Corporate entrepreneurial behaviour, organisational architecture and the entrepreneurial process

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DEDICATION

I'm dedicating this research and the abilities I have received to God and wish to state the following testimony:

Sitting at the Christian Revival Church Dream Week conference in 2015, Pr. Dharius Daniels delivered a message that resonated with me…*"God will let you live on any level you allow yourself to settle. You should say Yes to your calling and God will protect you when it's No".* Walking out of Church, I took this message and made it my own, deciding to further my education. Trusting God, I enrolled into a Masters programme at Wits Business School. If it's part of His plan for me, I will receive favour. Peace beyond understanding followed and continued throughout the year of dedicated hard work, exams and deadlines.

At CRC Dream Week 2016, I received the results of all nine subjects. I can only praise God for His guidance and favour.

ACKNOWLEDGEMENTS

In submitting this research I am greatly indebted to my supervisor, Professor Boris Urban, for guiding, supporting and encouraging me to pursue my own initiatives and ideas. He has been vital in ensuring that I follow the correct approach in my research.

This study would not have been possible without the various experts at the financial institution who participated in the interviews and surveys.

My sincere gratitude to all who contributed to this study and a special thank you to my family and friends who supported me.

ABSTRACT

The prominence of international entrepreneurship in the global economy is of great importance and interest to researchers, entrepreneurs and governments alike. International business and accelerated internationalisation focus on multinational companies as well as entrepreneurial ventures for growth and innovative collaborations across borders in the global environment.

The dominant logic for any corporate organisation today is to ensure that it facilitates and fosters an ecosystem that is conducive to innovation. The concept of generating opportunity through creativity and exploiting it with innovation, has proved to be extremely difficult, yet valuable. Innovation and control systems balance each other to ensure a pro-entrepreneurial organisational climate.

Corporate entrepreneurship (CE) has received substantial attention in entrepreneurship research, which expands and develops a cumulative body of knowledge. The CE strategy is conceptualised by identifying key principles and components. This research is formulated to investigate the pro-entrepreneurial organisational architecture, as well as the entrepreneurial process and behaviour that individually and collectively encourage entrepreneurial orientation (EO). The relationships between the identified variables and moderators in a bank in the financial sector of South Africa are measured.

Stevenson's (1983) dimensions of entrepreneurial management, defined as a set of opportunity-based constructs, was measured by the EM measurement scale. Entrepreneurial orientation (EO) was assessed with the Miller/Covin-Slevin scale and linked to the entrepreneurial or innovative process of the company.

Analysis of 178 samples (n=2229) indicated positive relationships between the variables, confirming theories in literature on the effects or predictions of the elements in the CE strategy on each other. The effect of success or failure in implementation indicated no moderating effect.

Recommendations to address in future research are suggested.

DECLARATION

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

Signed at ……

On the …….. day of ……..…….…… 2017

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LIST OF ABBREVIATIONS

BAI Bank Administration Institute

CE Corporate Entrepreneurship

CEA Corporate Entrepreneurship Architecture (Pro-entrepreneurial Organisational Architecture)

CES Corporate Entrepreneurship Strategy

EM Entrepreneurial Management

EO Entrepreneurial Orientation

ESV Entrepreneurial Strategic Vision

SE Strategic Entrepreneurship

CHAPTER 1: INTRODUCTION

1.1 Introduction and Background

Entrepreneurship was traditionally seen as a phenomenon found in the start-up of new ventures and firms (Brown, Davidsson, & Wiklund, 2001). In recent years, with researchers and scholars paying attention to this construct, it became the dominant logic upon which managers and organisations base their decision- making and strategies (Zahra, Ireland, Gutierrez, & Hitt, 2000).

Kuratko, Morris, and Covin (2011) suggest that the world was in an entrepreneurial revolution and that most companies may be entrepreneurial in some areas or activities, but not necessarily in all areas. Whereas, Morris and Kuratko (2002) believe that only a small number of companies exhibit entrepreneurial activity within a strong entrepreneurial orientation, which set them apart from their competitors.

Shane and Venkataraman (2000) conceptualised entrepreneurship as the recognition and exploitation of opportunities, whereas Stevenson and Jarillo (2007), describe entrepreneurial management as more than normal business management. Entrepreneurship, according to Morris, Kuratko, and Covin (2010) can provide direction to the firm's corporate strategy and operations, irrespective of the size or age of the organisation, or whether the company is recognised as entrepreneurial (Antoncic & Prodan, 2008).

Urban (2012) refers to the relationship between entrepreneurial action and strategic management and its significance for innovation and growth within the concept of corporate entrepreneurship. Corporate entrepreneurship is conceptualised as incorporating the entrepreneurial behaviour and actions of individuals within the organisation, while facing a host of environmental and organisational challenges (Urban, 2012).

Companies have to address and act on rapidly changing technological developments, changing markets and environments. This is done by their ability to recognise opportunities, innovation, entrepreneurial orientation and

corporate entrepreneurship; and by exploiting and investing in employees as well as entrepreneurial cultures inside their companies (Schwab & Sala-i-Martin, 2015).

This study is concerned with investigating the dimensions underlying the constructs in the corporate entrepreneurial environment in the proposed company studied. The relationship between entrepreneurial actions and behaviour, the internal pro-entrepreneurial architecture and the entrepreneurial orientation within the company are hypothesised to be statistically tested against the moderator effects of success or failure in implementation, as perceived by the respondents.

1.2 Problem Statement

Corporate entrepreneurship is an important field in management study and, as such, receives considerable interest from researchers. However, due to various conceptualisations and undefined concepts it might be difficult to reach consensus on a specific definition to describe the precise effects of CE (Schindehutte, Morris, & Kuratko, 2000; Shane & Venkataraman, 2000). Certain areas of entrepreneurship, like entrepreneurial orientation, receive considerable attention in studies (Rauch, Wiklund, Lumpkin, & Frese, 2009), but this is not necessarily true for all areas in the field.

Research indicates that the entrepreneurial process and behaviour of individuals and organisations within the internal and external environments they operate in, can be measured (Brown et al., 2001; Covin & Miles, 1999). Contributions towards the notion of corporate entrepreneurship have emerged from the research of Ginsberg and Hay (1994); Hornsby, Kuratko, and Zahra (2002); Hornsby and Kuratko (2003); Quinn and McGrath (1985). Significant and rigorous research and testing of theories and measures remain important to all practitioners and scholars in the entrepreneurship field.

The above suggestions in literature lead the researcher to evaluate the relationship between the existence of specific entrepreneurial opportunities in an organisation and the individual's decision to act entrepreneurially to

recognise, evaluate and exploit these opportunities (Ireland, Covin, & Kuratko, 2009).

This study aims to contribute more insight into the topic of pro-entrepreneurship organisational architecture that individually and collectively encourages entrepreneurial behaviour when innovation is present. The process might produce success or failure in the implementation of ideas, growth and performance (Brown et al., 2001; Ireland et al., 2009; Shane & Venkataraman, 2000; Stevenson, 1983; Urban, 2012). Hence, the following research question proposed in Kuratko, Ireland, Covin, and Hornsby (2005) on the entrepreneurial behaviour of middle-level managers, is important in the formulation of a research question for the purposes of this study. However, this study focuses on all levels of employees, except top-management, as the company endorses an owner-manager culture.

1.2.1 Research Gap

Is there a relationship between the organisational architecture of a corporation and the entrepreneurial process, typified in the process of discovery, evaluation, exploitation and implementation of entrepreneurial opportunity by its owner-managers within the entrepreneurial orientation of that company? Will success or failure as perceived by the owner-managers at specific stages of the entrepreneurial process influence these actions? (Ireland et al., 2009).

1.2.2 Main Problem

The main problem is stated below and indicates the issues to be addressed in this research. This is divided into three sub-problems, each focusing on specific relations between the various constructs.

Describe the relationship between the organisational architecture of a corporation and the entrepreneurial process, typified in the process of discovery, evaluation, exploitation and implementation of entrepreneurial opportunity by its owner-managers within the entrepreneurial orientation of that

company. Success or failure as perceived by the owner-managers at specific stages of the entrepreneurial process will influence these actions.

1.2.3 Sub-Problems

Sub-problem 1:

Identify if organisational architecture has a positive effect on the entrepreneurial orientation of the organisation.

Sub-problem 2:

Identify if entrepreneurial processes and behaviour have a positive effect on the entrepreneurial orientation in the organisation.

Sub-problem 3:

Evaluate the effect of success or failure on the relationships between organisational architecture and entrepreneurial processes and behaviour on the entrepreneurial orientation in the organisation.

1.2.4 Research Objective

The intention or objective of the research is to analyse corporate architectures and to identify salient elements of corporate entrepreneurship strategy which encourage entrepreneurial behaviours and processes of individuals and management structures (Brown et al., 2001; Miller, 1983; Urban, 2012). In addition, the success or failure and its impact on the entrepreneurial process is accounted for where a moderation effect is expected to act between entrepreneurial orientation and the pro-entrepreneurial organisational architecture.

1.3 Context of this research

The organisation selected for the purposes of this study is located in the financial sector of South Africa as one of the major commercial banks. It is perceived as pro-entrepreneurial by demonstrating entrepreneurial activity

through the introduction of innovative products, processes and services on a regular basis. In recent years, the company has been awarded numerous innovation accolades in the financial environment, locally and globally.

The overall perception from the external environment and market place is that the organisation is positioned as an innovative company. It is considered to have a strong corporate entrepreneurial vision, committing to pro-entrepreneurial architecture that fosters and encourages an entrepreneurial culture, behaviour and entrepreneurial orientation (Anderson, Covin, & Slevin, 2009; Anderson, Kreiser, Kuratko, Hornsby, & Eshima, 2015; Brettel, Chomik, & Flatten, 2015; Lumpkin & Dess, 1996; Lyon, Lumpkin, & Dess, 2000; Wiklund, 2006).

Operating in an external environment which may sometimes be hostile, and threatened by economic pressures, rapid changes, technological developments and turbulent competitive markets**,** the organisation demonstrates capability and development through an entrepreneurial strategic vision within the corporate entrepreneurship strategy and recently repositioned its entrepreneurial process, perceived as its innovation programme strategy (Hornsby, Kuratko, Shepherd, & Bott, 2009; Kuratko, Hornsby, & Covin, 2014; Van Wyk & Adonisi, 2012).

1.4 Significance of this research

In an effort to synthesise the key elements within the CE intellectual domain, the unique and limited nature of the impetus was to identify an organisation which is consistently rewarded for its EO. This organisation has the propensity to be innovative by being pro-active and taking advantage of emerging opportunities to penetrate and win market share ahead of its competitors. In so doing, this organisation is an appropriate subject for a critical case study which can potentially provide further insight into the unique ability of applying the phenomenon of CES (Kuratko et al., 2005; Urban, 2012).

Empirical research suggests a positive and direct relationship between entrepreneurial strategy, innovation and organisational growth indicators (Urban, 2012). This research study, aims to apply the diverse theoretical

arguments and verify the presence and strength thereof with quantitative data, confirming replication of the theories and models.

The organisation won the most Innovative Bank in the World in 2012 and as such the firm is perceived to have a strong entrepreneurial construct. This view was strengthened by the adoption of a corporate entrepreneurship strategy to implement innovations programmes. Results from a critical case study analyse the perceived entrepreneurial architecture and apply verifiable research to receive insight and confirmation as an outcome.

It is assumed that the outcome of the research will be beneficial to both the organisation and academic institutions. Research confirms the value of implementing a pro-entrepreneurship organisational architecture programme such as an innovator's programme. But, there might be a gap in the extent of contribution these programmes may add to the growth of the firm and ultimately the success in the adoption of an entrepreneurial strategy.

1.4.1 Academic

With the limited and fragmented research in the CE domain and little consensus on establishing a common body of knowledge, interest in the studies of entrepreneurship is important (Rauch, Wiklund, Frese, & Lumpkin, 2004). Results on studies of entrepreneurship and the relationships with constructs like behaviour, performance, organisational architecture and the dimensions of EO differ (Brown et al., 2001; Kuhn, Sassmannshausen, & Zolin, 2010; Rauch et al., 2004).

The space in the research presented between the relationship of EO, pro-entrepreneurial organisational architecture, entrepreneurial process and the subsequent success or failure, provides for various possible insightful findings if analysed in an organisation that demonstrates continuous entrepreneurial activity. Possible contributions towards academic literature could be yielded from the results in highlighting findings either related or not related to existing theories and models. Drawing conclusions from this may ensure the replication for future research as Davidsson (2004) states: " replication facilitates the

building of cumulative knowledge and provides us with much better truth criteria (p.188).

1.4.2 Practical

From an organisational perspective, the question always remains: how to ensure continuous levels of high entrepreneurial activity amidst change in internal and external environments. For an organisation that is perceived as being mostly innovative, the risk mitigation lies in the assurance of entrepreneurial activity sustainability. The case study outcome may present various known and/or unknown theories and concepts, which are quantified in such a way as to allow further strategic repositioning. This enables greater entrepreneurial activity for ensuring future sustainability of the current high levels of entrepreneurial activity.

1.5 Delimitations

The study was conducted on a commercial bank in a group of financial companies operating in the retail and business banking sector of South Africa. The remaining subsidiaries, as well as other banks in the financial sector are excluded from this study. The focus is on the measurable variables: the pro-entrepreneurial architecture that indicates the relationship between the ESV, entrepreneurial processes and behaviour as indicative of the EO in the financial institution and ultimately the GES of the company. All factors pertaining to entrepreneurship and corporate entrepreneurship per se, will not necessarily be discussed.

As the quantitative research approach was followed, there were no interviews with respondents. A questionnaire was used for the collection of data. The group of employees targeted by the study are those employees who have demonstrated entrepreneurial activity in using the organisation's entrepreneurial process. The exact population and sample definition are discussed in chapter 3.

1.6 Definition of Terms

Corporate entrepreneurship (CE) can be described as the process whereby a company renews itself by acting on the external and internal environments whereby ideas are transformed into new products by individuals or groups of individuals (Burgelman, 1983; Morris et al., 2010).

Strategic entrepreneurship (SE) is defined as integration of entrepreneurial activities with strategic visions and goals to create wealth (Audretsch, 2009).

Corporate entrepreneurship strategy (CES) applies to the organisational strategy as decided by management and incorporates the ESV, entrepreneurial process and behaviour and the pro-entrepreneurship architecture (Guth & Ginsberg, 1990; Ireland et al., 2009; Urban, 2012).

Pro-entrepreneurship organisational architecture or Corporate entrepreneurship architecture (CEA) is the enabling condition in the company which supports and encourages the entrepreneurial environment and culture through the entrepreneurship strategic vision and the entrepreneurial process and behaviour (Brown et al., 2001; Stevenson, 1983; Urban, 2012).

Entrepreneurial process and behaviour applies to the actions of individuals to discover, evaluate and exploit opportunities (Lyon et al., 2000; Shane & Venkataraman, 2000).

Entrepreneurial orientation (EO) is identified as entrepreneurship across the company and applies three dimensions namely, innovativeness, risk-taking and pro-activeness (Covin & Slevin, 1989; Lumpkin & Dess, 1996; Miller, 1983; Wiklund, 2006).

1.7 Conclusion

The strategic positioning of this research was discussed in Chapter 1 in an effort to synthesise insights in the CES domain and the key relationships where research demonstrates requirements for specific analysis to be undertaken. The literature review in Chapter 2 further discusses the topic in more detail.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The world economy has developed into a market place where entrepreneurs flourish, due to the existence of international business opportunities, global competition and fast-changing technological developments. Entrepreneurship is defined as: creating new ventures, opportunity exploitation, risk-taking, innovative thinking and pro-actively discovering different ways of doing business within new markets, locally and internationally (Hisrich & Drnovsek, 2002; Shane, 2003; Venter et al., 2015).

Kuratko et al. (2011) advise companies and entrepreneurs to transform into organic innovators who develop the entrepreneurial potential into profitability and growth for the company. They need to challenge existing structures, policies, systems, products, reward systems and services. In addition, they recognise corporate entrepreneurship as setting the context for innovative activity which leads to financial growth and productivity. Van Wyk and Adonisi (2012) suggest that companies need to nurture their entrepreneurial actions and ventures to sustain competitiveness and financial growth in the ever-changing economic environment.

The company must align itself with its internal entrepreneurial environment towards the demands and conditions of the external environment. The internal entrepreneurial environment is supportive of innovative activities and ventures within the entrepreneurial orientation of the company. This is the pathway for change and cultivation in the company's ongoing developments and competitive efforts (Kuratko et al., 2014; Magala, Rutherford, & Holt, 2007).

In research there is a wide range of definitions and concepts on the subject of entrepreneurship, innovation, entrepreneurial orientation, corporate entrepreneurship and the pro-entrepreneurial organisational architecture. In this study of the proposed company in the financial sector, the existing theories will be used as a foundation to discuss the entrepreneurial environment.

2.2 Definition of topic

Main Problem:

Describe the relationship between the organisational architecture of a corporation and the entrepreneurial process, typified in the process of discovery, evaluation, exploitation and implementation of entrepreneurial opportunity by its owner-managers within the entrepreneurial orientation of that company. Success or failure as perceived by the owner-managers at specific stages of the entrepreneurial process will influence these actions.

2.2.1 Entrepreneurship

Research indicates that the term “entrepreneur” has developed from earlier studies of the concept by Say, Schumpeter and Drucker. Modern day definitions by Shane, Venkatamaran and Stevenson suggest entrepreneurs to be risk-taking innovators who discover and exploit opportunities by developing them into new ventures, products or services to create value, profit and growth (Dees, 1998; Peredo & McLean, 2006; Rwigema, Urban, & Venter, 2008; Venter et al., 2015).

Schumpeter (1934) was one of the first researchers to use the term “entrepreneur” in connection with innovation and economic opportunities, whereafter various researchers refined and expanded the terminology. The definition by Shane and Venkataraman (2000) is the most cited definition: “Entrepreneurship as the scholarly examination of how, by whom, and with what effects opportunities to create future goods and services are discovered, evaluated, and exploited” (p.218).

Entrepreneurship is the pro-active process of creating change, innovation, value and new ventures by risk-taking and combining people, technologies and resources in an unique, often new way to exploit all possible opportunities to increase wealth and competitive advantage and can be applied in any organisational context (Kuratko et al., 2011; Stevenson & Jarillo, 2007; Venter et al., 2015). The process involves the presence of opportunities and enterprising individuals (Venkataraman, 1997), and is defined by the person as

well as the process that the individual follows to create a new venture, which often includes creativity and innovation (Venter et al., 2015). The entrepreneur is the central actor in the creation of a new venture (Robinson, Shaver, & Wrightsman, 1991).

Entrepreneurship is promoted in developing and developed countries, Ozaralli and Rivenburgh (2016) and is seen as leading to economic growth. This is done by opening new markets, new ventures, creating employment, dealing with challenges and competition to bring profit and prosperity to themselves, their companies and their countries (Holmgren & From, 2005; Hornsby et al., 2002; Smallbone & Welter, 2012).

Various models of the entrepreneurial process exist in literature and are based on different constructs in this field, like the identification of either opportunity, (Ardichvili, Cardozo, & Ray, 2003; Kirzner, 1979; Shane & Venkataraman, 2000); innovation (Schumpeter, 1934); intention in Ajzen's Theory of Planned Behaviour (Krueger, Reilly, & Carsrud, 2000) or event in Shapero-Krueger's Model of the Entrepreneurial event (Krueger et al., 2000).

2.2.1.1 Schumpetarian Model of Entrepreneurship

Schumpeter (1934) defines entrepreneurship in the theory of economic development as: "entrepreneurially successful introduction or new combination of already existing elements in the economy" (p.65-66).

Ziegler (2011) discusses the Schumpetarian theory of entrepreneurship based on:

- Motivation in an individual as an entrepreneur to move in a specific entrepreneurial direction;
- Attempts at economic exploration are done by innovation or new combinations;
- Entrepreneurial individuals need to overcome resistance in themselves and in the environment in which they are entrepreneurially active;

- Entrepreneurial profit is based on the unique and correct combinations to be successfully sold in the market place, and
- Entrepreneurial activities encourage changes and increased or decreased periods in business cycles.

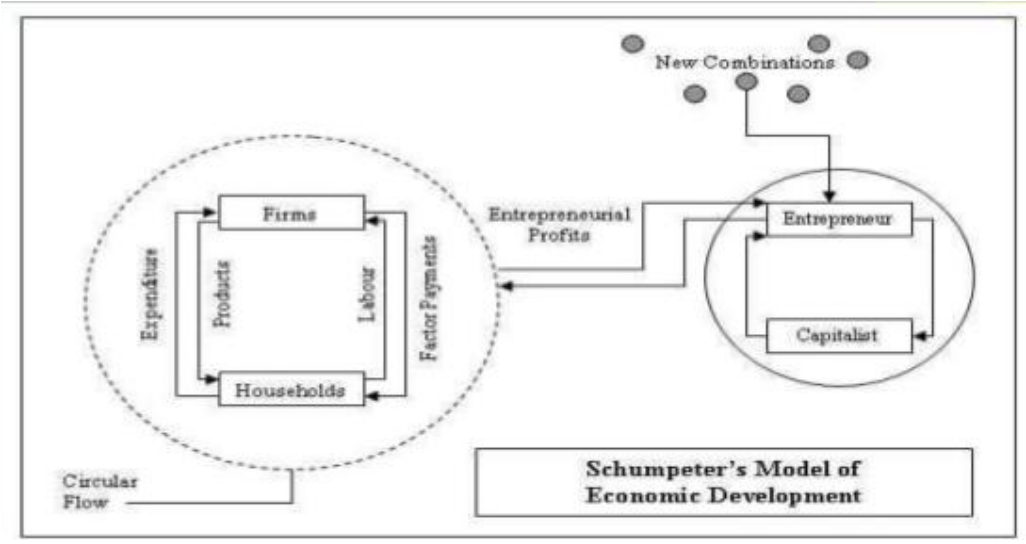

Figure 1: Schumpetarian Model of Entrepreneurship, Source: (Schumpeter, 1934)

2.2.1.2 Kirznerian Model of Entrepreneurship

Kirzner (1979) suggests that an opportunity is the outcome of the inefficient use or exploitation of resources caused by absence of coordination and knowledge. Landstrom, Parhankangas, Fayolle, and Riot (2016) discuss Kirzner's contribution to the process of entrepreneurship as:

- Entrepreneurial discoveries have an element of surprise, as it is impossible to search for opportunities.
- Opportunities are discovered by entrepreneurs who are alert and know where to find knowledge.
- It is important that the market is seen as a process which needs continuous development as resources can be sold at different markets, at different times, and at different prices.

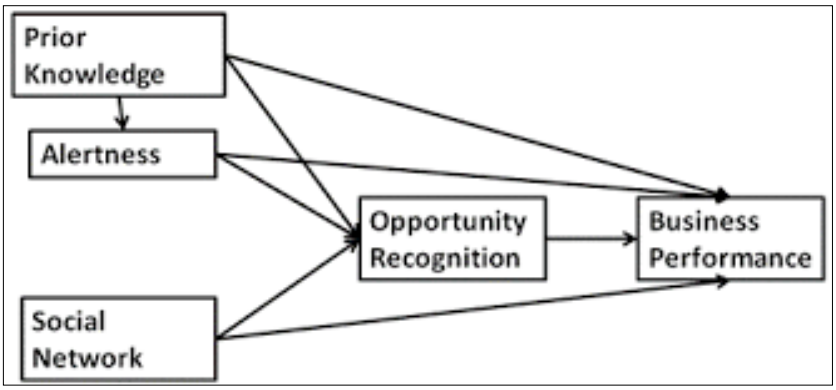

Figure 2: Kirzner Model of Entrepreneurship, Source: (Kirzner, 1979)

2.2.1.3 Shanian Model of Entrepreneurship

Shane (2003) presented the individual-opportunity nexus framework for entrepreneurship as he suggests that prior research failed to look at the complete process of entrepreneurship. Models like the Schumpetarian (Schumpeter, 1934) and Kirznerian (Kirzner, 1979) focused on parts of the process, according to Shane.

Shane (2003) defines entrepreneurship as: ”an activity involving the discovery and exploitation of opportunities to introduce new goods and services, ways of organising, markets, processes, and raw materials, through organising efforts that previously had not existed” (p. 4-5).

Torikka (2011) discusses Shane’s assumptions towards entrepreneurship as a process that involves the following:

- Identification of opportunities by individuals;
- Decision whether or not to exploit it;
- Efforts to obtain resources;
- A process of organising those resources into new combinations;
- Development of strategies for these new ventures.
- These activities are influenced by individual (psychological, cultural, demographic) and environmental (industry, markets, institutions, politics) factors (Lovgren, Peterson, & Ross, 2011).

In summary Shane (2003) describes the conditions for an underlying unified framework as follows:

1. The existence of profit based opportunities;
2. Variation in people in their willingness and ability to act;
3. A need to embrace uncertainty/risk-bearing;
4. Requirements for purposive organising;
5. Requirements for some sort of innovation.

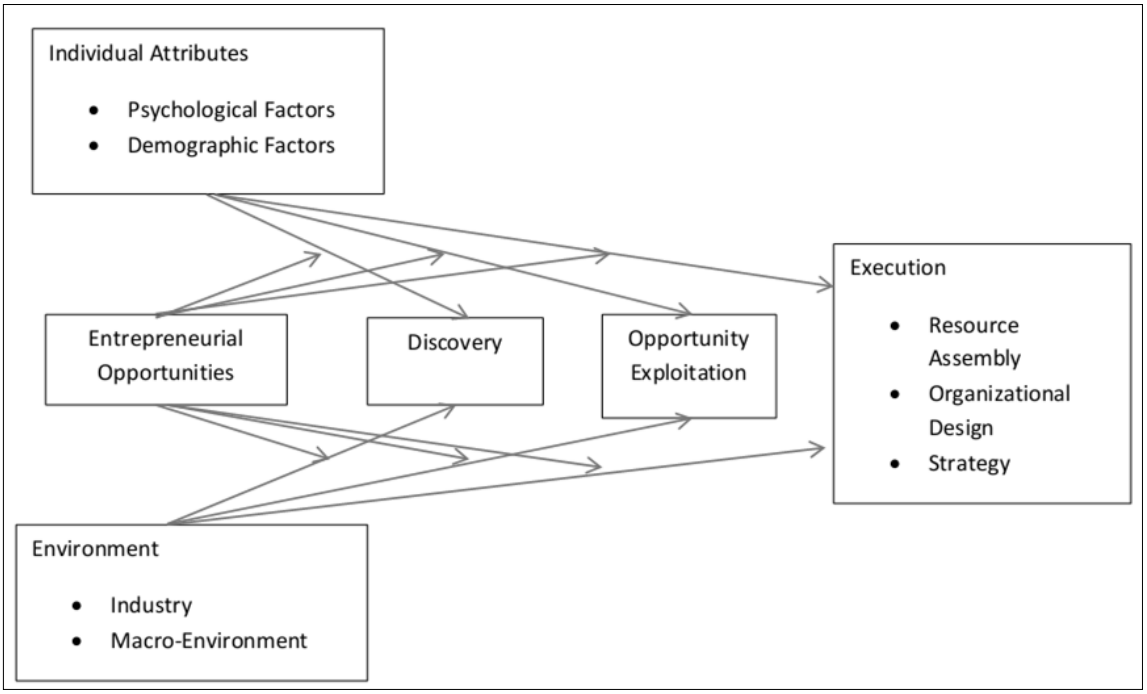

Figure 3: A model of the entrepreneurial process as put forth by Shane (2003)

These three models of the entrepreneurial process as put forth by Schumpeter (1934); Kirzner (1979) and Shane (2003) will be used as a basis for explaining the process in this study.

2.2.2 Corporate Entrepreneurship (CE)

Top management in a business is responsible for developing and defining strategies, missions, visions and policies. It must think strategically and formulate plans and objectives to effectively manage the opportunities,

strengths, weaknesses and threats posed by the environments it operates in (Hitt, Ireland, & Hoskisson, 2012; Mintzberg, 1994).

Corporate Entrepreneurship (CE) is a flexible, organic process characterised by a commitment to an entrepreneurial orientation of pro-active and continuous renewal, innovativeness, calculated risk-taking and opportunity exploitation (Hitt & Reed, 2000; Schindehutte, Morris, & Kocak, 2008; Urban, 2012). It enables organisations to become entrepreneurial by successfully supporting processes and behaviour and by having skilled and capable people. This process includes policies, procedures, culture, people, structure, customers and strategy, while maximising on value and outcome. It tests the existing boundaries and limits of systems, as well as, processes and builds on capabilities to change attitudes and skills (Lumpkin & Dess, 1996; Urban, 2012).

The outcome of this process may create the development of new ventures, products and processes in the organisation and its markets. New opportunities or ventures originate from formal or informal interactions and behaviour of individuals or teams in the established organisation. This happens within the entrepreneurial culture and the macro, micro and global environments of that organisation to rejuvenate the organisation by increasing or maintaining profitability (Antoncic & Hisrich, 2004; Kuratko, Ireland, & Hornsby, 2001; Lumpkin & Dess, 1996; Urban, 2012).

2.2.3 Strategic Entrepreneurship (SE)

Strategic entrepreneurship is the process whereby entrepreneurship and strategic management are combined and integrated to formulate entrepreneurship strategies and visions in businesses. According to Kuratko, Hornsby, and Goldsby (2004), strategic entrepreneurship involves continuous stimulation of entrepreneurial activities to improve competitive advantage and achieve strategic goals. Hitt and Reed (2000) defines SE as “integration of entrepreneurial opportunity-seeking behaviour and strategic advantage-seeking behaviour perspectives in developing and taking actions designed to create wealth (p. 481).

