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The Impact of Risk Propensity on Corporate Entrepreneurship

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

10 November 2014

Abstract

There has been a vast amount of research done in the fields of Entrepreneurship and Risk Taking. There is, however, very little literature regarding the relationship between Risk Taking and Corporate Entrepreneurship (CE). This study attempts to understand that relationship whilst exploring the impact of Risk Propensity on Corporate Entrepreneurship with the intention of questioning current CE frameworks. The objective was to establish criteria to increase CE in the business environment.

A bespoke questionnaire was sent out to determine both the individual Risk Propensity of the respondents and their perception of CE within their organisation. The elements of the questionnaire were based on well-known instruments available in literature. The variables used to explore the data further were based on the demographic information supplied by the respondents.

The main objective of the study was to determine the relationship between Risk Propensity and CE with the secondary objectives looking to explore the variation in both Risk Propensity and CE across the established variables.

The findings indicate little or no relationship between Risk Propensity and CE whilst the results from the variable analysis highlight the importance of Organisational Boundaries as a factor of CE. A framework is then proposed synthesising the results of the analysis before concluding with recommendations for future research.

Keywords

Corporate Entrepreneurship, Risk Propensity, Intrapreneurship, Organisational Boundaries, Risk Taking

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Declaration

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

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Matthew Lawson 10 November 2014

Acknowledgements

I would like to offer my appreciation to my supervisor, Andee Deverell, for her support and continued guidance during the research. Your help and insight was invaluable in in bringing my scattered ideas together.

I would like to dedicate this research to my fiancé, Stacey Lavery, whose patience and support helped me through the last two years of study and provided the cornerstones for this research project. There is no better reward at the end of this than having you become my wife.

I would like to thank my family and friends who have put up with my limited availability and lack of attention even when I was present. I would not have been able to complete this without your constant encouragement.

I would also like to thank Adam Martin for his help and advice with the statistical analysis contained in this research.

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1.2 Introduction

In today's ever changing world, the importance of adaptability and innovation as a response to this constant change cannot be overstated. Our reality is characterised by intensified global competition, dynamic change and increasing uncertainty and the need for organisations to become more innovative in order to survive and grow is increasing rapidly (Lassen, 2007).

According to Kumar, Mudambi & Gray (2013), a significant component of global innovative output originates from the innovation coming from developing economies. This innovation is a large part of why emerging market firms (EMFs) are so competitive in the global market place. Kumar et al. (2013) further emphasise this point by noting the increasing levels of research focusing on and around EMFs over the past decade. The research has begun to examine their rising levels of competitiveness in both their home markets as well as the global market place.

Kumar et al. (2013) makes reference to a video posted on the Wall Street Journal (2011) which shows how innovation is perceived by corporate executives as one of the primary drivers of competitiveness. China is noted as one of the strongest proponents of levering innovation to increase competitiveness. This point backed up by The Global Competitiveness Report (Schwab, K., & Sala-i-Martín, X. (2014) where we can see the increasing levels of competitiveness in most large developing economies, especially amongst the BRIC nations.

The importance of Corporate Entrepreneurship (CE) in this environment becomes apparent once you start to unpack its separate components. Urban & Nikolov (2013) conceptualise CE as the integration of three separate elements. These elements are listed as business venturing, new product development, and self-renewal which all have an effect on product innovation performance.

The importance of innovation is summarised by Chen, Tang, Jin, Xie & Li (2014) who state that "Innovation is critical to a firm's survival and growth in a dynamic business environment, as characterized by rapid technological change, shortened product life cycles, and globalization"

(p. 2). Chen et al. (2014) elaborates further by explaining that the "rapid development of the modern business world has put pressure on firms to seek out new ideas, products, and services." (p. 4). Innovation is one of the most important ways for businesses to enhance performance through sustained competitive advantage.

With the focus on innovation, organisations who lack entrepreneurial drive are attempting to adopt CE in order to try and succeed in an increasingly competitive and financially constrained environment (Urban & Nikolov, 2013). Consequently, it is important to develop a deep and thorough understanding of CE for both academic and business purposes. The implications of this are far reaching and could affect both the profitability and competitiveness of organisations as well as the economic performance of industry and the national economy as a whole (Urban & Nikolov, 2013).

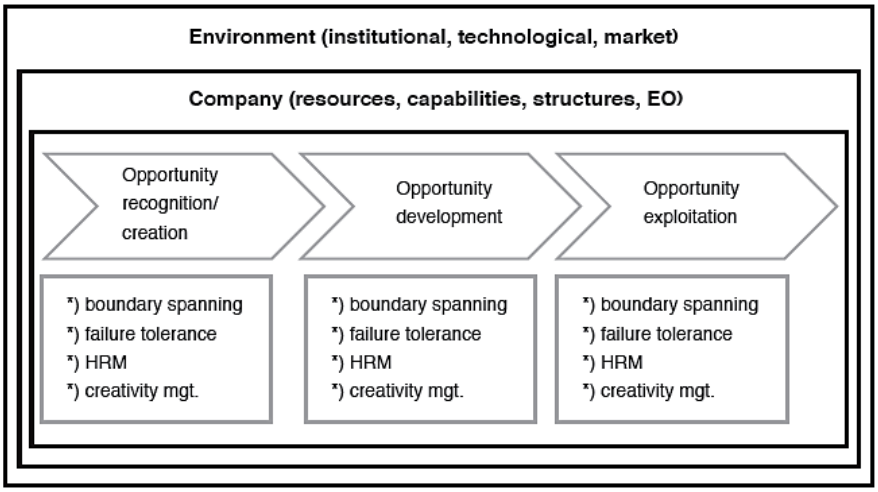
1.3 Research Problem

In the modern corporate environment, the concept of adaptability and innovation has been consolidated into the term, Corporate Entrepreneurship. Hayton, Hornsby, & Bloodgood (2013), explain that entrepreneurial organisations are those that discover and exploit opportunities at a greater rate than more conservative organisations.

Given the importance of CE within modern organisations, the understanding of the antecedents that facilitate CE becomes crucial. Rutherford & Holt (2007) define CE as the process of enhancing the ability of the firm to acquire and utilise the innovative skills and abilities of the individuals within an organisation. Whilst this is similar to many definitions of CE, Rutherford & Holt (2007) further state that it is the individual's application of those innovative abilities and skills that are at the very heart of CE.

Models typically explain CE as an entrepreneurial process and illustrate the interplay of these entrepreneurial processes but fail to adequately show how CE can be institutionalised within an organisation. Figure 1 below provides a framework for the CE process. Within this framework, Harms (2013) mentions Human Resource Management (HRM) but only as a mechanism for selecting and promoting creative employees. As you unpack the components of Corporate Entrepreneurship, you begin to see that the focus should be on the individuals within an organisation as opposed to facilitating CE within the organisation as a whole.

Figure 1: An embedded model of the Corporate Entrepreneurship process (Harms, 2013)



Corporate Entrepreneurship was defined by Miller (1983) as a process consisting of three separate elements, namely proactiveness, innovation, and risk taking and as per De Villiers-Scheepers (2012), these same three elements can be used to assess a firm's propensity towards entrepreneurial behaviour. Schmelter, Mauer, Börsch, & Brettel, (2010) take this concept further by suggesting that the selection criteria for employees within organisations should be in line with these CE dimensions of innovativeness, Risk Propensity and proactiveness. Schmelter et al. (2010) also includes the dimension of corporate venturing in this proposition.

Whilst all the dimensions listed above influence entrepreneurial behaviour, the dimension of Risk Propensity has a direct influence on the other dimensions. A study done by Miller (2007) considers three entrepreneurial processes, namely opportunity recognition, opportunity discovery, and opportunity creation. Miller (2007) states that unique conceptualisations of risk and rationality are associated with each of these processes and are reflected in distinct research streams.

Miller (2007) elaborates further by explaining that entrepreneurship involves opportunity recognition whereby an individual weighs the multitude of probable outcomes based on their perception of risk and rationality. Individuals use entrepreneurial behaviour to assess disparate information in order to estimate probabilities that could differ in their values and accuracy

(Norton Jr, & Moore, 2002).

Considering the research done, it is apparent that understanding how risk and individual Risk Propensity impacts CE is crucial in attempting to put a strategy in place.

1.4 Business Considerations

The purpose of my proposed research is to understand the impact of Risk Propensity on Corporate Entrepreneurship and to understand the role that individual Risk Propensity plays in opportunity creation.

It is important to understand which components of CE an organisation should focus on in order to best encourage entrepreneurial behaviour. The importance of CE is again reiterated by Kuratko, Hornsby & Covin (2014) who state that Corporate Entrepreneurship is a significant form of innovation used to a facilitate an organisation's innovation efforts with the intention of coping with competitive realities in order to compete in world markets.

The intention of this research is therefore to understand if focus on individual Risk Propensity will help with the implementation of CE within an organisation.

1.5 Academic Considerations

The study has been based on existing research done and in particular, compliments work done by the Academics listed below:

- Dess & Lumpkin (2005) who propose a framework for investigating the relationship between the dimensions of Entrepreneurial Orientation (EO) and firm performance based on their earlier research.

- Duobiene (2013) who dealt with the development of Corporate Entrepreneurship in different stages of organisational life-cycle. The research describes the development of Corporate Entrepreneurship within the organisational life-cycle before presenting a model which evaluates and systemises Corporate Entrepreneurship.

- Hornsby, Kuratko & Zahra (2002) who assess the properties of a scale measuring internal organisational factors influencing how managers initiate Corporate

Entrepreneurship activities. They define Corporate Entrepreneurship in a broad sense before using this definition to describe an instrument that is to be used to identify influencing conditions in Corporate Entrepreneurship activities.

- Lassen & Nielsen (2009) identified forces found at the core of Corporate Entrepreneurship, describing them in terms 'creative destruction' and 'controlled adaptation'. They identify these forces as essential to the successful implementation of Corporate Entrepreneurship. They then provide a framework using the two forces.

- Sharma, Chrisman (1999) who discussed the existing definitions in the field of Corporate Entrepreneurship before reconciling these definitions and providing criteria for classifying and understanding the activities associated with corporate venturing. The reason for this was to attempt to reach consensus on terminology in order to avoid confusion and facilitate future research.

- Zaleskiewicz (2001) who introduces two kinds of risk taking, namely Instrumental Risk Taking and Stimulating Risk Taking. The purpose of the paper was to test the validity of the Stimulating Instrumental Risk Inventory which is used to measure the two risk tendencies.

The aim is to combine this work with the intention of contributing to the body of literature by understanding the relationship between Risk Propensity and CE.

Chapter 2: Literature Review

2.1 Introduction

In order to fully understand the relationship between Risk Propensity and Corporate Entrepreneurship it is important to develop the theory base that the research will draw on. A solid theory base allows for expanded understanding of the research problem and it helps identify the constructs to be used in the study.

The Literature Review begins with an exploration into entrepreneurship and this provides a foundation from which to understand CE. The importance of Exploration versus Exploitation with regards to CE is then highlighted before discussing the drivers of CE within an organisation which also explores the role of the individual within CE.

The focus is then on Risk which provides the basis for risk-taking propensity and the relationship between risk-taking and proactivness. With the base established, the review then explores how risk-taking and CE interact.

2.2 Entrepreneurship

The starting point to any discussion on CE begins with the understanding and exploring of the term “entrepreneurship”. The earliest known mention of entrepreneurship can be traced back to Richard Cantillon, a French economist. Cantillon used the term in an attempt to define businessmen who undertook risks based on uncertain profit. His definition of an Entrepreneur describes a person with vision and the confidence to work in situations where the dangers might be known but the results are unclear (Cantillon, 1734).

The study of entrepreneurship in a modern day context began with the work of economist, Joseph Schumpeter (1883–1950). This statement has, however, been contended by Campagnolo & Vivel (2012) who argue that Sombart and Wieser were the forerunners to the theory of entrepreneurship although it is generally accepted that it was Schumpeter who first made it famous. Schumpeter argued that the entrepreneurs who create new products, new methods of production, and other innovations are the key representatives of economic activity which fuels economic growth (Hagedoorn, 1996).

As per Carlsson, Braunerhjelm, McKelvey, Olofsson, Persson & Ylinenpää (2013), Schumpeter

describes economic development as 'creative destruction' where the entrepreneur is an individual who introduces new innovations and consequently disrupts equilibrium. Carlsson et al. (2013) expands on this by stating the Schumpeter argued that 'creative destruction' and that the entrepreneur is considered to be "the prime agent of economic change" (p. 917).

Since then, Entrepreneurship has meant many different things to many different writers. Technological change began to shift innovation from the individual entrepreneur to large firms and in 1961, McClelland focused his research on understanding the reasons for economic growth and decline by focusing on the role of the Entrepreneur (Carlsson et al., 2013).

According to Gartner (1990), there were two distinctive schools of thought when dealing with the idea of entrepreneurship. The first school of thought dealt with the characteristics of the entrepreneurs and the belief system for entrepreneurship. The second school of thought focused on the consequences of entrepreneurship.

The historical view of entrepreneurs was that they were risk takers, innovative and resourceful with successful entrepreneurs described as innovative individuals who recognize opportunities and are then able to marshal the required resources in order to achieve their goals (Tajeddini and Meuller, 2008).

Whilst Schumpeter's writings concentrated mainly on the individual entrepreneur, there was a gradual understanding that in many situations, entrepreneurship is actually a corporation-level phenomenon (Covin & Slevin, 1991). This understanding has led to the transition from Entrepreneurship to Corporate Entrepreneurship in academic study.

2.3 Corporate Entrepreneurship

The body of literature dealing with CE has flourished over the last three decades, expanding to include the fields of strategy and organisational theory whilst providing the links between these fields and Entrepreneurship (Zahra, Randerson & Fayolle, 2013). Whilst the body of literature has expanded, the constructs that frame CE are continually being refined. In order to conceptualise Corporate Entrepreneurship, it is important to understand how the ideas surrounding the subject have evolved.

Understanding CE is, however, a difficult task. One of the reasons for this is that CE is a very broad concept which tends to touch on numerous other academic fields. This results in CE

being studied at different levels within organisations and under different terms. It is these different perspectives that make the outcome of the entrepreneurial process so uncertain in the organisation where it takes place (Thornberry, N., 2001).

Sharma, P., & Chrisman, S. J. J. (1999) broadly described CE as, "the process whereby an individual or a group of individuals, in association with an existing organisation, create a new organization or instigate renewal or innovation within that organization." (p.18). This definition includes two aspects of CE, namely new business creation within existing organisations and the renewal of the current strategy of the organisation. The most important concept taken from this is that organisations must capitalise on the entrepreneurial thinking of their managers to ensure future evolution in a world that is uncertain and constantly changing (Dess, Ireland, Zahra, Floyd, Janney & Lane, 2003).

Overall, studies suggest that CE activities are composed of three areas which are idea generation, selection, and implementation or retention (Burgelman. R. A 1983). These three areas are often repeated in other studies but tend to have different connotations.

Corporate Entrepreneurship was defined by Miller (1983) as a process consisting of three separate elements, namely proactiveness, innovation, and risk taking. Zahra (1993) refined this notion by defining CE as "a process of organizational renewal that has two distinct but related dimensions: innovation and venturing, and strategic renewal." The key themes dominating the research into CE throughout the period leading up to the year 2000, dealt mainly with the performance implications of Corporate Entrepreneurship and understanding the antecedents and outcomes of CE (Zahra et al, 2013).

According to Goodale, J. C et. al (2011), CE is the pursuit of entrepreneurial activities and ingenuities that have the ability to change the present organisation through strategic rejuvenation processes. This process may result in the extension of the organisation's scope of operations into new realms. Similarly Phan, P. H et. al (2009) defined CE as the practice of organisational regeneration which creates two diverse but connected phenomena. These two phenomena are listed as innovation and corporate venturing where corporate venturing refers to creation of new businesses. This creation of new businesses could be either internal or external.

