DCc							C5d			QN ECc		QL					GW							C5f		
	G																	E4	E4	E4	E4	E4										
September	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
	R					RCd				RCf										QN		QL					GW					
	G															E5	E5	E5	E5													
October	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	R																															GW
	G									GM	GM	GM	GM	GM	GM	GM	GM	GM	GM	GM												
November	#	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
	R							D2																								
	G																															

GIBS Modules and Workshops	
GM	Global Module
E1	Elective 1
E2	Elective 2
E3	Elective 3
E4	Elective 4
E5	Elective 5
D1	Due Date for Research Propsal
D2	Due Date for Integrated Business Research Project
QN	Quants Workshop
GW	General Research Workshop
QL	Qualitive Workshop
ECo	Ethical Clearance Opens
ECc	Ethical Clearance Closes
R	Research Milestones and Deliverables
G	GIBS Modules and Workshops

Research Milestones and Deliverables	
Sd	Survey - Draft version completed
Sf	Survey - Final version completed
ECs	Ethical Clearance - Submit proposal for ethical clearance
ECr	Ethical clearance results
DCo	Data Collection Opens
DCc	Data Collection Closes
C1d	Chapter 1 of IBRP - Draft send to Supervisor (Introduction)
C1f	Chapter 1 of IBRP - Final sent to Supervisor (Introduction)
C2d	Chapter 2 of IBRP - Draft send to Supervisor (Literature Review)
C2f	Chapter 2 of IBRP - Final sent to Supervisor (Literature Review)
C3d	Chapter 3 of IBRP - Draft send to Supervisor(Methodology)
C3f	Chapter 3 of IBRP - Final sent to Supervisor (Methodology)
C4d	Chapter 4 of IBRP - Draft send to Supervisor (Research Questions)
C4f	Chapter 4 of IBRP - Final sent to Supervisor (Research Questions)
C5d	Chapter 5 of IBRP - Draft send to Supervisor (Data Analysis)
C5f	Chapter 5 of IBRP - Final sent to Supervisor (Data Analysis)
RCd	Results and Conclusion - Draft send to supervisor
RCf	Results and Conclusion - Final sent to supervisor

Appendix 5: Consistency matrix

TITLE: The impact of corporate entrepreneurship on service innovation in the financial services industry

#	PROPOSITIONS/ QUESTIONS/ HYPOTHESES	LITERATURE REVIEW	DATA COLLECTION TOOL (Questionnaire)	ANALYSIS
1	H1 Management support is positively related to service innovation	(Kuratko et al., 2014);(Seshadri & Tripathy, 2006);(Bloodgood et al., 2015); (Lekmat & Chelliah, 2014) (Katzan, 2014);(Morrar, 2014);(Legrand & Ljoiem, 2013);(D'Emidio, Dorton & Duncan, 2014);(Fischer, 2011);(Jeknaker, Tellefsen & Luders, 2014);(Kentaro et al., 2015); (Watanabe, Fukuda & Nishimura, 2015);(Hertog, van der Aa & de Jong,2010) (Grawe, Churn & Daugherty, 2009)	Section 1 Section 6	Factor Analysis Linear Regression
2	H2 Work discretion is positively related to service innovation	(Kuratko et al., 2014);(Rigtering & Weitzel, 2013);(Manroop, 2015) (Katzan, 2014);(Morrar, 2014);(Legrand & Ljoiem, 2013);(D'Emidio, Dorton & Duncan, 2014);(Fischer, 2011);(Jeknaker, Tellefsen &	Section 2 Section 6	Factor Analysis Linear Regression

		Luders, 2014);(Kentaro et al., 2015); (Watanabe, Fukuda & Nishimura, 2015);(Hertog, van der Aa & de Jong,2010) (Grawe, Churn & Daugherty, 2009)		
3	H3 Time availability is positively related to service innovation	(Kuratko et al., 2014) (Bloodgood et al., 2015) (Katzan, 2014);(Morrar, 2014);(Legrand & Ljoiem, 2013);(D'Emidio, Dorton & Duncan, 2014);(Fischer, 2011);(Jeknaker, Tellefsen & Luders, 2014);(Kentaro et al., 2015); (Watanabe, Fukuda & Nishimura, 2015);(Hertog, van der Aa & de Jong,2010) (Grawe, Churn & Daugherty, 2009)	Section 3 Section 6	Factor Analysis Linear Regression
4	H4 Reward / Reinforcement is positively related service innovation	(Kuratko et al., 2014);(Giannikis & Nikandrou, 2013);(Sørensen & Fassiotto, 2011) (Katzan, 2014);(Morrar, 2014);(Legrand & Ljoiem, 2013);(D'Emidio, Dorton & Duncan, 2014);(Fischer, 2011);(Jeknaker, Tellefsen & Luders, 2014);(Kentaro et al., 2015); (Watanabe, Fukuda & Nishimura, 2015);(Hertog, van der Aa & de Jong,2010)	Section 4 Section 6	Factor Analysis Linear Regression

		(Grawe, Churn & Daugherty, 2009)		
5	H5 Organisation boundaries is positively related to service innovation	(Kuratko et al., 2014); (Zahra, 2015) (Katzan, 2014);(Morrar, 2014);(Legrand & Ljoiem, 2013);(D'Emidio, Dorton & Duncan, 2014);(Fischer, 2011);(Jeknaker, Tellefsen & Luders, 2014);(Kentaro et al., 2015); (Watanabe, Fukuda & Nishimura, 2015);(Hertog, van der Aa & de Jong,2010) (Grawe, Churn & Daugherty, 2009)	Section 5 Section 6	Factor Analysis Linear Regression
6	H6 Corporate entrepreneurship is positively related to service innovation	(Kuratko et al., 2014); (Demirci, 2013) (Kuratko & Audretsch, 2013) Karol (2015) (Clargo & Tunstall, 2011) (Katzan, 2014);(Morrar, 2014);(Legrand & Ljoiem, 2013);(D'Emidio, Dorton & Duncan, 2014);(Fischer, 2011);(Jeknaker, Tellefsen & Luders, 2014);(Kentaro et al., 2015); (Watanabe, Fukuda & Nishimura, 2015);(Hertog, van der Aa & de Jong,2010) (Grawe, Churn & Daugherty, 2009)	Section 1 Section 2 Section 3 Section 4 Section 5 Section 6	Factor Analysis Multiple Regression

Appendix 6: Ethical clearance

Dear Mr Bhavesh Ravjee

Protocol Number: **Temp2016-01538**

Title: **Application for Ethical Clearance**

Please be advised that your application for Ethical Clearance has been APPROVED.

You are therefore allowed to continue collecting your data.

We wish you everything of the best for the rest of the project.

Kind Regards,

Adele Bekker