It should be a way of thinking and searching for new opportunities, while implementing and evaluating strategies and written plans so as to take action on these. Companies do not always integrate the entrepreneurial activities they engage in, into their core strategies. Literature shows that researchers do not always make a clear distinction between CE and SE like Ireland et al. (2009) who discuss SE within the realm of CE (Urban, 2012). Schindehutte et al. (2008) define corporate entrepreneurship as the creation of new ventures or businesses by companies, whereas strategic entrepreneurship involves all innovative actions to gain competitive advantage.

Ireland et al. (2009) advise that the presence of entrepreneurial activities does not necessarily indicate that a corporate entrepreneurial strategy exists and is used to enhance performance and growth in that company. According to the CES model of Ireland et al. (2009), pro-entrepreneurial architecture is the tool used to translate the entrepreneurial strategic vision into processes and behaviour as used in opportunity recognition and exploitation to encourage entrepreneurial orientation and performance (Urban, 2012).

2.2.4 Corporate Entrepreneurship Strategy (CES)

The corporate entrepreneurship strategy (CES) of a company is a unique, identifiable organisational strategy with financial outcomes (Guth & Ginsberg, 1990), which is incorporated in the core strategy of the company. The CES enhances the ability of the company to acquire and utilise the motivation and skills of its employees to continually embrace and develop new opportunities, to innovate and grow the portfolio of the company in its economic and financial actions in the work- and marketplace.

To understand entrepreneurship as an organisation-wide phenomenon embedded in the strategy of the company, various interactive models of CES suggest different integrations of these constructs (Kuratko et al., 2011).

Guth and Ginsberg (1990) suggest a *domain framework* in that the processes of strategic renewal or transformation and internal innovation in organisations

defines corporate entrepreneurship. These processes are driven or influenced by the following factors, according to Kuratko et al. (2011).

- External environments which have implications on activities inside the company. It includes technologies, competition, resources, labour and legal regulations, customers and economic environments. These external environments may change instantly to have critical effects on the activities and strategies of the firm.
- Internal environments which implicate conduct inside the company as prescribed by the strategies, structures, processes and cultures inside the company. Management is responsible to put these policies and practices together.
- Leadership within the company to behave and lead in a positive motivational style according to values, norms, beliefs and characteristics preferable to enhance the entrepreneurial culture in that company.
- Company performance which is driven by innovation to be effective, efficient and satisfies stakeholders.

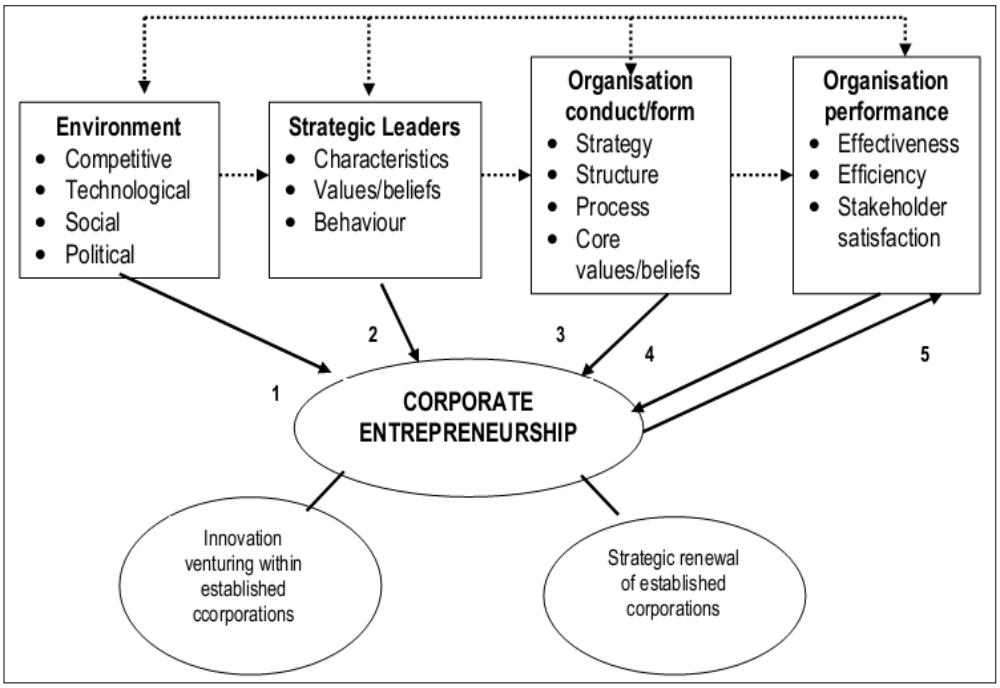

Figure 4: Integrative Domain Framework – Corporate Entrepreneurship. (Guth & Ginsberg, 1990)

Donald and Goldsby (2004) focus on *sustainability* of entrepreneurship as a continuous process in the organisation. Individuals need to be innovative and entrepreneurial on an ongoing basis with positive feedback, support and resources allocated by management. This process is triggered by an opportunity or threat in the environment (external or internal) which actions an individual into entrepreneurial activity. The activity is the result of the individual's perception that the organisational climate (top management support, autonomy, rewards, resources and flexible organisational boundaries) will create a perceived entrepreneurial outcome (Kuratko & Hodgetts, 2004). The individual as well as management need to be satisfied with the outcomes to sustain this strategy or to renew the strategy.

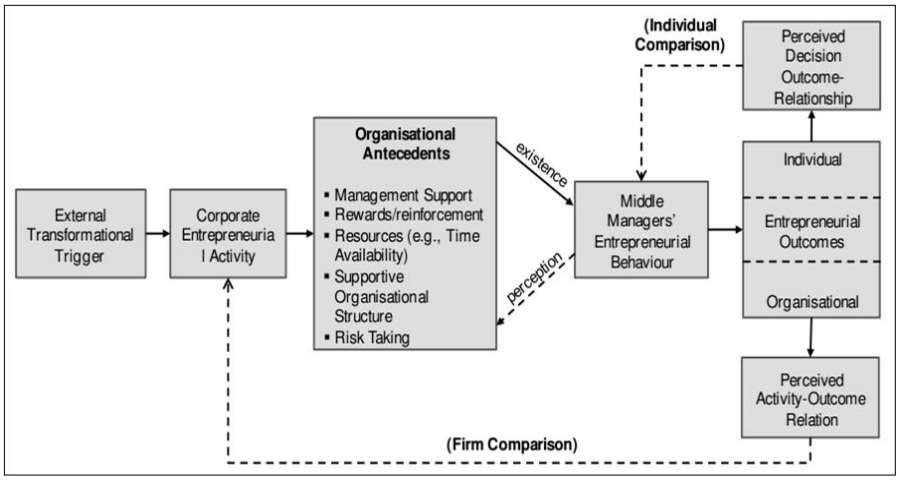

Figure 5: A Model of Sustained Corporate Entrepreneurship. (Kuratko et al., 2004)

In the *Strategic Integration* model of Ireland et al. (2009) used by Brown et al. (2001), there are three components that enable corporate entrepreneurship, namely the entrepreneurial strategic vision of a company which is translated or encouraged into entrepreneurial processes and behaviour by means of a pro-entrepreneurial architecture.

The consequences or outcomes of the CES, according to Ireland et al. (2009) are competitive capabilities and new knowledge which, combined with mobilisation of resources, will indicate industry position and growth within the scope of external environmental influences. These factors will influence top

management to continuously and purposefully evaluate and improve the ESV and pro-entrepreneurial architecture. This will shape the scope of its operations and affect the entrepreneurial processes and behaviour to be innovative and to bring about new capabilities and market place positions, which will encourage the EO and internal entrepreneurial environment of the company.

Many companies implement only one or two of these, but to receive full understanding and insight into the level of innovativeness and entrepreneurship, a company needs to develop and implement all three (processes, ESV, architecture). This strategy approaches entrepreneurship as the overall orientation that drives the company and needs to be integrated throughout all processes and strategies of the organisation to achieve the outcomes as planned (Ireland et al., 2009).

In literature, various interactive models of CES suggest different integrations of these constructs.

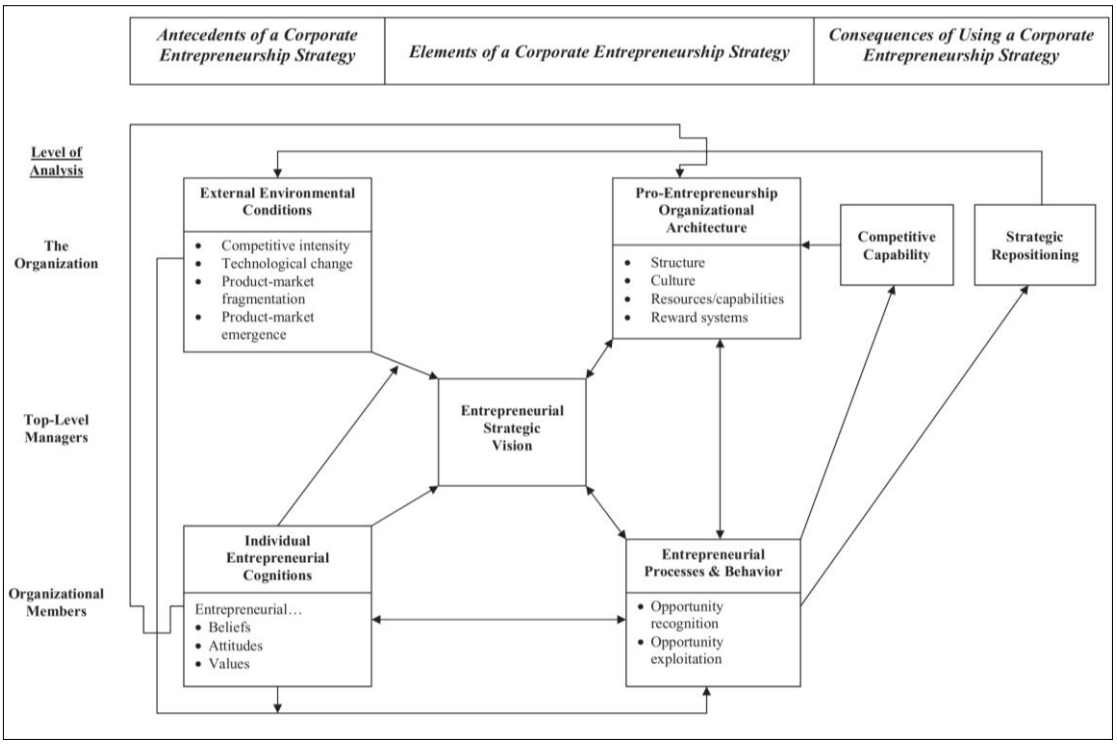

Figure 6: Interactive model of CES, Author: Ireland et al. (2009)

2.2.4.1 Entrepreneurial Strategic Vision (ESV)

Morris, Kuratko, and Covin (2010) suggest that an entrepreneurial mindset should drive the focus of the organisation to conceptualise its systems, strategies and behaviours to promote opportunity identification and exploitation into new sources that add value and profitability.

It is with this mindset, attitude and knowledge structures that top management use the information available in the CES to derive an entrepreneurial strategic vision (ESV). This ESV is linked to the following: a structure of organicity; the words and actions of top management to influence an entrepreneurial culture; acquiring resources to promote entrepreneurial capabilities; formal and informal reward systems to encourage the EO construct of the company (Brown et al., 2001; Urban, 2012).

The implementation of the ESV together with entrepreneurial processes and behaviour (see 2.2.1) through pro-entrepreneurship organisational architecture as a tool or vehicle, manifests as the entrepreneurial orientation (EO) of a company (Ireland et al., 2009; Kuratko et al., 2011; Urban, 2012; Zahra et al., 2000).

2.2.4.2 Sub-problem 1: Pro-entrepreneurial Organisational Architecture or Corporate Entrepreneurial Architecture (CEA)

Sub-problem 1:

Identify if organisational architecture has a positive effect on the entrepreneurial orientation of the organisation.

Top management is responsible for the design of pro-entrepreneurial architectures in its departments or companies, while middle management need to encourage and support the implementation thereof, according to Donald and Goldsby (2004). Top management has to ensure and communicate a thorough understanding of the enabling conditions which contribute to the entrepreneurial culture and environment or ecosystem within their entrepreneurial strategic vision. Middle management needs to inspire all individuals in the company to

adopt the entrepreneurial processes and behaviour, individually or collectively (Burns, 2010; Covin & Slevin, 1991; Ireland et al., 2009; Kuratko et al., 2011; Schindehutte et al., 2000; Urban, 2012).

Stevenson and Jarillo (2007) conclude that it is not the organisations that carry out entrepreneurial activities, but the employees in the organisations. Individuals seek, recognise and initiate opportunities to exploit into end-products within the entrepreneurial context or orientation of that organisation. Stevenson (1983) describes entrepreneurship as “an approach to management which is characterised by the pursuit of opportunity without regard to resources currently controlled” (p. 23).

Stevenson (1983) and Stevenson and Jarillo (2007) identified several dimensions of opportunity-based entrepreneurial management behaviour to be enablers in an entrepreneurial organisation. The first model in Stevenson (1983) describes six dimensions: strategic orientation; commitment to opportunity; commitment of resources; control of resources; management structure and reward philosophy (Brown et al., 2001).

In later work of Stevenson and Jarillo (2007) two other dimensions are mentioned: growth orientation and entrepreneurial culture. Based on the findings of Stevenson, Brown et al. (2001) developed an instrument to examine these dimensions and assess the degree of entrepreneurial management and behaviour in the organisation. They wanted to reflect support for opportunity-seeking behaviour by value-creation processes inside the company. In analysing their results they found overlapping between the eight dimensions in Stevenson’s model and reduced them to six.

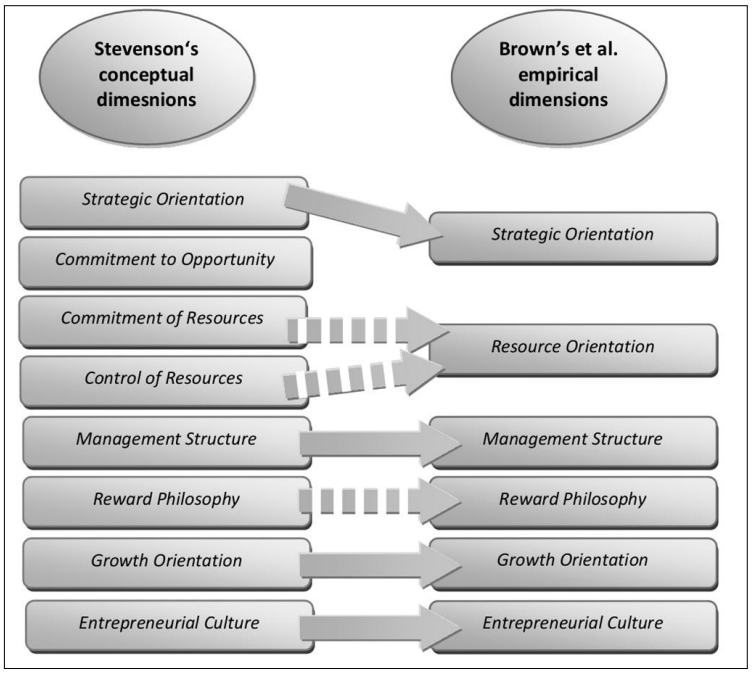

Figure 7: Stevenson's conceptual dimensions and Brown's et al. empirical dimensions, (Kuhn et al., 2010)

The six dimensions as measured with the Stevenson's EM scale are discussed below:

Strategic orientation and vision describe the factors that effect decisions about strategy in the firm. It implies that management has a clear and ethical vision in mind of the process, objectives, resources and actions needed to exploit opportunities relevant in their environment. They structure the strategies and paths the company, and teams working for that company, need to follow for success (Brown et al., 2001; Kuratko et al., 2011; Rwigema et al., 2008; Urban, 2012) .

Commitment to exploitation of opportunity describes the innovative, risky and sometimes revolutionary disruptive behaviour of entrepreneurial individuals or teams in recognising and identifying new opportunities, which they exploit and develop through strategic actions into new outcomes for successful business development (Brown et al., 2001; Kuratko et al., 2011; Rwigema et al., 2008; Urban, 2012).

Commitment and control of resources by management to enable entrepreneurial actions by mobilisation and deployment within the company. Management will dedicate resources if and when the experiment grows and becomes more profitable, so as to keep the risk of high costs and possible losses at a minimum (Engel, 2011). Companies normally make use of their own resources, like capital, production facilities, brand names, suppliers, technical and research development staff members, distribution channels, customer bases, marketing databases and internal expertise. Or, they might reduce the pressure to own all needed resources and subcontract or outsource resources and skills to minimise financial impact on own resources and maximise value and profit (Brown et al., 2001; Kuratko et al., 2011; Urban, 2012).

Management structure – Management creates an environment to encourage and reinforce entrepreneurial behaviour into pro-active risk-taking as desirable. Investment in the development of people and their ideas needs a flexible, organic structure where individuals, with skills and capabilities, champion their ideas in an environment of support and positive encouragement. Decision-making is decentralised; processes are flexible and informal for information to flow freely (Brown et al., 2001; Kuratko et al., 2011; Urban, 2012).

A Reward philosophy is the tool used by management to compensate entrepreneurial individuals or teams on their innovative actions, accountability and the value they add to the company. Formal or informal reward configurations may have different effects on individuals, as employees might be driven by psychological intrinsic (recognition, promotion) or financial extrinsic (bonus, increase) motivators (Brown et al., 2001; Knapp et al., 2015; Kuratko et al., 2011; Urban, 2012).

Growth orientation and entrepreneurial culture - The level of entrepreneurial culture in a company, as put into place by management through positive and innovative attitudes, strategies, (like the ESV and CES), structures, resources and reward systems will have a direct influence on the creativity, experimentation, disruptive ideas and motivation of employees to perform in a corporate entrepreneurial context. The company's financial performance, competitive advantage, sustainability, rapid growth, industry position and future

business lines will be maximised, by a work environment that is full of ideas that are valued (Brown et al., 2001; Bull & Urban, 2008; Ireland et al., 2009; Kuratko et al., 2011; Zahra et al., 2000).

2.2.4.3 Sub-problem 2: Entrepreneurial Processes and Behaviour

Sub-problem 2:

Identify if entrepreneurial processes and behaviour have a positive effect on the entrepreneurial orientation in the organisation.

The entrepreneurial process is a methodical way in which an alert entrepreneur realises that an opportunity exists. This demand or opportunity is then evaluated and developed by innovation, risk-taking and defeating forces of resistance by the entrepreneur, in both his external and internal environment, to start a new venture or produce new products or services for the market place (Kuratko et al., 2011; Rwigema et al., 2008; Shane, 2003; Stevenson & Jarillo, 2007; Venter et al., 2015).

The theoretical base of this study lies in the Schumpetarian, Kirznerian and Shanian models of entrepreneurship and the entrepreneurial processes and behaviour will be discussed based on these models (Shane, 2003)

Entrepreneurial Process:

- *Identification of opportunities:*

Barringer and Ireland (2010) define an opportunity as a favourable environment which creates the need for new ventures, products or services. Shane (2003) defines an entrepreneurial opportunity as:

“a situation in which a person can create a new means-ends framework for recombining resources which the entrepreneur believes will yield a profit “ (p.18).

Identification of an opportunity is a complex process by which the entrepreneur discovers a prospective idea for a new venture, product or service. Individuals discover opportunities based on access to information on the existence of the

opportunity with influence from experience, social networking and prior knowledge of markets. The individual is further motivated by cognitive processes (knowledge structures) such as creativity, sensing, intuition and risk-taking propensities (Shane, 2003; Urban, 2012).

According to Barringer and Ireland (2010), the process of identification or discovery, requires research, exploration, surveying and evaluation of the needs and demands of customers within the trends in the business and external environment. The opportunity can then be developed into a product to present in the market place, as long as the market for this product exists (Barringer & Ireland, 2010).

Hindle (2007) describes the discovery of an opportunity as a managerial skill and the evaluation thereof as entrepreneurial, as the evaluation process defines what needs to be done to achieve the expected outcome. Urban (2012) suggests that the skill of evaluation might just be the primary, most distinctive entrepreneurial skill as it can be applied across a range of cases.

Researchers like Shane (2003) do not recognise evaluation as part of the discovery of an opportunity process, but others like Hindle (2007) and Ardichvili et al. (2003) suggest that opportunities need to be evaluated throughout the development process to conclude whether exploitation is viable or whether the process needs no further consideration.

- *Exploitation*

Shane (2003) and Urban (2012) note that deserving opportunities need a decision about whether to exploit, modify or reject the opportunity. Researchers like Shane, are not convinced that the entrepreneur himself needs to follow identifying an opportunity through to exploitation and implementation. These actions can be performed by others, as long as the business plan and strategies are in place. The entrepreneur will judge the amount of risk involved in the exploitation process. The propensity to take risks differ between entrepreneurial and non-entrepreneurial individuals as certain types of bias exist in perceiving less or more risk (Urban, 2012).

In the exploitation process, the opportunity is tested for value, marketability and profitability. The value is tested against criteria such as durability, timeliness, attractiveness and compatibility of the goals and objectives of the entrepreneur (Urban, 2012).

Shane (2003) indicates that individual factors like non-psychological (opportunity cost; education; career experience; marital status; household income; social position) and psychological (personality, perceptions, motives, self-evaluation and cognitive) characteristics influence the decision to exploit the opportunity. Environmental factors (industry, institution, economic, political and cultural) influence the willingness and ability to further the development process.

- *Resourcing*

The third stage is determining and organising resources into new combinations and then allocating the necessary resources. The entrepreneurial process needs an assessment of the appropriate resources and whether sufficient resources are available to implement the new product, service or venture (Barringer & Ireland, 2010). Or, whether the organisation, if lacking the necessary resources, will be capable of obtaining resources by outsourcing, to ascertain a successful implementation.

This includes both financial, non-financial, human and intellectual capital and skills as resources, to make this an economically attractive proposition (Barringer & Ireland, 2010; Urban, 2012).

- *Execution*

Once resources are secured, with the business plan and strategies in place, execution or implementation can follow. Development of strategies for these new ventures means examining operational issues and planning for the implementation throughout the business cycle of that product or service (Barringer & Ireland, 2010). The management process involves determining the variables for success, establishing a control system with the implementation of structures and systems for sustainability and growth. This happens within the

parameters and boundaries as prescribed in the EVS and CES of that company (Urban, 2012; Venter et al., 2015).

Entrepreneurial Behaviour

The individual entrepreneur is seen as the creator of a new venture, the change agent whose behaviour focuses on the outcomes of this new creation (Urban, 2012; Venter et al., 2015). Researchers study the everyday behaviour of entrepreneurs in the workplace to find the underlying motivational constructs, personality attributes as well as attitudes which define their profiles and entrepreneurial actions (Venter et al., 2015).

The five most important personality dimensions of entrepreneurship, according to McClelland (1965); Venter et al. (2015) and Bandura (1997) are:

- Need for achievement

McClelland (1965) suggests the most important motivational need of entrepreneurs to be achievement, affiliation and power. Entrepreneurs are perceived as wanting to work alone with a high premium on independence to accomplish and achieve challenges and goals. They thrive on social interaction to seek approval from others to avoid conflict and confrontation. They need to be in control of their own destinies, environments, resources and colleagues (Venter et al., 2015), although achievement as motivator is more important to them than power.

- Need for autonomy

Achievement as the most important motivator, (Venter et al., 2015) indicates that entrepreneurs need autonomy to challenge themselves, to be self-directing and owner-managers to express themselves and to successfully fit into the entrepreneurial environment. This explains why entrepreneurs like to work for themselves or in smaller companies where they experience more freedom. They perceive bigger organisations as stifling to their creativity and innovative behaviour (Venter et al., 2015).

- Locus of control

Locus of control refers to the amount of control that individuals perceive to have over their own lives which is impacting the results they want to achieve (McShane & Von Glinow, 2003). Internal locus of control suggests that individuals decide on their own future with accountability for the mistakes they make. They monitor their actions to adapt their reactions and behaviour (Venter et al., 2015).

- Risk-taking

Literature on the entrepreneurial orientation of organisations indicates that entrepreneurs are innovative, pro-active and risk-takers. The entrepreneurial process indicates a propensity to take risks as the outcome of exploitation may be unwanted and is uncertain. Baron (2004) suggests that entrepreneurs have reduced perceptions of risk, which is why they are optimistic, opportunistic and act innovative. Risk is a reality for entrepreneurs, as the expected outcome of the opportunities and ventures they undertake may fail or show lower profits than expected (McClelland, 1965). This presents the problem of losing financially, emotionally, career opportunities, family support or social acceptance (Venter et al., 2015).

- Self-efficacy

Bandura (1997) defines self-efficacy as people's perceptions of their own capabilities and actions to perform and achieve their designated goals. This will influence an individual's choice of challenges and opportunities, reactions and coping mechanisms, as well as perseverance when facing difficulties. The focus is on the capabilities of performance and not necessarily on expectations (Bandura, 1997; Venter et al., 2015). Entrepreneurs are motivated by self-efficacy as they belief that they have the abilities to be successful in opportunistic and risky circumstances. Attitudes, beliefs and values play a role in entrepreneurial intention and motivation to challenge themselves to take risks and in the belief that their self-efficacy will let them achieve their goals with a low probability of failure (Venter et al., 2015).

2.2.5 Entrepreneurial Orientation (EO)

The main problem is restated for convenience:

> *Main problem:*
>
> *Describe the relationship between the organisational architecture of a corporation and the entrepreneurial process, typified in the process of discovery, evaluation, exploitation and implementation of entrepreneurial opportunity by its owner-managers within the entrepreneurial orientation of that company. Success or failure as perceived by the owner-managers at specific stages of the entrepreneurial process will influence these actions.*

Entrepreneurship is a variable (Kuratko et al., 2011) and as such can be found in all organisations and individuals or teams. Bull and Urban (2008) and Schindehutte et al. (2000) point out that entrepreneurship should be at the core of any organisation's strategies, thinking-patterns and decision-making. Top management has to instill the spirit and mindset of entrepreneurship into the culture and systems of a company; encourage, guide and justify the EO and communicate these to all levels of management. It is especially the middle-management level that needs to reconcile the EO process by endorsing the strategies, vision and perspectives from top management and sell the implementation thereof to lower levels (Hornsby et al., 2002; Kuratko, Montagno, & Hornsby, 1990). Management needs to think and plan strategically, (ESV and pro-entrepreneurial architecture), but act or behave entrepreneurially (entrepreneurial processes and behaviour) (Burns, 2010; Covin & Slevin, 1991; Hornsby, Naffziger, Kuratko, & Montagno, 1993).

Guth and Ginsberg (1990); Lumpkin and Dess (1996); Zahra and Covin (1995) describe EO as a means whereby companies and individuals are willing to take risks, innovate and be proactive in acting on opportunities to revitalise the company in the competitive marketplace to gain growth and financial equity. Brown et al. (2001) indicates that all companies possess EO in various combinations and levels, whether high or low, and that EO has a long-term effect on the firm's performance. According to Zahra and Covin (1995),

companies with a strong EO have the advantage in that they act pro-active to target specific market segments and exploit emerging opportunities in an innovative way. This puts them ahead of their competitors in the industry and enables them to maybe charge higher prices.

The nature of corporate entrepreneurship can be measured in terms of the degree of EO (risk, innovation, pro-activeness) in that company. However, Morris and Sexton (1996) identified another dimension of entrepreneurship, namely entrepreneurial intensity (EI) which suggests that the frequency in which a company acts entrepreneurially by recognising and exploiting opportunities for new products, ventures, processes or services also needs to be measured. Entrepreneurial intensity will not be measured for the purpose of this study.

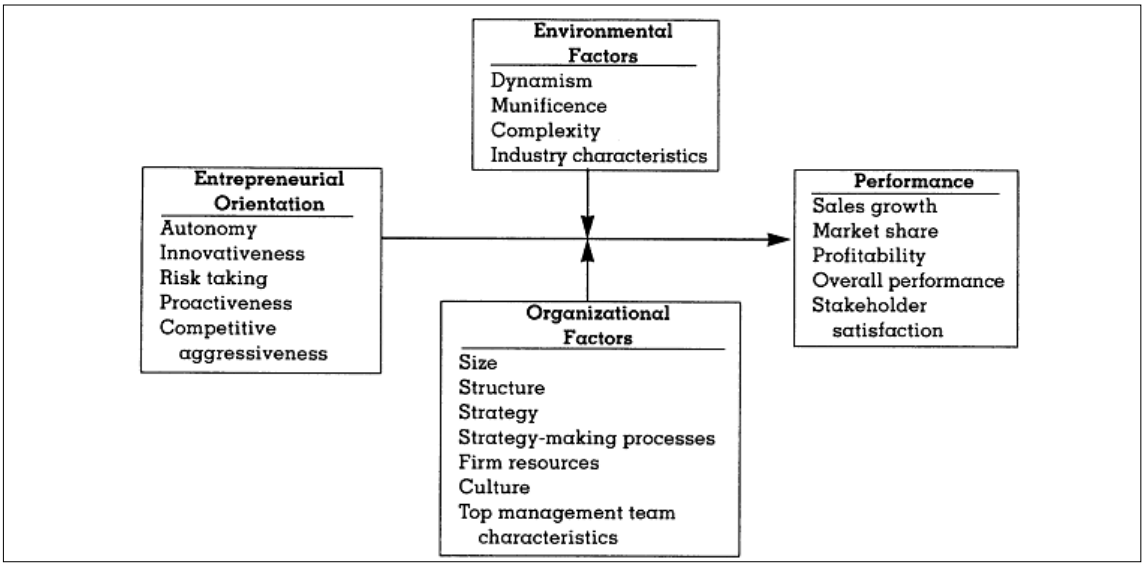

Figure 8: Conceptual Framework of EO, (Lumpkin & Dess, 1996)

Miller (1983) suggested the measurement of a firm's degree of entrepreneurship by developing the Miller EO scale. Covin and Slevin (1986) refined the scale and this instrument is now known as the Miller/Covin-Slevin EO scale. They suggested three dimensions to be evident in entrepreneurial orientation, namely innovativeness, risk-taking and pro-activeness. These are measured with a 9-item Likert scale: innovativeness (3 items), risk-taking (3 items) and pro-activeness (3 items). Lumpkin and Dess (1996) added two more dimensions (Figure 8), namely, competitive aggressiveness and autonomy

dimensions, but these are not used as often in research and measurement of EO than those of Miller/Covin-Slevin.