The concept of corporate venturing is one that has gained traction amongst researchers over

the last decade. According to Zahra et al (2013) "Venturing" is when a company enters new markets with the intention of revitalising or revising a company's existing portfolio. Corporate Entrepreneurship is embodied in the innovative and venturing activities of a company but is not limited to the activities of any one individual. CE rather refers to the entrepreneurial activities of the staff as a whole (Chen, Zhu, & Anquan, 2005).

According to Belousova O., et. al (2010), CE is initiated at the top level of the organisation with the intention of creating a companywide strategy and to gain competitive advantage. The terminology surrounding Corporate Entrepreneurship has also expanded with some scholars labelling CE as Intrapreneurship. According to Thornberry, N. (2001), Intrapreneurship is something that is derived from the knowledge of using entrepreneurial skills. These skills are used for innovation and in order to begin start-up business practices within an organisation.

Over the last decade, the research and study of CE has followed a number of different paths. A large part of the research has tried to uncover what activities should be promoted within organisations in order to engage middle managers and promote their interest in CE (Hornsby, Kuratko, Shepherd, & Bott, 2009; Kuratko, Ireland, Covin, & Hornsby, 2005). Others studies have looked at the effect of intellectual capital and Human Resource Management policies on CE (Zhang & Jia, 2010).

Based on the volume of research and studies done, it is apparent that CE is still both topical and relevant to modern day business. There is a perception that in today's ever changing and dynamic environment, successful organisations should be as dynamic as the environment, remaining flexible with a focus on innovation (Lassen & Nielsen, 2009). It is the focus on remaining dynamic and the need to foster a culture of innovation within organisations that has resulted in CE becoming such a topical field of research.

2.3.1 A Framework for Corporate Entrepreneurship

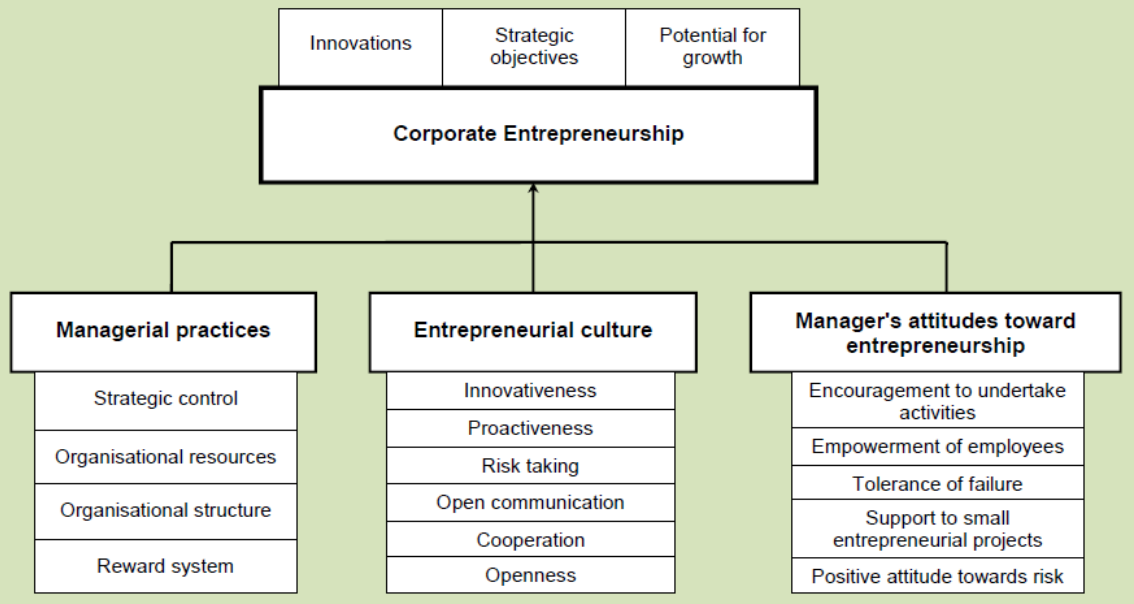
In order to consolidate the theory above, the conceptual framework of CE proposed by Duobiene (2013) has been presented in figure 2 below. The figure illustrates a framework for CE along with its institutional factors.

The operationalisation of CE has been described using three characteristics. These characteristics are innovations, strategic objectives, and potential for growth which represent organisational features integrating organisational activities. The three institutional factors

identified which influence organisational entrepreneurship are: managerial practices, manager's attitudes towards entrepreneurship and entrepreneurial culture.

It is important to note that Duobiene (2013) states the most important of the three institutional factors is organisational culture. In order to support this, Duobiene refers to Rutterford, Buller & McMullen (2003) who states that entrepreneurial culture embeds values, norms and beliefs which support CE and encourage innovation along with the achievement of competitive advantage. Risk Taking is listed as one of the variables impacting entrepreneurial culture.

Figure 2: The conceptual framework of Corporate Entrepreneurship and its institutional factors (Duobiene, 2013)



2.3.2 Exploration vs Exploitation

Whilst there are a multitude of definitions that attempt to encapsulate the concept of CE, the characteristics of these definitions can be consolidated into three main streams (Lassen & Nielsen, 2009), which are outlined below:

a) The impact of an entrepreneurial individual within an organisation and the how the individual initiates innovation.
b) How corporate venturing and spin off activity leads to new business and the effects of this on the market.

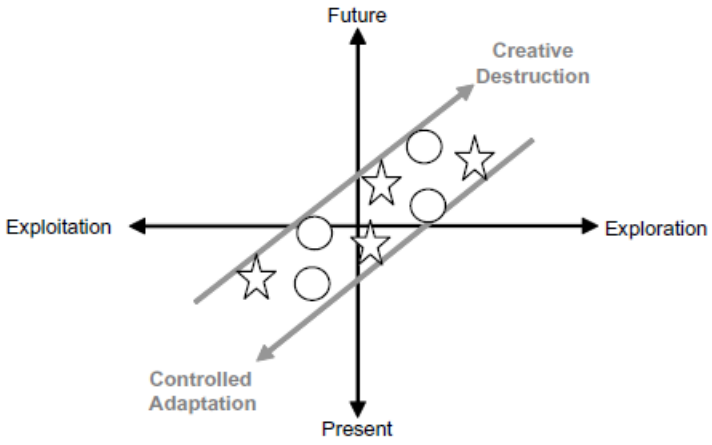
c) How the entrepreneurial and innovative processes within an organisation influences all other activities that are implemented.

These three streams are a reflection of how research in CE has morphed from being primarily focused on the individual to incorporating the impact of CE behaviour within an organisation and understanding how CE operates as a "holistic entrepreneurial philosophy of innovation in the organization." (Lassen & Nielsen, 2009, p. 183).

Lassen and Nielsen (2009) further explore the concept by arguing that the three streams combine to create a duality of opposing forces within the understanding of CE. The opposing forces are split between explorative forces and exploitative forces. Ireland & Webb (2009) elaborate on these two forces by combining the exploration for future sources of competitive advantage with the exploitation of current sources of competitive advantage to define strategic entrepreneurship.

The importance of CE then becomes apparent when you look at the rapidly changing environment that modern day organisations operate in. Organisations need a mechanism to manage uncertainty and adapt to the changes occurring in the external environment. CE is seen as process through which an individual or group of individuals can stimulate innovation within a new or existing organisation (Ireland & Webb, 2009). The stimulation of innovation provides the foundation for organisations to exploit their current competitive advantages whilst looking to explore innovation that could lead to tomorrow's competitive advantage (Ireland & Webb, 2009). Figure 3 below illustrates this point by graphically depicting the transition between controlled adaption and creative destruction.

Figure 3: Innovation in the corporate entrepreneurial area (Lassen & Nielsen, 2009)



2.4 Drivers of Corporate Entrepreneurship

Once the constructs surrounding CE are apparent, it then becomes important to understand the drivers behind CE. The drivers are important since CE is seen to be a process which should be incorporated as part of the organisational culture, as opposed to a single event. The level of entrepreneurship will therefore vary in intensity depending on the organisational culture and the explorative or exploitative nature of the activities within an organisation (De Villiers-Scheepers, 2012).

Hornsby, Kuratko, & Zahra (2002) have attempted to identify the factors that influence Corporate Entrepreneurship. As per Rutherford & Holt (2007), one of the unique properties of their study is that it examines the phenomenon of Corporate Entrepreneurship at an individual level by identifying five organisational factors that positively influence an individual's entrepreneurial behaviour within the organisation. The five factors from the study are listed below:

1) The appropriate use of rewards;
2) Top management support;
3) Resource availability;
4) Organisational support; and
5) Risk taking and failure tolerance.

The five factors listed above are organisational factors and are typically seen as antecedents to CE within an organisation. De Villiers-Scheepers (2012) states that entrepreneurial behaviour can be facilitated by creating the perception within an organisation that conditions are favourable for entrepreneurship. This can also be done by rewarding the proactive and risk-taking initiatives of employees.

In understanding the antecedents of CE we also have to acknowledge the role of Human Resource Management (HRM) practices within an organisation. It is agreed that HRM practices are both an antecedent to CE as well as an important driver of CE within an organisation (Schmelter, Mauer, Börsch & Brettel, 2010). As per Schmelter et al. (2010), HRM, in the context of CE, can generally be understood in three ways. The first is that HRM can be seen as managing human capital followed by the second which notes that HRM practices can reflect an organisation's culture. The final point made by Schmelter et al. (2010) is that HRM can be seen as a system of management activities which target the employee base in an attempt to facilitate CE in the organisation.

Once the duality of HRM and CE is apparent, we can begin to unpack the various structures within HRM that impact CE. Hayton, Hornsby, & Bloodgood (2013), provide two reasons to explain the importance of HRM practices with respect to CE. The first is that HRM practices will typically influence the extent to which employees engage in behaviours that promote knowledge integration and the second is that overly rigid HRM practices would serve to inhibit the strategic behaviours required to identify opportunity and acquire new knowledge. In addition to these two reasons Hayton et al. (2013) also talks to how HRM practices within an organisation can influence other behaviours such as the formation and maintenance of social networks both inside and outside of the organisation. These social networks are critical in order to promote and build support for ideas with uncertain outcomes which often form the basis of successful entrepreneurial ventures within an organisation.

Building on this, Bhardwaj, Jain, & Sushil (2010) also explores the impact of intelligence gathering on CE. Their study looks at intelligence generation as a driver of innovation but does so without fully exploring what drives the behaviours behind successful intelligence gathering. As per Hayton et al. (2013), an organisation should select HRM practices that drive the creation of CE skills as well as provide the opportunity to use the acquired skills. In this way the culture in the organisation morphs around the desire to employ CE which informs on which skills are

necessary and valued.

Ribeiro-Soriano & Urbano (2010) state that "collaboration among employees as well as between employees and managers has become an important source of competitive advantage for firms in competitive markets" (p. 352). They state further that these behaviours are linked to successful performances which generally arise as a result of CE activities within the organisation. This view is shared by Kuratko, Hornsby & Covin (2014) who propose that innovation is more likely to occur in organisations where the potential for entrepreneurial behaviour is identified and nurtured in individuals and where knowledge within the organisation is widely shared.

Kuratko et al. (2014) expand on the five determinants of CE which are required to encourage corporate entrepreneurial behaviour within an organisation. These are listed below along with brief descriptions of each:

1) **Top management support**

   The perception of top management support through the facilitation and promotion of entrepreneurial behaviour which includes the championing of innovative ideas as well as ensuring that people have the resources they require in order to take entrepreneurial actions. Support from top management has been found to have a positive impact on CE in the organisation.

2) **Work discretion**

   This relates to the perception of the organisation's tolerance for failure, the degree of latitude that decision makers are allowed and the amount of responsibility delegated to low-level managers. Increased work discretion has been found to have a positive impact on CE in the organisation.

3) **Rewards and reinforcements**

   The perception of how the organisation rewards entrepreneurial activity and success. Rewarding innovation and risk-taking has been found to have a positive impact on CE in the organisation.

4) **Time availability**

   The perception of how much time is allowed by the organisation to pursue innovation and focus on both short and long term goals. Time availability is an important resource for generating innovative behaviour and having free or unstructured time has been

found to have a positive impact on CE in the organisation.

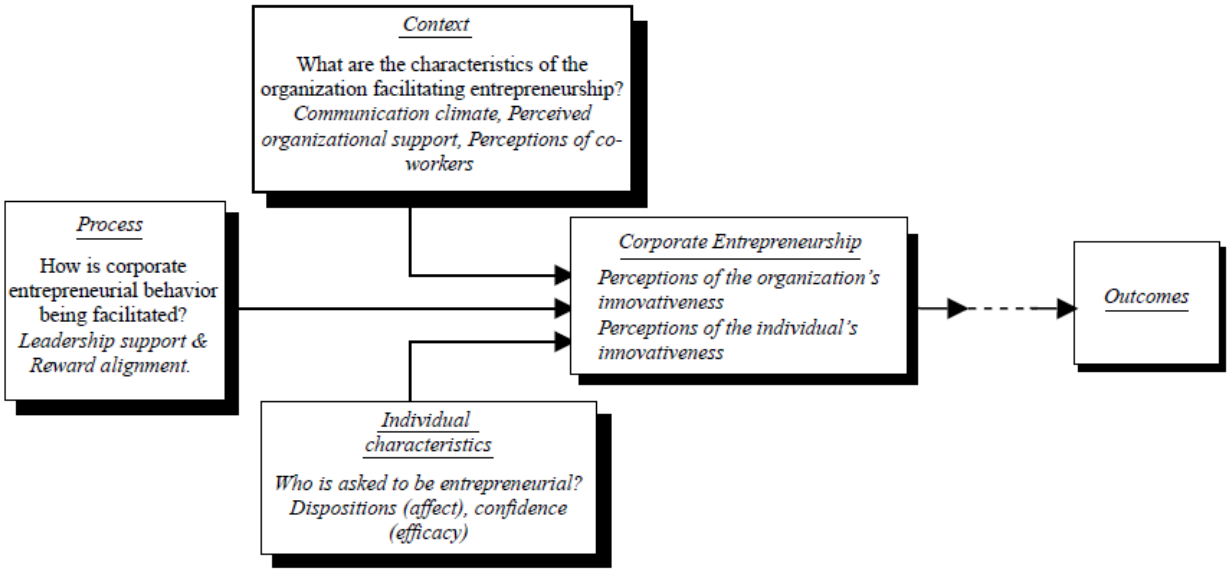
5) **Organisational boundaries**

This relates to the perception of how flexible organisational boundaries are since flexible boundaries facilitate the flow of information internally as well as externally. Flexible boundaries or boundaries that encourage coordinated innovative behaviour have been found to have a positive impact on CE in the organisation.

2.4.1 Corporate Entrepreneurship and the Individual

The antecedents of CE often focus on drivers within an organisation and fail to take enough cognisance of the importance of the individual in the process. The model in figure 4 below shows three separate variables that feed into Corporate Entrepreneurship resulting in outcomes aligned with a CE strategy. Rutherford & Holt (2007) list the three variables as process, context, and individual variables.

Figure 4: An integrated model of CE that includes process, context, individual and outcome variables (Rutherford & Holt, 2007)



According to Rutherford & Holt (2007), process variables refer to how leaders facilitate and implement CE in an organisation including the specific strategies that leaders use to encourage entrepreneurial behaviours. Context variables describe the characteristics of the organisation as it embarks on strategic renewal efforts through the incorporation of CE. The individual

variables describe the individuals who are asked to engage in entrepreneurial activities and these variables cover the general disposition, skills, abilities, and attitudes of the individuals.

Rutherford & Holt (2007) elaborate further by stating that "these three classes of variables should not only influence people's perceptions regarding the organization's ability to be entrepreneurial but also perceptions of their own ability to be entrepreneurial" (Rutherford & Holt, 2007, p.431).

These individual characteristics play a vital role in CE and whilst CE might be implemented at an organisational level, the outcomes of CE still remain a product of individual efforts. The individual characteristics are also known as entrepreneurial cognitions which are essentially the knowledge structures that are used to make assessments, judgements, or decisions involving opportunity evaluation, venture creation and growth (Ireland, Covin, & Kuratko, 2009). Ireland et al. (2009) expands on this by linking entrepreneurial cognitions to a person's beliefs, attitudes, and values which are the fundamental thoughts that each individual has regarding entrepreneurship.

2.5 Risk Taking

Dionne (2013) provides a brief synopsis of the study of Risk Management. According to Dionne, the study of Risk Management began after World War II where engineers developed technological risk management models. These models covered both the operational and the political risks of projects.

Dionne states further that new forms of risk management emerged during the mid-1950s in order to provide alternatives to market insurance which had become very costly. Contingent planning activities were developed during the 1960s providing self-insurance instruments to protect against losses before operational risk and liquidity risk management emerged in the 1990s.

Crowe and Horn (1967) define risk "as the possibility that a sentient entity will incur loss" (p.462). Crowe et al. (1967) elaborate on the term 'loss' by stating that it is how an individual's capacity to satisfy its wants is reduced. They also elaborate on the term 'incur' which they state has been used in the definition to convey the concept that the individual or entity who incurs the loss need not be aware of this loss for it to take place.

Sitkin & Pablo (1992) define risk as a characteristic of certain decisions which are categorised according to the extent of the uncertainty attached to them. This uncertainty concerns the likelihood of potentially significant or disappointing outcomes being realised. This definition is framed around three separate dimensions which facilitate the understanding of risk. These dimensions are: outcome uncertainty, outcome expectations, and outcome potential.

Andretta (2014) provides an expanded definition of risk by stating that risk is the probability of an adverse effect in a system of interest. An adverse effect is further defined as the damage in the system of interest combined with the risk of adverse effect on targets of interest.

The consensus among these definitions is that risk involves uncertainty coupled with loss or another equally undesirable outcome. The loss described in these definitions relates not only to a financial or economic loss but also encompasses a larger scope in order to provide a more complete definition.

2.5.1 Relationship between Risk Taking and Proactiveness

Modern day organisations are constantly looking to innovate and explore new markets. In this process, proactiveness is considered to be a crucial element. This is highlighted by both Miller & Friesen (1982) and Schoorman, Mayer, & Davis (2007) who state that the basic argument for proactiveness is the importance to come up with new innovations in the form of product-strategy ahead of others in order to respond to competitive threats in the environment.

This is reiterated by Lumpkin & Dess (1996) who state that organisations who exhibit proactiveness typically gain first-mover advantage as they take the initiative by anticipating and pursuing new opportunities and also by participating in new markets. Lumpkin & Dess (2001) elaborate further on this with the idea that an organisation is considered to be proactive not only by embracing a forward-looking perspective but also by anticipating market opportunities with the aim of becoming a market leader.

Venkatraman (1989) suggested that proactiveness is exhibited when an organisation seeks new opportunities that are not part of normal or traditional operations. Venkatraman (1989) also states that proactiveness includes the “introduction of new products and brands ahead of competition, strategically eliminating operations which are in the mature or declining stages of life cycle” (p. 949) which aligns with the position stipulated by Lumpkin & Dess.

The connection between first-mover advantage and proactiveness was incorporated by Lumpkin & Dess following research done by Miller. The definition of an entrepreneurial organisation as provided by Miller (1983) states that an entrepreneurial organisation is one that engages in product-market innovation allowing the organisation to come up with proactive innovations ahead of their competitors. This definition captures the concept of first-mover advantage quite succinctly. In addition to this, Chakraborty, Sheikh & Subramanian (2007) also argued that organisations who adopted innovations early were able to capture more market share than those organisations who were late adopters resulting in the inherent capture of first-mover advantage.

A more recent approach in defining proactiveness includes the requirement that organisations monitor trends in order to identify the future needs of existing customers. This allows them to anticipate changes in demand that could lead to new venture opportunities (Dess & Lumpkin, 2005). Dess & Lumpkin (2005) expand on this by stating that proactiveness not only acts as an agent of change but also as the mechanism used to create further competitive advantage once competitors' respond to successful initiatives.

Nasution, Mavondo, Matanda & Ndubisi (2011) argue that proactiveness should be considered as a dimension of CE as the more an organisation encourages proactiveness amongst its managers and employees, the more the organisation is able to deliver superior customer value.

Rauch, Wiklund, Lumpkin & Frese (2009) provide a definition of proactiveness which consolidates all the previous points. They define proactiveness as "an opportunity-seeking, forward-looking perspective characterised by the introduction of new products and services ahead of the competition and acting in anticipation of future demand" (p. 763).

2.5.2 Risk Taking Propensity

Brockhaus (1980) defined Risk Propensity as "the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation." (p. 513). Brockhaus qualified this definition by stating that it typically describes the situation faced by an entrepreneur establishing a new business venture.

Nicholson, Soane, Fenton-O'Creevy & Willman (2005) then introduce Prospect theory which is one of the theories relating to Risk Propensity. This theory proposes that risk taking is asymmetric about a reference point. What this means is that individuals are averse to risk when they perceive some sort of gain and that they seek risk out when anticipating loss. The premise behind this is that individuals are inconsistent when it comes to risk.

Prospect theory follows research by Sitkin & Pablo (1992) who explain that context impacts an individual's decision to either take or avoid risk. They also define Risk Propensity as the process where an individual's tendency to take or avoid risk influences their perception of risk. The result of this is that an individual who is averse to risk is more likely to consider a negative outcome which causes them to overestimate the probability of loss versus the probability of gain.

Following this, Sitkin & Weingart (1995) provided a definition for another element of decision making, namely risk perception. They defined risk perception as the ability of an individual to assess the risk in a situation by estimating the probability of uncertainty within the situation combined with their ability to control the uncertainty.

The link between risk and entrepreneurship was researched by both Aaby & Slater and Mitton. Aaby & Slater (1989) linked risk to entrepreneurship by stating that a higher Risk Propensity was positively related to improved performance. The study was, however, related to export performance which does limit the application somewhat. Mitton (1989) took this premise further by stating that entrepreneurs welcome uncertainty and are able to accept risk. This was expanded on by saying that although they accept risk, entrepreneurs understand how to limit risk and are actually risk avoiders.

The relationship between risk taking and entrepreneurship is typically a positive one with stronger levels of entrepreneurship displayed by individuals with more willingness to take risk (Begley, 1995; Douglas & Shepherd, 2002). Aaby & Slater (1989) expanded on the links between individual tendencies and those of an organisation by stating that organisations with a favourable perception and attitude toward international business coupled with a willingness to take risk are more likely to lead those organisations to business success.

2.6 Risk Taking within Corporate Entrepreneurship

Understanding that a person's beliefs, attitudes, and values impact the thoughts that an individual has regarding entrepreneurship, we can see that the dimensions of Corporate Entrepreneurship have to take cognisance of the individual. The concept of Entrepreneurial Orientation (EO) is generally defined by Lumpkin & Dess (1996) as the processes, structures and behaviours of organisations which are characterised by innovativeness, proactiveness, risk-taking, competitive aggressiveness and autonomy. While there is no single agreed definition of EO, it is commonly regarded as firm-level entrepreneurship focused on opportunity recognition and exploitation (Lechner & Gudmundsson, 2014).

Following this definition, the five dimensions that encompass EO are outlined below (Lumpkin and Dess, 1996):

1. Innovativeness – the support and encouragement of new ideas as well as experimentation and creativity;
2. Risk-taking;
3. Proactiveness – the exploitation of first-mover advantages and the anticipation of future events;
4. Competitive aggressiveness – the intensity of an organisation's efforts to outperform competitors whilst setting ambitious market share goals;
5. Autonomy – independent decision-making.

Whilst the above dimensions are similar to the five factors of CE proposed by Hornsby, Kuratko, & Zahra (2002), they differ in the sense that the five factors of CE indicate the aspects within an organisation that encourage CE amongst individuals whilst the five dimensions of EO indicate an organisation's propensity towards CE. The most obvious commonality between these two constructs is that they both view risk taking as an essential element of CE.

Risk taking has always been an important part of early entrepreneurship literature, "dating back to Cantillon (1734) who argued that the principal factor that separated entrepreneurs from hired employees was the uncertainty and risk of self-employment" (Josien, 2012, p.22). Palmer (1971) stated that entrepreneurial functions primarily involve risk taking whilst Deamer and Earle (2004) proposed that risk taking is an important dimension within Corporate Entrepreneurship and has both intuitive and experimental links with CE.

Dess & Lumpkin (2005) state that there are three types of risks that organisations and the individuals within the organisations face. The three types of risk are business risk, financial risk, and personal risk which are outlined by Dess & Lumpkin (2005) below:

- Business risk is the risk that an organisation takes when it ventures into the unknown without knowing the probability of success. This risk is typically associated with organisations that enter untested markets or commit themselves to unproven technologies.
- Financial risk occurs when an organisation either borrows heavily or commits a large portion of its resources in order to grow. Risk used in this sense refers to the risk versus reward trade-off that is commonly assessed when analysing financials.
- Personal risk is the risk associated with an individual making a decision to take a particular course of action or follow a specific strategic course. The implications of these decisions could possibly influence the course of the entire organisation as well as have significant implications for their careers.

Since it is individuals that make the decisions within an organisation, it is important to understand how the risk taking propensity of an individual affects their Entrepreneurial Orientation and the Corporate Entrepreneurship within an organisation.

2.7 Conclusion

One of the issues that was identified at the start of this chapter is how difficult it is to try and explain Corporate Entrepreneurship from one defined point of view. However, with the definition of CE by Zahra (1993) and Sharma & Chrisman (1999) combined with the framework of entrepreneurial orientation by Lumpkin & Dess (1996), we begin to explain some of the aspects of CE.

Understanding where CE began and the various fields that are interlinked within it provides a starting point for the understanding of the complexities and the nature of CE. These complexities are summed up by Hornsby, et al. (1993) who states that the process of CE is multidimensional and depends on the interaction of several different activities. Entrepreneurship, CE and entrepreneurial orientation are all linked but at the centre of all of this is either an individual or a group of individuals who drive the enterprising behaviour exhibited by an organisation (Barringer & Bluedorn, 1999).

The acknowledgment that individuals drive enterprising behaviour within an organisation is significant in the sense that it highlights the point that in order to foster entrepreneurial behaviour in an organisation, you should focus on individuals. The balance between risk and innovation is often a precarious one which is why understanding how risk affects CE is so important.

Innovation facilitates growth and in the modern world, survival as well. CE drives innovation along with Risk Propensity which is said to be one of the key factors driving entrepreneurial behaviour in the work place. Understanding how Risk Propensity impacts CE allows organisations to mitigate risk whilst trying to improve CE.

Chapter 3: Research Objectives and Hypotheses

3.1 Introduction

After assessing the literature, it becomes apparent that the relevance of CE is largely due to the congruence of the concepts contained within CE and today's ever changing world. As per McFadzean, O'Loughlin & Shaw (2005), CE encourages and stimulates innovation within an organisation by examining new opportunities and aligning resources to exploit those opportunities.

This section covers the purpose of the research as well as the research objectives and the research questions.

3.2 Purpose of the Research

The purpose of the research is to understand the impact of Risk Propensity on Corporate Entrepreneurship and the individual's perception of CE within an organisation given their own propensity for risk. This research aims to make a contribution to the body of knowledge by attempting to find a relationship between an individual's Risk Propensity and CE. It also seeks to establish whether there is any significant difference in Risk Propensity across different demographics and experience levels.

3.3 Research Objectives

The research objectives are as follows:

Research Objective 1:

- The first research objective is to try and establish whether an individual's Risk Propensity has any impact on their perception of Corporate Entrepreneurship within an organisation.

Research Objective 2:

- The second research objective is to try and establish whether an individual's Risk Propensity differs across various demographics and experience levels. The sample has been split according to gender, age, education and experience level and the aim is to

assess if Risk Propensity is significantly different across these bands.

Research Objective 3:

- The third research objective is to try and establish whether an individual's perception of Corporate Entrepreneurship within an organisation differs across various demographics and experience levels. Again, the sample has been split according to gender, age, education and experience level and the aim is to find out how CE differs across these bands.

3.4 Research Questions and Hypotheses

The hypotheses were based on the research questions as stated below:

Research Question 1:

- Is there correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation?

  The null hypothesis under Question 1 states that there is a correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation.

  The alternative hypothesis states that there is no correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation.

Research Question 2:

- Is there any significant difference in Risk Propensity across different demographics and experience levels?

  The null hypothesis under Question 2 states that there is no discernible difference in Risk Propensity across different demographics and experience levels.

  The alternative hypothesis states that there is a discernible difference in Risk Propensity across different demographics and experience levels.

Research Question 3:

- Is there any significant difference in the perception of Corporate Entrepreneurship within an organisation across different management levels?

  The null hypothesis under Question 3 states that there is no discernible difference in the perception of Corporate Entrepreneurship within an organisation across different management levels.

  The alternative hypothesis states that there is a discernible difference in the perception of Corporate Entrepreneurship within an organisation across different management levels.

Table 1: Research Questions and Hypotheses

Research Questions	Hypotheses
1. Is there correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation?	H_0: $p_1 \neq 0$ H_1: $p_1 = 0$
2. Is there any significant difference in Risk Propensity across different demographics and experience levels?	H_0: $\mu_1 = \mu_2$ H_1: $\mu_1 \neq \mu_2$
3. Is there any significant difference in the perception of Corporate Entrepreneurship within an organisation across different management levels?	H_0: $\mu_1 = \mu_2$ H_1: $\mu_1 \neq \mu_2$

Chapter 4: Research Methodology

For the purposes of this study the research was conducted as a descriptive study using survey data. The study aimed to gain a better understanding of the impact of Risk Propensity on Corporate Entrepreneurship through the exploration of known factors.

4.1 Research Design

As per Saunders & Lewis (2012) there are typically three types of studies used when conducting research. The three types of studies are exploratory, descriptive and explanatory.

An exploratory study seeks to discover information about a topic that is not clearly understood by the researcher (Saunders & Lewis, 2012). The study would attempt to gain insight into a topic and would typically use qualitative methods such as interviews to gather information.

A descriptive study is used to try and describe a situation using quantitative responses and is designed to produce an accurate representation of an event or situation. As per Saunders & Lewis (2012), descriptive research is typically thought to be a means to an end rather than the actual end itself.

The third research type is an explanatory study which takes descriptive research a step further by looking for explanations behind a particular occurrence (Saunders & Lewis, 2012). This is usually done by investigating causal relationships between certain key variables. This type of research can be either quantitative or qualitative depending on the focus of the research.

4.1.1 Descriptive Study

The choice of a descriptive study for the research conducted was based on the desire to describe the impact of Risk Propensity on Corporate Entrepreneurship. This provided a snap shot of the situation and allowed the researcher to answer the research questions using the data provided.

The research was then conducted using a non-experimental design. A non-experimental design is used when it is not possible to manipulate the research variables of interest due to the fact that in certain cases, the variable has already occurred. In this case both the individual Risk Propensity and the levels of Corporate Entrepreneurship are factors which have already

occurred necessitating the need for a non-experimental design (Salkind, 2010).

The three most common forms of non-experimental design are causal comparative, survey, and correlation (Salkind, 2010). For the purpose of this study a survey was used to obtain the data and correlation research was then used to explore the relationship between Risk Propensity and Corporate Entrepreneurship.