Corporate entrepreneurship sets the context for innovation by providing the infrastructure needed to support and sustain innovation over time.

Innovativeness can be defined as the willingness of employees (individually or collectively) within companies to make changes, react on disruptions, design and develop new, improved sometimes unique ideas, products, services and processes. This will ensure that the company has a competitive edge in the marketplace in terms of profitability, income and market share (Antoncic & Hisrich, 2001; Kuratko et al., 2011; Ostojić Mihić, Umihanić, & Fazlović, 2015; Porter & Van der Linde, 1995; Rwigema et al., 2008; Urban, 2012). According to Engel (2011), innovation is not just a matter of adapting to new radical technologies and developing new products, it is a continuous process of experimentation and revision that needs to activate all necessary available resources to succeed.

Individuals and teams in business units, have to be empowered (owner-manager) to freely and quickly decide on viable opportunities for adding value, inside or outside the company (Ireland et al., 2009). The decisions need to fit within the operations and strategic lines of that company. They need to focus their efforts on this process long enough to have a sustainable advantage, but also, impact or penetrate the market with industry-shifting ideas, before their competitors win the market share. Therefore, it is important for managers to attract and give priority to performers with entrepreneurial talent, who will, by looking at their surroundings, envision a future with radical and disruptive changes and developments, resulting in rapid growth for their companies (Engel, 2011; Kuratko et al., 2011; Urban, 2012).

Risk-taking involves a reasonable awareness of all risks involved in all innovations or opportunities that might incur losses or failures for the company. By exploiting the opportunities identified and taking the risks, there might be an impact on profitable performance and growth for the company (Kuratko et al., 2011). Management normally takes calculated risks with regard to resources,

products, services and markets implicated in new activities. It avoids or defers introducing new initiatives until such time that there exists acceptable probability to achieve the strategic intent of the initiative. The project will be successful and fit in with the strategy and budget to add value, with as little resources as possible needed to achieve this. Sometimes middle management want to get internal support, recognition and rewards by minimising new and risky activities, and only partake in proven, successful acts and solutions so as to look good in achieving its department's goals (Antoncic & Hisrich, 2001; Engel, 2011; Kuratko et al., 2011; Ostojić Mihić et al., 2015; Porter & Van der Linde, 1995; Rwigema et al., 2008; Urban, 2012; Zahra et al., 2000).

Pro-activeness in companies relates to the active perusal of value creation for a specific market and its customers. The company achieves this by matching market needs and the company's ability to integrate its product or services as offering (Urban, 2012). Innovation occurs when the company exposes a gap against their offering and the market needs. Pro-activeness will lead them to substitute this gap with an appropriate product, before the market even realises the existence of this gap. Strategy will expose the gap to the market once the innovation process to fulfil the gap has been completed, and an applicable product or service is available (Engel, 2011; Lumpkin & Dess, 1996; Rwigema et al., 2008; Urban, 2012; Zahra et al., 2000). Kuratko et al. (2011), state that competitive advantage will only be maintained through entrepreneurial pro-activeness and not by being reactive.

Brown et al. (2001), compared the Stevenson EM scale with the EO scale of Miller/Covin-Slevin and concluded that entrepreneurial orientation and entrepreneurial management, measure different aspects of the complex concept of corporate entrepreneurship. They suggest that researchers combine the two scales into one measurement instrument, like a questionnaire, to get a complete and reliable finding.

The entrepreneurial orientation, behaviour, processes and strategies of companies are influenced by the external and internal environments around them.

2.2.6 External and Internal Environments

In the twenty-first century companies need to adapt to changes in environments and align themselves with customers' needs to cope effectively, stay profitable and competitive, with high levels of performance by both individuals and the company itself. The business atmosphere and competitive surrounding landscapes may be characterised and influenced by pressures of increased risk, volatile changes, radical disruptive technologies, new flexible structural forms and boundaries, as well as innovative mindsets (Hitt & Reed, 2000).

In the corporate entrepreneurial company it is important that the CES supports, facilitates and supplies infrastructure, administrative mechanisms, rewards and resources to implement and promote new ventures (Ireland et al., 2009). This is done by utilising the expertise and skills of employees to develop, transform, improve and test existing systems, processes and opportunities; or to discover and exploit new opportunities into new ventures in the environments they serve (Covin & Miles, 1999; Hornsby et al., 2002; Kuratko et al., 2014; Kuratko et al., 2011; Lumpkin & Dess, 1996; Magala et al., 2007; Van Wyk & Adonisi, 2012; Zahra & Covin, 1995). Companies are not immune to the forces of the environments they operate in and need to adapt or face failure and closure.

2.2.6.1 External environment

To be successful as innovative and entrepreneurial, the company has to be aware of the competitive realities and its position in the marketplace within the local and global financial markets. Continuous changes in the external environment force companies to take correct, proactively, timely and appropriate decisions to align their internal environment and entrepreneurial actions and strategies to maintain optimum levels of productivity, growth and success (Kuratko et al., 2014; Van Wyk & Adonisi, 2012).

According to Covin and Slevin (1991); Zahra (1993) and Antoncic and Hisrich (2001), a competitive advantage and industry growth with enhanced performance, does not only come from improving the quality of services and products, lower costs or the development of new products and services. But,

lies in all aspects of an entrepreneurial culture, which includes factors like flexibility, adaptability, proactive decision-making, risk-taking, innovative behaviour, visionary management, awareness of environmental changes and market-orientation.

Hornsby et al. (2009); Kuratko et al. (2014); Van Wyk and Adonisi (2012) and Wiklund and Shepherd (2011), state that the factors in the external environment that influence the entrepreneurial and innovative actions of companies, and which have to be taken into consideration in the reaction of the company in its financial endeavours, are:

Customers and the communities which the company serves – They have a need or want for the products or services of the company. The company must exceed the customer expectations and focus on customer satisfaction to retain or enlarge its customer base, add value to their needs and subsequently stay in business.

Suppliers, service providers and creditors - The company's relationship with them could be beneficial for the gathering of information on its competitors and role-players in the marketplace. They may supply advice on new products, opportunities, threats and technologies on the horizon. This will keep the company pro-actively in the forefront of developing new strategies, services and products based on the dissemination and utilisation of the information received.

Local and provincial governments and labour laws – Companies need to be aware of guidelines, regulations, laws and policies issued by these governments, as well as the assistance given to businesses and industry growth in the economic structure of the country or the financial sector in which the company operates. In South Africa, banks operate under the Banks Act of 1990, within the legal frameworks and regulations by The Banking Association of South Africa, The South African Reserve Bank and the Financial Services Board. Internationally, banks in South Africa are regulated by principles laid down by the International Monetary Fund and Basel II international financial practice framework (Venter et al., 2015). Labour laws, regulations and policies might have a huge impact on the economically viable and entrepreneurial

culture of the companies in South Africa, especially with changing demographics after democratisation and initiatives like B-BBEE and affirmative action (Venter et al., 2015).

Local and global economic markets – *Markets* could be violent, turbulent and threatening with social and political unrest, like terrorist attacks and refugee problems; changing markets such as the Brent crude-oil market or mineral prices and environmental disasters, including earthquakes, fires or floods. Or, it could be positively economically alive with opportunities for new imports, exports, investments and manufacturing possibilities. At the moment, South Africa and especially financial institutions, keep an eye on the exit of Great Britain from the European Union, the so called Brexit and the change in presidents in various countries.

Technological developments - Innovation and technology shapes and reshapes the present and the future. It changes the way people experience the world. It fosters a direct influence on behaviour in personal as well as in corporate environments. Society adopts new ideas and methods to pro-actively change thinking patterns and skills to develop into people who work, live and play to their fullest potential (Shen & Eder, 2009).

Globally, a wealth of trends and technologies evolve daily to shift boundaries and disrupt the corporate world of the past and the present. Some technologies grow and develop faster than others. For companies to future-proof themselves, management needs to navigate the technological environment to assess the implications of the latest technologies, like virtual reality, internet and cloud computing (Barreira et al., 2011; Venter et al., 2015)

Companies need to invest in Technopreneurship which identifies opportunities to combine scientific or technical skills, knowledge and resources into new commercial, technology-intensive strategies, visions, goals and products. These might change the reality of their world or working environment, and that of their customers, who need to adopt these changes. Management needs to implement these chan

ges amidst constraints to reshape the future for profitable competitiveness. (Allen & Stearns, 2004; Antoncic & Prodan, 2008; Shane & Venkataraman, 2003; Venter et al., 2015; Zahra, 1993)

Competitors and role players – Organisations need to be aware of all role players and competitors in the marketplace to react immediately and timely on threats from these role players. These are not always expected or predictable, but banks need to be responsive to these threats and adapt themselves to maintain a competitive advantage in the financial market it operates in.

2.2.6.2 Internal environment

Hornsby et al. (2009) advise that a company needs to be aware of the external environment and its threats and opportunities to align its internal entrepreneurial innovative environment and actions with these conditions. This will create possible new ventures and increase its competitiveness and economic actions in the current financial market place.

Corporate entrepreneurship enhances the ability of the company to acquire and utilise the motivation and skills of its employees. This leads to continually embracing and developing new opportunities to innovate and grow the portfolio of the company in its economic and financial actions in the work- and marketplace.

Hornsby et al. (2009); Kuratko et al. (2014) and Wiklund and Shepherd (2011) see the following as factors which might encourage or discourage entrepreneurial behaviour in the internal environment in a company:

Top Management Support – Employees might have a perception that entrepreneurial activities are the responsibility of management. It is usually management's task to facilitate, promote, communicate and develop enabling conditions, innovations, processes, actions and reward systems. They further need to provide resources and support for innovative and entrepreneurial actions in the department or company.

It is important for management to be positive and the driving force behind championing entrepreneurial actions and innovative ideas. They should make provision for time, resources, administrative structures, corporate sponsors and mentorship in the collaboration of departments and individuals. Business strategies, visions, goals, structure platforms and implementation channels for all levels of employees and lower management should be communicated by top management. This will sustain the entrepreneurial energy and ensure that the individual makes a link between his own work, the entrepreneurial actions of his department and the goals of the company as a whole (Ireland et al., 2009; Kuratko et al., 2014).

Damanpour (1991); Floyd and Lane (2000); Hornsby et al. (2002); Ireland et al. (2009); Kuratko et al. (2001); Kuratko et al. (2011) suggest that every employee should have the willingness and innovative spirit to be able to institute or create ideas. This is done through improving products or processes, challenging existing strategies and procedures, taking calculated risks with the freedom to fail and learn a lesson. Employees must keep the best interests of the company at heart while partaking in entrepreneurial actions.

The morale and attitudes of employees towards their workplace and company are affected by the conditions in the workplace, as well as the perceived support they experience. The CES (as developed by management) should encourage a pro-entrepreneurial and actionable architecture within the company where employees will have the freedom to partake in innovation processes enabled by either cognitive (create ideas) or implementation (new product) and execution abilities they possess (Ireland et al., 2009; Kuratko et al., 2011).

Management support is not perceived the same way by all employees. Those on higher levels, like middle and senior management might perceive a lot more support from top management. They have more contact and discussion in meetings and correspondence and are closer to top management than the lower levels of employees. Middle management determines the implementation of these entrepreneurial actions by identifying opportunities to exploit; deploy resources and capabilities and reconcile perspectives from the top into

autonomous behaviour in their business units (Hornsby et al., 2002; Kuratko et al., 1990).

Work Discretion – Communication between management, employees and co-workers should allow each staff member to feel that innovation and entrepreneurship is the task of each and every employee. Hornsby et al. (2002); Kuratko et al. (2001) and Kuratko et al. (2014) advise that work conditions and the support and attitude of management should instil in the employees a belief that decision-making, authority and responsibility is delegated to himself (owner-manager). Individuals are encouraged to recognise and develop ideas and opportunities at their own discretion, to engage in risk-taking and experimentation with the support and mentorship of their superiors. This must include a toleration for failure and the possibility that the innovation might not bring the growth that was envisioned.

Rewards – For employees to feel valued, they are influenced by the extent to which rewards and reinforcement systems recognise their efforts, commitment, innovative entrepreneurial actions and risk-taking. This could have a positive effect on their job-satisfaction and personal fulfilment (Hornsby et al., 2002). Rewards and incentives could motivate employees to innovate, take risks, act entrepreneurial, partake in projects reaching not only the company's goals, but also their own goals for enjoying success and growth, personally and financially (Kuratko et al., 2014).

Time availability – Demanding routines, work-loads and day-to-day schedules might leave the employee with little or no time to act entrepreneurial. His focus is on problem-solving, paperwork, outputs and to achieve the goals set for his job level. This might create the perception that entrepreneurial initiatives are out of reach, because employees do not have time to investigate or spot opportunities or threats that might be developed into innovative products.

Research shows that extra time encourages new ventures and that might be why such endeavours are normally initiated by management who have more time on hands (Kuratko et al., 2014). It is part of management's responsibilities to scan environments and markets for opportunities to add value to customers'

perceptions and needs, in the process adding to the profit margins of their companies (Hornsby et al., 2009; Kuratko et al., 2014; Shepherd, McMullen, & Jennings, 2007).

Organisational boundaries – Management and employees need a vision and a clear map of the route they need to take to reach their goals and the company's financial profit margins. They operate in highly dynamic and complex environments and need structures, policies, processes and resources to be planned and available for individuals or teams to champion their entrepreneurial ideas. Innovative outcomes should be structured and planned, encouraging individuals to be productive in following the norms, values, rules and regulations of the company (Kuratko et al., 2014; Magala et al., 2007).

It should be made clear that innovation and entrepreneurship is not just the responsibility of management, research and development departments or the innovation champions of banks and is not necessarily restricted by organisational boundaries and red tape.

Hornsby et al. (2002); Kuratko et al. (2014) and Van Wyk and Adonisi (2012) find that companies need to be flexible and pro-active to react on changes in their environments, internally and externally. Research shows that flexible, informal environments and working climates, enhance and promote entrepreneurial actions, creativity and the flow of communication, information and ideas between employees, teams, departments and management.

Managers must manage, influence and measure these antecedents or dimensions to develop strategies and organic structures, such as the corporate entrepreneurship strategy (CES) and the entrepreneurial strategic vision (EVS). They further need to develop staff members and to reinforce, encourage and promote entrepreneurial behaviour and innovative actions.

Research emphasises the need for corporate entrepreneurship (CE) to be embedded in a company's structures, systems and all individuals to encourage innovation (Ireland et al., 2009). This means that companies have to exploit opportunities that already exist, while discovering new opportunities and execute them into new ventures, products or services to increase growth,

profitability, success and survival (Antoncic & Hisrich, 2004; Covin & Slevin, 1991; Kuratko et al., 2001; Kuratko et al., 2011; Lumpkin & Dess, 1996; Urban, 2012; Venter et al., 2015; Zahra & Covin, 1995; Zahra & O'Neill, 1998).

2.2.7 Sub-problem 3: Success or Failure

Sub-problem 3:

Evaluate the effect of success or failure on the relationship between organisational architecture and entrepreneurial processes and behaviour on the entrepreneurial orientation in the organisation.

Creative individuals in an organisation behave entrepreneurially by taking risks to foster development of new ventures and products. This entrepreneurial process involves discovery, identification, evaluation and implementation of an innovative product (Kuratko et al., 2001; Shane, 2003; Urban, 2012).

The personality characteristics of these entrepreneurial individuals include the need for achievement, autonomy, locus of control, risk-taking and self-efficacy (Bandura, 1997; Urban, 2012; Venter et al., 2015). Their actions are driven by psychological motivators to meet and exceed their goals and entrepreneurial actions. These motivators are not the same for all people, as some employees will be motivated by success, achievement and power incentives, while others need to be rewarded financially (McClelland, 1965). The environments in which these entrepreneurs operate may also influence their actions, decisions, attitudes, beliefs, perceptions and values (Kuratko et al., 2011).

The entrepreneurial process in an organisation is a function that must be managed from the top-down by recognising innovation as important for competitive advantage, survival and profitability. This is done by implementing programmes and structures to improve the process, by building on capabilities and by improving financial performance and competitive position (Jaruzelski, Staack, & Goehle, 2014).

The challenge of innovation implementation lies with top management to decide on opportunities to implement and then to get the commitment from all

employees to adopt this innovation (Klein & Sorra, 1996). The implementation process can be successful or unsuccessful, although literature lacks models that explain the difference between these two (Blazevic & Wünderlich, 2011). Karim, Somers, and Bhattacherjee (2007) suggest that "the degree of implementation success is considered a better indicator for innovation quality than the degree of adoption success" (p.103). Not all ideas adopted by decision-makers are implemented, some are dropped along the process or fail.

2.2.7.1 Drivers of implementation success:

When trying to explain innovation implementation success, researchers focus on either employee related aspects on an individual level (behaviour) or organisational aspects like management support, structures, strategies and resources (entrepreneurial architecture) (Chang, Chang, Chi, & Chiu, 2009). Best results of implementation and innovation effectiveness are obtained when management support is combined with individual acceptance of the innovation to ensure a collective confidence and adoption in the organisation (Chang et al., 2009; Karim et al., 2007). The dynamics between the individual and management and their opinion-forming process are influenced by communication networks between different groups and levels of employees.

2.2.7.2 Drivers of implementation failure

Implementation failure occurs when the implementation process or the innovation itself fails (Klein & Sorra, 1996). Despite the fact that an innovation might be adopted and used in the workplace for some time, it might fail when employees use the innovation less frequently, less consistently and less diligently (Klein & Sorra, 1996).

Lindegaard (2010) and Klein and Sorra (1996) point to the top of an organisation to find the reasons for failure of implementation. They suggest that top management has a knowledge gap in their role in connecting all constructs necessary for aligning the firm's goals, objectives and strategies with innovation. Some of the reasons they give for failure are:

- unrealistic expectations from top management and a reluctance to act on innovation;
- the innovation strategy and vision is not defined properly, or managed poorly;
- a lack of resources (finances, capabilities, people, infrastructure) and time;
- too much focus on products and technology and too little on service and business plans;
- individuals or teams take locus of control and do not collaborate with other employees or groups;
- employees without the necessary skills, knowledge and experience to run innovation programmes;
- employees are not willing to take risks;
- too much emphasis on logging of innovations and too little on execution and implementation.

Companies need to simultaneously deliver results, make money, operate their core business and invest in entrepreneurial and innovative activities to perform at their peak.

2.3 Hypothesised model

When a research problem or question is identified, the researcher creates a hypothesis or assumption by speculating, guessing or suggesting a possible testable answer, or predicting an outcome for the problem. It is the given facts used as a basis for studying or evaluating the problem and relationship between the variables to propose an explanation. The hypothesis can be confirmed or rejected in the testing phase by comparing results. If, rejected a new hypothesis is created. If, accepted it could be developed into a theory (Blumberg, Cooper, & Schindler, 2014; Saunders & Thornhill, 2009).

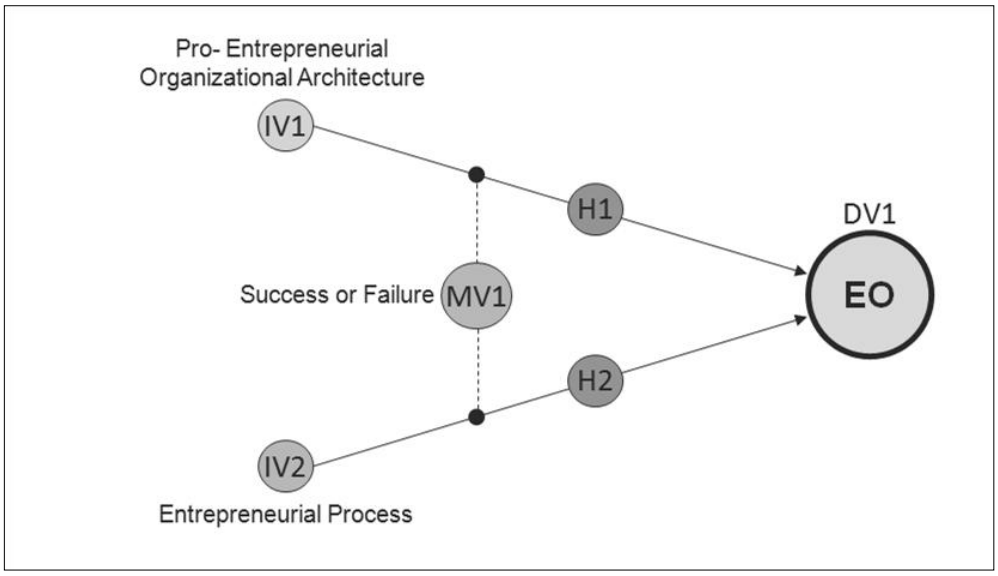

Figure 9: Hypothesis model, source: author

2.3.1 Hypothesis 1

H_o: There is no relationship between the elements of a pro-entrepreneurial organisation architecture and entrepreneurial orientation (EO).

H_A: There is a positive relationship between the elements of a pro-entrepreneurial organisational architecture in terms of (a) strategic orientation; (b) resources orientation; (c) management structure; (d) reward philosophy; (e) growth orientation and (f) entrepreneurial culture and entrepreneurial orientation (EO) in terms of (a) pro-activeness; (b) innovativeness and (c) risk-taking, where this relationship will be moderated by failure or success in implementation.

2.3.2 Hypothesis 2

H_o: There is no relationship between the elements of an entrepreneurial process and entrepreneurial orientation (EO).

H_A: There is a positive relationship between the elements of an entrepreneurial process in terms of (a) opportunities recognised (b) opportunities implemented and entrepreneurial orientation (EO) in terms of (a)

pro-activeness, (b) innovativeness and (c) risk-taking, where this relationship will be moderated by failure or success in implementation.

2.4 Conclusion

This chapter reviewed the literature on entrepreneurial orientation's importance in the construct of entrepreneurship. Substantial evidence for the existence of EO is outlined and discussed with various theories and models. This leads the researcher to formulate the following hypotheses.

Hypothesis 1

There is a positive relationship between the elements of a pro-entrepreneurial organisational architecture in terms of (a) strategic orientation; (b) resources orientation; (c) management structure; (d) reward philosophy; (e) growth orientation and (f) entrepreneurial culture and entrepreneurial orientation (EO) in terms of (a) pro-activeness; (b) innovativeness and (c) risk-taking, where this relationship will be moderated by failure or success in implementation.

Hypothesis 2

There is a positive relationship between the elements of an entrepreneurial process in terms of (a) opportunities recognised (b) opportunities implemented and entrepreneurial orientation (EO) in terms of (a) pro-activeness, (b) innovativeness and (c) risk-taking, where this relationship will be moderated by failure or success in implementation.

The researcher must establish whether the enabling conditions and activities of innovation, corporate entrepreneurship, entrepreneurial orientation, corporate- and management strategies and pro-entrepreneurial architecture, are in place in the organisation as subject of this study. Relationships between the variables need to be measured to indicate positive or negative outcomes. This is done by designing a research process (chapter 3), including all necessary methods,

instruments, methodologies and paradigms used to collect and analyse data. Statistical analysis in this study is used to measure and test the effect of the IV on the DV as a function of the MV. This means that the effect of pro-entrepreneurial architecture and the entrepreneurial process and behaviour on the entrepreneurial orientation of the company needs to be measured as a function of the success or failure of the implementation component.

CHAPTER 3 – RESEARCH METHODOLOGY

3.1 Introduction

As per the described research gap in Chapter 1 and 2, this study will focus on a detailed and intensive analysis of one company. The company is perceived to display continuous levels of entrepreneurial behaviour across all elements of the corporate entrepreneurship phenomenon and is in the financial environment (Brown et al., 2001; Stevenson & Jarillo, 2007).

Blaikie (2007) states that “anything that cannot be verified by experience is meaningless.” (p.98.) The researcher aims to gain knowledge through measurement, testing and observation of evidence such as existing theories in literature and statistics from the database of the organisation studied (Gill & Johnson, 2010; Saunders & Thornhill, 2009).

The responsibilities of the researcher include focusing on facts, causalities and drawing fundamental laws to their simplest forms, by being independent and objective towards the subject matter. Key theoretical concepts will be operationalised through hypotheses formulation and testing.

The researcher is currently employed by the company where the case study was conducted. This implies a certain amount of knowledge and understanding on the complexity of the operations and relationships in this company. Due to this fact, the researcher must be very conscious of assumptions, preconceptions and a presumptuous mentality which might be a consequence of knowing the context (Maxwell, 2012; Maxwell, 1984).

Although the researcher might be seen as subjective, in the words of Peshkin

> *My subjectivity is the basis for the story that I am able to tell. It is a strength on which I build. It makes me who I am as a person and as a researcher, equipping me with the perspectives and insights that shape all that I do as a researcher, from the selection of a topic clear through to the emphases I make in my writing. Seen as virtuous, subjectivity is something to capitalise on rather than exorcise (p.104) (*Glesne & Peshkin, 199*2)*

3.2 Population and Sample

A critical case study was selected as means of collecting data on a sample frame of 17,611 employees of a bank in the financial economical sector in Johannesburg, South Africa. This organisation received the BAI Global Most Innovative Bank Award in 2012. The BAI-Finacle Global Banking Innovation Awards recognise the organisational leaders of innovation in the financial sector and act as a catalyst for innovation in the financial service industry worldwide. ("BAI Finacle Global Banking Innovation Awards ", 2012)

The bank is perceived as entrepreneurial and innovative by demonstrating entrepreneurial activity and a consideration for most of the elements of corporate entrepreneurship strategy (Ireland et al., 2009). It has won numerous innovation awards and accolades in the financial environment. This leads to the company incrementally introducing innovative products, processes and services.

Although the researcher is an employee or internal researcher, consent or formal approval from within the organisation, to gain access to employees and data, was needed. To achieve this, the competence and integrity, as well as a clear and concise explanation of the intended research objective, data to be collected and methods to be used, was conveyed. There might be suspicions and perceptions within the organisation about the use of the data by the individual, as well as his/her status in relation to participants and departments in the organisation. The researcher considered all appropriate issues and discussed these with management, to ensure that they trusted the intentions of the employee to produce useful reliable outcomes of a good quality (Saunders & Thornhill, 2009).

Two general methods for selecting a sample exist: probability and non-probability sampling (Saunders & Thornhill, 2009). Probability sampling indicates that every employee in the population has a chance or probability to be selected for the survey, and is seen as more independent and objective. Whereas, non-probability sampling may be seen as more subjective as the selection process is often at the discretion of the researcher (Blumberg et al., 2014; Cooper, Schindler, & Sun, 2003).

Sample size is influenced by factors such as variance within the population, precision and a small error range desired, representativeness of the entire population, costs and meaningful statistical analysis. Bartlett (2001) indicates that the sample size be increased with 40-50% to account for non-response when questionnaires are used.

To generalise the results across the population, a sample of sufficient numerical size was selected for reliable statistical outcomes. The researcher needed to gain access to the intended participants as well as the primary sources of data available, to address the research question (Buchanan, Boddy, & McCalman, 1988; Saunders & Thornhill, 2009).

The sample for the entire population (n=17,611), employees who logged innovations on the Innovator's Programme of the organisation, is stored as an accurate and easily accessible list on the company's database at headquarters. Approval was given by the organisation and access to the database for data collection and analysis was granted.

The sample size was screened for relevance and data integrity. Stratified random sampling prescribes the use of categorising the population into 'strata' which are relevant divisions, such as employees displaying entrepreneurial activity in certain stages of the entrepreneurial process. For a simple random sample, these divisional samples will be proportionately representative and randomly selected (Bryman, 2003; Saunders & Thornhill, 2009).

In the screening process, it became apparent that the planned stratified random sampling (Bryman, 2003; Saunders & Thornhill, 2009) would not be feasible. This was due to the lack of creditable data, defined as Strata1: Ideas Logged; Strata2: Ideas Implemented; Strata3: Ideas Won. The initial strategy behind this was to use these strata as a process construct in testing to analyse failure or success of implementation.

It was decided to not use three different strata draws of the sample, but rather to adopt a mixed non-probability sampling method. Convenience sampling was the cheapest and easiest as the researcher could use all employees of the organisation where he was employed, as respondents. Convenience sampling

will not ensure precision or accuracy, but will be useful to gain information and evidence on the constructs studied (Blumberg et al., 2014; Cooper et al., 2003).

Purposive or judgement sampling was used by the researcher to select respondents who conformed to certain criteria and where perceived to be biased towards entrepreneurial behaviour. This method might be more subjective as it relies on the judgement of the researcher.

The database used for sampling, included data of 17,611 participants logging ideas between 2005 and 2016, on the organisation's Innovators Programme. The sample group was filtered down (n=6,153) by using data for years ranging 2014 and 2015 only. This sample was screened by the number of ideas logged in that specific year ranging from the most to the least number of loggings. One participant managed to log 304 ideas during that one year, while the closest competitor logged only 76. This participant, with out-of-the-norm behaviour, was deleted due to the possibility of bias or incorrect use of the programme.

The research intent, to receive more insight into the entrepreneurial architecture, behaviours and processes, led the researcher to assume that participants who logged more than two ideas to be behaving entrepreneurial and to be included as possible participants. The sample was still fairly big (n=6, 153). To do a batch run and mitigate the potential risk of failure without diluting the entire sample, 2500 participants were chosen, including those who logged the highest number of ideas. This number was screened for non-personal emails i.e reflecting as not to be a human and for any other system or administrative email errors. The sample was reduced to (n=2,299) participants.

A sample size this big, dictated the use of an electronic survey platform and SurveyMonkey.com was investigated. Unfortunately SurveyMonkey.com could not accommodate the use of the preferred scale and therefore SurveyGismo.com was selected as electronic survey platform.