4.1.2 Research Instrument

The primary data gathering, which was done using a survey, consisted of a two-part questionnaire. A survey is "a research strategy which involves the structured collection of data from a sizeable population" (Saunders & Lewis, 2012, p. 115). The collection of data was done through the use of a standardised questionnaire which was sent out electronically. The questionnaire consisted of two parts:

Part 1: DOSPERT Scale and the Stimulating-Instrumental Risk Inventory

- The first part of the questionnaire attempted to assess the Risk Propensity of the individual. As a base for the questions, a combination of the Domain-Specific Risk-Taking (DOSPERT) Scale developed by Weber, Blais, and Betz (2002) and the Stimulating-Instrumental Risk Inventory developed by Zaleskiewicz (2001) was used. The DOSPERT Scale can be found under Appendix 8.1 and the Stimulating-Instrumental Risk Inventory can be found under Appendix 8.2.

  The DOSPERT scale was developed using insights about the diverse set of determinants of decisions under risk which allows "researchers and practitioners to assess both conventional risk attitudes (defined as the reported level of risk taking) and perceived-risk attitudes (defined as the willingness to engage in a risky activity as a function of its perceived riskiness) in five commonly encountered content domains…" (Weber, Blais, and Betz, 2002, p. 34).

  As per Zaleskiewicz (2001) the Stimulating-Instrumental Risk Inventory attempts to measure two distinct forms of risk preference. These forms have been labelled as stimulating risk taking and instrumental risk taking. The crucial difference between the two types of behaviours refers to the basic motives that stimulate risk taking (Zaleskiewicz, 2001).

Part 2: Corporate Entrepreneurship Assessment Instrument (CEAI)

- The second part of the questionnaire attempted to assess the level of Corporate Entrepreneurship within an individual organisation. The Corporate Entrepreneurship Assessment Instrument (CEAI) developed by Hornsby, Kuratko, & Zahra (2002) was used as a base for these questions. The CEAI Scale can be found under Appendix 8.3.

  As per Hornsby, Kuratko, & Zahra (2002) the assessment instrument was developed using the literature on the internal factors. The instrument contains 84 Likert-style questions that attempt to assess an organisation's internal entrepreneurial environment. The questions are split into five factors, namely the appropriate use of rewards; gaining top management support; resource availability; supportive organisational structure and risk taking and tolerance for failure (Hornsby, Kuratko, & Zahra, 2002).

4.2 Scope

For the purposes of this study, the population was all employees at Lombard Insurance Company Ltd. The reason for the definition of the population is due to convenience and access as explained in section 4.3.

As discussed earlier, the research instrument used was a survey structured around two parts based on the research objectives. The questions utilised a 7-point Likert-scale where the respondents were asked to determine the degree with which they either agree or disagree with the statements provided.

Before the questionnaire was distributed, pre-testing was done by sending the questionnaire to a trial group. This pilot study was done to test the validity of the questionnaire before sending it out to the various respondents. The feedback from the pilot study resulted in the rephrasing of some of the questions or statements in order to make them more understandable and thus improving both the validity and reliability of the questionnaire as a research instrument.

Once the data was received, statistical calculations were done and the results tabulated. Internal reliability measures such as Cronbach's Alpha was then used to test the consistency of the data.

Cronbach's alpha, is used to quantify reliability and it represents the proportion of the variance of the observed score that is true score variance (Multon & Coleman, 2010). Multon et al. (2010) states further that reliability is derived from true scores, observed scores, and measurement error and is the result of a statistical test.

4.3 Universe and Population

The original population included all the local employees of short-term insurers operating in South Africa. The research was originally intended to utilise the staff from two short-term insurers operating in South Africa but due problems with access, the population was reduced to the employees of one of the short term insurers.

The research was then adapted as a case study and the population now consists of the staff complement of Lombard Insurance Group. Lombard Insurance is privately owned and has approximately 200 employees working in South Africa.

The organisation was chosen due to the diversity of knowledge exhibited by its employee's and the range of job functions they fulfil. In addition to this, ease of access was a major consideration as the researcher has a relationship with the management of the organisation which facilitated access to the population.

4.4 Unit of Analysis

The primary objective of this research was to determine the relationship between Risk Propensity and Corporate Entrepreneurship. Based on this, there were two units of analysis, namely Risk Propensity and Corporate Entrepreneurship.

It is, however, also important to state the unit of generalisation. As per Salkind (2010), since data can be collected on various levels, the results of a study are also generalised across these various levels. In this case, the responses from the questionnaire were split into management and non-management staff and the two units of analysis were therefore split across these levels as well.

Further variables were also used based on the demographic data received. The additional variables were based on gender, age and education.

4.5 Sampling

A non-probability based sampling technique was used based on convenience. Given the scope of the proposed research, it was not necessary to expend resources to apply a stratified random sampling method.

In terms of sample size, the questionnaire was sent out to a total of 157 people within the Lombard Insurance Group, all of whom were within the population stipulated above. A total of 109 responses were received back although 13 of these responses were incomplete and were consequently discarded.

The initial response rate was 69% and this was reduced to 61% once the incomplete questionnaires were removed. This left a total of 96 complete questionnaires which were then used in the statistical analysis described in Chapter 5.

As per Saunders & Lewis (2012) there are two main sources of error encountered when conducting survey research. The first is Random Sampling Error which is the difference between the result of a sample and the result of a population. In other words it is a statistical fluctuation resulting from a chance variation in the elements selected for the sample. The second source of error is Systematic or Non-sampling Error which is error resulting from an imperfect aspect of the research design. Both of these were taken into account when assessing the results of the survey.

4.6 Data Collection and Analysis

The research method entailed using data obtained from the questionnaires collected and then applying statistical analysis to the data in order to test the hypotheses. The questionnaires were sent out using Surveymonkey due to the ease with which you are able to distribute a questionnaire to a large number of respondents using the tool.

The hypotheses were based on the research questions as stated below:

Research Question 1:

- Is there correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation?

The null hypothesis under Question 1 states that there is a correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation.

The alternative hypothesis states that there is no correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation.

Research Question 2:

- Is there any significant difference in Risk Propensity across different demographics and experience levels?

  The null hypothesis under Question 2 states that there is no discernible difference in Risk Propensity across different demographics and experience levels.

  The alternative hypothesis states that there is a discernible difference in Risk Propensity across different demographics and experience levels.

Research Question 3:

- Is there any significant difference in the perception of Corporate Entrepreneurship within an organisation across different management levels?

  The null hypothesis under Question 3 states that there is no discernible difference in the perception of Corporate Entrepreneurship within an organisation across different management levels.

  The alternative hypothesis states that there is a discernible difference in the perception of Corporate Entrepreneurship within an organisation across different management levels.

4.6.1 Analysis

The initial hypothesis testing was done using correlation analysis. Correlations were used to determine the zero-order correlation between Risk Propensity and Corporate Entrepreneurship. The measurement instrument used was the Pearson product-moment correlation which is the most commonly used instrument.

The Pearson product-moment correlation coefficient (r) is a measure of linear association between two independent continuous variables measured on the same individuals. The values produced measures the strength of the linear relationship between the two variables whilst the sign indicates the direction of the relationship (Bagiella, 2008). The results range from -1.0 to 1.0 with a value of 0.00 representing a lack of correlation. The interpretation of the correlation is summarised in table 2 below.

Table 2: Correlation Coefficient Interpretation

Correlation Coefficient	Interpretation
-1.0 to -0.8	High Negative
-0.8 to -0.6	Substantial
-0.6 to -0.4	Medium
-0.4 to -0.2	Low
-0.2 to 0.2	Very Low
0.2 to 0.4	Low
0.4 to 0.6	Medium
0.6 to 0.8	Substantial
0.8 to 1.0	High Positive

It must be noted that caution should be exercised when using correlation coefficients, as the resulting value indicates the strength of the relationship but gives no indication as to the direction of causality. The reason you cannot assume causality is that there may be other variables affecting the results which may not have been measured.

The remaining hypotheses were then analysed using Independent Sample T-Tests. Independent Sample T-Tests are used when you have two groups or sets of data and you need to compare mean scores on a continuous variable (Pallant, 2011). The reason Independent Sample T-Tests were used over Paired Sample T-Tests is that you typically use Paired Sample T-Tests when looking at the changes in scores for participants over a period in time. In this instance the test was done at a point in time resulting in the use of Independent Sample T-Tests.

The Independent Samples T-Test was used to determine whether any of the specified variables had a statistical relationship with the constructs detailed in the research objectives (SPSS Inc, 2005). When looking at the relationship, significance was confirmed if the p-value was found to be less than 0.05.

According to Buskirk (2008), the smaller the p-value, the more the evidence provided against the null hypothesis. Buskirk elaborates further by stating that if the p-value is less than the level of significance then the null hypothesis is rejected in favour of the alternative and the result is said to be "statistically significant."

The p-value refers to a numeric value used in sample statistics for the purpose of hypothesis testing. The p-value indicates the probability of the observed relationship occurring by chance or whether it is statistically significant (Buskirk, 2008). For the purposes of this study, a p-value of 0.05 and below was deemed to indicate an acceptable error level.

Levene's Test

In order to further test the sample, Levene's Test was used to assess the assumption of homogeneity in the variances of the population distributions from which different samples were drawn. Leven's Test is used prior to interpreting the results of a t-test and basically tests the assumption that the variances are equal. The reason for conducting this test is that a t-test is not valid if this assumption is not met (Vogt, 2005).

4.7 Research Limitation

The research only seeks to describe the specific relationship between Risk Propensity and Corporate Entrepreneurship. It does not provide information regarding the causal factors which could influence either Risk Propensity or Corporate Entrepreneurship.

Since convenience sampling was used, no inferences can be made to the population. The population in the survey was also restricted to the employees of Lombard Insurance Company.

For the purposes of this study the research was conducted using a descriptive study based on survey data. The study did not aim to explore unknown factors but rather aimed to gain a better understanding of the impact of Risk Propensity on Corporate Entrepreneurship.

Chapter 5: Results

This chapter attempts to present the results obtained by first exploring the basic descriptive data split across the various demographics. The data has been organised according to gender, age, level of education and current job level.

The descriptive stats are then presented to gain further understanding into the sample and to test for internal reliability before inferential stats are used to test for correlation.

5.1 Response Rate

The questionnaire was sent out to a total of 157 people within the Lombard Insurance Group. A total of 109 responses were received back although 13 of these responses were incomplete and were consequently discarded.

The initial response rate was 69% and was reduced to 61% once the incomplete questionnaires were removed. This left a total of 96 complete questionnaires which have been used in the analysis described below.

5.2 Descriptive Statistics

According to Schreiber (2008) descriptive statistics are a mathematical summarisation of data where observed values are converted to numbers. The collected numerical data is described as descriptive statistics.

The descriptive statistics discussed below have been used in the analysis.

- Mean

  This measures the central location of the distribution of a random variable and is calculated by summing the variable values for all observations and then dividing this total by the number of observations (Salkind, 2010).
- Median

  This is the number that separates the upper half from the lower half of a population or sample and is arrived at by taking the middle most value of the observations once they have been ordered from smallest to largest (Salkind, 2010).
- Standard Deviation

The Standard Deviation represents the average amount of variability in a set of scores by showing the average distance of each score from the mean. It is often used in place of the Variance when reporting since it is a much more direct form of Variance (Salkind, 2013).

- Skewness

  This measures the symmetry of a distribution and is typically compared to a normal distribution (Hair, Black, Babin, Anderson, and Tatham, 2006).

- Kurtosis

  This compares the peakedness or flatness of a distribution compared to a normal distribution (Hair et al., 2006).

5.2.1 Demographic Descriptives

The table below illustrates the split in gender of the sample. The sample is split almost directly down the middle showing that there is equal representation of both males and females in the organisation.

Table 3: Split by Gender

Gender		
	Frequency	Percent
Female	50	52,1
Male	46	47,9
Total	**96**	**100,0**

The table below shows the how the sample is split across the various age bands. 65% of the sample respondents fall within the first two age bands indicating that the bulk of the employees within the organisation are below the age of 40. This provides the opportunity to analyse responses regarding both Risk Propensity and CE across different age categories.

Table 4: Split by Age

Age		
	Frequency	Percent
24 - 30	24	25,0
31 - 40	38	39,5
41 - 50	18	18,8
51 and older	16	16,7
Total	**96**	**100,0**

The table below is an indication of the level of education within the sample. 65% of the respondents within the sample have attended university and obtained either an undergraduate or a postgraduate degree. This provides the opportunity to analyse and compare responses from respondents who have been exposed to a university education versus those who have not.

Table 5: Split per Education Level

Highest level of education		
	Frequency	Percent
Matric	12	12,5
Diploma	22	22,9
Undergraduate Degree	19	19,8
Postgraduate Degree	43	44,8
Total	**96**	**100,0**

The table below shows how the sample is split amongst various job levels. This allows us to compare responses from those in a management role versus those in an intermediate or entry level position. The sample has more respondents in a management position with about 58% of the sample currently in a management role.

Table 6: Split per Job Level

Which of the following best describes your current job level?		
	Frequency	Percent
Entry Level	9	9,4
Intermediate	31	32,3
Management	29	30,2
Senior Management	12	12,5
Executive	15	15,6
Total	**96**	**100,0**

5.2.2 Descriptives per Question

The questionnaire contained a 7-point Likert Scale which ranged from 'Strongly Disagree' to 'Strongly Agree'. The scale used is displayed in Figure 5 below.

Figure 5: 7-point Likert Scale

Strongly Disagree	Disagree	Tend to Disagree	Undecided	Tend to Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

The data contained in the two tables below shows the individual questions used in the questionnaire along with the mean and median for each question. The questions that have been highlighted indicate the questions that were reverse scored and consequently these results have been inverted when calculating the gross mean for each factor.

The highest and lowest means for each factor have also been highlighted which allows for a visual check for consistency amongst the questions.