The literature review states the potential use of middle-level managers as sample group, (Kuratko et al., 2005), but with the organisations owner-manager culture it was not feasible to limit the survey to middle-level managers. The respondents ranged from junior to senior employee level. Top management

(exco/channel CEO's) was excluded, to lessen skewed findings in that management could be biased towards an entrepreneurial culture and activity (Kuratko et al., 2011).

A potential sample bias might present itself, through respondents associating themselves as being entrepreneurial due to the mere fact of being selected for the entrepreneurial survey completion. This bias will be taken into consideration when calculating empirical evidence over perceived desirability.

3.3 Data collection

One of the most widely used data collection techniques is by means of a questionnaire. It provides an efficient method to collect responses from a large samples of participants where each person responds to the same set of questions (Saunders & Thornhill, 2009).

When using the internet/intranet for distribution of questionnaires, the researcher needs a clear and specific timetable to identify all tasks and resources needed. The intranet approach ensures data capturing quality and reduction in the distribution time, opposed to manual and printed distribution (Blumberg et al., 2014).

It was decided to use a critical case study as strategy to do an empirical investigation and analysis of one company in the financial industry. The researcher has existing knowledge of the company, as well as the resources of the company available to him.

A quantitative method of data collection by using questionnaires was followed. This allows for responses from a large sample of participants on sets of questions in a structural way. According to Saunders and Thornhill (2009), this method generates reliable statistical and numerical results, especially if opinions of a large sample group are collected and analysed. The use of questionnaires allows the researcher to conduct the process from his desk.

Approval for distributing the survey was received from the organisation's Risk, Legal and HR departments. Wits Business School and the University of the Witwatersrand approved the research and registered the title of the research as: Corporate entrepreneurial behaviour, organisational architecture and the entrepreneurial process.

Distribution was done by using the organisation's intranet facilities. This means less time spent on interviews, calls, visits or other methods of data collection (Blumberg et al., 2014; Saunders & Thornhill, 2009). The aim, purpose and objectives of the research, and benefits to the organisation, was explained in a polite introductory letter, requesting access to data and getting the intended respondents interested in maximum participation (See appendix A). The researcher assured the participants of confidentiality, anonymity and ethical conduct of the collection and analysis process.

3.4 Measures

Rating scales are used to measure concepts and constructs by asking questions in a structured, designed way. This enables the researcher to gather information on properties of objects, like the attitudes of participants. Summated rating scales indicate levels of agreement or disagreement by the participant, by making use of numerical scores given to these responses. The scores are summed up to find averages. The position of positive and negative adjectives from left to right is varied to reduce the tendency of participants to read and choose only the adjectives on the left. This will also lessen the halo effect (Cooper et al., 2003).

The **Likert Scale** was used to represent the attitudes of the participants in expressing their preferences or level of agreement with the statements in the questionnaire. The responses on the items ranged from 1 to 10 with indication of agreement or disagreement on either the statement on the left or the right. The numbers indicate the degree of agreement.

Two-sided forced choice type questions are used to assess the respondent's view of the constructs in their company. A high score indicates a more pro-

entrepreneurial element of organisational architecture, while a low score indicates total disagreement. Reversed items marked ®, indicates a higher value for lower level of entrepreneurship and vice versa (Brown et al., 2001).

Each item can be analysed separately or grouped together with related items. This scale is simple to use, easy to complete and seen as highly reliable (Blumberg et al., 2014; Saunders & Thornhill, 2009). To ensure maximum response rate and consistency, it was decided to convert all measurement scales to a 10-point scale for all variables. The 10-point scale was also used by Brown et al. (2001).

This study adopts the deductive methodological approach, because of the usability of existing knowledge to formulate a hypothesis, which can be tested by analysing data with quantitative methods, to support the hypothesis (Gill & Johnson, 2010).

It involves starting out with existing theories, which is used to implicate the hypothesis, (a speculative, tentative and testable statement) about casual relationships between variables (characteristic, concept or phenomenon). These variables can be explained by generalised laws, predicted and controlled to confirm the theory, or modify it (Gill & Johnson, 2010; Saunders & Thornhill, 2009).

A variable is a symbol or characteristic which is operationalised through indicators. It has certain values and can be measured. The visual representations of the relationships between different variables are models. See 2.3 for the hypothesis model of the variables used in this study (Baron & Kenny, 1986; Blumberg et al., 2014).

An independent or predictor variable is the presumed cause or predictor of other variables, mostly the dependent variable. It influences the dependent variable to show the relationship between them as causal (Baron & Kenny, 1986; Blumberg et al., 2014).

The independent variables in this research, namely pro-entrepreneurial architecture and the entrepreneurial processes and behaviour is assumed to cause, manipulate or predict the dependent variable, entrepreneurial

orientation. These relationships might be influenced by the moderating variable, success or failure of implementation.

3.4.1 Independent Variable 1: Pro-entrepreneurial Organisational Architecture (CEA)

Organisational architecture as independent variable in this study, will be measured as an indication of opportunity-based entrepreneurial management, defined by Stevenson (1983) and Stevenson and Jarillo (2007). In the first model Stevenson (1983) describes six dimensions, namely: strategic orientation; commitment to opportunity; commitment of resources; control of resources; management structure and reward philosophy (Brown et al., 2001). Growth orientation and entrepreneurial culture was later added by Stevenson and Jarillo (2007).

Brown et al. (2001) developed a scale instrument (Stevenson's EM scale) to measure these dimensions as enablers for entrepreneurial management and behaviour in the organisation. This scale uses a 6-dimension (initially 8-dimensions, but because of overlapping was reduced to 6), 10-point Likert scale. The number of items may vary due to reliability, pre-testing, factor-analysis or whether specific aspects are investigated.

The constructs used on the questionnaire to measure the dimensions of organisational architecture within the specified company, are:

Stevenson's EM 20-item 10-point Likert scale **(**Brown et al. (2001)

1. Strategic Orientation (3-items)
2. Resource Orientation (4-items)
3. Management Structure (5-items)
4. Reward Philosophy (3-items)
5. Growth Orientation (2-items)
6. Entrepreneurial Culture (3-items)

3.4.2 Independent Variable 2: Entrepreneurial Process and Behaviour

The research question proposes the need to review the relationship between the entrepreneurial process and behaviour and EO.

In literature, the entrepreneurial process is seen as the discovery, exploitation and implementation of an opportunity (Barringer & Ireland, 2010; Kirzner, 1979; Schumpeter, 1934; Shane, 2003). In the organisation studied, innovation is seen as a process whereby new and novel ideas are generated to be implemented. As the banking industry is seen as quite conservative and heavily regulated, business performance or cost to income goes without saying.

To measure the entrepreneurial process as independent variable, 6 question items on a 10-point Likert scale, were designed. The items measure the employees' experience and knowledge of using the innovation programme on the logging of ideas (identifying opportunity), evaluation of ideas and the implementation thereof. The outcome further measures whether employees perceive logging an idea as indication that he needs to follow the process to implement the idea as well. The content of the questions corresponds with the terminology as used by the organisation within its online innovation process and entrepreneurial culture. This was done to not confuse employees and to receive higher response rates.

3.4.3 Dependent Variables: Entrepreneurial Orientation (EO)

A dependent or criterion variable can be predicted, affected and manipulated by an independent variable and can be seen as a presumed effect, outcome or consequence (Baron & Kenny, 1986; Blumberg et al., 2014). The dependent variable in this study, the entrepreneurial orientation (risk, innovation, pro-activeness) of the company is presumed to be influenced, caused or predicted by the pro-entrepreneurial architecture (strategic orientation, resource and growth orientation, management structure, reward philosophy and entrepreneurial culture) and the entrepreneurial processes and behaviour (opportunity recognition, exploitation and implementation).

The Miller/Covin-Slevin 9-item EO scale measures innovativeness, risk-taking and pro-activeness, with each item articulated as a pair of opposite statements on a 7-point Likert scale (Covin & Slevin, 1986, 1989). The scale was suggested by Miller (1983) to measure a firm's degree of entrepreneurship and further refined and developed by Covin and Slevin (1986). Brown et al. (2001); Lumpkin and Dess (1996); Wiklund (1998); Zahra and O'Neill (1998), suggest that this instrument is not comprehensive enough and has weaknesses. It measures current attitudes mixed with past behaviour, the pro-activeness dimension is ambiguous and it does not assess the process of opportunity seeking and exploitation (Brown et al., 2001). However, it still remains a widely used and reliable scale. Brown et al. (2001) indicates that the best results are obtained if the EO-scale is used in combination with the EM-scale.

Although Miller/Covin-Slevin used a 7-point scale, a 10-point scale is used to correlate with the 10-point scale as used in the EM scale, for statistical purposes.

The constructs used on the questionnaire to measure the dimensions of entrepreneurial orientation within the specified company, are:

Miller/Covin-Slevin EO (Miller, 1983)

1. Innovativeness (3-items)
2. Pro-activeness (3-items)
3. Risk-taking (3-items)

3.4.4 Moderating Variable 1: Success or Failure in implementation

A moderating or interaction variable is a qualitative (gender, race, etc.) or quantitative (level of reward, etc.) variable that impacts or contributes to the direction and strength of the relationship between an independent / predictor variable and a dependent / criterion variable. It must be uncorrelated to the IV and DV and it implies the causal relation between the two as a function of the moderating variable. (Baron & Kenny, 1986; Blumberg et al., 2014).

Innovations or ideas implemented need to have specific outcomes to yield results and create value. Ideas are worthless unless they can be successfully implemented as a positive innovation with radical impact (Gaylard, Sutherland, & Viedge, 2005). Management need to decide and describe in the entrepreneurial and innovation strategy how and when innovations are rewarded.

Depending on the analysis of data, the ideas logged, implemented and rewarded, will be classified as success over ideas implemented (Kuratko et al., 2011).

To measure the construct of the employees perception of success or failure in implementation of generated ideas and whether or not, the Innovator's Programme enhanced this implementation, 3 questions on a 10-point Likert scale were included.

Table 1: Table of Measures

<table>
<tr><td rowspan="3">DV1
Entrepreneurial Orientation (EO)</td><td colspan="3">Innovativeness</td><td>Item 1
Item 2
Item 3</td></tr>
<tr><td colspan="3">Pro-activeness</td><td>Item 1
Item 2
Item 3</td></tr>
<tr><td colspan="3">Risk-taking</td><td>Item 1
Item 2
Item 3</td></tr>
<tr><td>MV1
Success or Failure</td><td colspan="4">Item 1
Item 2
Item 3</td></tr>
<tr><td rowspan="6">IV1
Pro-Entrepreneurial Organisational Architecture</td><td>Strategic Orientation</td><td>Item 1
Item 2
Item 3</td><td rowspan="6">IV2
Entrepreneurial Process</td><td rowspan="6">Item 1
Item 2
Item 3
Item 4
Item 5</td></tr>
<tr><td>Resource Orientation</td><td>Item 1
Item 2
Item 3
Item 4</td></tr>
<tr><td>Management Structure</td><td>Item 1
Item 2
Item 3
Item 4
Item 5</td></tr>
<tr><td>Reward Philosophy</td><td>Item 1
Item 2
Item 3</td></tr>
<tr><td>Growth Orientation</td><td>Item 1
Item 2</td></tr>
<tr><td>Entrepreneurial Culture</td><td>Item 1
Item 2
Item 3</td></tr>
</table>

3.5 Data analysis

The complexity of data analysis will depend on the objectives of the research and the research questions. Unless the collected data has been processed and analysed by graphs, charts or statistics to turn it into useful information, it will have no meaning to the managers in the organisation (Blumberg et al., 2014; Saunders & Thornhill, 2009).

The quality of a study is determined by certain aspects such as credibility, neutrality, consistency, applicability and transferability (Golafshani, 2003). Research rigor in both documentation and appropriate and precise data collection is required to maintain quality.

3.5.1 Scale validity

A measurement scale should be accurate, valid, reliable, and an indicator of what is being measured. The design and structure of the questionnaire will need to ensure validity and reliability of the collected data, as well as the response rate achieved. Data needs to be valid and reliable to convey the intentions of both the researcher and the respondent, and to be understood by both as was intended (Blumberg et al., 2014; Guba & Lincoln, 1994; Saunders & Thornhill, 2009).

Validity (internal and external) tests the degree to which the researcher is measuring what is supposed to be measured. This means that the questionnaire needs to be designed in such a way that the results will represent the reality of what is measured (Blumberg et al., 2014; Saunders & Thornhill, 2009).

External validity refers to the data's abilities, in research findings, to be generalised across different settings, times, persons, tests and subjects and can be increased through random sampling. (Blumberg et al., 2014; Saunders & Thornhill, 2009).

Internal validity refers to the degree to which outcomes are caused by the independent variables under consideration and is very important in quantitative research, where relationships between variables establish cause and effect. This means that the questionnaire needs to be designed in such a way that the results will represent the reality of what you want to measure. (Blumberg et al., 2014; Saunders & Thornhill, 2009)

Blumberg et al. (2014) in discussing the validity of questionnaires, refer to *content validity* (where items in the measurement scale provide adequate coverage of the content guiding the study); *criterion validity* (where the outcomes of a measure make predictions and are compared with specific predetermined criteria) and *construct validity* (where a scale is measuring what it is supposed to measure, according to the theories for that construct).

As the instruments used in this study are based on existing tests and theories, construct validity was used. Factor analysis was used to evaluate whether items which was supposed to correlate highly was indeed loading highly on the same factor and not on different factors (Saunders & Thornhill, 2009).

3.5.2 Scale Reliability

Reliability tests the extent to which measurement results test consistent with the same results when tested repeatedly and is free of random error. It is a contributor to validity, but not a condition for validity (Saunders & Thornhill, 2009).

Blumberg et al. (2014) and Mitchell (1996) outline three approaches to assess reliability after data was collected: stability (repeated measurements of the same person with the same questionnaire over an interval of less than six months by using correlation); equivalence (concerned with variations at one point in time by studying alternative forms of the same measure by using correlation) and internal consistency. According to Cooper et al. (2003) and Santos (1999), internal consistency is important as it indicates homogeneity and high inter-correlations between items in the scale. The higher the correlation, the more similarity between the items measured (DeVellis, 2012). Calculation is

most frequently done by equating with Cronbach's coefficient alpha, (or Cronbach's Alpha as it is known) (Cronbach, 1951; Tavakol & Dennick, 2011).

The smaller the number of items in the construct (fewer than ten), the smaller the values for Chronbach's Alpha (Kuhn et al., 2010). Saunders and Thornhill (2009) suggest four threats to reliability, namely subject or participant error; subject or participant bias; observer error and observer bias.

3.5.3 Factor Analysis

SAS was used to fit the moderation models and correlation analysis. Varimax with Kaiser Normalisation rotation was applied. The Initial Eigenvalues greater than 1.00 were used to assess the number of factors, while Principal Component Extraction Method was used for factor analysis.

According to Kuhn et al. (2010); Tucker and Lewis (1973), factor analysis is a tool used in statistical measurement to represent the impact of a small number of hypothetical variables, with underlying factors on a larger set of observed variables. Two types of factor analysis can be identified: namely, exploratory and confirmatory (Kim & Mueller, 1994; Tucker & Lewis, 1973).

Factor analysis may start once the data set is evaluated for sample size and the strength of the relationships among the variables. Size has implications for reliability, strength of correlations and possible generalisation of findings (Kuhn et al., 2010; Tucker & Lewis, 1973). Literature suggests negative correlations (one variable increases, while the other decreases and vice versa) and positive correlations (both variables increase or decrease at the same time) (Saunders & Thornhill, 2009).

Kaiser-Meyer-Olkin measure (KMO) of sampling adequacy and Bartlett's test of sphericity to consider factor analysis appropriate, was used in evaluation of the data set (Bartlett, 1954; Tabachnick, Fidell, & Osterlind, 2001).

Factor extractions were done to find the minimum number of common factors that would produce and describe the relationships between the variables.

Various analysis techniques are discussed in literature to be used as measurement for association and relationship (Blumberg et al., 2014). For the purposes of this study the Pearson Product Moment Correlation Coefficient (PMCC), in short Pearson's Correlation, is used to indicate a linear relationship (Santos, 1999).

A regression analysis model, where estimations and predictions are used based on the relationships between the variables, is used to test the hypotheses. The known value of an observed variable (X) (or independent variable) is used to estimate or predict the unknown value of (Y) (or dependent variable) in the relationship. In the analysis of the data for this study a multiple regression model is used because more than one independent variable (X), with lesser or greater importance is specified as having an effect on the dependent variable (Y) (Blumberg et al., 2014; Stanton & Rogelberg, 2001).

3.6 Limitations

The following limitations were experienced and could have an influence on the outcome of this research:

- *Time constraint:* The researcher is enrolled as a student at WITS Business School for one year, thus, all research needs to be completed in this timespan. This leaves little or no time for: testing and re-testing; evaluating every possible factor which could influence the relationships and effects of the variables on each other and measuring the impact of all constructs on each other and the EO of the company.
- *Sampling constraint:* As the data on the database could not be used to correctly stratify the sample, the researcher decided to use mixed sampling methods of non-probability. These methods of sampling are not as scientific and specific as that for probability sampling (Blumberg et al., 2014; Saunders & Thornhill, 2009). The sample is not necessarily representative of the total entrepreneurial population in the company as only those with the

highest number of loggings in the specific time frame of 2014-2015, was included.

- *Data analysis constraint:* As this is a cross-sectional study, analysis was done for a short period of time. The results might change with a longitudinal study (Saunders & Thornhill, 2009). The study did not measure the impact of success or failure of implementation on the EO and performance of the company, but measured the perceptions of success as perceived by the owner-managers.

Limitations, like bias, should be kept to a minimum to ensure the quality of outcomes. The researcher has to keep the following types of bias, as suggested by Pande, Neuman, and Cavanagh (2000) in consideration in designing the questions and in the analysis of the data:

- *social desirability bias:* Respondents give responses that they perceive to be the norm or socially desirable and not how they actually feel about the question. This implicates that questions need to be simple, in context and not threatening to the respondent, especially to his position in the company.
- *cultural bias*: Researchers need to be aware of the cultural differences of the sample population, which may influence the respondent's responses and the interpretation of the results. This implicates that the researcher should not be biased and where possible use research assistants to avoid subjectivity and judgement.
- *common method variance or bias*: A single method to collect data and self-report methods may give false or inflated outcomes on the relationship between the variables. This implicates questions that do not overlap and must be tested for construct validity (Spector, 2006).
- *non-response bias*: Non-completion of questionnaires or some of the items on the questionnaire may have an influence on the analysis of the data, the quality and validity of the research and

the estimation of the characteristics of certain items and the population's response thereof. This implicates a sampling approach where all respondents conform to the same characteristics.

- *endogeneity*: The regression analysis of the effect of variables on each other may be influenced to be in the reverse order as what is being tested. This often happens in management and entrepreneurial research as the mediator may sometimes act as both independent and dependent variable.

3.7 Ethical Considerations

In the conduct of research ethical concerns may occur and should be recognised and considered in all stages of the research project, from planning, seeking access, data collection, data analysis and report feedback. Research ethics refers to the manner in which you behave when conducting your research in relation to the rights of the participants and other researchers (Saunders & Thornhill, 2009). Privacy, confidentiality and safety of participants should be considered and informed consent is needed from them (Stanton & Rogelberg, 2001). The research process needs to be methodologically sound, but also adhere to social, moral and organisational norms and values (Blumberg et al., 2014). Data collection needs to be accurate, valid and reliable and the researcher must maintain objectivity throughout the research process.

Howe and Moses (1999) state that the integrity of research is determined by the authenticity of data and political issues surrounding research findings. Saunders and Thornhill (2009) suggest a need for researchers to comply to data protection legislation to protect the privacy and interests of the participants. The use of the internet and email generates the need for netiquette and to be aware of public and private data.

This study conforms to the University of the Witwatersrand's Ethics Policy of non-medical research and ethical considerations as prescribed by the School Ethics Committee. The guidance and procedures for conduct were followed to receive a clearance number.

3.8 Conclusion

All necessary precautions were taken to conduct an ethical process with a high premium on reliability and validity in the process of data collection and analysis. Limitations which might influence the results were taken into account.

CHAPTER 4: PRESENTATION OF THE RESULTS

4.1 Introduction

This chapter aims to present analysis and results in answering the hypotheses as discussed in Chapter 2, Literature Review and the Research Methodology as discussed in Chapter 3.

The below process was followed to obtain the results:

- Submit the survey with introductory letter to the allocated sample for completion, after approval was obtained.
- Use the data, after cleaning and screening for errors, to assess the validity of the constructs (Tucker & Lewis, 1973).
- Analyse the Cronbach's Alpha to assess reliability of the scale for each construct (Tavakol & Dennick, 2011).
- Factor analysis and extraction; computed summated scale, Pearson's Correlation, Multiple Regression Analysis and Moderating Equations were done (Saunders & Thornhill, 2009; Stanton & Rogelberg, 2001; Tucker & Lewis, 1973)
- The summated scale was used to fit a moderation model with entrepreneurial behaviour (EO) as the dependent variable, organisational architecture as an independent variable and failure or success in implementation, as the moderating variable.
- Another model with entrepreneurial behaviour (EO) as the dependent variable, entrepreneurial process as an independent variable and failure or success in implementation, as the moderating variable, was fitted.

4.2 Data collection

A pilot study was done to serve as a basis to refine the questions and layout of the questionnaire. It further tested assumptions in data capturing capabilities to assess validity and reliability.

Due to limitations on the security server of the organisation, the survey was distributed to batches of 200 participants at a time. The collection period started on 26 September 2016 and finished on 21 October 2016.

A response rate (n=376) was received after reminders were sent out. This was made up of:

- partial completion 52.65% or 198 questionnaires (n=376)
- full completion 47.34% or 178 questionnaires (n=376)

Speculation on the reasons and limitations for low response and partially completed questionnaires: (Saunders & Thornhill, 2009).

- A calculated time of 15 minutes for completion is too long.
- Participants did not understand the scale used.
- Participants did not receive the email.
- Participants were too busy to allocate time towards non work-related tasks.
- Aversion to the use of online surveys.
- Refusal to partake in the research.

4.3 Measurement Scale Characteristics

SPSS was used to assess the validity and reliability, while SAS was used to analyse to fit the moderation models and correlation analysis. Varimax with Kaiser Normalisation rotation was applied. The Initial Eigenvalues greater than 1.00 were used to assess the number of factors, while Principal Component Extraction Method was used for factor analysis.

4.3.1 Scale validity

Statistical measurements used in evaluation of the data set:

Kaiser-Meyer-Olkin measure (KMO) of sampling adequacy, which was introduced by Kaiser (1970). It was modified by Kaiser and Rice (1974). A minimum value of 0.6 is suggested as minimum value in the KMO index of 0-1 (Tabachnick et al., 2001).

Bartlett's test of sphericity was introduced by Bartlett (1954). This test needs to measure at ($p<0.05$) to be adequate to consider the factor analysis appropriate.

Table 2 shows the Kaiser-Meyer-Olkin Measure of Sampling Adequacy (KMO) and Bartlett's Test of Sphericity.

Table 2: KMO and Bartlett's Test for all constructs

KMO and Bartlett's Test		
Corporate Entrepreneur Architecture (Pro-entrepreneurial organisational architecture)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.845
Bartlett's Test of Sphericity	Approx. Chi-Square	2176.327
	df	190
	Sig.	.000
EO (Entrepreneurial Orientation – Risk taking, Innovativeness, Pro-activeness)		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.822
Bartlett's Test of Sphericity	Approx. Chi-Square	780.963
	df	36
	Sig.	.000
Entrepreneurial process		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.749
Bartlett's Test of Sphericity	Approx. Chi-Square	200.051
	df	10
	Sig.	.000
Failure – Success		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.609
Bartlett's Test of Sphericity	Approx. Chi-Square	29.832
	df	3
	Sig.	.000

All the KMO values were greater than the minimum required value of 0.6. This implies that the sample was adequate to conduct factor analysis for the different

constructs. As the values for CEA (0.845); EO (0.822) and entrepreneurial process (0.749) is considered high, generalisation would be possible. However, generalisation for Failure/Success needs to be done with great care, if done at all.

The Bartlett's Test of Sphericity had significant p-values as required (the values should be less than 0.05). For all the constructs, the probability associated with the Barlett Test was .000 to 3 decimal.

Factor extractions were done to find the minimum number of common factors that would produce and describe the relationships between the variables. The larger the data set, the better the factors will generalise. Nunnally (1967), suggested 10 cases for each item, while Tabachnick et al. (2001), reported that 300 cases for each item is significant.

The results in Table 3 shows the final construct composition, factor loadings for the items within each factor and the total variance explained. Variance indicates the spread of scores, where the greater dispersion of score, indicates a greater variance (Saunders & Thornhill, 2009). If all the scores are identical, the variance will be 0.

Table 3: Factor analysis

Construct	Su-construct	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Total Variance Explained
Corporate Entrepreneur Architecture	Management Structure	CEA Management Structure5	.763	.283	.126	.131	.026	68.38%
		CEA Management Structure2	.747	.094	.429	.059	.053	
		CEA Management Structure3	.719	.270	.174	.194	.009	
		CEA Management Structure1	.714	.198	.362	.170	.037	
		CEA Management Structure4	.684	.220	-.198	.180	-.047	
	Growth and reward	CEA Reward Philosophy3	.278	.859	.060	.147	.040	
		CEA Growth Orientation1	.293	.857	.040	.180	.024	
		CEA Reward Philosophy1	.290	.686	.016	.282	.052	
		CEA Reward Philosophy2	.225	.635	.309	.039	.146	
		CEA Growth Orientation2	-.014	.478	.288	.221	.132	
	Entrepreneurial Culture	CEA Entrepreneurial Culture2	.254	.130	.901	.002	.111	
		CEA Entrepreneurial	.278	.122	.896	-.005	.125	

		Culture3						
		CEA Entrepreneurial Culture1	.001	.200	.805	.093	.075	
	Strategic Orientation	CEA Strategic Orientation2	.120	.203	-.027	.823	-.120	
		CEA Strategic Orientation3	.160	.223	.036	.728	.118	
		CEA Strategic Orientation1	.307	.163	.133	.692	.192	
	Resource Orientation	CEA Resource Orientation3	-.184	.238	-.016	-.028	.787	
		CEA Resource Orientation1	-.006	.172	.134	.436	.624	
		CEA Resource Orientation4	.362	-.031	.238	-.080	.610	
		CEA Resource Orientation2	.059	-.222	.418	.314	.456	
EO	Pro-activeness and Innovativeness	EO Pro-activeness2	.842	.175				
		EO Pro-activeness1	.839	.033				
		EO Innovativeness2	.725	.315				
		EO Innovativeness3	.707	.312				
		EO Innovativeness1	.525	.409				65.27%
		EO Pro-activeness3	.512	.407				
	Risk-taking	EO Risk-taking2	.223	.882				
		EO Risk-taking1	.174	.867				
		EO Risk-taking3	.251	.813				
Entrepreneurial process	Innovation Process	Innovation Process1	.827					
		Innovation Process5	.778					
		Innovation Process2	.778					49.47%
		Innovation Process4	.550					
		Innovation Process3	.526					
Success	Success - failure	SuccessFailure3	.723					
		SuccessFailure1	.706					50.14%
		SuccessFailure2	.695					

● CEA – 6 latent variable constructs were hypothesised as per Brown et al. (2001), on the original 8 dimensions as per Stevenson's EM scale (Stevenson, 1983). 5 factors were successfully retained for this construct as growth orientation and reward philosophy were combined and named, growth and reward. A total variance of 68.38% shows greater dispersion of scores or variation in the items in the scale.

The loadings of the items in the sub-constructs were loading highly, above 0.65 on that sub-construct, indicating that it is measuring the same latent variable.

Side loadings were mostly above 0.3. Validity indicates that the latent variable is the cause of item correlation, and reliability shows that the strong relationship between the items and the latent variable, will indicate a strong correlation with each other.

● EO – The results indicate that the EO construct which was hypothesised as per Brown et al. (2001), to have 3 sub-constructs, retained 2 factors which explained 65.27% of variation in the items within the scale. Pro-activeness and innovation retained as one sub-construct and risk-taking as the second. The items within each of the two sub-constructs loaded highly (>0.65) onto the two factors.

● Entrepreneurial Process – was hypothesised to have one sub-construct innovation process, with 5 items. The construct retained the one factor as hypothesised, explaining 49.47% of variation in the construct. Factor loadings of 0.526 and as high as 0.827 loaded onto the one factor.

● Success or failure – retained one construct as initially hypothesised, which loaded highly onto the retained factor and explained 50.14% of total variation.

The percentage of variance in the entrepreneurial process and success/failure constructs was lower than that for the constructs CEA and EO, as used from the scale by Brown et al. (2001). This might be due to the fact that the questions were added by the researcher and needs reworking, as the construction of the statements might be confusing for respondents. There was no reversed order for statements, to lessen the probability of bias and error.

The Entrepreneurial Process (innovation process) construct retained one factor which was initially suggested as the Innovator's Programme of the company. The retained factor explained 49.47% of total variation in the construct, showing that there was no big variation in the responses of the participants. All the items loaded highly onto the retained factor with a minimum factor loading of 0.526 and with a factor loading as high as 0.827.

The SuccessFailure construct also retained one construct as initially hypothesised. The retained factor explained 50.14% of total variation in the construct. All the items loaded highly onto the retained factor.

4.3.2 Reliability

Calculation for reliability was done by equating with Cronbach's Coefficient Alpha, (or Cronbach's Alpha as it is known) (Cronbach, 1951; Tavakol & Dennick, 2011).

Nunnally (1967) initially recommended a value of (α = 0.58), while Robinson et al. (1991) suggested that (α = 0.69) can be seen as a moderate reliability criterion. Nunnally (1967) later agreed that (α = 0.70) is preferred as indication of consistency.

Cronbach's Alpha was computed for each of the constructs/sub-constructs to assess the reliability of the scale, with (α = 0.70). The results are shown in Table 4.

Table 4: Reliability of scale

Construct	Sub-Construct	Items	Cronbach's Alpha	Level of reliability
Corporate Entrepreneur Architecture (CEA)	Entrepreneurial Culture	3	.912	Excellent
	Management Structure	5	.862	Good
	Growth and reward	5	.844	Good
	Strategic Orientation	3	.764	Acceptable
	Resource Orientation	4	.609	Questionable
	Overall CEA	**20**	**.892**	**Good**
EO	Pro-activeness and Innovativeness	6	.837	Good
	Risk-taking	3	.869	Good
	Overall EO	**9**	**.875**	**Good**
Entrepreneurial process	Innovation Process	5	.724	Acceptable
Success or Failure	Success or Failure	3	.497	Unacceptable

>0.9 Excellent, >0.8 Good, >0.7 Acceptable, >0.6 Questionable, >0.5 Poor and <0.5 unacceptable

The results in Table 3 indicate that the Chronbach's Alpha for this data set are mostly reliable as the values are above the prescribed (α = 0.70) (Nunnally, 1967).

The measurement for the independent variable CEA construct shows a good level of reliability with a total of (α = 0.892), where Brown et al. (2001) measured this construct at (α = 0.73). The only questionable measurement was that for resource orientation (α = 0.609) within the CEA construct. Brown et al. (2001), measured resource orientation (α = 0.58) and advised that the measurement properties could be increased by adding one or more items with similar measurement properties to this construct (Nunnally & Bernstein, 1994). Kuhn et al. (2010), added items to their measurement of resource orientation to test the suggestion by Brown et al. (2001). These items seemed to perform well and received a better reliability (α = 0.648), still not high enough to prove successful replicability (Hair, Anderson, Tatham, & Black, 1998).

Innovation Process, (independent variable) defined as the entrepreneurial process and behaviour in the company (5 items, α = 0.724), measured acceptable since the value is greater than 0.7.

The dependent variable EO measured a level of good reliability (α = 0.875) compared with (α = 0.73) as tested by Brown et al. (2001). The difference in measurements may be due to the survey being done in different countries, in different industries and with different relationships being measured.

The poor performance of the SuccessFailure construct (3-item α <0.497) as unacceptable, might be explained by the small number of items in the scale, as smaller numbers cause lower Alpha values (Hair et al., 1998). It could also be due to the fact that the questions were designed and added by the researcher and needs further development into a reliable scale.

Thus, the items within each of the sub-constructs except SuccessFailure, could be grouped together to form a summated scale since the reliability allowed for that. For SuccessFailure, the individual items were used for further analysis since the items could not be grouped together.

4.3.3 Summated scale

For the purpose of this study the Pearson Product Moment Correlation Coefficient (PMCC), in short Pearson's Correlation, is used to indicate linear relationship (Stanton, 2001). The letter *"r"* is used for association based on the sample data and "ρ" to represent the population correlation. "ρ" is calculated from the *"r"* score (Blumberg et al., 2014; Stanton, 2001).

The coefficient varies between -1 and 1, with the following as indication of positive, negative or null relationships (Blumberg et al., 2014; Stanton, 2001)

Positive relationship: .5 to 1.0 or -0.5 to 1.0. (high correlation)
No relationship: 0
Negative relationship. .1 to .3 or -0.1 to -0.3. (low correlation)

Summated scale for each construct was computed by finding the average of the items within the scale. The descriptive statistics for the constructs are shown in Table 5.

Table 5: Descriptive Statistics and Pearson's Correlation

Construct/ Sub-construct	Descriptive		Pearson's Correlation Coefficients												
	M	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.		
1. Strategic Orientation	6.69	1.94	1												
2. Resource Orientation	6.18	1.67	.31***	1											
3. Management Structure	5.42	2.16	.43***	.23***	1										
4. Growth and reward	5.78	2.12	.49***	.28***	.56***	1									
5. Entrepreneurial Culture	4.28	2.55	.19**	.40***	.44***	.37***	1								
6. Overall CEA	**5.68**	**1.5**	**.64*** **	**.57*** **	**.81*** **	**.81*** **	**.67*** **	**1**							
7. Pro-activeness & Innovativeness	7.53	1.55	.32***	0.09	.24***	.40***	-.17**	**.26*** **	1						
8. Risk-taking	6.4	1.86	.45***	.22***	.46***	.50***	0.11	**.51*** **	.57***	1					
9. Overall EO	**7.15**	**1.47**	**.41*** **	**.15** **	**.36*** **	**.49*** **	**-0.07**	**.40*** **	**.94*** **	**.82*** **	1				
10. Innovation Process	7.11	1.81	.39***	.23***	.22***	.48***	-0.03	**.37*** **	.59***	.42***	.59***	1			
11. SuccessFailure1	5.99	2.76	.22***	.14*	.26***	.42***	0.1	**.34*** **	.33***	.34***	.37***	.35***	1		
12. SuccessFailure2	8.71	2.08	0.08	-0.06	0.12	.16**	-0.1	**0.08**	.35***	.20***	.33***	.39***	.24***	1	
13. SuccessFailure3	6.94	2.54	.52***	.25***	.31***	.45***	0.06	**.44*** **	.41***	.38***	.45***	.74***	.27***	.26***	1

Notes: M = Variable mean, average response, SD = standard deviation, shows variability in data set,

*** = p < .01, ** = p < .05, * = p < .10

The highest rating construct was SuccessFailure2 (mean = 8.71) with a standard deviation of 2.08. This means that around 90% of respondents agreed on scores between 6 and 10. This construct indicated that the respondents thought the innovation process of the organisation enhanced success in the entrepreneurial process.

This was followed by pro-activeness and innovativeness (mean=7.53) with a near normal distribution (SD 1.55) around the middle of the scale, by 68% of respondents. The same is true for the innovation process (mean=7.11, SD 1.80).

The overall CEA distribution (mean = 5.68, SD 1.5) indicates that respondents have a tendency towards staying on neutral ground and not swaying to the lowest or highest points of agreement. It might also indicate that the wording or context of the questions was misunderstood and should be checked for formulation.

The Pearson's test for association shows that all constructs except entrepreneurial culture (r= 0.11) were significantly related to risk-taking. The overall CEA measuring at a high or positive correlation (r= 0.51) with risk-taking. All constructs, except for entrepreneurial culture (r= -0.17) and resource orientation (r= 0.009) were significantly related to pro-activeness and innovativeness as construct. The overall CEA tested low (r= 0.26) on association with pro-activeness and innovation.

Entrepreneurial culture (mean=4.28, SD 2.55) rated the lowest construct and showed low correlation (r= 0.11) with risk-taking and has a negative correlation (r= -0.17) with pro-activeness and innovation. The dispersion of responses are skewing to the left, with 90% of responses between 1.73 and 6.83 on the scale. As this construct had reversed order questions, a low or negative rating indicates that respondents ranked the company towards the entrepreneurial side. The correlation between entrepreneurial culture and the innovation process and Success/Failure measured low or at 0.

Hair et al. (1998) suggest that a small number of items might cause lower Alpha values. Although this construct only had 3 items, it measured excellent on the

reliability scale (α = 0.912), indicating that it might be free of random error and can be used to increase statistical results. Similarity and homogeneity of items are indicated by a high correlation. In Brown et al. (2001) their construct of entrepreneurial culture measure (α = 0.68). As the same questions were used as in Brown et al. (2001) there might be a discrepancy in the measurement for this study. There was a duplication of one of the questions (Question 2 and 3) in the questionnaire, but, interestingly the responses for the same question by the same respondents, differed. Since the respondents did not answer the two questions exactly the same, the two questions should remain in the construct and will not affect the results.

Most constructs have low or negative correlations with the three constructs of Success/Failure, but the overall CEA, EO and innovation process shows significant to high correlations with the three constructs of SuccessFailure. This construct measured unacceptable on reliability (α = 0.496) indicating that generalisations will be problematic. The items in the construct is not measuring what it was supposed to measure, and might pose problems for statistical results. Question 38 (item 3 in the SuccessFailure construct) was not an actual question, but an employee number. It seems the numbers coincidentally were also between 1 and 10. Since the reliability and validity confirmed the items in the scale, it means that the numbers were in sync, i.e. low values of item 2 are associated with low values for item 3 as well.

Potential problems with Pearson's correlation may present, as it indicates relationships but cannot differentiate between variables, like independent and dependent. This may lead to misinformation if not interpreted correctly.

4.4 Hypothesis 1 results

H_0: There is no relationship between the elements of a pro-entrepreneurial organisation architecture and entrepreneurial orientation (EO).

The null hypothesis was rejected, and the alternative hypothesis accepted.

H_A: There is a positive relationship between the elements of a pro-entrepreneurial organisational architecture in terms of (a) strategic orientation;

(b) resources orientation; (c) management structure; (d) reward philosophy; (e) growth orientation and (f) entrepreneurial culture and entrepreneurial orientation (EO) in terms of (a) pro-activeness; (b) innovativeness and (c) risk-taking, where this relationship will be moderated by failure or success in implementation. The hypothesis was split for analysis purposes.

H_{1a}: The different elements of organisational architecture have a positive relationship with entrepreneurial orientation (EO).

H_{1b}: The relationship between organisational architecture and entrepreneurial orientation (EO) is moderated by failure or success in implementation.

The regression model was fitted with overall CEA as the independent variable, the overall EO as the dependent variable and each of the 3 SuccessFailure sub-constructs as the moderating variables, one after the other, since no one variable could be computed for success or failure.

The results are shown below in Table 6; Table 6 reflects the Moderating equations with overall EO as dependent variable, overall CEA independent variable and SuccessFailure as moderating variable.

Table 6: Moderation equations with Overall EO 1

Moderation Regressions - SuccessFailure1 and moderator variable						
	Model 1		**Model 2**		**Model 3**	
	B	β	B	β	B	β
Intercept	7.15***	0	7.15***	0	7.12***	0
Overall CEA	0.39***	0.4	0.3***	0.31	0.29***	0.29
SuccessFailure1			0.14***	0.27	0.15***	0.28
Overall CEA x SuccessFailure1					0.02	0.06
R2	0.16		0.22		0.23	
Moderation Regressions SuccessFailure2 and moderator variable						
	Model 1		**Model 2**		**Model 3**	
	B	β	B	β	B	β
Intercept	7.15***	0	7.15***	0	7.14***	0
Overall CEA	0.39***	0.4	0.37***	0.37	0.35***	0.35
SuccessFailure2			0.21***	0.3	0.24***	0.34
Overall CEA x SuccessFailure2					0.06*	0.12
R2	0.16		0.25		0.26	
Moderation Regressions SuccessFailure3 and moderator variable						

	Model 1		Model 2		Model 3	
	B	β	B	β	B	β
Intercept	7.15***	0	7.15***	0	7.09***	0
Overall CEA	0.39***	0.4	0.25***	0.25	0.22***	0.22
SuccessFailure3			0.2***	0.34	0.21***	0.36
Overall CEA x SuccessFailure3					0.03	0.1
R2	0.16		0.25		0.26	

*Notes: *** = p < .01, ** = p < .05, * = p < .10*

The results for model 1 on all the regression models shows that there is a positive relationship between Organisational Architecture (B = 0.39, Standardised better = 0.40, p-value < 0.001) and Entrepreneurial Orientation. The relationship is positive since the coefficient of the variable is positive and is significant because the p-value is less than 0.05. The model shows that variation in Overall CEA explains 16% of variation in Entrepreneurial Orientation.

Model 2 on the table with SuccessFailure1 as moderator variable shows that SuccessFailure1 (B = 0.14, Standardised better = 0.29, p-value < 0.0.01) on its own has a significant and positive impact on Entrepreneurial Orientation since the coefficient of the variable is positive and the p-value is less than 0.05.

Model 2 on the table with SuccessFailure2 as moderator variable shows that SuccessFailure2 (B = 0.37, Standardised better = 0.37, p-value < 0.0.01) on its own has a significant and positive impact on Entrepreneurial Orientation since the coefficient of the variable is positive and the p-value is less than 0.05.

Model 2 on the table with SuccessFailure3 as moderator variable shows that SuccessFailure3 (B = 0.20, Standardised better = 0.34, p-value < 0.0.01) on its own has a significant and positive impact on Entrepreneurial Orientation since the coefficient of the variable is positive and the p-value is less than 0.05.

On model 3, the introduction of the moderator, Overall CEA x SuccessFailure1, or Overall CEA x SuccessFailure2, or Overall CEA x SuccessFailure3 led to an increase in the R-Square. The variables, Overall CEA x SuccessFailure1, Overall CEA x SuccessFailure2, and Overall CEA x SuccessFailure3 each were not significant predictors of the Overall EO. Since the p-values were all greater

than 0.05 (the significance level), this implies that failure or success from ideas implemented does not moderate the relationship between organisational architecture (CEA) and entrepreneurial orientation (EO).

A Scatterplot presents a visual graph of the direction and shape of a relationship by using the values of variables as listed above (Blumberg et al., 2014). Linear relationships is characterised by a straight line, while non-linear will have parabolic or curvy shapes (Stanton, 2001). Moderation occurs where the direction of the correlation changes. The effect of the IV on the DV will linearly change with respect to changes in the moderator (Baron & Kenny, 1986).

The relationships which do not show moderation are presented graphically below, by making use of Scatterplots.

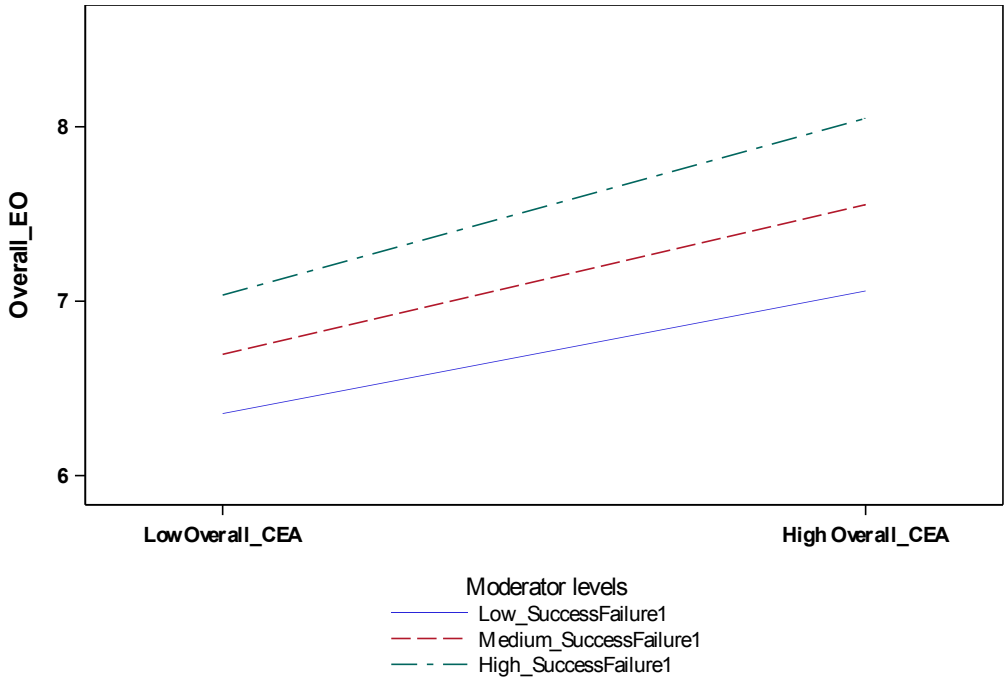

Figure 10: Moderating Effect of SuccessFailure1, EO & CEA

Figure 10: Moderating Effect of SuccessFailure1 reflects the moderation effect of SuccessFailure1 on the relationship between the Overall_CEA & Overall_EO.

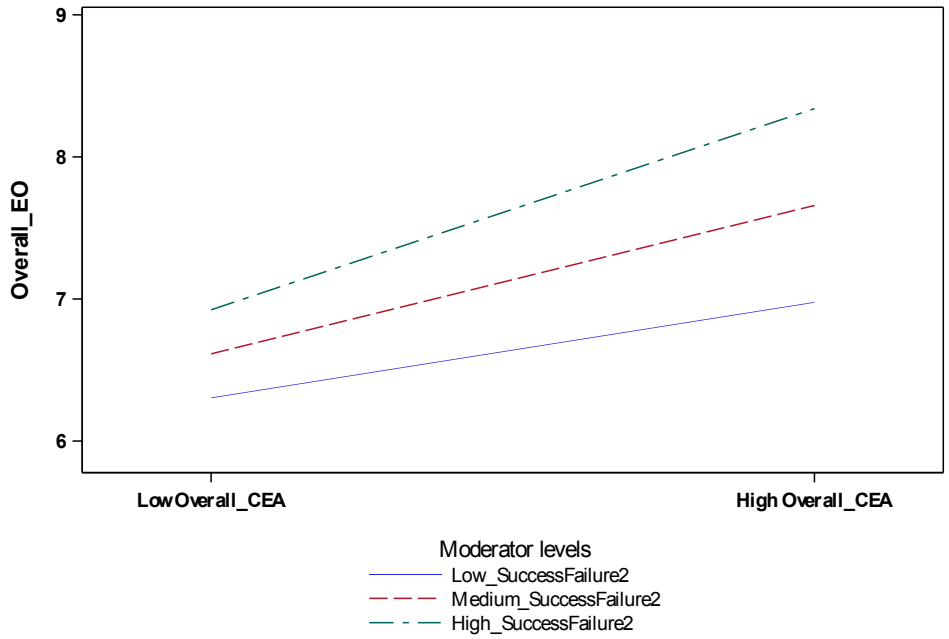

Figure 11: Moderating Effect of SuccessFailure2, EO & CEA

Figure 10: Moderating Effect of SuccessFailure12 reflects the moderation effect of SuccessFailure2 on the relationship between the Overall_CEA & Overall_EO.

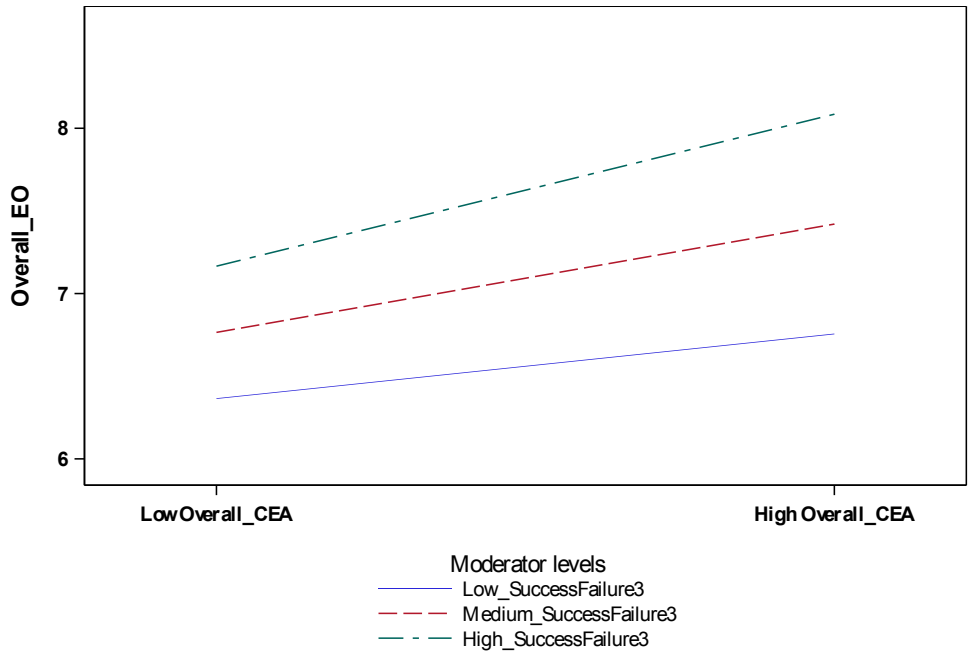

Figure 12: Moderating Effect of SuccessFailure3, EO & CEA

Figure 10: Moderating Effect of SuccessFailure13 reflects the moderation effect of SuccessFailure3 on the relationship between the Overall_CEA & Overall_EO.

4.5 Hypothesis 2 results

H_0: There is no relationship between the elements of an entrepreneurial process and entrepreneurial orientation (EO).

The null hypothesis was rejected and the alternative hypothesis accepted.

H_A: There is a positive relationship between the elements of an entrepreneurial process in terms of (a) opportunities recognised (b) opportunities implemented and entrepreneurial orientation (EO) in terms of (a) pro-activeness, (b) innovativeness and (c) risk-taking where this relationship will be moderated by failure or success in implementation.

The hypothesis can be split into 2 parts, which are;

H_{2a}: The entrepreneurial process has a positive relationship with entrepreneurial orientation (EO).

H_{2b}: The relationship between the entrepreneurial process and entrepreneurial orientation (EO) is moderated by failure or success.

Multiple regression was conducted to test these hypotheses. The entrepreneurial process was the independent variable, the overall EO as the dependent variable and each of the 3 SuccessFailure sub-constructs as the moderating variables, one after the other, since no one variable could be computed for success or failure.

The null hypothesis for hypothesis 2a was no relationship between entrepreneurial process and entrepreneurial behaviour (EO). The alternative hypothesis was that there is a positive relationship between entrepreneurial process and entrepreneurial orientation (EO). The results are shown below in Table 7.

Table 7: Moderation equations with Overall EO 2

Moderation Regressions SuccessFailure1 and moderator variable						
	Model 1		**Model 2**		**Model 3**	
	B	β	B	β	B	β
Intercept	7.15***	0	7.15***	0	7.16***	0

Innovation Process	0.48***	0.59	0.43***	0.52	0.42***	0.52
SuccessFailure1			0.1***	0.19	0.1***	0.19
Innovation Process x SuccessFailure1					0	-0.02
R2	0.35		0.38		0.38	
Moderation Regressions SuccessFailure2 and moderator variable						
	Model 1		**Model 2**		**Model 3**	
	B	β	B	β	B	β
Intercept	7.15***	0	7.15***	0	7.12***	0
Innovation Process	0.48***	0.59	0.44***	0.54	0.44***	0.54
SuccessFailure2			0.08*	0.12	0.11*	0.16
Innovation Process x SuccessFailure2					0.02	0.06
R2	0.35		0.36		0.36	
Moderation Regressions SuccessFailure3 and moderator variable						
	Model 1		**Model 2**		**Model 3**	
	B	β	B	β	B	β
Intercept	7.15***	0	7.15***	0	7.22***	0
Innovation Process	0.48***	0.59	0.47***	0.58	0.47***	0.57
SuccessFailure3			0.01	0.02	0	0
Innovation Process x SuccessFailure3					-0.02	-0.07
R2	0.35		0.35		0.35	

Table 7 reflects the Moderation equations with Overall EO as dependent variable, Innovation Process as independent and SuccessFailure as moderating variable.

The results for model 1 on all the regression models shows that there is a positive relationship between Innovation Process (B = 0.48, Standardised better = 0.59, p-value < 0.001) and entrepreneurial orientation (EO). The relationship is positive since the coefficient of the variable is positive and is significant because the p-value is less than 0.05. The model shows that variation in Overall CEA explains 35% of variation in entrepreneurial (EO).

On model 3, the introduction of the moderator, Innovation Process x SuccessFailure1, or Innovation Process x SuccessFailure2, or Innovation Process x SuccessFailure3 did not lead to a change in the R-Square. The variables, Innovation Process x SuccessFailure1, Innovation Process x SuccessFailure2, and Innovation Process x SuccessFailure3 each were not significant predictors of the Overall EO, since the p-values were all greater than 0.05 (the significance level). This implies that failure or success from ideas implemented does not moderate the relationship between entrepreneurial process and entrepreneurial orientation (EO).

The relationships which do not show moderation are presented graphically below;

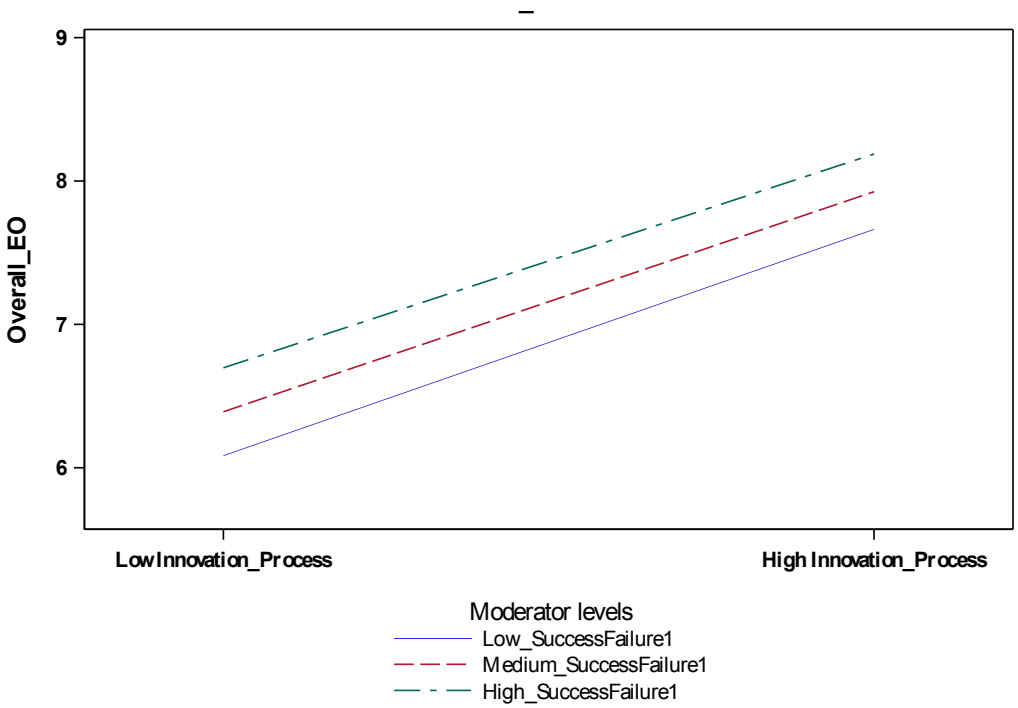

Figure 13: Moderating Effect of SuccessFailure1, EO and Process

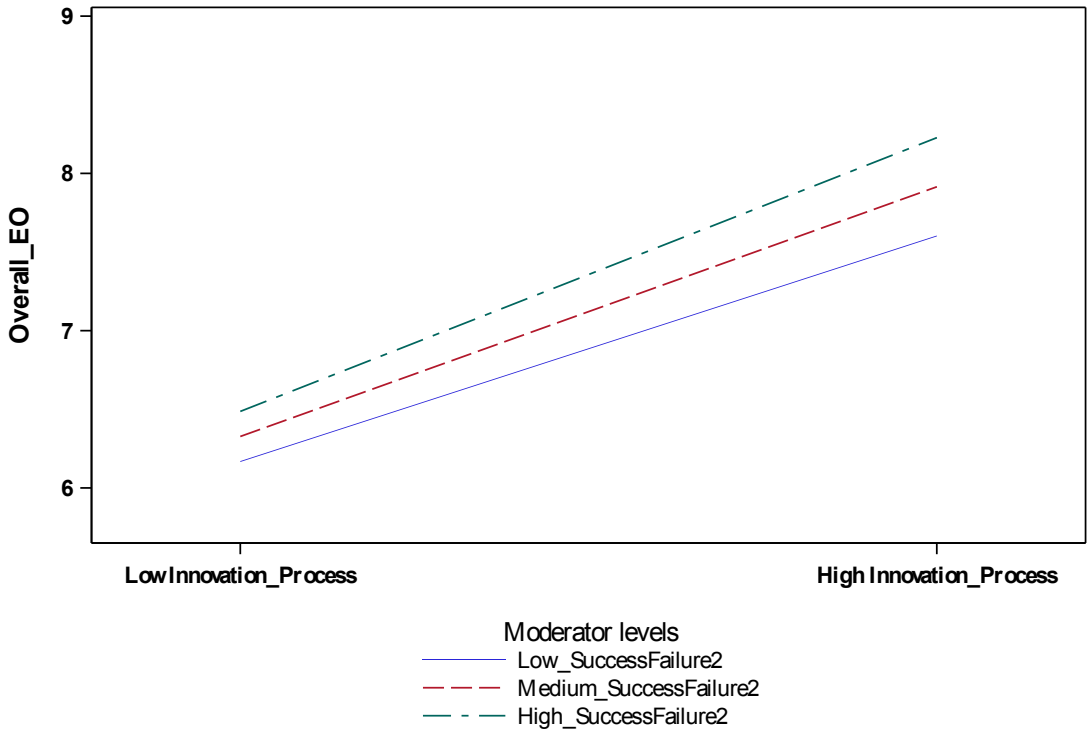

Figure 14: Moderating Effect of SuccessFailure 2, EO and Process

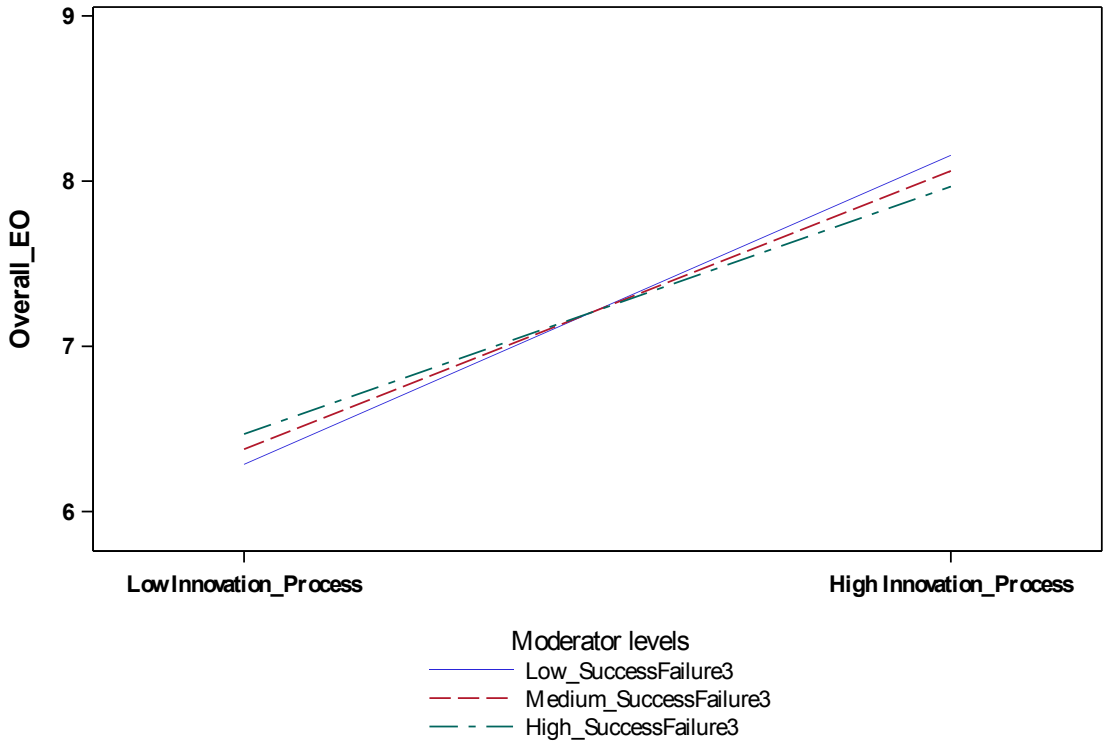

Figure 15: Moderating Effect of SuccessFailure3, EO and Process

4.6 Summary of the results

The calculated results as summarised in Table 8 below explain that two components of the two hypothesised models are supported. Both Hypothesis 1a and 2a are supported whilst Hypothesis 1b and 2b are not supported.