Table 7: Descriptive Statistics per Question – Risk Propensity

Risk Propensity

Factor 1: Stimulating Risk Taking	Mean	Median
If I play a game (e.g. cards) I prefer to play for money.	3,14	2,00
I enjoy risk taking.	4,35	5,00
I often take risk just for fun.	3,58	3,00
I take risk only if it is absolutely necessary to achieve an important goal.	4,60	5,00
I am attracted by different dangerous activities.	3,59	3,00
I avoid activities whose results depend too much on chance.	4,02	4,00
Gambling is something that seems very exciting to me.	2,77	2,00
In business one should take risk only if the situation can be controlled.	4,82	5,00
I make risky decisions quickly without an unnecessary waste of time.	2,78	3,00
Factor 2: Instrumental Risk Taking	**Mean**	**Median**
At work I would prefer a position with a high salary which could be lost easily over a stable position with a lower salary.	3,84	4,00
To achieve something in life one has to take risks.	5,54	6,00
If there is a good chance of profit I would possibly take very high risks.	4,63	5,00
To gain high profits in business one has to take high risks.	4,39	5,00
If there was a good chance to multiply the capital, I would invest my money in the shares of a completely new and uncertain company.	3,49	3,00
I willingly take responsibility in my work-place.	6,27	6,00
The skill of reasonable risk taking is one of the most important managerial skills.	5,63	6,00

Table 8: Descriptive Statistics per Question – Corporate Entrepreneurship

Corporate Entrepreneurship

Factor 1: Management Support for Corporate Entrepreneurship	Mean	Median
My organisation is quick to use improved work methods.	4,61	5,00
In my organisation, developing one's own ideas is encouraged for the improvement of the business.	5,14	5,00
Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.	4,95	5,00
Individual risk takers are often recognised for their willingness to champion new projects, whether eventually successful or not.	4,81	5,00
There is considerable desire among people in the organisation to generate new ideas without regard for crossing departmental or functional boundaries.	3,86	4,00
People are encouraged to talk to employees in other departments within the organisation about ideas for new projects.	4,89	5,00
Factor 2: Work Discretion	**Mean**	**Median**
I feel that I am my own boss and do not have to double check all of my decisions.	5,05	6,00
This organisation provides the chance to be creative and to try my own methods of doing the job.	5,47	6,00
This organisation provides freedom to use my own judgment.	5,57	5,00
It is basically my own responsibility to decide how my job gets done.	5,63	6,00

I have much autonomy on my job and am left on my own to do my own work.	5,73	6,00
I seldom have to follow the same work methods or steps for doing my major tasks from day to day.	4,75	5,00
Factor 3: Rewards and Reinforcement	**Mean**	**Median**
My manager helps me get my work done by removing obstacles.	4,92	5,00
The rewards I receive are dependent upon my work on the job.	4,85	5,00
My manager will increase my job responsibilities if I am performing well in my job.	5,35	6,00
My manager will give me special recognition if my work performance is especially good.	5,32	6,00
My manager would tell his boss if my work was outstanding.	5,21	6,00
There is a lot of challenge in my job.	5,22	6,00
Factor 4: Time Availability	**Mean**	**Median**
During the past three months, my work load was too heavy to spend time on developing new ideas.	3,75	3,00
I always seem to have plenty of time to get everything done.	3,74	4,00
I have just the right amount of time and work load to do everything well.	4,38	5,00
My job is structured so that I have very little time to think about wider organisational problems.	3,48	3,00
I feel that I am always working with time constraints on my job.	4,05	4,00
My co-workers and I always find time for long-term problem solving.	3,88	4,00
Factor 5: Organisational Boundaries	**Mean**	**Median**
In the past three months, I have always followed standard operating procedures or practices to do my major tasks.	4,60	5,00
There are many written rules and procedures that exist for doing my major tasks.	4,02	4,00
On my job I have no doubt of what is expected of me.	5,40	6,00
During the past year, my manager discussed my work performance with me frequently.	4,90	5,00
My job description clearly specifies the standards of performance on which my job is evaluated.	4,91	5,00
I clearly know what level of work performance is expected from me in terms of amount, quality and timeliness of output.	5,42	6,00

5.3 Reliability Analysis

The objective of reliability analysis is to attempt to establish the reliability and validity of each research instrument. The section below attempts to first clarify these concepts before relating them to the research in question.

Reliability measures the consistency with which an instrument measures a given performance or behaviour. The most common and most widely used measure to assess consistency is Cronbach's Alpha. Cronbach's Alpha, is used to quantify reliability and it represents the proportion of the variance of the observed score that is true score variance (Multon & Coleman, 2010). Multon et al. (2010) states further that reliability is derived from true scores, observed scores, and measurement error and is the result of a statistical test.

The basic rule of thumb for interpreting the size of coefficient alphas is that a "high" reliability coefficient (usually .90 or above) is considered to be very good. An alpha between .80 and .89 is considered good whilst an alpha between .70 and .79 is considered adequate (Multon et al., 2010).

Table 9 below shows the Cronbach's Alpha for each factor. All of the factors apart from two had an alpha above the recommended 0.7. The two factors where the alpha dipped below the below the recommended 0.7 only did so by a small margin. Both Instrumental Risk Taking and Time Availability had an Alpha 0.69 which is close enough to confirm that the measurement instrument used is both valid and reliable.

Table 9: Reliability Analysis per Factor

Factors	Cronbach's Alpha	N of Items
RP Factor 1: Stimulating Risk Taking	0,751864118	9
RP Factor 2: Instrumental Risk Taking	0,714406479	7
CE Factor 1: Management Support for Corporate Entrepreneurship	0,696054819	6
CE Factor 2: Work Discretion	0,864334757	6
CE Factor 3: Rewards and Reinforcement	0,837590741	6
CE Factor 4: Time Availability	0,691222037	6
CE Factor 5: Organisational Boundaries	0,776271082	6

In order to further confirm the reliability of the instrument, Cronbach's Alpha was also

calculated for each of the questions used in the questionnaire. The alpha was then calculated after removing each question to assess the impact each question has on the total alpha. This was done to illustrate the reliability and consistency of the questionnaire as a whole which is illustrated by the fact that the resultant alphas vary only slightly with the removal of each question. The results have been tabulated and can be seen in appendix 8.5.

The only significant change to the alphas occurs in Factor 4 for CE. This is one of the two factors where the total alpha was below 0.7. The alpha for Factor 4 increases to 0.724 with the removal of question 4 which states '*My job is structured so that I have very little time to think about wider organisational problems'.* One possible reason for this is that this is the only question in Factor 4 which refers to the organisation as a whole whilst the other five questions all focus on individual time management and work load.

5.4 Factor Descriptives

Table 10 below shows the descriptive statistics per factor as well as the cumulative statistics for Risk Propensity and Corporate Entrepreneurship. As explained in the previous section, certain questions contained in Stimulating Risk Taking and Time Availability were reverse scored and consequently these results were then inverted when calculating the descriptive statistics for each of these factors.

Table 10: Descriptive Statistics per Factor

Factors	Mean	Median	Mode	Std Dev	Skewness	Kurtosis	Min	Max
Factor 1: Stimulating Risk Taking	3,4190	3,3333	2.89[a]	,90144	,548	1,305	1,22	6,78
Factor 2: Instrumental Risk Taking	4,8259	4,9286	5,14	,77118	,095	,106	3,14	7,00
Total Risk Propensity	**4,0345**	**4,0000**	**3.88[a]**	**,73336**	**,746**	**1,589**	**2,56**	**6,75**
Factor 1: Management Support for Corporate Entrepreneurship	4,7101	4,6667	4,33	,72759	-,313	-,015	2,50	6,17
Factor 2: Work Discretion	5,3663	5,3333	5,83	,93459	-,307	-,060	2,83	7,00
Factor 3: Rewards and Reinforcement	5,1458	5,1667	5.17[a]	1,03315	-,547	-,172	2,67	7,00
Factor 4: Time Availability	4,1181	4,1667	4,33	,85427	-,444	-,008	1,67	6,00
Factor 5: Organisational Boundaries	4,8733	5,1667	5,33	1,04483	-,840	,495	1,83	7,00
Total Corporate Entrepreneurship	**4,8427**	**4,8667**	**5,17**	**,54656**	**-,235**	**-,092**	**3,50**	**6,23**

a. Multiple modes exist. The smallest value is shown

When looking at the descriptive statistics contained in the table above it is important to do so with the 7-point Likert scale in mind. Mean values below 4 indicate disagreement with the statements contained in the factor whilst mean values from 5 upwards indicate agreement with the statements. The middlemost value was 4 which indicated that the respondents were undecided.

The majority of the mean values for each of the factors fell between 4 and 5 indicating that there were no strong leanings for these factors once the responses had been aggregated. The exceptions to this were: Stimulating Risk Taking, Work Discretion and Rewards and Reinforcement.

Since the mean is an indication as to the central tendency of the data, a mean score of 3,4190 for Stimulating Risk Taking shows that the majority of the respondents disagreed with the statements and consequently were not attracted to Stimulating Risk Taking. As per Zaleskiewicz, Stimulating Risk Taking "was found to be related to the preference for recreational, ethical, health and gambling risks…" (Zaleskiewicz, 2001, p. S105).

In contrast, the two Corporate Entrepreneurship factors (Factors 2 and 3) were the only factors with a mean score above 5 indicating that the respondents, as a whole, agreed with the

statements made in the questionnaire. Work Discretion relates to autonomy in the workplace whilst Rewards and Reinforcement relates to incentives and assistance from management in order to get work done.

5.5 Recoded Variables

In order to analyse the data, certain variables were recoded and collapsed in order to ensure that there were sufficient responses to interrogate the data. The aim was to ensure that there were at least 30 responses per variable in order to avoid type II error.

The four age variables were collapsed into two bands, namely 24-40 and 41 and older.

Table 11: Recoded Variables for Age

Age		
	Frequency	Percent
24 - 30	24	25,0
31 - 40	38	39,5
41 - 50	18	18,8
51 and older	16	16,7
Total	96	100,0
[R] Age		
	Frequency	Percent
24-40	62	64,6
41 and older	34	35,4
Total	96	100,0

The level of education variables were collapsed into two variables showing respondents that have obtained a university degree and those that have not.

Table 12: Recoded Variables for Education Level

Highest level of education		
	Frequency	Percent
Matric	12	12,5
Diploma	22	22,9
Undergraduate Degree	19	19,8
Postgraduate Degree	43	44,8
Total	**96**	**100,0**
[R] Highest level of education		
	Frequency	Percent
Matric/Diploma	34	35,4
Degree	62	64,6
Total	**96**	**100,0**

The variables describing current job level were collapsed into two variables showing those respondents that are in a managerial position and those that are not.

Table 13: Recoded Variables for Job Level

Which of the following best describes your current job level?		
	Frequency	Percent
Entry Level	9	9,4
Intermediate	31	32,3
Management	29	30,2
Senior Management	12	12,5
Executive	15	15,6
Total	**96**	**100,0**
[R] Which of the following best describes your current job level?		
	Frequency	Percent
Entry Level/Intermediate	40	41,7
Management	56	58,3
Total	**96**	**100,0**

5.6 Hypothesis Testing

The initial hypothesis testing was done using correlation analysis in order to determine the zero-order correlation between Risk Propensity and Corporate Entrepreneurship. The remaining hypotheses were then analysed using Independent Sample T-Tests. The Independent Samples T-Test was used to determine whether any of the specified variables had a statistical relationship with the constructs detailed in the research objectives. When looking at the relationship, significance was confirmed if the p-value was found to be less than 0.05.

Levene's Test was also used to assess the assumption of homogeneity in the variances of the population distributions from which different samples were drawn. Again, when looking at the relationships significance was confirmed if the p-value was less than 0.05.

The factor labels that appear in the various tables below have been abbreviated in order to fit the relevant data in. The key below in table 14 shows which factors the abbreviated labels refer to.

Table 14: Key for Factor Abbreviations

KEY			
RP Fac1: SLR	[Risk Propensity] Factor 1: Stimulating Risk Taking	**CE Fac1**	[Corporate Entrepreneurship] Factor 1: Management Support for Corporate Entrepreneurship
RP Fac2: IRT	[Risk Propensity] Factor 2: Instrumental Risk Taking	**CE Fac2**	[Corporate Entrepreneurship] Factor 2: Work Discretion
RP	Risk Propensity	**CE Fac3**	[Corporate Entrepreneurship] Factor 3: Rewards and Reinforcement
		CE Fac4	[Corporate Entrepreneurship] Factor 4: Time Availability
		CE Fac5	[Corporate Entrepreneurship] Factor 5: Organisational Boundaries
		CE	Corporate Entrepreneurship

5.6.1 Correlations

The relationship between Risk Propensity and Corporate Entrepreneurship was tested using Pearson Correlation coefficient. The results of the test are tabulated in table 15 below.

Table 15: Factor Correlations

		CE Fac1	CE Fac2	CE Fac3	CE Fac4	CE Fac5	CE
RP Fac1: SLR	Pearson Correlation	,140	,082	,180	-,046	,020	,127
	Sig. (2-tailed)	,175	,427	,078	,655	,847	,219
	N	96	96	96	96	96	96
RP Fac2: IRT	Pearson Correlation	-,019	,123	,107	-,266	-,036	-,020
	Sig. (2-tailed)	,851	,232	,298	,009	,727	,850
	N	96	96	96	96	96	96
RP	Pearson Correlation	,088	,113	,174	-,154	-,003	,079
	Sig. (2-tailed)	,396	,272	,090	,133	,978	,447
	N	96	96	96	96	96	96

It can be seen from the results above that there is no significant correlation between Risk Propensity and Corporate Entrepreneurship. The p-value of 0.447 exceeds the required 0.05 and the null hypothesis was therefore rejected. Even without the required level of significance the observed relationship between the two variables is weak with a correlation figure of only 0.079.

Correlations were run on all the factors as well as the total Risk Propensity and total CE scores and the only correlation of any significance was between RP fac2 (Instrumental Risk Taking) and CE fac4 (Time Availability) with a correlation score of -0.266. This indicates a negative relationship which implies that as one variable increases, the other variable decreases. The p-value of 0.009 indicates statistical significance to the relationship; however, the correlation is considered to be low indicating a weak relationship between the two variables.

In order to further understand the relationship between Instrumental Risk Taking and Time Availability, the Coefficient of Determination has been calculated below:

r_{xy} = -0.266 therefore

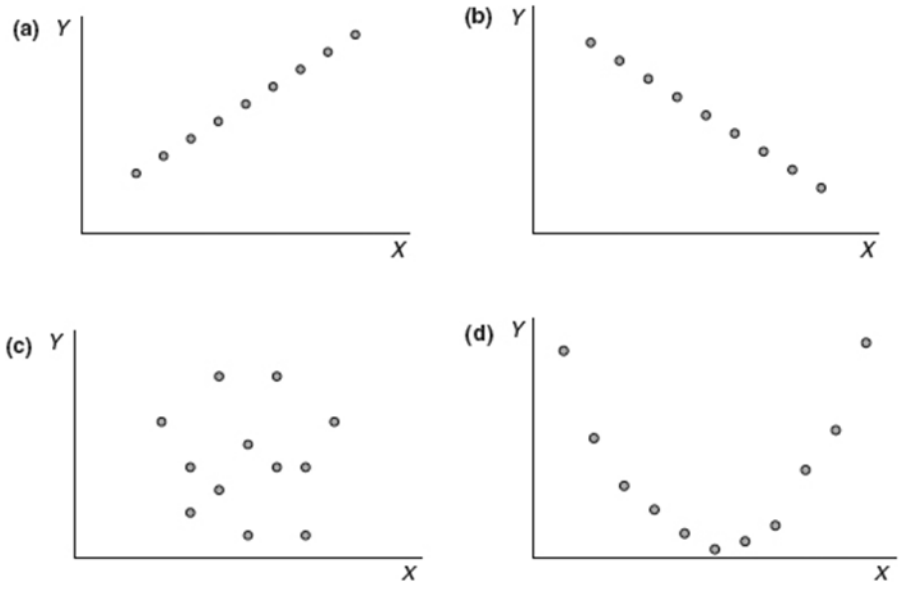
r^2_{xy} = 0.07

This indicates that the two variables only share about 7% of the variance between them.

Figure 6 below provides some reference to the scatterplot used in figure 7. According to Bagiella (2008), the Pearson correlation values range between -1 and 1. In figure 6, (a)

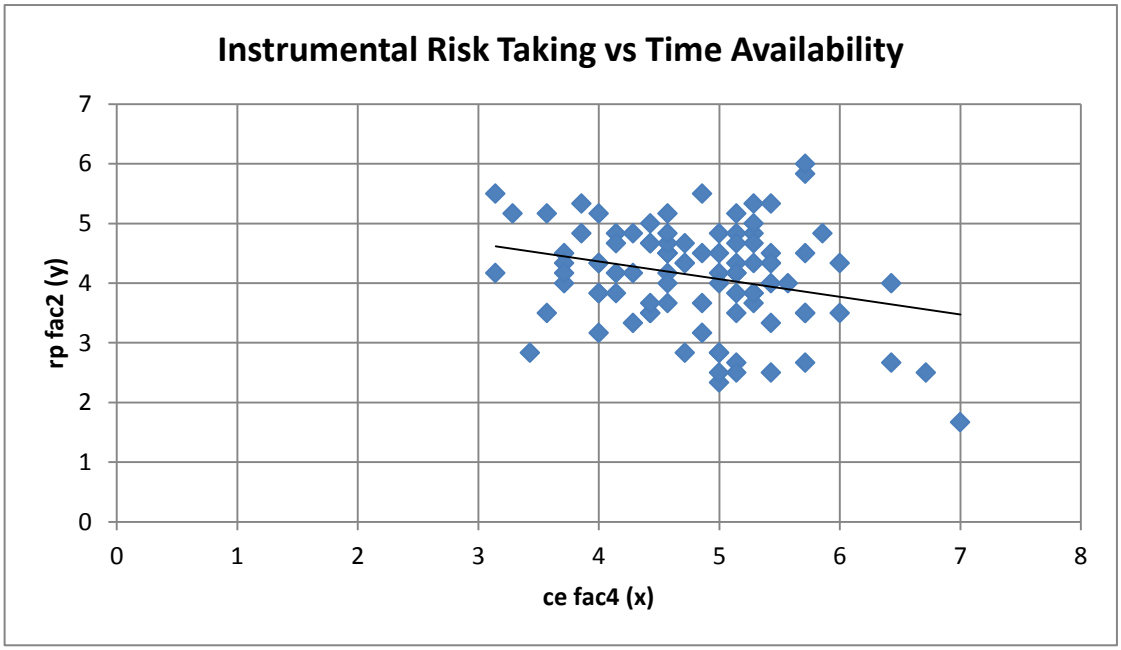
represents a perfect positive linear relationship whilst (b) indicates a perfect negative linear relationship between two variables. The coefficient is equal to zero when the two variables are either independent as shown in (c) or associated through a nonlinear relationship as seen in (d).