Table 8: Summary of hypothesises

Hypothesis	**Outcome**
Hypothesis 1a: The different elements of organisational architecture have a positive relationship with entrepreneurial behaviour (EO).	Supported
Hypothesis 1b: The relationship between organisational architecture and entrepreneurial behaviour (EO) is moderated by failure or success in implementation.	Not supported

Hypothesis 2a: The entrepreneurial process has a positive relationship with entrepreneurial behaviour (EO).	Supported
Hypothesis 2b: The relationship between the entrepreneurial process and entrepreneurial behaviour (EO) is moderated by failure or success in implementation.	Not supported

4.7 Conclusion

The sample used in calculating the result for the research implies that the sample was adequate to conduct factor analysis for the different hypothesised constructs. Significant p-values that were more than 0.05 for all the constructs ensure a high probability. The corporate entrepreneurial architecture (CEA) main construct had a very good level of reliability. The Overall EO which was made up of all the 9 items within the EO construct also had good reliability. Both Hypothesis 1a and Hypothesis 2a were supported. Hypothesis 1b and 2b, where success or failure in implementation were supposed to moderate effects of the independent variables CEA and innovation process on EO, were not supported.

CHAPTER 5: DISCUSSION

5.1 Introduction

This chapter presents a discussion on entrepreneurial orientation (EO) and the relationships and patterns between factors such as pro-entrepreneurial architecture, entrepreneurial processes and behaviour and the perceived organisational success or failure rate, on each other. The results are linked to propositions for the conclusion and refers to the initial literature review. The anticipated research findings and the actual findings are compared and discussed.

The research gap as discussed in Chapter 1 poses the question: “Is there a relationship between the organisational architecture of a corporation and the entrepreneurial process, typified in the process of discovery, evaluation, exploitation and implementation of entrepreneurial opportunity by its owner-managers within the entrepreneurial orientation of that company? Will success or failure as perceived by the managers at specific stages of the entrepreneurial process influence these actions?” (Kuratko et al., 2005).

As the organisation studied in this paper enforces an owner-manager culture, the research was extended to cover all levels of employees and not just middle level managers. The main research problem is stated in Chapter 1 as:

“Describe the relationship between the organisational architecture of a corporation and the entrepreneurial process, typified in the process of discovery, evaluation, exploitation and implementation of entrepreneurial opportunity by its owner-managers within the entrepreneurial orientation of that company. Will success or failure as perceived by the owner-managers at specific stages of the entrepreneurial process influence these actions? “

5.2 Hypotheses

Hypotheses restated for convenience.

5.2.1 Hypothesis 1

H_0: There is no relationship between the elements of a pro-entrepreneurial organisation architecture and entrepreneurial orientation (EO).

The null hypothesis was rejected, and the alternative hypothesis accepted.

H_A: There is a positive relationship between the elements of a pro-entrepreneurial organisational architecture in terms of (a) strategic orientation; (b) resources orientation; (c) management structure; (d) reward philosophy; (e) growth orientation and (f) entrepreneurial culture and entrepreneurial orientation (EO) in terms of (a) pro-activeness; (b) innovativeness and (c) risk-taking, where this relationship will be moderated by failure or success in implementation.

H_{1a}: The different elements of organisational architecture have a positive relationship with entrepreneurial orientation (EO). Supported.

H_{1b}: The relationship between organisational architecture and entrepreneurial orientation (EO) is moderated by failure or success in implementation. Not supported.

5.6.1 Hypothesis 2

H_0: There is no relationship between the elements of an entrepreneurial process and entrepreneurial orientation (EO).

The null hypothesis was rejected and the alternative hypothesis accepted.

H_A: There is a positive relationship between the elements of an entrepreneurial process in terms of (a) opportunities recognised (b) opportunities implemented and entrepreneurial orientation (EO) in terms of (a) pro-activeness, (b) innovativeness and (c) risk-taking where this relationship will be moderated by failure or success in implementation.

The hypothesis can be split into 2 parts, which are;

H_{2a}: The entrepreneurial process have a positive relationship with entrepreneurial orientation (EO). Supported.

H_{2b}: The relationship between the entrepreneurial process and entrepreneurial orientation (EO) is moderated by failure or success. Not supported.

5.3 Discussion

The entrepreneurial orientation of the organisation is discussed based on the results for measuring the relations between the entrepreneurial process, pro-entrepreneurial organisational architecture and the effect of success or failure in implementation of ideas on these relationships. Each of these constructs will be discussed as measured, referring to the hypotheses and theories mentioned in literature.

5.3.1 Hypothesis 1a: Pro-entrepreneurial organisational architecture (CEA)

H_{1a}: The different elements of organisational architecture have a positive relationship with entrepreneurial orientation (EO). Supported.

According to Brown et al. (2001) the 6 dimensions of entrepreneurial management could be expected to have a high correlation, as Stevenson (1983) defined entrepreneurial management as a "cohesive pattern of behaviours" (p. 16). The summed indices, factor analysis and Pearson's correlation statistics in Chapter 4, confirmed mostly moderate positive correlations ($\rho < .01$), for 4 of the 5 dimensions: strategic orientation, resource orientation, management structure, growth and reward. The distribution curves of responses skewed towards the entrepreneurial side, if looking at the means for these 5 dimensions. This may be due to employees perceiving the company to be entrepreneurial because of accolades like Most Innovative Bank and huge rewards for innovations.

The only exception is entrepreneurial culture with ($\rho < .05$) indicating a weaker correlation, although the correlation between entrepreneurial culture and the overall CEA shows positive ($r= 0.67$). The items in this sub-construct were

reversed, so that the lower mean (mean=4.28) will indicate a greater propensity towards an entrepreneurial intention in the company. This will have a direct influence on the motivation of employees to perform innovative and disruptive in taking risks (Brown et al., 2001; Bull & Urban, 2008; Ireland et al., 2009; Kuratko et al., 2011; Zahra et al., 2000).

The attitudes, words and actions of top management on structuring and implementing the entrepreneurial strategic vision will affect the climate to form norms and values to encourage entrepreneurship. They create the environment in which the strategic vision is translated into entrepreneurial processes and behaviour by means of the pro-entrepreneurial architecture (Urban, 2012). Although the employees in this company are seen as owner-managers (accountable for the value they add to the company), they still need to operate entrepreneurially within the objectives of the corporate entrepreneurial strategic orientation and vision of the company.

Growth and reward correlates moderately to high with the entrepreneurial culture, strategic orientation and management structure of the company and lower with resource orientation (r= 0.28). Resource orientation in both this study and that of Brown et al. (2001), measured poorly or questionable on reliability, indicating possible problems with measurement properties (Nunnally & Bernstein, 1994). Management decides on reward incentives as well as commitment and control of resources, to motivate employees into acting innovative, to increase profits, growth, competitiveness and financial performance (Ireland et al., 2009; Kuratko et al., 2011; Zahra et al., 2000).

Banks in South Africa have monetary awards worth millions of rands, as well as exposure to national and international mentors, investors and entrepreneurial platforms as part of their reward programmes. It might be that employees are not motivated by monetary rewards as such, and do not see the growth and profit of the company as part of their own goals. Employees, as owner-managers taking responsibility for their own actions and deciding their own fates, are dependent on management or other departments for the availability of resources. This might lead to feelings of negativity and despondence in taking risks to exploit opportunities.

The organisation studied embraces a culture of innovation and idea incubation, as indicated in the innovation and reward programme that was started in 2004. The programme includes all employees and is encouraged and supported by management to be part of the entrepreneurial culture in the organisation. The intent was to develop new products and services, to include learning methodologies, to focus on innovation and creativity and to become the most innovative bank in the financial environment in South Africa. The outcome of this strategy was the generation of significant revenue and a global brand name.

The vision and strategy of the company is built on three constructs, namely: people, innovation and efficiency (Gaylard, & Viedge, 2011).

The following organisational architecture dimensions is embedded in the CE strategy at this institution:

- An enabling entrepreneurial environment across all channels, units and businesses.
- Clear guidelines and leadership support from management.
- A technological platform to support innovative and entrepreneurial activities in a transparent manner.
- Training, knowledge sharing and learning is enhanced by a YouTube channel to be available online to all employees.
- A sustainable culture of innovation is supported by innovation champions in the innovation department.
- Infrastructure and resources to support experimentation and implementation.
- Collaboration and networking is encouraged, both internally and externally, to drive successful and radical innovation for maximum impact.

5.3.2 Hypothesis 2a: Entrepreneurial process and behaviour

H_{2a}: The entrepreneurial process has a positive relationship with entrepreneurial orientation (EO). Supported.

The entrepreneurial process involves discovery, identification, evaluation and implementation of an innovative product or new idea. (Kuratko et al., 2011; Shane, 2003; Urban, 2012).

Schumpeter (1934) sees the entrepreneur as an innovator who creates opportunities to pro-actively develop products for future needs. Kirzner (1979) defines the entrepreneur as an alert person discovering opportunities by exploiting today's needs, info and knowledge.

The definition by Shane (2003), suggests entrepreneurial opportunity to be a process in which an individual creates a new product, service or means-ends framework by combining processes and raw materials to yield profit. Researchers like Shane (2003), do not include evaluation as part of exploitation of an opportunity, while others like Hindle (2007) as well as Ardichvili et al. (2003) suggest that the entrepreneur needs to evaluate opportunities throughout the development process. This will indicate whether implementation is viable or whether the implementation will possibly fail and that the process requires no further consideration.

According to Venkataraman (1997) the entrepreneurial process involves the discovery and identification of opportunities, evaluation, exploitation and implementation thereof. This is done by an innovative individual who takes risks and displays entrepreneurial behaviour to create future goods. The demands and needs of the external environment in which the company operates, influences the internal entrepreneurial environment and relations between the various variables (Kuratko et al., 2011)

In an external environment of radical change and reliance on social networks to communicate with customers, financial institutions must shift the ways in which they deal with demands. Banking is no longer dependent on tangible products, but is increasingly influenced by changes in regulations and markets, customers' needs and behaviour, as well as digital and technological disruptions. Since risk is associated with these disruptions or innovations, it would be easier for banks to depend on existing strategies and practices (Van Zyl, 2011).

The challenge was to take innovation seriously and incorporate risk-taking and radical ideas into the process of recognising opportunities to have an effective impact. This bank was one of the first financial institutions to drive innovation by generating ideas on the Innovator's Programme to deliver significant revenue. The bank must source people with skills such as risk-taking, implementation, generating ideas, persuasion and networking. Employees needed to be empowered to operate in an informal environment conducive to free-flowing ideas. This was done by developing a social platform on the web which allowed all employees to connect with other employees across departments and units. Anyone could log an idea, view all other ideas, rate the ideas and collaborate with everybody else in the Innovator's Programme (Gaylard & Viedge, 2011).

This innovation process led to employees assessing themselves, working together in teams for greater value-creation while embedding a culture of entrepreneurial and innovative improvements, actions and behaviour into the strategies and structures. Realising that ideas could be exploited and implemented, with huge financial rewards and incentives, employees were motivated to stay pro-active and creative (Van Zyl, 2011).

McClelland (1965) and Venter et al. (2015) suggest that motivators for individuals to behave entrepreneurially are the will to achieve, locus of control, need for autonomy, self-efficacy and risk-taking. This may lead to employees surprising management by their achievements with new ways to do things with great outcomes. Management in the case study realised this and empowered the employees to be owner-managers, responsible for their own actions to achieve self-efficacy and receive recognition. But the stakes were high as financial rewards were huge, risk-taking was encouraged within the boundaries of strict legislation, and a high premium was put on performance and value.

To explain innovation, the employees used terms like, ideas that are new and radical, pushing boundaries, making a difference, new ideas to improve sales and efficiencies, development of an entrepreneurial spirit and finding different ways to solve problems to give a competitive advantage (Gaylard & Viedge, 2011).

According to Van Zyl (2011) key areas were identified by management to drive specific outcomes :

- Idea generation to effect new value and opportunities for change.
- Concentration on specific areas of innovation to implement strategies more effectively.
- Impact of innovation on performance.
- Capacity and resources to implement.

This was used done to direct the focus on needs of the customers and markets, future demands, new knowledge and successful implementation.

In the first few years, ideas consisted of small, incrementally small and radical innovations. In 2009, the process was evaluated and refined with emphasis on mostly radical innovations. It was decided to pay rewards six months after implementation to allow sufficient time for the implemented innovation to show success or failure. The monetary reward was increased to millions of rands. In 2015 the process was re-evaluated with the addition of Business Innovation Awards, where small businesses may also log ideas and are rewarded.

Statistical analysis of the data set in this case study indicates a reliability Chronbach's Alpha ($\alpha = 0.875$, 5-items) for the entrepreneurial process. In the questionnaire this construct was named Innovation Process as the respondents are used to this term in the organisation that they work for. Not all terms as used in literature in the entrepreneurial process are known to employees by that name, as the company does not necessarily make use of the same terms. This might result in misunderstandings of terms and questions. The organisation uses "idea logged or generated" as the recognition or identification of the opportunity. The process of evaluation or adoption and exploitation with the goal of implementation is done by various teams and management groups as steps in the innovation process of this company.

Factor analysis retained one factor with mostly high loadings, above 0.65 on that same component for the innovation process. Responses of 60% - 70% were between 5.30 - 8.92 with a (mean= 7.11, SD 1.81) skewing towards the entrepreneurial side of the scale.

5.3.3 Entrepreneurial Orientation (EO)

It is confirmed in literature that for any organisation to increase its entrepreneurial orientation the enabling conditions in the internal environment, namely pro-entrepreneurial organisational architecture, must be in place. Management need to encourage and support opportunity-seeking behaviour within an entrepreneurial conducive CES and EVS (Brown et al., 2001; Kuratko et al., 2011; Stevenson, 1983; Urban, 2012). Zahra and Covin (1995), suggest that companies with a strong EO are ahead of competition with the advantage to penetrate specific market segments and exploit opportunities pro-actively. This may be true for this company as it receives awards for innovation on a regular basis.

In the bank studied, innovation is seen as testing new things to bring about change. These innovative activities are enabled within the organisational capability to create innovative individuals and teams. The spirit of radical change, where big data and artificial intelligence is seen as some of the disruptive and comprehensive influences, is integrated into existing structures and mechanisms. This encourages innovation and changes thinking in the current competitive environment. The bank should create platforms to incorporate these radical innovations into implemented products to impact on growth and job creation.

Management indicated that the employees of this company are rewarded for innovation and that is why they are committed to continuous innovation. This enables the bank to challenge ideas, to pro-actively implement commercially viable products, to establish a distinct market position and receive global recognition.

Entrepreneurial orientation was defined as having three dimensions: innovation, risk-taking and pro-activeness (Brown et al., 2001; Guth & Ginsberg, 1990; Lumpkin & Dess, 1996; Zahra & Covin, 1995). In this study the two dimensions of entrepreneurial orientation retained as pro-activeness and innovation, as well as, risk-taking correlated moderately to strong (r= 0.57) with each other. This indicates a positive correlation in that if the one dimension increases the other will increase as well, and vice versa (Saunders & Thornhill, 2009). Based on the

scores for the EO dimensions (m= 7.15, SD 1.47), the responses skewed to the right indicating a high level of EO as perceived by 60% - 75% of the respondents. The good Chronbach's Alpha (α = 0.875) suggests similarity and homogeneity between the items.

The test for association between organisational architecture (5 dimensions) shows that four of the five sub-constructs were significantly related to risk-taking. Entrepreneurial culture (r= 0.11) shows low relation. This means that if one of the internal architectural dimensions increases, risk-taking will increase. All dimensions, except for entrepreneurial culture (r= -0.17) and resource orientation (r= 0.009) are significantly related to pro-activeness and innovation as second construct of entrepreneurial orientation. The relationships between CEA and risk-taking has higher correlations than that of pro-activeness and innovation.

The entrepreneurial culture construct is found to be having the least impact on EO (risk-taking, innovativeness and pro-activeness) as both correlations are low. This is rather interesting as it is perceived that an entrepreneurial culture is directly related to a firm level of EO (Ireland et al., 2009; Kuratko et al., 2011; Urban, 2012; Zahra et al., 2000). Many organisations try to replicate a working environment that will facilitate an entrepreneurial culture believing that this ensures high levels of EO, when in fact the culture alone will not foster higher levels of entrepreneurship.

This case study and analysis shows greater levels of growth and reward, management structure, resource and strategic orientation to influence the EO. The organisation is perceived as having a high level of entrepreneurial culture but this analysis shows that it is not necessarily the culture that is referred to, but the internal enabling elements of pro-entrepreneurial architecture.

The correlation between the entrepreneurial process and behaviour and EO (r= 0.59) is positive as ($\rho < .01$). This supports the assumption that if activities in the process (identifying and logging ideas onto the innovation programme of the company) increase, the EO (risk-taking, innovation and pro-activeness) activities will increase as well, and vice versa.

5.3.4 Hypotheses 1b and 2b: Success or Failure in implementation

H_{1b}: The relationship between organisational architecture and entrepreneurial orientation (EO) is moderated by failure or success in implementation. Not supported.

H_{2b}: The relationship between the entrepreneurial process and entrepreneurial orientation (EO) is moderated by failure or success. Not supported.

Some of the banks in South Africa have implemented innovation programmes, which take ideas from concept through to implementation. These programmes log hundreds of ideas and narrow that down to ideas that can be tested and put in the market as new products or services. The rewards of logging successful ideas are substantial, like those paid by the Innovator's and Incubator's Programmes at various banks in South-Africa. As one of the CEOs once said in an interview before an innovation rewards ceremony in 2010, that rewards were huge because radical innovations have been the source of nearly all their profit growth (Gaylard & Viedge, 2011).

Moderation indicates the effect of the moderator variable (success or failure) on the relation between the independent variables, CEA and entrepreneurial process and behaviour with the dependent variable (EO). A moderator is uncorrelated to the IV and DV. Its effect is measured by moderation equations which shows different effects for different values of the moderator (Cooper et al., 2003; Saunders & Thornhill, 2009).

The intention was to measure success as ideas logged and implemented, while failure, related to ideas logged but not implemented. Respondents indicated whether the process enhanced logging of ideas and if they perceive success as logging an idea or logging and implementing an idea. This implies that an individual's propensity to act entrepreneurial, as in being pro-active, innovative and taking risks, are impacted by the perceived success or failure they experience when embarking on the process.

The relationship between CEA and EO, as well as that between entrepreneurial process and behavior and EO, is not found to be moderated by success or failure of ideas implemented. Implication is that whether an idea is successful or

not, when the organisational architecture is in place and a process of idea generation is followed and these dimensions correlate positively with EO, it will enable higher levels of EO.

Success determinants are reliant on interrelated variables such as management support; customer and market focus; communication networks; HR strategies; team structures; knowledge management, leadership and technology structures (Damanpour, 1991).

Management should be reminded that only a select few employees are rewarded for successful implementations. This could be detrimental to the success of the innovation process, as employees could get discouraged by not winning. Negative attitudes and a reluctance to compete with colleagues could influence the value creation by means of the innovation process (Brown et al., 2001; Knapp et al., 2015; Kuratko et al., 2011; McClelland, 1965; Urban, 2012).

In the company studied, success is measured by logged ideas that were implemented for at least six months to confirm that the adoption and the execution of the ideas were successful. Failure did not necessarily relate to ideas that were logged but not implemented, as ideas that were considered to be possibly viable were rolled over to a new period; incorporated with another idea, or put in incubation for future use.

The annual awards ceremony is a prestigeous event, with not only financial gains for competitors but also a realisation of the impact that their participation has on themselves, their internal working environment, the external environment and customers, the markets and also on the competitiveness of their organisation.

As seen from data retrieved from the company's database, the programme is responsible for just over 9 000 fully implemented innovations during the first 10 years of implementation. This number includes small, incrementally small and radical innovations. The cumulative net present value of its 50 finalists between 2011 and 2013 amounts to R9 billion. The bank has awarded around R42 million in total in rewards to its innovative employees for the years 2004 up to 2016.

Data retrieved shows that in previous years, a success rate of between 8% to 12% on implementation was achieved. One of the previous CEOs of the bank indicated that he sees success in the implemented Innovators Programme as the following: every employee logs at least one idea and 10% of those logged ideas are implemented (Gaylard & Viedge, 2011). This means that innovation was embedded in the structures and adopted by all employees.

There are many difficulties when trying to operationalise success or failure in the entrepreneurial process domain. Success for one staff member could be seen as merely taking the time to identify an opportunity, while another staff member will consider success as exploitation and full implementation of the idea. Perceived success or failure was measured by questioning whether or not the organisational entrepreneurial process assist in opportunity implementation and if the implementation is considered as success over opportunity recognition.

The intention behind this construct is to understand if the perceived organisational view of innovation success or failure will influence the architecture, process and or EO. The success/failure construct itself did not measure at an acceptable reliability ($\alpha < 0.497$), therefore cannot be used as statistically significant. From the analysis done, the success/failure construct as moderating variable did not moderate the relationship between the organisational architecture construct and EO or the entrepreneurial process and EO.

The perceived success/failure construct for the purposes of this study, did not influence the organisational entrepreneurial architecture, process or ability to innovate. As per the literature review, (Kuratko et al., 2005) a gap exists in understanding at what stage of the entrepreneurial process, entrepreneurial intent succeeds or fails. The organisation used for this case study demonstrates the successful application of an entrepreneurial process, but fails to leverage the ability to use the data captured in this process for a measurable outcome to understand where ideas succeed or fail. The data below, as captured on the entrepreneurial process system for 2014 and 2015, reflects as follows:

- Total ideas logged using the entrepreneurial process system: **18,207**

- Ideas that remained in the “logged status” stage: **12,243**
- Ideas that remained in the “evaluation” stage: **2,900**
- Ideas implemented: **309**
- Ideas archived: **2,732**
- Ideas without data reflecting an accurate status: **23**

From the secondary data presented above, it can be assessed for 2014 – 2015, that the success rate for implementation was 309 out of 18, 207 ideas logged. But, 12, 243 are still logged and 2, 900 are in the evaluation stage, meaning that a number of these ideas may still be developed into full scale implementations, or incorporated into other innovations, not necessarily in the year that it was logged. Based on an implementation rate of between 8-12% in previous years and 10% average as assumed to be successful implementation by the CEO, at least 915 of the ideas in the evaluation stage, might still be implemented. At this stage, it is only 2, 755 or 15% (ideas archived and incorrect status) that failed.

From the above data, it is verified that the entrepreneurial process of idea or opportunity recognition and identification is positive and yields a large number of ideas that are logged, evaluated or adopted and exploited. However, it seems that the majority of identified ideas remains on the “logged” level. This indicates that further processing of ideas into new products or services fail at this stage.

Even though the moderating variable as success/failure proved unreliable when measured, the following conclusions can be drawn referring to this construct:

- The organisational entrepreneurial process enhances usage of the innovation logging system (secondary data).
- Implementation of ideas fails in the “logged” stage (secondary data).
- Respondents consider the innovation process to enable innovation success (questionnaire).
- Respondents mostly agreed that an innovation is considered to be successful on implementation, and not on recognition or identification of an idea (questionnaire).

The results indicated a positive relationship between the independent variables and the dependent variables. This organisation demonstrates a conducive pro-entrepreneurial organisational architecture, a successful entrepreneurial process and therefore high levels of entrepreneurial orientation. The respondents agree that successful implementation of ideas is considered as innovation success, yet most ideas fail in the "logged" stage, and take considerable time in the evaluation and exploitation stage. Investigations and future research is suggested to understand the synergy required for a pro-entrepreneurial organisational architecture, and an entrepreneurial orientation that will harvest the full potential of the entrepreneurial process to specifically moving ideas from opportunity recognition to opportunity exploitation into successful implementation.

5.4 Conclusion

H_1: There is a positive relationship between the elements of a pro-entrepreneurial organisational architecture in terms of (a) strategic orientation; (b) resources orientation; (c) management structure; (d) reward philosophy; (e) growth orientation and (f) entrepreneurial culture and entrepreneurial orientation (EO) in terms of (a) pro-activeness; (b) innovativeness and (c) risk-taking, where this relationship will be moderated by failure or success in implementation.

The corporate entrepreneurship strategy specifies where to find evidence of entrepreneurial activities in the company. Various models of CE and the corporate entrepreneurship strategy demonstrate an organisation's commitment in pursuing:

- new opportunities (Urban, 2012);
- new ventures and strategic renewal (Lumpkin & Dess, 1996);
- sustainability in innovative activities with organisational support and resources as continuous process (Kuratko et al., 2004);
- exploration and exploitation of opportunities (Ireland et al., 2009);
- an identifiable strategy within strategic management (Guth & Ginsberg, 1990);

- competitive capabilities and new knowledge (Ireland et al., 2009);
- pro-entrepreneurial architecture as the tool to translate the strategic vision into processes and behaviour to increase performance and success manifested as the EO (Ireland et al., 2009).

The above processes are influenced by external and internal environments and will shape and affect all processes and behaviour to encourage EO.

Results confirmed that there is a positive relationship between organisational architecture and EO. Failure or success from ideas implemented does not moderate the relationship between organisational architecture and entrepreneurial behaviour (EO).

H_2: There is a positive relationship between the elements of an entrepreneurial process in terms of (a) opportunities recognised (b) opportunities implemented and entrepreneurial orientation (EO) in terms of (a) pro-activeness, (b) innovativeness and (c) risk-taking where this relationship will be moderated by failure or success in implementation.

The essence of entrepreneurial behaviour can be seen as identifying and exploiting opportunities into new products, services or ventures (Kirzner, 1979; Schumpeter, 1934; Shane & Venkataraman, 2000; Shane, 2003). According to Ireland et al. (2009), external environmental conditions trigger top management to develop an entrepreneurial strategic vision which is translated into pro-entrepreneurial organisational architecture. This manifests in the internal environment as employees with pro-entrepreneurship cognitions which lead to entrepreneurial behaviour by recognising the presence of opportunities. The actual pursuit of opportunities will be influenced or encouraged by available resources, support and guidance from management, cultural norms, reward and incentive structures (Ireland et al., 2009; Kuratko et al., 1990; Urban, 2012).

Entrepreneurial behaviour results in individual (recognition, rewards, incentives) and organisational-level (growth, financial and non-financial performance) outcomes (Shane & Venkataraman, 2000). These outcomes are evaluated relative to costs incurred in the process (Ireland et al., 2009).

Results confirmed that there is a positive relationship between entrepreneurial process and EO. Failure or success from ideas implemented does not moderate the relationship between entrepreneurial processes and behaviour with entrepreneurial orientation. (EO).

A presumed innovative bank (high level of entrepreneurial orientation) is the subject in the case study. Is the presence of innovation sufficient to label this institution as entrepreneurial? Will this entrepreneurial behaviour and rewarding thereof foster innovative and entrepreneurial thinking and acting in every individual and department?

The research objective was to analyse entrepreneurial orientation (EO) and the pro-entrepreneurial corporate architectures. The EO scale and EM scale were used to identify Stevenson (1983) salient elements of corporate entrepreneurship strategy which encourages entrepreneurial behaviours and processes of individuals and management structures (Brown et al., 2001; Miller, 1983; Urban, 2012). Success and failure and its impact on the entrepreneurial process should moderate the objective in finding a relationship between entrepreneurial orientation and the pro- entrepreneurial organisational architecture.

With the hypothesised models and analysis completed, it can be seen that both the pro-entrepreneurial architecture of an organisation and the presence of entrepreneurial processes and behaviour have an influence on the EO of the company. The level of impact will be a combination or synergy between the process and the architecture to either support or reject the opportunity recognition, evaluation and or implementation. Increases in the architecture or entrepreneurial activities and behaviour will increase and impact on risk-taking, innovation and pro-activeness. However, the perception of success or failure of logged ideas and the implementation thereof were not supportive of these increases.

CHAPTER 6: IMPLICATIONS AND RECOMMENDATIONS

6.1 Introduction

Ronald H. Coase, a Nobel Laureate, defines entrepreneurship as:

> *Entrepreneurship involves undertaking new business initiatives, such as setting up a new firm, creating a new market, inventing a new product, experimenting a new way of marketing, retailing, or organizing the production line, and bearing the related risks. These are all novel business endeavors, their outcomes cannot possibly be known in advance. Most of these attempts may fail, but the few successful ones help to introduce fundamental changes to the economy, keeping it innovative* (Terjesen & Wang, 2013, p. 177).

Companies experience greater challenges to sustain competitive advantage through innovation creation today, partially due to an ever-growing hostile, disruptive and technological nature of the environment (Terjesen & Wang, 2013). The core ideology for a corporate organisation is to foster creativity while sustaining innovation through technological advances and developments, to allow for a greater competitive advantage by introducing revolutionary innovations. The organisation as case study for this research is in a perceived predicament to reassure its ecosystem of its pro-entrepreneurial environment and ability to generate ideas for innovation.

In Chapter 6, academic and practical implications of this research are discussed. Limitations and suggestions for future research are recommended.

6.2 Conclusions of the study

As stated in Chapter 1, it is perceived that the organisation selected for the purposes of this study, is innovative, with a well-designed corporate entrepreneurial strategy to encourage entrepreneurial behaviour and orientation. The company recently evaluated its corporate entrepreneurship

strategy to reposition the Innovation Programme which is in use for identifying and exploiting opportunities.

The research intention or objective was to analyse the entrepreneurial orientation (EO) with the Miller/Covin-Slevin scale Miller (1983); to identify Stevenson (1983) salient elements of entrepreneurial organisational architecture as part of the corporate entrepreneurship strategy, which encourages entrepreneurial behaviours and processes of individuals and management structures (Brown et al., 2001; Miller, 1983; Urban, 2012). This was measured with the EM measurement scale as developed by Brown et al. (2001).

Success and failure and its impact on the entrepreneurial process and the pro-entrepreneurial architecture should moderate the relations of these two constructs with the entrepreneurial orientation of the company.

The CES (as developed by management) should support a pro-entrepreneurial and actionable architecture within the company to ensure that employees have the freedom to partake in innovation processes enabled by either cognitive (create ideas) or implementation and execution abilities they possess (Kuratko et al., 2011).

Entrepreneurial orientation (EO) as risk-taking propensity, innovativeness and pro-activeness can be enhanced through the implementation and fostering of a conducive pro-entrepreneurial organisational architecture in the ecosystem of the organisation (Guth and Ginsberg (1990); Lumpkin and Dess (1996); Zahra and Covin (1995)**.**

Discussions in Chapter 5 showed that the different elements of organisational architecture (management support, strategic orientation, resource orientation, entrepreneurial culture, growth and reward) have a positive relationship with entrepreneurial orientation (EO). The relationship between the organisational architecture and entrepreneurial orientation (EO) is not necessarily moderated by failure or success from ideas implemented.

The entrepreneurial process (opportunity recognition, evaluation and implementation) has a positive relationship with entrepreneurial orientation (EO). The relationship between the entrepreneurial process and entrepreneurial orientation (EO) is not necessarily moderated by failure or success from ideas implemented.

6.3 Implications and Recommendations

Research suggests that a company's competitive capability relies on the entrepreneurial capability which is influenced by the architecture, processes and behaviour of individuals (Ireland et al., 2009). By exploiting opportunities, organisations are enabled to change their CE strategies and strengthen existing capabilities, and build new capabilities (Kuratko et al., 2004).

The outcome of this research will be beneficial to both the organisation and scholars as discussed below:

6.3.1 Academic implications

The body of literature on entrepreneurship, entrepreneurial orientation and the CE domain seeks to identify internal and external conditions required for innovation to occur. With little consensus on a common body of knowledge, results which contribute to that are important (Rauch et al., 2004).

This study contributes to this knowledge by identifying the constructs to be present in the organisation for innovation and entrepreneurial behaviour to occur, as stated in various models and theories in literature (Brown et al., 2001; Ireland et al., 2009; Shane & Venkataraman, 2000; Urban, 2012).

The existence and relationships between the constructs provide for findings demonstrating conclusions such as perceptions of success and failure in this financial environment, do not necessarily influence the processes of entrepreneurship and behaviour. It also indicated that opportunity recognition (logging innovations) is perceived as being important and at a high level in this organisation, but that success is seen as full implementation of these logged ideas.

The measurement instruments used in this study appear to be applicable across many different types of firms (Brown et al., 2001; Kuhn et al., 2010; Urban, 2012). As Stevenson (1983) indicated, the antecedents of entrepreneurship can be studied using entrepreneurial management as a substitute for opportunity-seeking behaviour (Brown et al., 2001).

6.3.2 Practical implications

As stated in Chapter 1, the question on how to ensure continuous and sustainable levels of high entrepreneurial and innovative activity in an organic environment, both internal and external, will always be important.

Top management need to support and focus attention on the corporate entrepreneurship strategy of the company to exploit and develop their competitive advantage. At the same time, they should make decisions and implement strategies for future advantages and dimensions of entrepreneurship to increase growth, profit and competitive survival.

As discussed in Chapter 2, when a CE strategy is in place and structural flexibility is enhanced by transparent and open communication channels, with support and encouragement by top management, innovation and entrepreneurial behaviour will happen on a sustained basis. Employees need to be empowered to share the vision and factors which constitute the entrepreneurial culture of the company. Organisational boundaries, time availability, rewards and recognition play a role in determining the employees' attitudes of support or indifference.

From discussions in the foregoing chapters it follows that this organisation must recognise and develop its CE strategy to upgrade its entrepreneurial orientation and build human capability. Entrepreneurial individuals should be challenged, rewarded and included in the CE process to add value to the scope of operations and entrepreneurial outcomes of the company.

Banks, therefore need to ensure that all levels of management are informed and supportive of the entrepreneurial actions, visions and strategies in the bank and

that this knowledge is enhanced and cultivated into actions by middle management or owner-managers.

In the financial complexity of the commonly assumed conservative banking industry, it might be quite difficult to introduce innovative products or services, especially if it is technologically advanced and radical. Banks will have to build close relationships with their customers to develop not only their offerings but their customers as well, so as to get acceptance for their innovations.

At the moment, South Africa and especially, financial institutions keep an eye on the exit of Great Britain from the European Union, the so called Brexit. In the next few years banks will closely watch and evaluate this situation as it might have huge impacts on international money markets, investments and the import-export markets.

The banking industry, locally as well as internationally, has seen breakthroughs and mind-shifting ideas and products implemented because of disruptive technologies like the internet and mobile applications. Banks in South Africa will have to investigate, scan and stay abreast of new technologies to apply, operate and translate these technologies into their processes and products to be ahead of their competitors, and to continuously and proactively change the rules of the banking industry.

Threats from competitors in the marketplace are not always expected or predictable, but banks need to be responsive and adapt themselves to maintain a competitive advantage in the financial market they operate in. In South Africa new competitors, like medical aid and health care companies, which are not perceived as banking institutions, are in the process of launching banking services.

Shane (2003) does not give attention to evaluation of the opportunity and further states that the entrepreneurial process may not necessarily be profitable. He is also not convinced that the entrepreneur has to take the opportunity from the discovery/exploitation/start-up phase to implementation/profit making. Managers and skilled staff members may be responsible for the execution and growth phase of the new venture (Shane, 2003).

A recommendation for the organisation based on the above statement of Shane (2003), will be to look at the process of innovation and implementation differently. Further to the discussion in 5.3.4 it appears that the successful implementation of new ideas is bottlenecking at the logged stage. The unique nature of demographic, psychometric profiles and personality characteristics requires innovation channels with multiple avenues to follow.

Some corporate organisations make use of an open innovation model which involves external companies to present their ideas to the corporate for adoption, using their knowledge, resources and capabilities to improve the process (Kuratko et al., 2011). The organisation studied, with a confirmed pro-entrepreneurial environment, generally makes use of an internal innovation model for most of the innovation and idea generations. This already removes one of the barriers in changing the mind-set of employees to believe in their abilities as capable innovators. The challenge is to unlock the potential for generating more viable ideas and ensuring greater execution and success rates in less time, without ideas being stopped at the identification stage.

An innovators programme should allow for a wide variety of personality types to generate a larger margin in idea generation and execution. Creative, entrepreneurial individuals (entrepreneurial focus or promoter) generating innovative ideas are not necessarily great at the execution. While individuals with organised, analytical and practical mindsets (administrative focus or trustee) are not necessarily great at generating ideas (Kuhn et al., 2010).

An Internal Open Innovation Model is suggested to be the solution. Kuratko et al. (2011) suggest that in this model, R&D departments look at internal and external knowledge sources and capabilities to accelerate internal innovation and paths to develop and implement their technologies. In this case, useful information, skills and resources are widely distributed across teams and departments in the organisation.

This will allow idea generating employees to be innovative and increase their entrepreneurial opportunity recognition. Those employees who are able and happy to collaborate with the ‘idea champions’ to execute these innovations, and to be rewarded for that, will also be accommodated. A reward recognition

programme for innovations should not exclude individuals who do not have a propensity to be creative or have an alertness to opportunity. Individuals inclined to assist in delivering on timelines should be able to benefit as much as the creator of the idea.

Figure 16 illustrates the suggested high level lifecycle and associated rewards buckets.

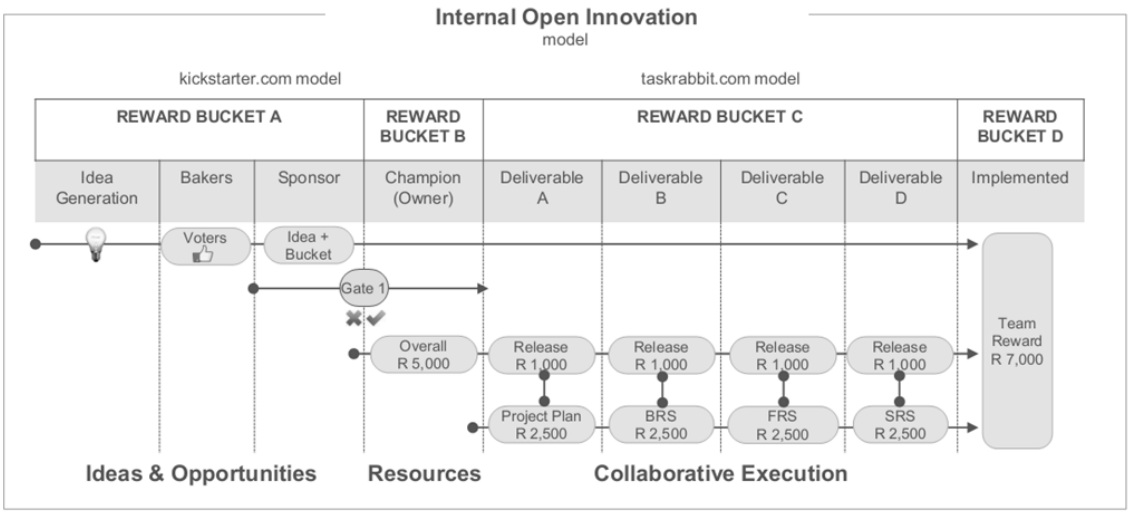

Figure 16: Internal Open Innovation Model, Source: Author

The fundamental change is in the rewards recognition system, to not only reward great implemented ideas but to reward the process of collaboration and execution of innovations as well. This model may be facilitated by an internal web platform for logging ideas with certain aspects of the kickstarter.com and taskrabbit.com models combined.

In the kickstart.com model, all employees will be able to vote, volunteer or “bake” towards ideas that demonstrate a strong business case through the pitch loaded by the idea generator. The champion logs the idea by creating a new idea page and uploads, creates or types the pitch for the idea, while demonstrating how it aligns to the company levers or focus segments as set by top management in the CES.

The champion proposes an implementation reward bucket for approval and explains the implementation criteria and its deliverable requirements. Examples of such requirements may include, formulating a business case, compiling a

comprehensive business requirements specification document, project management or project schedules. Once the bakers have voted and surpassed the preselected threshold criteria, all business unit sponsors will receive a notification to approve or decline the idea for adoption. With approval from the sponsor the proposed reward bucket will be approved and that specific business unit will be liable for the reward bucket costs, as per the example below.

The implementation reward buckets are constructed as follows:

Reward Bucket A as per figure 10, rewards the idea logger with R5,000 which is paid once the idea has been baked and incepted by a sponsor. The idea generators may choose to give the idea up for adoption by another champion or may champion the idea themselves. This Reward Bucket A will drive idea generation and can be very lucrative for creative individuals (dreamers and inventors), who are not keen on execution.

Reward Bucket B will be rewarded to the overall champion of the implementation, by setting deliverables as milestones and will pay out when the idea evolves into an innovation. If the reward for bucket B is set at R5,000 the champion receives a R1,000 release for each deliverable completed, as defined by the pitch criteria.

It is in the best interest of the organisation to ensure that the idea logger remains the champion and therefore should be made as lucrative as possible for him.

Reward Bucket C rewards those individuals who have been selected to deliver certain components, as per the set criteria. If a Business Analyst completes a Business Requirements Specification (BRS) document for R2,500.00, he receives this amount once the document is completed, uploaded and verified by the champion.

Reward Bucket D will be rewarded to all the innovation resources who worked on the initiative, to ensure that everybody does their utmost to complete the innovation as speedily as possible, without compromising the quality.

Innovation Reward – This is not a bucket, but the Overall Company Innovations Reward Recognition System for ideas implemented. The web platform showcases all ideas implemented and employees will be able to vote internally for implemented ideas to receive rewards.

Various benefits could be realised if this model is implemented correctly, some of which might be:

- Increased collaboration and networking in exposure to greater resource capacity and intellectual capital.
- Higher alertness for opportunity recognition and propensity to generate ideas due to the potential shorter turnaround time in award recognition.
- Greater implementation conversion rates due to the ability to connect educated and experienced resources with required deliverables.
- Resource leverage through stretching resources.
- Complementing one resource with another to create higher combined value.
- Sharing the risk of innovation and reward.
- Lower failure rates through organisation wide voting on the feasibility of ideas which should result in reduced cost of innovation.
- Increased perception of top management support through the immediate sponsorship and vested interest via business unit owners and the allocated cost centre Reward Bucket sponsorship.
- Increased quantity and quality of implemented ideas.
- Increased efficiencies through the dedicated focus of vested interest of individuals in producing after hours.
- Increased speed of innovation due to the ability to earn more as soon as the allocated task has been completed.
- Greater innovation adoption and fostering the ecosystem of innovation through the ability to earn more by working after hours.
- Lower cost of innovation as employees will use after hours to complete deliverables as their day-to-day score card will still dictate their job role expectations.
- Ability to break down bureaucratic boundaries.

The suggested model of Internal Open innovation has the dispensation to ensure a corporate entrepreneurial climate propensity as it addresses the key components measured namely: top management support, work discretion, time availability, rewards recognition and organisational boundaries.

6.4 Limitations

This study was conducted on a commercial bank in a group of financial companies operating in the retail and business banking sector of South Africa. The remaining subsidiaries, as well as other banks in the financial sector are excluded from this study.

All factors pertaining to entrepreneurship and corporate entrepreneurship per se, were not discussed as the focus was on corporate entrepreneurial behaviour, organisational architecture and the entrepreneurial process.

As the quantitative research approach was followed, there were no interviews with respondents. A questionnaire was used for collection of data.

The group of employees targeted by the study are those employees who have demonstrated entrepreneurial activity in logging ideas onto the innovations database. No demographic specific data was taken into account, although an optional inclusion of the unique employee number, as question 38, was given. This could be used for future reference and analysis of demographic data to combine with this research.

No data on growth or performance was available or used in this research. It was not possible to assess whether risk-taking is associated with success or failure of implementation or whether it enhances the outcomes.

6.5 Suggestions for further research

Future research may focus on the following:

- Top management and Exco members and their perceptions and beliefs on positive outcomes for themselves and their companies linked to the presence of CE and EO strategies (Ireland et al., 2009). A comparison

between the results of employees on various levels and top management will indicate whether the CES was successfully implemented and communicated in the company.

- As per the suggestions it may be worthwhile to study the difference in demographic profiles and the ability to generate ideas opposed to implementation. Differences in age, qualifications, departments, teams and cultures might supply interesting findings on the entrepreneurial inclination and behaviour in these various categories.
- Cognitive, behavioural and motivational characteristics of human capital which contributes to patterns of decision-making and innovative behaviour, as well as, the effect of reward and recognition as motivators for entrepreneurial inclination, could further confirm what effect success or failure will have on the process.
- Replicate this study but include all factors pertaining to the success or failure of implementation of opportunities, with scientific valid and reliable questions juxtaposed with reversed order questions.
- Replicate this study on all commercial banks in South Africa to validate generalisation of the findings.
- Entrepreneurial orientation and behaviour as indicator or predictor of performance, growth and profit.

6.6 Conclusion

To conclude, entrepreneurship is encouraged and promoted. Research shows that flexible, informal environments and working climates, enhance and promote entrepreneurial actions, creativity and the flow of communication, information and ideas between employees, teams, departments and management.

Entrepreneurial management requires consistency in adopting a CE strategy as reflected in an entrepreneurial strategic vision, pro-entrepreneurial organisational architecture and entrepreneurial processes and behaviour which encourages and motivates entrepreneurial orientation in the organisation (Ireland et al., 2009). This ranges from the overall strategic orientation to reward

systems within the external and internal environments with financial growth and profits as outcome.

A company must excel in most of these dimensions to create an exceptional entrepreneurial culture and superior value (Brown et al., 2001). However, strategy is based on stability, while innovation and entrepreneurship thrive on chaos, change and disruption (Ireland et al., 2009; Mintzberg, 1994). A balance between the two will keep the company at the edge of entrepreneurial competition (Eisenberger, Fasolo, & Davis-LaMastro, 1990).

REFERENCES

Allen, K., & Stearns, T. (2004). Technology entrepreneurs. In W. B. Gartner, K. G. Shaver, N. M. Carter, & P. D. Reynolds (Eds.), *Handbook of Entrepreneurial Dynamics*: *The Process of Business Creation* (pp. 438-447). Thousand Oaks, CA: Sage Publications.

Anderson, B. S., Covin, J. G., & Slevin, D. P. (2009). Understanding the relationship between entrepreneurial orientation and strategic learning capability: an empirical investigation. *Strategic Entrepreneurship Journal, 3*(3), 218-240.

Anderson, B. S., Kreiser, P. M., Kuratko, D. F., Hornsby, J. S., & Eshima, Y. (2015). Reconceptualizing entrepreneurial orientation. *Strategic Management Journal, 36*(10), 1579-1596.

Antoncic, B., & Hisrich, R. D. (2001). Intrapreneurship: Construct refinement and cross-cultural validation. *Journal of Business Venturing, 16*(5), 495-527. doi: 10.1.1.468.2327

Antoncic, B., & Hisrich, R. D. (2004). Corporate entrepreneurship contingencies and organizational wealth creation. *Journal of Management Development, 23*(6), 518-550.

Antoncic, B., & Prodan, I. (2008). Alliances, corporate technological entrepreneurship and firm performance: Testing a model on manufacturing firms. *Technovation, 28*(5), 257-265.

Ardichvili, A., Cardozo, R., & Ray, S. (2003). A theory of entrepreneurial opportunity identification and development. *Journal of Business Venturing, 18*(1), 105-123.

Audretsch, D. B. (2009). The entrepreneurial society. *The Journal of Technology Transfer, 34*(3), 245-254.

BAI Finacle Global Banking Innovation Awards (2012). Retrieved from Infosys Website: https://www.infosys.com/newsroom/press-releases/Pages/banking-innovation-award2012.aspx.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman. Retrieved from https://www.uky.edu/~eushe2/Bandura/Bandura1994EHB.pdf

Baron, R. A. (2004). The cognitive perspective: a valuable tool for answering entrepreneurship's basic “why” questions. *Journal of Business Venturing, 19*(2), 221-239.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology, 51*(6), 1173. Retrieved from www.personal.kent.edu/.../Baron%20&%20Kenny%20(1986)%20-%20JPSP.pdf

Barreira, J., Carmichael, T., Dagada, R., Duneas, N., Marcelle, G., Smith, P., & Urban, B. (2011). Technopreneurship: Strategy, Innovation, and Entrepreneurship. Perspectives in entrepreneurship (Vol. 3). Cape Town: Pearson Education.

Barringer, B., & Ireland, R. (2010). *Entrepreneurship: Successfully launching new ventures* (3rd ed.). Upper Saddle River, N.J. : Prentice Hall.

Bartlett II, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational research: Determining appropriate sample size in survey research. *Information Technology Learning and Performance Journal, 19*(1), 43-50.

Bartlett, M. S. (1954). A note on the multiplying factors for various χ 2 approximations. *Journal of the Royal Statistical Society. 16*(2), 296-298. Retrieved from https://www.jstor.org/stable/10.2307/i349700

Blaikie, N. (2007). *Approaches to social enquiry: Advancing knowledge*. (2nd ed.). Cambridge, UK: Polity Press. Retrieved from http://www.polity.co.uk/book.asp?ref=9780745634494

Blazevic, V., & Wünderlich, N. (2011). The unchosen idea: attribution bias in collaborative innovation. Ithaca, New York: (n.p.). Retrieved from https://core.ac.uk/display/16179919

Blumberg, B. F., Cooper, D. R., & Schindler, P. S. (2014). *Business research methods*. London: McGraw-hill education.

Brettel, M., Chomik, C., & Flatten, T. C. (2015). How organizational culture influences innovativeness, proactiveness, and risk-taking: Fostering entrepreneurial orientation in SMEs. *Journal of Small Business Management, 53*(4), 868-885.

Brown, T. E., Davidsson, P., & Wiklund, J. (2001). An operationalization of Stevenson's conceptualization of entrepreneurship as opportunity-based firm behavior. *Strategic Management Journal, 22*(10), 953-968.

Bryman, A. (2003). *Quantity and quality in social research*: New York: Routledge. Retrieved from https://www.routledge.com/Quantity-and-Quality-in-Social-Research/Bryman/p/book/9780203410028

Buchanan, D., Boddy, D., & McCalman, J. (1988). Getting in, getting out, getting back: the art of the possible. In A. Bryman (ed.), *Doing Research in Organisations* (pp. 53-67). London: Routledge & Kegan Paul. Retrieved from https://www.jstor.org/stable/23747507

Bull, M., & Urban, B. (2008). Social entrepreneurship in South Africa: delineating the construct with associated skills. *International Journal of Entrepreneurial Behavior & Research, 14*(5), 346-364.

Burgelman, R. A. (1983). Corporate entrepreneurship and strategic management: Insights from a process study. *Management science, 29*(12), 1349-1364. doi: 10.1287/mnsc.29.12.1349

Burns, P. (2010). *Entrepreneurship and Small Business: Start-up. Growth and Maturity* (3rd ed. revised). Hampshire: Palgrave Macmillan.

Chang, Y.-C., Chang, H.-T., Chi, H.-R., & Chiu, W.-H. (2009). *Firm attributes and intellectual capital disclosure: evidences from IPO prospectuses in Taiwan.* In C. Stam (ed.) Proceedings of the European Conference on Intellectual Capital, Holland University of Applied Sciences, Haarlem, The Netherlands on the 28-29 April 2009. Retrieved from http://120.107.180.177/1832/9801/9801-13pa.pdf

Cooper, D. R., Schindler, P. S., & Sun, J. (2003). Business research methods. New York: McGraw-Hill/Irwin.

Covin, J. G., & Miles, M. P. (1999). Corporate entrepreneurship and the pursuit of competitive advantage. *Entrepreneurship: Theory and Practice, 23*(3), 47-47. doi: 10.1177/0971355713513356

Covin, J. G., & Slevin, D. P. (1986). The development and testing of an organizational-level entrepreneurship scale. *Frontiers of Entrepreneurship Research, 1*(1986), 626-639. Retrieved from https://fusionmx.babson.edu/entrep/

Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal, 10*(1), 75-87. doi: 10.1002/smj.4250100107

Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship: Critical Perspectives on Business and Management, 3*, 5-28. Retrieved from http://kisi.deu.edu.tr//ethem.duygulu/covin%20ve%20slevin.pdf

Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika, 16*(3), 297-334. doi:10.1007/BF02310555.

Damanpour, F. (1991). Organizational innovation: A meta-analysis of effects of determinants and moderators. *Academy of Management Journal, 34*(3), 555-590. doi: 10.2307/256406.

Davidsson, P. (2004). *Researching entrepreneurship*. New York: Springer.

Dees, J. G. (1998). The meaning of social entrepreneurship: Kauffman Center for Entrepreneurial Leadership. Stanford University: Draft Report for the Kauffman Center for Entrepreneurial Leadership.

Dees, J. G., Emerson, J., & Economy, P. (Eds.). (2002). *Enterprising nonprofits: A toolkit for social entrepreneurs* (Vol. 186). New York: John Wiley & Sons. Retrieved from https://entrepreneurship.duke.edu/news-item/the-meaning-of-social-entrepreneurship

DeVellis, R. F. (2012) *Scale Development: Theory and Applications.* Applied Social Research Methods (Vol. 26). Thousand Oaks, CA: Sage Publications.

Donald, K. F., & Goldsby, M. G. (2004). Corporate entrepreneurs or rogue middle managers? A framework for ethical corporate entrepreneurship. *Journal of Business Ethics, 55*(1), 13-30.

Eisenberger, R., Fasolo, P., & Davis-LaMastro, V. (1990). Perceived organizational support and employee diligence, commitment, and innovation. *Journal of Applied Psychology, 75*(1), 51-59.

Engel, J. S. (2011). Accelerating corporate innovation: Lessons from the venture capital model. *Research-Technology Management, 54*(3), 36-43.

Floyd, S. W., & Lane, P. J. (2000). Strategizing throughout the organization: Managing role conflict in strategic renewal. *Academy of Management Review, 25*(1), 154-177.

Gaylard, A., & Viedge, C. (2011). *First National Bank: Developing a culture of innovation*. (WBS-2011-2). Johannesburg: Wits Business School.

Gaylard, M., Sutherland, M., & Viedge, C. (2005). The factors perceived to influence the retention of information technology workers. *South African Journal of Business Management, 36*(3), 87-97.

Gill, J., & Johnson, P. (2010). *Research methods for managers*. Thousand Oaks, CA: Sage Publications.

Ginsberg, A., & Hay, M. (1994). Confronting the challenges of corporate entrepreneurship: Guidelines for venture managers. *European Management Journal, 12*(4), 382-389.

Glesne, C., & Peshkin, A. (1992). *Becoming qualitative researchers: An introduction*. White Plains, NY: Longman. Retrieved from https://books.google.co.za/books/about/Becoming_qualitative_researchers.html?id=PhFHAAAAMAAJ

Golafshani, N. (2003). Understanding reliability and validity in qualitative research. *The Qualitative Report, 8*(4), 597-606.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 105-117). Thousand Oaks, CA: Sage Publications.

Guth, W. D., & Ginsberg, A. (1990). Guest editors' introduction: Corporate entrepreneurship. *Strategic Management Journal, 11*(5), 5-15. Retrieved from URL: http://www.jstor.org/stable/2486627

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th ed.). New Jersey, USA: Prentice Hall. Retrieved from https://www.abebooks.com/book-search/isbn/0138948585

Hindle, K. (2007). Teaching entrepreneurship at university: from the wrong building to the right philosophy. In Fayolle, A. (ed.) *Handbook of research in entrepreneurship education* (Vol. 1, pp. 104-126). doi: 10.1.1.452.5502

Hisrich, R. D., & Drnovsek, M. (2002). Entrepreneurship and small business research: A European perspective. *Journal of Small Business and Enterprise Development, 9*(2), 172-222.

Hitt, M. A., Ireland, R. D., & Hoskisson, R. E. (2012). *Strategic management concepts and cases: competitiveness and globalization* (10th ed.). Mason, USA: South Western Cengage Learning.

Hitt, M. A., & Reed, T. S. (2000). Entrepreneurship in the new competitive landscape. In Meyer, G. D. & Heppard, K. A. (Eds.). *Entrepreneurship as strategy: competing on the entrepreneurial edge* (pp. 23–48). Thousand Oaks, CA: Sage Publications.

Holmgren, C., & From, J. (2005). Taylorism of the mind: entrepreneurship education from a perspective of educational research. *European Educational Research Journal, 4*(4), 382-390.

Hornsby, J. S., & Kuratko, D. F. (2003). Human resource management in US small businesses: A replication and extension. *Journal of Developmental Entrepreneurship, 8*(1), 73-92.

Hornsby, J. S., Kuratko, D. F., Shepherd, D. A., & Bott, J. P. (2009). Managers' corporate entrepreneurial actions: Examining perception and position. *Journal of Business Venturing, 24*(3), 236-247.

Hornsby, J. S., Kuratko, D. F., & Zahra, S. A. (2002). Middle managers' perception of the internal environment for corporate entrepreneurship: Assessing a measurement scale. *Journal of Business Venturing, 17*(3), 253-273.

Hornsby, J. S., Naffziger, D. W., Kuratko, D. F., & Montagno, R. V. (1993). An interactive model of the corporate entrepreneurship process. *Entrepreneurship: Theory and Practice, 17*(2), 29-38.

Howe, K. R., & Moses, M. S. (1999). Ethics in educational research. *Review of Research in Education, 24*(1), 21-59. doi: 10.3102/0091732X024001021.

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

Jaruzelski, B., Staack, V., & Goehle, B. (2014). Proven paths to innovation success. In PwC. *Strategy & Business: 10th Global Innovation 1000* (Winter ed). New York: PwC Strategy&. Retrieved from http://www.strategyand.pwc.com/reports/2014-global-innovation-1000-study.

Kaiser, H. F. (1970). A second generation little jiffy. *Psychometrika, 35*(4), 401-415. doi: 10.1007/BF02291817

Kaiser, H. F., & Rice, J. (1974). Little jiffy, mark IV. *Educational and Psychological Measurement, 34*(1), 111-117. doi: 10.1177/001316447403400115

Karim, J., Somers, T. M., & Bhattacherjee, A. (2007). The impact of ERP implementation on business process outcomes: A factor-based study. *Journal of Management Information Systems, 24*(1), 101-134. doi: 10.2753/MIS0742-1222240103

Kim, J., & Mueller, C. W. (1994). Factor analysis: Statistical methods and practical issues, part II. In M.S. Lewis-Beck (ed.) *Factor analysis and related techniques (Vol. 5).* London: Sage Publications.