Figure 6: Correlation Coefficient under Different Scenarios



The relationship between Instrumental Risk Taking and Time Availability has been plotted in figure 7 below showing a visual representation of the data. You are able to see that although the data points do follow the regression line, they are not clustered tightly around it further illustrating the weak relationship.

Figure 7: Scatterplot of Instrumental Risk Taking and Time Availability



5.6.2 Independent T-Tests

The Independent Samples T-Test was used to determine whether any of the specified variables had a statistical relationship with the constructs detailed in the research objectives. When looking at the relationship, significance was confirmed if the p-value was found to be less than 0.05.

Levene's Test was also used to assess the assumption of homogeneity in the variances of the population distributions from which different samples were drawn. Again, when looking at the relationships, significance was confirmed if the p-value was less than 0.05.

The four variables tested were gender, age, education and job level. For each variable, the first table indicates both the mean and standard deviation for each of the factors as well as the number of respondents for each variable. The second table shows the Levene's Test results as well as the T-test results.

Should the level of significance for the Levene's Test result be below the required 0.05, equal variance has not been assumed and the corresponding T-test result has therefore been used. Equal variance is assumed if the p-value is above 0.05.

Gender

The Independent Samples T-Test was used to compare the means between female and male respondents.

Table 16: Group Statistics - Gender

Gender		N	Mean	Std. Deviation
RP Fac1: SLR	Female	50	3,2956	,71291
	Male	46	3,5531	1,06148
RP Fac2: IRT	Female	50	4,6629	,74413
	Male	46	5,0031	,76871
RP	Female	50	3,8938	,57230
	Male	46	4,1875	,85604
CE Fac1	Female	50	4,7667	,68263
	Male	46	4,6486	,77637
CE Fac2	Female	50	5,2933	,89313
	Male	46	5,4457	,98134
CE Fac3	Female	50	5,1933	,94902
	Male	46	5,0942	1,12582
CE Fac4	Female	50	4,2267	,74059
	Male	46	4,0000	,95710
CE Fac5	Female	50	5,1000	,91163
	Male	46	4,6268	1,13158
CE	Female	50	4,9160	,39950
	Male	46	4,7630	,66664

Table 17: Independent Samples Test - Gender

		Levene's Test		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff
RP Fac1: SLR	EV assumed	6,139	,015	-1,406	94	,163	-,25758
	EV not assumed			-1,384	77,795	,170	-,25758
RP Fac2: IRT	EV assumed	,094	,760	-2,203	94	,030	-,34025
	EV not assumed			-2,200	92,737	,030	-,34025
RP	EV assumed	5,524	,021	-1,991	94	,049	-,29375
	EV not assumed			-1,959	77,571	,054	-,29375
CE Fac1	EV assumed	2,883	,093	,793	94	,430	,11812
	EV not assumed			,789	89,976	,432	,11812
CE Fac2	EV assumed	,666	,417	-,796	94	,428	-,15232
	EV not assumed			-,793	91,121	,430	-,15232
CE Fac3	EV assumed	2,056	,155	,468	94	,641	,09913
	EV not assumed			,464	88,380	,644	,09913
CE Fac4	EV assumed	2,819	,096	1,304	94	,196	,22667
	EV not assumed			1,290	84,644	,201	,22667
CE Fac5	EV assumed	3,504	,064	2,264	94	,026	,47319
	EV not assumed			2,244	86,471	,027	,47319
CE	EV assumed	15,254	,000	1,376	94	,172	,15296
	EV not assumed			1,349	72,391	,181	,15296

The results in table 17 above show that the difference in means is significant for both [Risk Propensity] Factor 2: Instrumental Risk Taking and [Corporate Entrepreneurship] Factor 5: Organisational Boundaries.

When looking at the mean values in table 16 you can see that females have a lower mean when compared to males for Instrumental Risk Taking indicating that males have higher propensity for instrumental risk taking.

The table also shows females have a higher mean when compared to males for Organisational Boundaries indicating that females tend to view the workplace as more structured.

Age

The Independent Samples T-Test was used to compare the means between respondents aged 24-40 and those aged 41 and older.

Table 18: Group Statistics - Age

[R] Age		N	Mean	Std. Deviation
RP Fac1: SLR	24-40	62	3,4624	,81257
	41 and older	34	3,3399	1,05301
RP Fac2: IRT	24-40	62	4,9309	,69686
	41 and older	34	4,6345	,86946
RP	24-40	62	4,1048	,63454
	41 and older	34	3,9063	,88191
CE Fac1	24-40	62	4,6344	,76396
	41 and older	34	4,8480	,64402
CE Fac2	24-40	62	5,2204	,96937
	41 and older	34	5,6324	,81524
CE Fac3	24-40	62	5,1694	1,08033
	41 and older	34	5,1029	,95524
CE Fac4	24-40	62	4,1290	,81673
	41 and older	34	4,0980	,93124
CE Fac5	24-40	62	5,0296	,90108
	41 and older	34	4,5882	1,22971
CE	24-40	62	4,8366	,55995
	41 and older	34	4,8539	,52934

Table 19: Independent Samples Test - Age

		Levene's Test		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff
RP Fac1: SLR	EV assumed	2,380	,126	,635	94	,527	,12250
	EV not assumed			,589	54,904	,558	,12250
RP Fac2: IRT	EV assumed	1,883	,173	1,823	94	,071	,29642
	EV not assumed			1,710	56,549	,093	,29642
RP	EV assumed	3,641	,059	1,273	94	,206	,19859
	EV not assumed			1,159	52,124	,252	,19859
CE Fac1	EV assumed	,349	,556	-1,382	94	,170	-,21363
	EV not assumed			-1,453	78,344	,150	-,21363
CE Fac2	EV assumed	,415	,521	-2,102	94	,038	-,41192
	EV not assumed			-2,211	78,486	,030	-,41192
CE Fac3	EV assumed	,801	,373	,300	94	,765	,06641
	EV not assumed			,311	75,448	,757	,06641
CE Fac4	EV assumed	2,161	,145	,169	94	,866	,03099
	EV not assumed			,163	60,854	,871	,03099
CE Fac5	EV assumed	3,137	,080	2,011	94	,047	,44133
	EV not assumed			1,839	52,818	,071	,44133
CE	EV assumed	,236	,628	-,148	94	,883	-,01736
	EV not assumed			-,151	71,384	,881	-,01736

The results in table 19 above show that the difference in means is significant for both [Corporate Entrepreneurship] Factor 2: Work Discretion and [Corporate Entrepreneurship] Factor 5: Organisational Boundaries.

When looking at the mean values in table 18 you can see that respondents aged 24-40 have a lower mean when compared to respondents aged 41 and older for Work Discretion indicating that older respondents have more discretion in the work place.

The table also shows that respondents aged 24-40 have a higher mean when compared to respondents aged 41 and older for Organisational Boundaries indicating that older respondents tend to view the workplace as less structured.

Education

The Independent Samples T-Test was used to compare the means between respondents with a

university degree and those without a university degree.

Table 20: Group Statistics - Education

[R] Highest level of education		N	Mean	Std. Deviation
RP Fac1: SLR	Matric/Diploma	34	3,4216	,70739
	Degree	62	3,4176	,99740
RP Fac2: IRT	Matric/Diploma	34	4,5840	,81526
	Degree	62	4,9585	,71844
RP	Matric/Diploma	34	3,9301	,64692
	Degree	62	4,0917	,77575
CE Fac1	Matric/Diploma	34	4,7794	,59843
	Degree	62	4,6720	,79156
CE Fac2	Matric/Diploma	34	5,2843	,68230
	Degree	62	5,4113	1,05007
CE Fac3	Matric/Diploma	34	5,1716	,91975
	Degree	62	5,1317	1,09733
CE Fac4	Matric/Diploma	34	4,2255	,74748
	Degree	62	4,0591	,90792
CE Fac5	Matric/Diploma	34	5,2843	,80458
	Degree	62	4,6478	1,09732
CE	Matric/Diploma	34	4,9490	,36829
	Degree	62	4,7844	,61814

Table 21: Independent Samples Test - Education

		Levene's Test		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff
RP Fac1: SLR	EV assumed	1,440	,233	,021	94	,984	,00401
	EV not assumed			,023	87,753	,982	,00401
RP Fac2: IRT	EV assumed	1,072	,303	-2,328	94	,022	-,37449
	EV not assumed			-2,243	61,098	,029	-,37449
RP	EV assumed	,138	,711	-1,033	94	,304	-,16159
	EV not assumed			-1,089	78,992	,279	-,16159
CE Fac1	EV assumed	2,874	,093	,690	94	,492	,10737
	EV not assumed			,747	84,581	,457	,10737
CE Fac2	EV assumed	7,032	,009	-,635	94	,527	-,12698
	EV not assumed			-,716	91,181	,476	-,12698
CE Fac3	EV assumed	1,984	,162	,180	94	,858	,03985
	EV not assumed			,189	78,688	,850	,03985
CE Fac4	EV assumed	,883	,350	,912	94	,364	,16635
	EV not assumed			,965	79,756	,338	,16635
CE Fac5	EV assumed	5,547	,021	2,970	94	,004	,63646
	EV not assumed			3,245	86,160	,002	,63646
CE	EV assumed	10,555	,002	1,419	94	,159	,16461
	EV not assumed			1,634	93,282	,106	,16461

The results in table 21 above show that the difference in means is significant for both [Risk Propensity] Factor 2: Instrumental Risk Taking and [Corporate Entrepreneurship] Factor 5: Organisational Boundaries.

When looking at the mean values in table 20 you can see that respondents with a degree have a higher mean when compared to respondents without a degree for Instrumental Risk Taking indicating that respondents with a degree have a higher propensity for Instrumental Risk Taking.

The table also shows that respondents with a degree have a lower mean when compared to respondents without a degree for Organisational Boundaries indicating that respondents with a degree tend to view the workplace as less structured.

Job Level

The Independent Samples T-Test was used to compare the means between respondents in a management position and those not in a management position.

Table 22: Group Statistics – Job Level

[R] Which of the following best describes your current job level?		N	Mean	Std. Deviation
RP Fac1: SLR	Entry Level/Intermediate	40	3,3750	,65502
	Management	56	3,4504	1,04735
RP Fac2: IRT	Entry Level/Intermediate	40	4,7357	,67438
	Management	56	4,8903	,83343
RP	Entry Level/Intermediate	40	3,9703	,52501
	Management	56	4,0804	,85345
CE Fac1	Entry Level/Intermediate	40	4,6458	,67641
	Management	56	4,7560	,76473
CE Fac2	Entry Level/Intermediate	40	4,9042	,81901
	Management	56	5,6964	,87566
CE Fac3	Entry Level/Intermediate	40	4,7875	1,01132
	Management	56	5,4018	,97896
CE Fac4	Entry Level/Intermediate	40	4,0917	,79434
	Management	56	4,1369	,90124
CE Fac5	Entry Level/Intermediate	40	5,1208	,80063
	Management	56	4,6964	1,16390
CE	Entry Level/Intermediate	40	4,7100	,48211
	Management	56	4,9375	,57377

Table 23: Independent Samples Test – Job Level

		Levene's Test		t-test for Equality of Means			
		F	Sig.	t	df	Sig. (2-tailed)	Mean Diff
RP Fac1: SLR	EV assumed	5,754	,018	-,402	94	,688	-,07540
	EV not assumed			-,433	92,578	,666	-,07540
RP Fac2: IRT	EV assumed	1,709	,194	-,968	94	,336	-,15459
	EV not assumed			-1,003	92,471	,319	-,15459
RP	EV assumed	7,800	,006	-,723	94	,471	-,11004
	EV not assumed			-,780	92,214	,437	-,11004
CE Fac1	EV assumed	1,353	,248	-,729	94	,468	-,11012
	EV not assumed			-,744	89,702	,459	-,11012
CE Fac2	EV assumed	,032	,858	-4,489	94	,000	-,79226
	EV not assumed			-4,539	87,380	,000	-,79226
CE Fac3	EV assumed	,312	,578	-2,990	94	,004	-,61429
	EV not assumed			-2,973	82,477	,004	-,61429
CE Fac4	EV assumed	1,365	,246	-,255	94	,800	-,04524
	EV not assumed			-,260	89,835	,795	-,04524
CE Fac5	EV assumed	4,083	,046	1,993	94	,049	,42440
	EV not assumed			2,116	93,896	,037	,42440
CE	EV assumed	1,526	,220	-2,044	94	,044	-,22750
	EV not assumed			-2,104	91,455	,038	-,22750

The results in table 23 above show that the difference in means is significant for [Corporate Entrepreneurship] Factor 2: Work Discretion, [Corporate Entrepreneurship] Factor 3: Rewards and Reinforcement and [Corporate Entrepreneurship] Factor 5: Organisational Boundaries. The difference in means was also significant for Corporate Entrepreneurship as a whole.

When looking at the mean values in table 22 you can see that respondents in a management position have a higher mean when compared to respondents that are not in a management position for Work Discretion indicating that respondents in a management position have more discretion in the workplace.

The table also shows that respondents in a management position have a higher mean when compared to respondents that are not in a management position for Rewards and Reinforcement indicating that respondents in a management position perceive their incentives and the assistance they receive from their superiors to be higher.

Respondents in a management position have a lower mean when compared to respondents that are not in a management position for Organisational Boundaries indicating that respondents in a management position tend to view the workplace as less structured.

For CE as a whole, the difference in means between respondents in a management position and respondents that are not in a management position was also found to be higher for those in a management position. This indicates that those in a management position tend to view the organisation as more entrepreneurial than the respondents who are not in a management position.

Chapter 6: Discussion of Results

In this chapter, the results are discussed in terms of the research questions, hypotheses and in terms of the literature. The relationship between this chapter and chapters one, two, three and five has been explained and the results attempt to show how the various constructs relate to each other. This chapter attempts to show depth of insight into the findings in terms of both the context of the study and in light of the theory base.

6.1 Response Rate

The size of the research population numbered 157 and consisted of the employees of Lombard Insurance Group. The research was intended as a case study attempting to understand how Risk Propensity would impact Corporate Entrepreneurship within an organisation. The questionnaire was sent out to a total of 157 people within the Lombard Insurance Group and a total of 109 responses were received back. 13 of these responses were incomplete and were consequently discarded.

The initial response rate was 69% and this was reduced to 61% once the incomplete questionnaires were removed. The response rate is considered acceptable and this can be attributed to the method used whereby the questionnaire was sent to individual email addresses using the tool, Surveymonkey. The end result was a total of 96 complete questionnaires which were used in the analysis.