Kirzner, I. M. (1979). *Perception, opportunity, and profit: Studies in the theory of entrepreneurship*: Chicago: University of Chicago Press.

Klein, K. J., & Sorra, J. S. (1996). The challenge of innovation implementation. *Academy of Management Review, 21*(4), 1055-1080. Retrieved from Jstor Webpage: http://www.jstor.org/stable/259164

Knapp, B., Bardenet, R., Bernabeu, M. O., Bordas, R., Bruna, M., Calderhead, B., . . . Kuijper, B. (2015). Ten simple rules for a successful cross-disciplinary collaboration. *PLoS Comput Biol, 11*(4). Retrieved from: http://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1004214

Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing, 15*(5), 411-432.

Kuhn, B., Sassmannshausen, S., & Zolin, R. (2010). *"Entrepreneurial management" as a strategic choice in firm behavior: linking it with performance.* Paper presented at the 18th Annual High Technology Small Firms Conference and Doctoral Workshop, University of Twente, Enschede, The Netherlands., 25-28 May. Retrieved from http://purl.utwente.nl/proceedings/33

Kuratko, D. F., & Hodgetts, R. M. (2004). *Entrepreneurship: Theory, Process and Practice* (6th ed.). The Entrepreneurship series. United Kingdom: Thomson/South Western.

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

Kuratko, D. F., Hornsby, J. S., & Goldsby, M. G. (2004). Sustaining corporate entrepreneurship: modelling perceived implementation and outcome comparisons at organizational and individual levels. *The International Journal of Entrepreneurship and Innovation, 5*(2), 77-89.

Kuratko, D. F., Ireland, R. D., Covin, J. G., & Hornsby, J. S. (2005). A Model of Middle-Level Managers' Entrepreneurial Behavior. *Entrepreneurship Theory and Practice, 29*(6), 699-716.

Kuratko, D. F., Ireland, R. D., & Hornsby, J. S. (2001). Improving firm performance through entrepreneurial actions: Acordia's corporate entrepreneurship strategy. *The Academy of Management Executive, 15*(4), 60-71.

Kuratko, D. F., Montagno, R. V., & Hornsby, J. S. (1990). Developing an intrapreneurial assessment instrument for an effective corporate entrepreneurial environment. *Strategic Management Journal, 11*(5), 49-58.

Kuratko, D. F., Morris, M. H., & Covin, J. G. (2011). *Corporate innovation and entrepreneurship*. Cincinatti, OH: South-western Cengage Learning.

Landstrom, H., Parhankangas, A., Fayolle, A., & Riot, P. (Eds.). (2016). *Challenging Entrepreneurship Research*. Routledge Rethinking Entrepreneurship Research Series. New York: Routledge.

Lindegaard, S. (2010). *The open innovation revolution: essentials, roadblocks, and leadership skills*. Hoboken, NJ: John Wiley & Sons.

Lovgren, A., Peterson, C. H., & Ross, B. (2011). *Developing a framework for assisting entrepreneurs: A case study of the Michigan State University Product Center for Agriculture and Natural Resources.* Pittsburgh, Pennsylvania: Michigan State University.

Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review, 21*(1), 135-172. Retrieved from URL: http://www.jstor.org/stable/258632

Lyon, D. W., Lumpkin, G. T., & Dess, G. G. (2000). Enhancing entrepreneurial orientation research: Operationalizing and measuring a key strategic decision making process. *Journal of Management, 26*(5), 1055-1085. doi: 10.1177/014920630002600503

Magala, S., Rutherford, M. W., & Holt, D. T. (2007). Corporate entrepreneurship: An empirical look at the innovativeness dimension and its antecedents. *Journal of Organizational Change Management, 20*(3), 429-446. Retrieved from http://dx.doi.org/10.1108/09534810710740227

Maxwell, J. A. (2012). *Qualitative research design: An interactive approach (3rd ed.).* Applied social research methods series (Vol. 41). Thousand Oaks, CA: Sage Publications.

Maxwell, N. (1984). From knowledge to wisdom: A revolution in the aims and methods of science. In R. Barnett & N. Maxwell, (Eds.). *Wisdom in the University* (pp. 1-20). London: Routledge. 2008. Retrieved from https://www.srhe.ac.uk/conference2010/.../N_Maxwell_Knowledge_to_Wisdom.pdf

McClelland, D. C. (1965). N achievement and entrepreneurship: A longitudinal study. *Journal of Personality and Social Psychology, 1*(4), 389-392. Retrieved from http://psycnet.apa.org/doi/10.1037/h0021956

McShane, S., & Von Glinow, M. (2003). *Organizational behavior: Emerging realities for the workplace revolution*. (2nd ed.). New York: McGraw-Hill/Irwin.

Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management science, 29*(7), 770-791. Retrieved from http://pubsonline.informs.org/doi/abs/10.1287/mnsc.29.7.770

Mintzberg, H. (1994). *The rise and fall of strategic planning: Reconceiving roles for planning, plans, planners.* New York: The Free Press. Retrieved from http://coco-net.org/wp-content/uploads/2012/08/risefall.pdf

Mitchell, V. (1996). Assessing the reliability and validity of questionnaires: an empirical example. *Journal of Applied Management Studies, 5*, 199-208. Retrieved from www.journalijar.com/uploads/755_IJAR-8565.pdf

Morris, M., Kuratko, D., & Covin, J. (2010). *Corporate entrepreneurship & innovation*: Entrepreneurial development within organizations (3rd ed.). Mason, OH: South Western Cengage Learning.

Morris, M. H., & Kuratko, D. F. (2002). *Corporate entrepreneurship: Entrepreneurial development within organizations*. San Diego, CA: Harcourt College Publishers.

Morris, M. H., & Sexton, D. L. (1996). The concept of entrepreneurial intensity: Implications for company performance. *Journal of Business Research, 36*(1), 5-13. Retrieved from http://dx.doi.org/10.1016/0148-2963(95)00158-1.

Nunnally, J. C. (1967). Psychometric theory. New York: McGraw-Hill.

Nunnally, J. C., & Bernstein, I. (1994). *Psychometric theory (3rd ed.).* New York: McGraw-Hill. Retrieved from https://www.scribd.com/doc/223325596/Nunnally-Bernstein-Psychometric-Theory-3ed-1994

Ostojić Mihić, A., Umihanić, B., & Fazlović, S. (2015). The role of organizational innovation in achieving and maintaining company's business excellence. *Management: Journal of Contemporary Management Issues, 20*(1), 79-100.

Ozaralli, N., & Rivenburgh, N. K. (2016). Entrepreneurial intention: antecedents to entrepreneurial behavior in the USA and Turkey. *Journal of Global Entrepreneurship Research, 6*(1), 1-32.

Pande, P. S., Neuman, R. P., & Cavanagh, R. R. (2000). *The six sigma way*: *How GE, Motorola, and Other Top Companies Are Honing Their Performance*. New York: McGraw-Hill. Retrieved from http://www.premiumcoaching.be/uploads/images/The%20six%20sigma%20way.pdf

Peredo, A. M., & McLean, M. (2006). Social entrepreneurship: A critical review of the concept. *Journal of World Business, 41*(1), 56-65.

Porter, M. E., & Van der Linde, C. (1995). Toward a new conception of the environment-competitiveness relationship. *The Journal of Economic Perspectives, 9*(4), 97-118. Retrieved from http://www.jstor.org/stable/2138392?origin=JSTOR-pdf

Quinn, R. E., & McGrath, M. R. (1985). The transformation of organizational cultures: A competing values perspective. In P. J. Frost, L. F. Moore, M. R. Louis, C. C. Lundberg, & J. Martin (Eds.), *Organizational culture* (pp. 315-334). Beverly Hills,CA: Sage Publications. Rohrbaugh

Rauch, A., Wiklund, J., Frese, M., & Lumpkin, G. T. (2004). *Entrepreneurial orientation and business performance: an assessment of past research and suggestions for the .* Paper presented at the 23rd Babson College Entrepreneurship Research Conference. Glasgow, UK.

Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial orientation and business performance: An assessment of past research and suggestions for the future. *Entrepreneurship Theory and Practice, 33*(3), 761-787. doi: 10.1111/j.1540-6520.2009.00308.x

Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. In J. P. Robinson, P. R. Shaver, & L. S. Wrightsman (Eds.), *Measures of personality and social psychological attitudes* (Vol 1, pp. 1–16). San Diego, CA: Academic Press. Retrieved from http://www.radford.edu/~jaspelme/611/Spring-2007/Robinson_Shaver_and_Wrightsman_1991_Ch1.pdf

Rwigema, H., Urban, B., & Venter, R. (2008). *Entrepreneurship: theory in practice*. Caoe Town: Oxford University Press Southern Africa.

Santos, J. R. A. (1999). Cronbach's alpha: A tool for assessing the reliability of scales. *Journal of Extension, 37*(2), 1-5. Retrieved from https://www.joe.org/joe/1999april/tt3.php

Saunders, M. L., & Thornhill, A. (2009). *Research methods for business students*. (5th ed.).London: Prentice-Hall/Financial Times. Retrieved from http://ebooks.narotama.ac.id/files/Research%20Methods%20for%20Business%20Students%20(5th%20Edition)/Cover%20&%20Table%20of%20Contents%20-%20Research%20Methods%20for%20Business%20Students%20(5th%20Edition).pdf

Schindehutte, M., Morris, M. H., & Kocak, A. (2008). Understanding market-driving behavior: the role of entrepreneurship. *Journal of Small Business Management, 46*(1), 4-26.

Schindehutte, M., Morris, M. H., & Kuratko, D. F. (2000). Triggering events, corporate entrepreneurship and the marketing function. *Journal of Marketing Theory and Practice, 8*(2), 18-30.

Schumpeter, J. A. (1934). *The theory of economic development: An inquiry into profits, capital, credit, interest, and the business cycle*. New Brunswick,

USA: Transaction Publishers. Retrieved from https://books.google.ca/books?id=-OZwWcOGeOwC&printsec=frontcover#v=onepage&q&f=false

Schwab, K., & Sala-i-Martin, X. (Eds.). (2015). *The global competitiveness report 2013–2014 (Full data ed.)*. World Economic Forum. Retrieved from www19.iadb.org/intal/intalcdi/PE/2013/12834.pdf

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

Shane, S., & Venkataraman, S. (2003). Guest editors' introduction to the special issue on technology entrepreneurship. *Research Policy, 32*(2), 181-184.

Shane, S. A. (2003). *A general theory of entrepreneurship: The individual-opportunity nexus*. Cheltenham, UK: Edward Elgar Publishing.

Shen, J., & Eder, L. B. (2009). Intentions to use virtual worlds for education. *Journal of Information Systems Education, 20*(2), 225-233. doi:10.1080/17439880902923622

Shepherd, D. A., McMullen, J. S., & Jennings, P. D. (2007). The formation of opportunity beliefs: Overcoming ignorance and reducing doubt. *Strategic Entrepreneurship Journal, 1*(1-2), 75-95. doi:10.1002/sej.3

Smallbone, D., & Welter, F. (2012). Entrepreneurship and institutional change in transition economies: The Commonwealth of Independent States, Central and Eastern Europe and China compared. *Entrepreneurship & Regional Development, 24*(3-4), 215-233.

Spector, P. E. (2006). Method variance in organizational research truth or urban legend? *Organizational Research Methods, 9*(2), 221-232. doi/full/10.1177/1094428105284955

Stanton, J. M. (2001). Galton, Pearson, and the peas: A brief history of linear regression for statistics instructors. *Journal of Statistics Education, 9*(3). Retrieved from http://ww2.amstat.org/publications/jse/v9n3/stanton.html.

Stanton, J. M., & Rogelberg, S. G. (2001). Using internet/intranet web pages to collect organizational research data. *Organizational Research Methods, 4*(3), 200-217. Retrieved from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.475.4288&rep=rep1&type=pdf

Stevenson, H. H. (1983). *A Perspective on Entrepreneurship.* Harvard Business School Background Note 384-131. Cambridge, Mass.: Harvard Business School. Retrieved from http://www.hbs.edu/faculty/Pages/item.aspx?num=9950

Stevenson, H. H., & Jarillo, J. C. (2007). A paradigm of entrepreneurship: Entrepreneurial management *Entrepreneurship* (pp. 155-170): Springer.

Tabachnick, B. G., Fidell, L. S., & Osterlind, S. J. (2001). *Using multivariate statistics*. Boston: Pearson/Allyn & Bacon. Retrieved from http://tocs.ulb.tu-darmstadt.de/135813948.pdf

Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education, 2*, 53-55. doi: 10.5116/ijme.4dfb.8dfd

Terjesen, S., & Wang, N. (2013). Coase on entrepreneurship. *Small Business Economics, 40*(2), 173-184. doi: 10.1007/s11187-012-9468-2

Torikka, J. (2011). *Does the theory of entrepreneurship suite to franchising*. Finland: University of Jyväskylä, School of Business & Economics. Retrieved from http://emnet.univie.ac.at/uploads/media/Torikka_01.pdf

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38*(1), 1-10. doi:10.1007/BF02291170

Urban, B. (2012). The effect of pro-entrepreneurship architecture on organisational outcomes. *Journal of Business Economics and Management, 13*(3), 518-545.

Van Wyk, R., & Adonisi, M. (2012). Antecedents of corporate entrepreneurship. *South African Journal of Business Management*, *43*(3), 56-78. Retrieved from http://hdl.handle.net/2263/21994

Van Zyl, J. (2011). *Built to Thrive: Using Innovation to Make Your Mark in a Connected World.* Retrieved from http://www.academia.edu/2053628/Built_to_Thrive_Using_Innovation_to_Make_Your_Mark_in_a_Connected_World

Venkataraman, S. (1997). The distinctive domain of entrepreneurship research. In J. Katz, & R. Brockhaus (Eds.), *Advances in entrepreneurship, firm emergence, and growth* (vol. 3, pp. 119-138). Greenwich, CT: JAI Press.

Venter, R., Urban, B., Beder, L., Oosthuizen, C., Reddy, C., & Venter, E. (2015). *Entrepreneurship: theory in practice* (3rd ed.). Cape Town: Oxford University Press.

Wiklund, J. (1998). *Small firm growth and performance: Entrepreneurship and beyond*. Jönköping: Internationella Handelshögskolan. Retrieved from http://swepub.kb.se/bib/swepub:oai:DiVA.org:hj-207?tab2=abs&language=en

Wiklund, J. (2006). The sustainability of the entrepreneurial orientation–performance relationship. In P. Davidsson, F. Delmar, & Wiklund, J (Eds.). *Entrepreneurship and the Growth of Firms* (pp. 141-155). Cheltenham, UK: Edward Elgar Publishing Ltd.

Wiklund, J., & Shepherd, D. A. (2011). Where to From Here? EO-as-Experimentation, Failure, and Distribution of Outcomes. *Entrepreneurship: Theory and Practice, 35*(5), 925-946.

Zahra, S. A. (1993). A conceptual model of entrepreneurship as firm behavior: A critique and extension. *Entrepreneurship: Theory and practice, 17*(4), 5-22.

Zahra, S. A., & Covin, J. G. (1995). Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis. *Journal of Business Venturing, 10*(1), 43-58.

Zahra, S. A., Ireland, R. D., Gutierrez, I., & Hitt, M. A. (2000). Introduction to Special Topic Forum Privatization and Entrepreneurial Transformation: Emerging Issues and a Future Research Agenda. *Academy of Management Review, 25*(3), 509-524.

Zahra, S. A., & O'Neill, H. M. (1998). Charting the landscape of global competition: Reflections on emerging organizational challenges and their implications for senior executives. *The Academy of Management Executive (1993-2005)*, 13-21.

Ziegler, R. (2011). *An introduction to social entrepreneurship*: *Voices, precondiditons, context*. Cheltenham, UK: Edward Elgar Publishing.

APPENDIX A - RESEARCH INSTRUMENT & CONSENT FORM

Corporate Entrepreneurship Research

We have selected you to participate in this research survey, because you have demonstrated a propensity to act entrepreneurial, by logging an Innovation on the previous Innovators Programme. The current research investigates the relationship between your organisations Entrepreneurial Orientation and Organisational Architecture and its influence on the success or failure of the innovation process.

This survey will take approximately 15 minutes to complete. By completing the survey you hereby agree to participate in this research.

Note: Please understand that your participation is voluntary and any study records that identify you will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including my academic supervisor. (All of these people are required to keep your identity confidential.) All study records will be destroyed after the completion of this research. This research has been approved by the organisation and Wits Business School. If you have any complaints or concerns about ethical aspects of the research or feel that you have been harmed in any way by participating in this study, please contact the Research Office Manager at the Wits Business School, Mmabatho Leeuw. Mmabatho.leeuw@wits.ac.za.

Participation in this study will be extremely helpful in enabling us to understand how to adopt our innovative culture and architecture for optimal participation. If you would like to receive feedback on the study, results will be available in February 2017

To complete the questionnaire please select the most appropriate number in the rating scale from 1 to 10. The selection you make will be based on how much you agree or disagree with the statement on the left or right. Example:

Corporate Entrepreneurship Research

Strategic Orientation

	1	2	3	4	5	6	7	8	9	10	
1. As we define our strategies, our major concern is how to best utilize the resources we control *	○	○	○	○	○	○	○	○	○	○	As we define our strategies, we are driven by our perception of Opportunity. We are not constrained by the resources at (or not at) hand. *
2. We limit the opportunities we pursue on the basis of our current resources *	○	○	○	○	○	○	○	○	○	○	Our fundamental task is to pursue opportunities we perceive as valuable and then to acquire the resources to exploit them. *
3. The resources we have significantly influence our business strategies *	○	○	○	○	○	○	○	○	○	○	Opportunities control our business strategies. *

Resource Orientation

	1	2	3	4	5	6	7	8	9	10	
4. Since we do not need resources to commence the pursuit of an opportunity, our commitment of resources may be in stages *	○	○	○	○	○	○	○	○	○	○	Since our objective is to use our resources, we will usually invest heavily and rapidly. ®
5. All we need from resources is the ability to use it. *	○	○	○	○	○	○	○	○	○	○	We prefer to totally control and own the resources we use. ®
6. We like to employ resources that we borrow or rent *	○	○	○	○	○	○	○	○	○	○	We prefer to only use our own resources in our ventures. ®
7. In exploiting opportunities, having the idea is more important than just having the money *	○	○	○	○	○	○	○	○	○	○	In exploiting opportunities, access to money is more important than just having the idea. ®

Management Structure

8. . *

	1	2	3	4	5	6	7	8	9	10	
We prefer tight control of funds and operations by means of sophisticated control and information systems	○	○	○	○	○	○	○	○	○	○	We prefer loose, informal control. There is a dependence on informal relations.

9. . *

	1	2	3	4	5	6	7	8	9	10	
We strongly emphasize getting things done by following formal processes and procedures	○	○	○	○	○	○	○	○	○	○	We strongly emphasize getting things done even if this means disregarding formal procedure.

10. . *

	1	2	3	4	5	6	7	8	9	10	
We strongly emphasize holding to tried and true management principles and industry norms	○	○	○	○	○	○	○	○	○	○	We strongly emphasize adapting freely to changing circumstances without much concern for past practices.

11. . *

	1	2	3	4	5	6	7	8	9	10	
There is a strong insistence on a uniform management style throughout the firm	○	○	○	○	○	○	○	○	○	○	Managers' operating styles are allowed to range freely from very formal to very informal.

12. . *

	1	2	3	4	5	6	7	8	9	10	
There is a strong emphasis on getting line and staff personnel to adhere closely to their formal job	○	○	○	○	○	○	○	○	○	○	There is strong tendency to let the requirements of the situation and the personality of the individual dictate proper job behavior.

Reward Philosophy

13. . *

	1	2	3	4	5	6	7	8	9	10	
Our employees are evaluated and compensated based on their responsibilities	○	○	○	○	○	○	○	○	○	○	Our employees are evaluated and compensated based on the value they add to the firm.

14. . *

	1	2	3	4	5	6	7	8	9	10	
Our employees are usually rewarded by promotion and annual raises	○	○	○	○	○	○	○	○	○	○	We try to compensate our employees by devising ways so they can benefit from the increased value of the firm.

15. . *

	1	2	3	4	5	6	7	8	9	10	
An employee's standing is based on the amount of responsibility he/she has	○	○	○	○	○	○	○	○	○	○	An employee's standing is based on the value he/he adds.

Growth Orientation

16. . *

	1	2	3	4	5	6	7	8	9	10	
An employee's standing is based on the amount of responsibility he/she has	○	○	○	○	○	○	○	○	○	○	An employee's standing is based on the value he/he adds.

17. . *

	1	2	3	4	5	6	7	8	9	10	
It is generally known throughout the firm that our intention is to grow as big and as fast as possible	○	○	○	○	○	○	○	○	○	○	It is generally known throughout the firm that steady and sure growth is the best way to expand. ®

Entrepreneurial Culture

18. . *

	1	2	3	4	5	6	7	8	9	10	
We have many more promising ideas than we have time and the resources to pursue	○	○	○	○	○	○	○	○	○	○	We find it difficult to find a sufficient number of promising ideas to utilize all of our resources. ®

19. . *

	1	2	3	4	5	6	7	8	9	10	
Changes in the society-at-large often give us ideas for new products and services	○	○	○	○	○	○	○	○	○	○	Changes in the society-at-large seldom lead to commercially promising ideas for our firm. ®

20. . *

	1	2	3	4	5	6	7	8	9	10	
Changes in the society-at-large often give us ideas for new products and services	○	○	○	○	○	○	○	○	○	○	Changes in the society-at-large seldom lead to commercially promising ideas for our firm. ®

Innovativeness

21. In general, the top managers of my firm favour: *

	1	2	3	4	5	6	7	8	9	10	
A strong emphasis on the marketing of tried-and-true products/services	○	○	○	○	○	○	○	○	○	○	A strong emphasis on R&D, technological leadership, and innovations.

22. How many new lines of products/services has your firm marketed in the past five years (or since its establishment): *

	1	2	3	4	5	6	7	8	9	10	
No new lines of products/services	○	○	○	○	○	○	○	○	○	○	Very many new lines of products/services.

23. How many new lines of products/services has your firm marketed in the past five years (or since its establishment): *

	1	2	3	4	5	6	7	8	9	10	
Changes in product/service lines have been mostly of a minor nature	○	○	○	○	○	○	○	○	○	○	Changes in product/service lines have usually been quite dramatic.

Pro-activeness

24. In dealing with its competitors, my firm.... *

	1	2	3	4	5	6	7	8	9	10	
Typically responds to actions which competitors initiate	○	○	○	○	○	○	○	○	○	○	Typically initiates actions to which competitors then respond.

25. In dealing with its competitors, my firm.... *

	1	2	3	4	5	6	7	8	9	10	
Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc	○	○	○	○	○	○	○	○	○	○	Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.

26. In dealing with its competitors, my firm.... *

	1	2	3	4	5	6	7	8	9	10	
Typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	○	○	○	○	○	○	○	○	○	○	Typically adopts a very competitive, "undo-the-competitors" posture.

Risk-taking

27. In general, the top managers of my firm have… *

	1	2	3	4	5	6	7	8	9	10	
A strong proclivity for low-risk projects (with normal and certain rates of return)	○	○	○	○	○	○	○	○	○	○	A strong proclivity for high-risk projects (with chances of very high returns)

28. In general, the top managers of my firm believe that… *

	1	2	3	4	5	6	7	8	9	10	
Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behavior	○	○	○	○	○	○	○	○	○	○	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives.

29. When confronted with decision-making situations involving uncertainty, my firm… *

	1	2	3	4	5	6	7	8	9	10	
Typically adopts a cautious, "wait-and-see" posture in order to minimize the probability of making costly decisions	○	○	○	○	○	○	○	○	○	○	Typically adopts a bold, aggressive posture in order to maximize the probability of exploiting potential opportunities.

Innovation Process

30. Generally the innovation process consist of Idea or opportunity recognition followed by evaluation and finally implementation. *

	1	2	3	4	5	6	7	8	9	10	
My organization do not follow this process.	○	○	○	○	○	○	○	○	○	○	My organization follow this process.

31. . *

	1	2	3	4	5	6	7	8	9	10	
I am not familiar to use the process of innovation implemented by my organization	○	○	○	○	○	○	○	○	○	○	I know how to use the process of innovation implemented by my organization.

32. . *

	1	2	3	4	5	6	7	8	9	10	
The most important part of the innovation process is successfully evaluating the idea	○	○	○	○	○	○	○	○	○	○	The most important part of the innovations process is to successful implement the idea.

33. . *

	1	2	3	4	5	6	7	8	9	10	
If I have not intent to implement the idea I should not log the idea	○	○	○	○	○	○	○	○	○	○	Even if I do not implement an idea it is still valuable to log the idea.

34. . *

	1	2	3	4	5	6	7	8	9	10	
Most ideas in the innovation process fail at the evaluation stage	○	○	○	○	○	○	○	○	○	○	Most ideas in the innovation process fail at the implementation stage.

35. . *

	1	2	3	4	5	6	7	8	9	10	
The innovation process in our organization is complex and do not assist in successful innovation. *	○	○	○	○	○	○	○	○	○	○	The innovation process in our organization is easy to use and promotes successful innovation. *

Innovation Success or Failure

36. Generally in our organization successful innovation is regarded as: *

	1	2	3	4	5	6	7	8	9	10	
A new innovative idea logged. *	○	○	○	○	○	○	○	○	○	○	A new innovative idea implemented. *

37. . *

	1	2	3	4	5	6	7	8	9	10	
The innovation process used by the organization prohibits the innovation success	○	○	○	○	○	○	○	○	○	○	The innovation process used by the organization enables greater innovation success.

38. **Optional:** Please type in your F-number(only the digits). This is optional and may be used in future to draw correlations against demographic and or education versus innovation propensity.

APPENDIX B - CONSISTENCY MATRIX

Research problem: Describe the relationship between the organisational architecture of a corporation and the entrepreneurial process, typified in the process of discovery, evaluation, exploitation and implementation of entrepreneurial opportunity by its owner-managers within the entrepreneurial orientation of that company. Success or failure as perceived by the owner-managers at specific stages of the entrepreneurial process will influence these actions.					
Sub-problem	**Literature Review**	**Hypotheses**	**Source of data**	**Type of data**	**Analysis**
Sub-Problem 1 Identify if organisational architecture has a positive effect on the entrepreneurial orientation of the organisation.	(Anderson et al., 2015; Donald & Goldsby, 2004; Hornsby et al., 2002; Ireland et al., 2009; Schindehutte et al., 2000); Stevenson (1983) Guth and Ginsberg (1990); Lumpkin and Dess (1996); Zahra and Covin (1995); (Antoncic & Hisrich, 2001; Kuratko et al., 2011; Ostojić Mihić et al., 2015; Porter & Van der Linde, 1995; Rwigema et al., 2008; Urban, 2012) Engel (2011))	**H_1**: There is a positive relationship between the elements of a pro-entrepreneurial organisational architecture in terms of (a) strategic orientation; (b) resources orientation; (c) management structure; (d) reward philosophy; (e) growth orientation and (f) entrepreneurial culture and entrepreneurial orientation (EO) in terms of (a) pro-activeness; (b) innovativeness and (c) risk-taking, where this relationship will be moderated by failure or success in implementation. **H_{1a}**: The different elements of organisational architecture have a positive relationship with entrepreneurial orientation (EO)	**Architecture:** 20 item instrument with a Bi-polar 10 point Likert scale **EO:** 9 item Bi-polar 10 point Likert scale	Interval	Statistical means and correlations

Research problem: Describe the relationship between the organisational architecture of a corporation and the entrepreneurial process, typified in the process of discovery, evaluation, exploitation and implementation of entrepreneurial opportunity by its owner-managers within the entrepreneurial orientation of that company. Success or failure as perceived by the owner-managers at specific stages of the entrepreneurial process will influence these actions.					
Sub-problem	**Literature Review**	**Hypotheses**	**Source of data**	**Type of data**	**Analysis**
Sub-Problem 2 Identify if entrepreneurial processes and behaviour has a positive effect on the entrepreneurial orientation in the organisation.	(Anderson et al., 2009; Schindehutte et al., 2000; Shepherd et al., 2007; Smallbone & Welter, 2012; Stevenson & Jarillo, 2007; Urban, 2012; Van Wyk & Adonisi, 2012; Venter et al., 2015; Wiklund & Shepherd, 2011; Zahra et al., 2000)	**H_2:** There is a positive relationship between the elements of an entrepreneurial process in terms of (a) opportunities recognised (b) opportunities implemented and entrepreneurial orientation (EO) in terms of (a) pro-activeness, (b) innovativeness and (c) risk-taking where this relationship will be moderated by failure or success in implementation. **H_{2a}:** The entrepreneurial process has a positive relationship with entrepreneurial behaviour (EO).	**EO:** 9-item Bi-polar 10 point Likert scale **Entrepreneurial Process:** 6-item Bi-polar 10 point Likert scale	Interval	Statistical means and correlations
Sub-Problem 3 Evaluate the effect of success or failure on the relationships between organisational architecture and entrepreneurial processes and behaviour on the entrepreneurial orientation in the organisation.	(Bandura, 1997; Chang et al., 2009; Karim et al., 2007; Klein & Sorra, 1996; Lindegaard, 2010; McClelland, 1965; Schindehutte et al., 2008; Shane, 2003)	**H_{1b}**: The relationship between organisational architecture and entrepreneurial orientation (EO) is moderated by failure or success from ideas implemented. **H_{2b}:** The relationship between the entrepreneurial process and entrepreneurial behaviour (EO) is moderated by failure or success from ideas implemented	**Success or Failure:** 3 item Bi-polar 10 point Likert scale Secondary Data	Interval	Statistical means and correlations