6.2 Sample Description

In the initial sample analysis, the respondents were split into four separate variables. The variables are listed as age, gender, education and job level. The results from these contextual variables are expanded upon below.

Gender

In terms of gender, the sample is split almost directly down the middle with 52% of the respondents being female versus 48% of the respondents being male. This indicates that there is an almost equal representation of both males and females in the organisation.

The difference, however, between the respective genders becomes apparent when you view

the gender representation across job levels. Although the there is more female representation in the sample, the percentage of management representation between the two genders is very different. The table below shows that only 39% of the female respondents are at a management level compared to 61% of the male respondents.

Table 24: Gender Representation across Job Levels

	Female	Male
Entry Level	8	1
Executive	2	13
Intermediate	20	11
Management	16	13
Senior Management	4	8
	50	**46**
Management	22	34
	39%	**61%**

The significance of this becomes apparent in the next section once we begin to unpack the various correlations across genders and across management levels.

Age

When looking at the sample, it is apparent that the bulk of the sample respondents fall within the first two age bands. In fact 65% of the sample is below the age of 40 which would be considered the norm in most South African companies as this statistic is reflective of the population as a whole.

Education

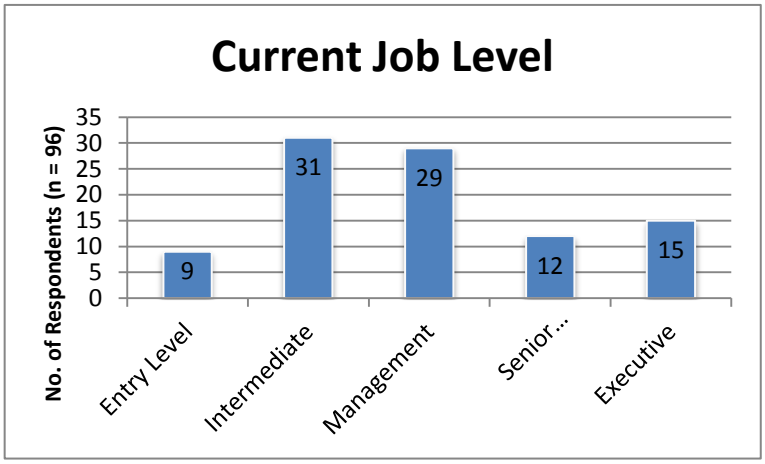
65% of the respondents within the sample have attended university and obtained either an undergraduate or a postgraduate degree. In a country where the quality of the education system is ranked 140 out of 144 and the quality of maths and science education is ranked 144 out of 144 (Schwab & Sala-i-Martín, 2014), this statistic can be considered as high. This is especially true when you couple it with the tertiary education enrolment ranking of 93 out of 144. It does begin to make sense when you consider that the sample has been taken from an insurance company providing financial advice where highly educated employees are

considered a requirement for this particular industry.

Job Level

The figure below illustrates sample split amongst various job levels. The fact that 58% of the respondents are in a managerial role indicate that there could possibly be a top-heavy management structure within the organisation. One possible reason for this is the high skill level required as evidenced in the previous section which indicated 65% of the respondents had a university education. Highly skilled employees would be more demanding in terms of position which could account for the large management layer.

Figure 8: Split per Job Level



6.3 Scale Reliability

The scale reliability was determined by calculating Cronbach's Alpha for each factor. Cronbach's Alpha reliability coefficient ranges from 0 to 1 with a greater internal reliability shown the closer the result is to 1 (Salkind, 2010). The size of the Cronbach's Alpha is determined by both the number of items considered as well as the mean of the inter-item correlations.

The results can be seen in table 9 which shows that all of the factors apart from two had an alpha above the recommended 0.7. The two factors where the alpha dipped below the recommended 0.7 only did so by a small margin. Both Instrumental Risk Taking and Time Availability had an Alpha 0.69 which is close enough to confirm that the measurement

instrument used is both valid and reliable.

Further reliability confirmation was done by calculating Cronbach's Alpha for each of the questions used in the questionnaire. The alpha was then calculated after removing each question to assess the impact each question had on the total alpha. This was done to illustrate the reliability and consistency of the questionnaire as a whole. Reliability was confirmed by the fact that the resultant alphas varied only slightly with the removal of each question.

The only significant change when removing questions occurred with the Time Availability construct for Corporate Entrepreneurship. This was one of the two factors where the total alpha was below 0.7. The alpha for Time Availability increased to 0.724 with the removal of question 4 which states '*My job is structured so that I have very little time to think about wider organisational problems'.* One possible reason for this is that this is the only question within the Time Availability construct which refers to the organisation as a whole whilst the other five questions all focus on individual time management and work load.

6.4 Descriptive Statistics

The research questionnaire was conducted using a 7-point Likert scale. Mean values below 4 indicate disagreement with the statements contained in the factor whilst mean values from 5 upwards indicate agreement with the statements. The middlemost value was 4 which indicated that the respondents were undecided.

The majority of the mean values for each of the factors fell between 4 and 5 indicating that there were no strong leanings for these factors once the responses had been aggregated. The exceptions to this were Stimulating Risk Taking, Work Discretion and Rewards and Reinforcement.

Risk

The total mean value for Risk Propensity was 4,0345 indicating that on average, the respondents were undecided with regards to their risk taking. This seeming indecision is understood as you drill down into the two components that contributed to Risk Propensity. The mean score for Factor 1: Stimulating Risk Taking was 3,4190 whilst the mean score for Factor 2: Instrumental Risk Taking was 4,8259.

According to Zaleskiewicz, it was found that Instrumental Risk Taking is related to risk preference in the investment domain and is determined by personality traits connected with orientation towards the future and the tendency to think rationally whilst Stimulating Risk Taking was found to be related to the preference for recreational, ethical, health and gambling risks and was associated with personality features connected with paratelic orientation and arousal seeking (Zaleskiewicz, 2001, p. S105).

It is interesting to note that the differences in means between the two components of Risk Propensity show a marked difference in attitude towards risk when it comes to investment risk and the risks associated with arousal seeking. The result is that the respondents, as a whole, are more inclined to take investment risk as opposed to personal risk. This result could also stem from the fact the respondents answered the questionnaire in relation to work and their work environment. Their responses could have been different if the context had been changed to one that had no reference to work.

Corporate Entrepreneurship

The overall mean for CE was 4,8427 which indicates that the overall perception of the organisation is that it is entrepreneurial. A mean score of 4,8427 is, however, far from definitive and this can be seen as this individual factors within CE are explored.

The first factor, which explored Management Support for Corporate Entrepreneurship, had only one question with a mean response below 4. The question was "*There is considerable desire among people in the organisation to generate new ideas without regard for crossing departmental or functional boundaries*" and the mean result was 3,86.

Ribeiro-Soriano & Urbano (2010) state that "collaboration among employees as well as between employees and managers has become an important source of competitive advantage for firms in competitive markets" (p. 352). They state further that these behaviours are linked to successful performances which generally arise as a result of CE activities within the organisation.

This view is shared by Kuratko, Hornsby & Covin (2014) who propose that innovation is more likely to occur in organisations where the potential for entrepreneurial behaviour is identified and nurtured in individuals and where knowledge within the organisation is widely shared.

This indicates that although the general perception is that management does support CE within the organisation, this support does not typically cross organisational boundaries. It also implies reluctance from the employees within the organisation to collaborate with other employees outside their departments which would hamper the growth of CE within the organisation.

The means for Factor 2 and 3 are both above 5 and the means for all the individual questions within these factors are all above or close to 5 as well. The two factors are Work Discretion and Rewards and Reinforcement and it is these two factors that are seen to influence CE within the organisation the most.

In the study by Hornsby, Kuratko, & Zahra (2002), Work Discretion and autonomy are used interchangeably and it is consistently regarded as one of the most important contributing factors towards CE. Likewise, Rewards and Reinforcement relates to incentives and management support and is also a crucial factor contributing towards CE within an organisation. The fact that both of these factors are high scoring indicates that CE plays an important role within the organisation.

Factor 4 relates to Time Availability and with a mean score of 4,1181, it is the CE factor with the lowest score. One of the possible reasons for this low score is that this is the one factor where reverse scoring was used. Reverse scoring is typically used to detect response bias where the respondent might select ‘agree’ or ‘disagree’ without actually thinking through the response. If this is not the reason for the low score, then this indicates that the respondents feel that they do not have enough to explore CE activities within the organisation.

The mean responses to Factor 5 all range from 4 to 5 indicating that the majority of respondents seem undecided with regards to Organisational Boundaries. This will, however, be explored further when assessing the Independent T-Tests which show how these responses are split between the variables that were tested.

6.5 Inferential Statistics, Research Questions and Hypotheses

This study has tested the hypotheses that a positive relationship exists between an individual’s Risk Propensity and their perception of Corporate Entrepreneurship within an organisation. It further explores how variables such as gender, age, education and job level impact both Risk

Propensity and CE. The purpose of the research is to understand what drives CE within an organisation and whether focus on Risk Propensity will improve CE within the organisation.

6.5.1 Discussion of Research Hypothesis 1

Is there correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation?

Null hypothesis:

$H_0$1: *There is a relationship between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation.*

Alternate hypothesis:

H_A1: *There is no relationship between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation.*

The objective in assessing whether or not there is a relationship between Risk Propensity and CE was to try and understand how to improve CE within an organisation. This relates back to the statement by Urban & Nikolov (2013) who suggest that with the focus on innovation, organisations who lack entrepreneurial drive are attempting to adopt CE in order to try and succeed in an increasingly competitive and financially constrained environment.

Understanding that a person's beliefs, attitudes, and values impact the thoughts that an individual has regarding entrepreneurship, we can see that the dimensions of Corporate Entrepreneurship have to take cognisance of the individual. Entrepreneurial Orientation is defined by Lumpkin & Dess (1996) as the processes, structures and behaviours of firms which are characterised by innovativeness, proactiveness, risk-taking, competitive aggressiveness and autonomy. While there is no single agreed definition of Entrepreneurial Orientation, it is commonly regarded as firm-level entrepreneurship focused on opportunity recognition and exploitation (Lechner & Gudmundsson, 2014).

(Lumpkin and Dess, 1996) follow this definition by outlining the five dimensions that encompass EO which are similar to the five factors of CE proposed by Hornsby, Kuratko, & Zahra (2002). They differ in the sense that the five factors of CE indicate what aspects within an organisation encourage CE amongst individuals whilst the five dimensions of EO indicate a

firm's propensity towards CE. The most obvious commonality between these two constructs is that they both view risk taking as an essential element of CE.

Palmer (1971) stated that entrepreneurial functions primarily involve risk taking whilst Deamer and Earle (2004) proposed that risk taking is an important dimension within Corporate Entrepreneurship and has both intuitive and experimental links with CE. Since it is individuals that make the decisions within an organisation, it is important to understand how the risk taking propensity of an individual affects their Entrepreneurial Orientation and the Corporate Entrepreneurship within an organisation.

Results

The correlations in table 15 show the relationships between Risk Propensity and CE as well as all the factors contained within each one. The level of significance was to be established if the p-value ≤ 0.05. The calculated level of significance for Risk Propensity and CE was 0.447 which exceeds the required level and is therefore not significant. Even without the required level of significance the observed relationship between the two variables is weak with a correlation figure of only 0.079.

Therefore, the findings from the analysis indicate that there is no significant relationship between Risk Propensity and CE which gives us sufficient reason to reject the null hypothesis and accept the alternate. From this, we are able to conclude that individual Risk Propensity does not have a significant impact on CE within the organisation.

This is further reinforced by the fact that only one of the correlations that were run indicated a relationship of any significance. The calculated p-value for RP fac2 (Instrumental Risk Taking) and CE fac4 (Time Availability) was 0.009 and although this indicates statistical significance to the relationship, the correlation score of -0.266 indicates a weak relationship between the factors.

Furthermore, when studying the relevant literature, no mention can be found of any relationship that exists between Instrumental Risk Taking and Time Availability.

6.5.2 Discussion of Research Hypothesis 2

Is there any significant difference in Risk Propensity across different demographics and

experience levels?

Null hypothesis:

$H_0$1: *There is no discernible difference in Risk Propensity across different demographics and experience levels.*

Alternate hypothesis:

H_A1: *There is a discernible difference in Risk Propensity across different demographics and experience levels.*

Sitkin & Pablo (1992) define Risk Propensity as the process where an individual's tendency to take or avoid risk influences their perception of risk. They also explain that the context impacts an individual's decision to either take or avoid risk. The result of this is that an individual who is averse to risk is more likely to consider a negative outcome which causes them to overestimate the probability of loss versus the probability of gain.

The link between risk and entrepreneurship was researched by both Aaby & Slater and Mitton. Aaby & Slater (1989) linked risk to entrepreneurship by stating that a higher Risk Propensity was positively related to improved performance. Mitton (1989) took this premise further by stating that entrepreneurs welcome uncertainty and are able to accept risk. This was qualified with the statement that although they accept risk, entrepreneurs understand how to limit risk and are actually risk avoiders.

The relationship between risk taking and entrepreneurship is typically a positive one with stronger levels of entrepreneurship displayed by individuals with more willingness to take risk (Begley, 1995; Douglas & Shepherd, 2002). This point is particularly relevant in that it highlights the relationship between Risk Propensity and CE.

Aaby & Slater (1989) expanded on the links between individual tendencies and those of an organisation by stating that organisations with a favourable perception and attitude toward international business coupled with a willingness to take risk are more likely to lead those organisations to business success.

Results

The two constructs used for assessing Risk Propensity were Instrumental Risk Taking and Stimulating Risk Taking. The only significant difference was found when assessing Instrumental Risk Taking. According to Zaleskiewicz (2001), Instrumental Risk Taking is related to risk preference in the investment domain and is determined by personality traits connected with orientation toward the future and the tendency to think rationally. The results showed a difference in Instrumental Risk Taking across gender and education.

When looking at the mean values in table 16 you can see that females have a lower mean when compared to males for Instrumental Risk Taking indicating that males have higher propensity for Instrumental Risk Taking. This is interesting when you look at table 24 which shows that the gender split at management level is 39% female compared to 61% male.

The implication is that males could possibly find themselves in management positions partly as result of their higher propensity for Instrumental Risk Taking. Whilst most research points to the fact that Risk Propensity has a positive relationship with CE, the findings from the analysis of Research Hypothesis 1 indicate that there is no significant relationship between Risk Propensity and CE. This could indicate that the logic behind selecting managers based on their propensity for risk could be flawed if the intention is to increase CE within the organisation.

The other variable showing a significant difference in means for Risk Propensity was that of education. The results in table 21 show that the difference in means is significant and when looking at the mean values in table 20, you can see that respondents with a degree have a higher mean when compared to respondents without a degree indicating that respondents with a degree a higher propensity for Instrumental Risk Taking.

The impact of education with regards to this variable could indicate a better understanding of the components of Instrumental Risk Taking by those respondents with a degree. This corresponds with Zaleskiewicz (2001) who indicates that Instrumental Risk Taking is related to the investment domain where cognitive processes and reflective decision making are more important.

6.5.3 Discussion of Research Hypothesis 3

Is there any significant difference in the perception of Corporate Entrepreneurship within an

organisation across different management levels?

Null hypothesis:

$H_0$1: *There is no discernible difference in the perception of Corporate Entrepreneurship within an organisation across different management levels.*

Alternate hypothesis:

H_A1: *There is a discernible difference in the perception of Corporate Entrepreneurship within an organisation across different management levels.*

Kuratko, Hornsby & Covin (2014) state that CE is a form corporate innovation where an organisation uses CE as a process which facilitates their efforts to constantly innovate and effectively cope with competition encountered when entering world markets. The importance of CE has been established and it stands to reason that management within an organisation would have to drive CE at both operational and strategic levels. Understanding whether management's perception of CE within the organisation differs from that of the other respondents allows us to assess the impact managements has on CE as a whole.

Results

Before assessing the results between job levels, the results for gender age and education are consolidated below.

The most consistent result across all 3 variables was for [Corporate Entrepreneurship] Factor 5: Organisational Boundaries. There were significant differences for this variable across gender, age and education indicating the importance of this with regards to CE. The results have been tabulated in tables 25 and 26 below.

Table 25: Mean Results for Organisational Boundaries across Gender, Age and Education

[Corporate Entrepreneurship] Factor 5: Organisational Boundaries	N	Mean	Std. Deviation
Female	50	5.1000	0.91163
Male	46	4.6268	1.13158
24-40	62	5.0296	0.90108
41 and older	34	4.5882	1.22971
Matric/Diploma	34	5.2843	0.80458
Degree	62	4.6478	1.09732

Table 26: P-values for Organisational Boundaries across Gender, Age and Education

[Corporate Entrepreneurship] Factor 5: Organisational Boundaries	Sig. (2-tailed)	Mean Difference
Gender	0.026	0.47319
Age	0.047	0.44133
Education	0.002	0.63646

The results show that females have a higher mean when compared to males indicating that females tend to view the workplace as more structured. Respondents aged 24-40 have a higher mean when compared to respondents aged 41 and older indicating that older respondents tend to view the workplace as less structured. Lastly respondents with a degree have a lower mean when compared to respondents without a degree indicating that respondents with a degree tend to view the workplace as less structured.

The implication of this is that focusing on Organisational Boundaries is clearly the most important area of focus when looking to foster CE within an organisation. This factor is significant across all four variables tested showing that flexible organisational boundaries will help facilitate the implementation of CE in an organisation.

Kuratko, Hornsby & Covin (2014) state that flexible organisational boundaries are useful in promoting entrepreneurial activity as they facilitate enhanced information flow between the external environment and the organisation. This enhanced information flow also occurs between departments and divisions within the organisation facilitating the promotion of entrepreneurial activity internally.

Kuratko et al. (2014) do qualify this by stating that creating structure in the way that information flows allows for the most predictable innovative outcomes. This point is corroborated by Ribeiro-Soriano & Urbano (2010) who state that “collaboration among employees as well as between employees and managers has become an important source of competitive advantage for firms in competitive markets” (p. 352). They state further that these behaviours are linked to successful performances which generally arise as a result of CE activities within the organisation.

The result is that organisational boundaries should be flexible in the sense that they allow for the unhindered flow of information between departments but should also be structured in a way that ensures the most productive use of innovation resources. This is consistent with

Kuratko et al. (2014) who propose that "productive outcomes are most readily accomplished in organizational systems when uncertainty is kept at manageable levels" (p. 39).

The only other significant difference in mean identified was the difference between respondents aged 24-40 and those aged 41 and older with regards to [Corporate Entrepreneurship] Factor 2: Work Discretion. Respondents aged 24-40 have a lower mean when compared to respondents aged 41 and older indicating that older respondents have more discretion in the work place. This result makes sense in that you would expect more of the older respondents to be in a managerial role which would result in greater discretion in the work place.

Job Level

The main purpose of the analysis done for hypothesis 3 was to establish if there any significant difference in the perception of Corporate Entrepreneurship within an organisation across different management levels. The relevance of this related to the fact that management would typically drive CE within an organisation and consequently, you would expect the perception of CE to be different across various job levels.

This point is highlighted by Hornsby, Kuratko, Shepherd & Bott (2009) who state that organisations pursuing a CE strategy tend to cascade and integrate entrepreneurial activities at senior, middle and lower levels of management. The managers at the various levels share responsibility for the organisations' entrepreneurial activities.

The results contained in table 23 show that the difference in means is significant for three out the five CE factors assessed. The three factors are Factor 2: Work Discretion, Factor 3: Rewards and Reinforcement and Factor 5: Organisational Boundaries with significance also attained for Corporate Entrepreneurship as a whole.

Table 27: Mean Results for Corporate Entrepreneurship

Factor	Job Level	N	Mean	Std. Deviation
Factor 2: Work Discretion	Entry Level/Intermediate	40	4.9042	0.81901
	Management	56	5.6964	0.87566
Factor 3: Rewards and Reinforcement	Entry Level/Intermediate	40	4.7875	1.01132
	Management	56	5.4018	0.97896
Factor 5: Organisational Boundaries	Entry Level/Intermediate	40	5.1208	0.80063
	Management	56	4.6964	1.16390
Corporate Entrepreneurship Total	Entry Level/Intermediate	40	4.7100	0.48211
	Management	56	4.9375	0.57377

Table 28: P-values for Corporate Entrepreneurship

Corporate Entrepreneurship	Sig. (2-tailed)	Mean Difference
Factor 2: Work Discretion	0.000	-0.79226
Factor 3: Rewards and Reinforcement	0.004	-0.61429
Factor 5: Organisational Boundaries	0.037	0.42440
Corporate Entrepreneurship Total	0.044	-0.22750

The mean values for the three factors and CE as a whole have been consolidated in table 27 above along with the p-values in table 28. The results show that managers have a consistently higher perception of CE across all three factors which results in a higher CE total for managers as well.

Managers are seen to have more discretion in the workplace and their response for Rewards and Reinforcement indicates that they also have a more favourable perception regarding their incentives and the assistance they receive from their superiors. Managers also have a higher mean for Organisational Boundaries indicating that they tend to view the workplace as less structured when compared to the responses from those respondents who are not in a management position.

These results seem to corroborate the model proposed by Duobiene (2013) which list three institutional factors which influence organisational entrepreneurship. The three institutional factors identified are managerial practices, managers' attitudes towards entrepreneurship and entrepreneurial culture. It's clear that the manager's role in implementing and encouraging CE within the workplace is an important one and without the focus and drive from managers, the implementation of CE will not result in the desired outcome.

6.6 Summary

This chapter discussed the findings from the research. The results from the three hypotheses are summarised in table 29 below followed by the main findings.

Table 29: Summary of Results

Hypotheses		Conclusion
H_1:	Is there correlation between an individual's Risk Propensity and their perception of Corporate Entrepreneurship within an organisation?	There is no correlation. Reject the null and accept the alternate hypothesis.
H_2:	Is there any significant difference in Risk Propensity across different demographics and experience levels?	There is a difference. Reject the null and accept the alternate hypothesis.
H_3:	Is there any significant difference in the perception of Corporate Entrepreneurship within an organisation across different management levels?	There is a difference. Reject the null and accept the alternate hypothesis.

When assessing the means, it was noted that the mean score for Stimulating Risk Taking was far lower than the mean score for Instrumental Risk Taking. The differences in means between the two components of Risk Propensity show a marked difference in attitude towards risk when it comes to investment risk and the risks associated with arousal seeking. The respondents, as a whole, are more inclined to take investment risk as opposed to personal risk.

It was found that although the general perception is that management supports CE within the organisation, this support does not typically cross organisational boundaries. This also implies reluctance from the employees within the organisation to collaborate with other employees outside their departments which would hamper the growth of CE within the organisation.

The findings from the analysis indicate that there is no significant relationship between Risk Propensity and CE and from this; we are able to conclude that individual Risk Propensity does not have a significant impact on CE within the organisation.

It was also found that females have a lower propensity for Instrumental Risk Taking when compared to males. This was then linked to the data showing that the gender split at

management level is 39% female compared to 61% male. The implication is that males could possibly find themselves in management positions partly as result of their higher propensity for Instrumental Risk Taking even though the findings from the analysis of Research Hypothesis 1 indicate that there is no significant relationship between Risk Propensity and CE.

Respondents with a degree were shown to have a higher propensity for Instrumental Risk Taking. This could indicate a better understanding of the components of Instrumental Risk Taking by those respondents with a degree.

It was found that Organisational Boundaries is clearly one of the most important areas of focus when looking to foster CE within an organisation. This factor was significant across all four variables tested showing that flexible organisational boundaries will help facilitate the implementation of CE in an organisation.

It was found that there is a significant difference in the perception of CE across various job levels. The results showed that the difference in means was significant for three out the five CE factors assessed as well as Corporate Entrepreneurship as a whole. The relevance of this related to the fact that management would typically drive CE within an organisation and consequently, you would expect the perception of CE to be different across various job levels.

Chapter 7: Conclusion

After examining the analysis of the data in Chapter 5 and the findings detailed in Chapter 6, we can now consolidate and synthesize the results. This chapter highlights the main findings of the research before concluding with recommendations based on these findings as well as recommendations for future research.

7.1 Main Findings

It was the intention of this study that the results would assist in providing a framework that could be used to establish criteria for increasing CE in the business environment. In order to do this, the main findings have been consolidated below:

1) The assessment of means provided the first result indicating that the mean score for Stimulating Risk Taking was far lower than the mean score for Instrumental Risk Taking. Although the total mean value for Risk Propensity was 4,0345, the mean scores for Stimulating Risk Taking and Instrumental Risk Taking were 3,4190 and 4,8259 respectively.

   This implies that respondents, as a whole, are more inclined to take investment risk as opposed to personal risk. Whilst this result could stem from the fact the respondents answering the questionnaire did so from a work perspective, it is interesting to note the higher propensity for investment risk in an organisation in the financial and insurance sector.

2) The general perception of management within the organisation is that they support CE. This support is not, however, seen to cross organisational boundaries which also implies reluctance from employees within the organisation to collaborate with other employees outside their departments. This particular point would hamper the growth of CE within the organisation and is elaborated on further in point 5.

3) The correlation analysis indicated no significant relationship between Risk Propensity and CE. From this, we are able to conclude the individual Risk Propensity does not have a significant impact on CE within the organisation.

4) It was also found that females have a lower propensity for Instrumental Risk Taking when compared to males. This was then linked to the data showing that the gender split at management level is 39% female compared to 61% male. The implication is that males could find themselves in management positions partly as result of their higher propensity for Instrumental Risk Taking. The findings, explained in point 3 above, indicate that there is no significant relationship between Risk Propensity and CE which could indicate that the logic behind selecting managers based on their propensity for risk could be flawed if the intention is increase CE within the organisation.

5) There were significant differences between the means of the variables assessed for Organisational Boundaries. The basic summary is that males, older respondents and those respondents with a degree tend to view the workplace as less structured.

   The implication of this is that Organisational Boundaries are clearly the most important area of focus when looking to foster CE within an organisation. The fact that Organisational Boundaries provided significant differences across all four of the variables tested highlights this importance. It also shows that flexible organisational boundaries could help facilitate the implementation of CE in an organisation.

6) It was found that there is a significant difference in the perception of CE across various job levels. The relevance of this is related to the fact that management would typically drive CE within an organisation and consequently, you would expect the perception of CE to be different across various job levels.

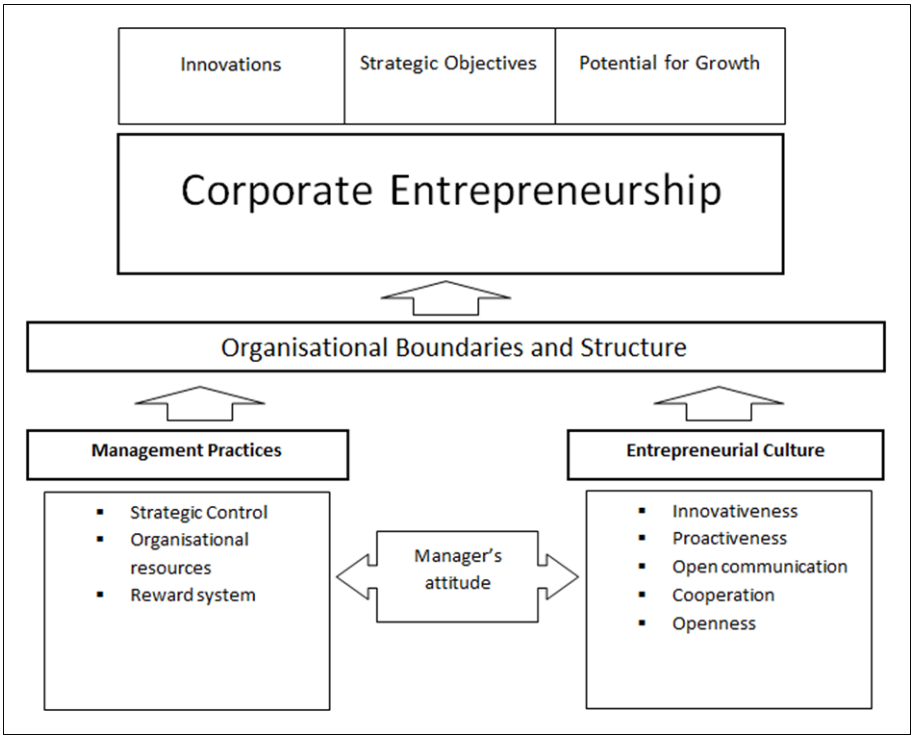
7.2 Framework for Corporate Entrepreneurship

The conceptual model by Duobiene (2013) has been used as a framework from which to apply the main findings resulting from the research. The model, which is found in figure 2, seeks to provide a framework for CE along with its institutional factors.

Duobiene's model describes the operationalisation of CE using three characteristics. These characteristics are: innovations, strategic objectives, and potential for growth. The model then identifies three institutional factors which influence organisational entrepreneurship which are listed as: managerial practices, managers' attitudes towards entrepreneurship and entrepreneurial culture.

The arrangement of these institutional factors and their relevance to CE is where the adapted framework contained in figure 9 below, departs from the original model.

Figure 9: Adapted Framework of Corporate Entrepreneurship and its Institutional Factors



The most important consideration in the Adapted Framework above is the introduction of Organisational Boundaries and Structure as a mediating layer between CE and the institutional

factors. The original model lists organisational boundaries and structure as one of the elements of Management Practices but the analysis and findings from this research indicate the importance of organisational boundaries with regards to the implementation of CE.

This corresponds with research by Kuratko, Hornsby & Covin (2014) who state that flexible organisational boundaries are useful in promoting entrepreneurial activity as they facilitate enhanced information flow between the external environment and the organisation. This enhanced information flow also occurs between departments and divisions within the organisation facilitating the promotion of entrepreneurial activity internally.

Should the organisational boundary layer not have enough flexibility, the flow of information will be constrained, hindering the growth of CE within the organisation. It is important to remember that the organisational boundaries should also be structured in a way that ensures the most productive use of innovation resources.

Based on the results from the correlation analysis which indicated no significant relationship between Risk Propensity and CE, the element of risk taking has been removed from the Entrepreneurial Culture institutional factor. The other five elements of innovativeness, proactiveness, open communication, cooperation and openness remain due the importance of entrepreneurial culture to CE.

This point was corroborated by Hayton, Hornsby, & Bloodgood (2013) who provide two reasons to explain the importance of HRM practices with respect to CE. The first is that HRM practices will typically influence the extent to which employees engage in behaviours that promote knowledge integration and the second is that overly rigid HRM practices would serve to inhibit the strategic behaviours required to identify opportunity and acquire new knowledge. Rutterford, Buller & McMullen (2003) support this by stating that entrepreneurial culture embeds values, norms and beliefs which support CE and encourage innovation along with the achievement of competitive advantage.

The last change to the framework incorporates the finding which shows how the perception of CE differs across various job levels. The relevance of this relates to the fact that management would typically drive CE within an organisation and consequently, the manger's attitude would impact the entrepreneurial culture in the organisation as well as the management practices.

7.3 Recommendations Based on Findings

It is the intention of this research and the adapted framework resulting from it to provide insight into how CE should be institutionalised within the organisation. One of main points resulting from this research is that Risk Propensity does not lead to greater CE. This point can be applied when hiring for an organisation as hiring based on individual Risk Propensity will not necessarily assist in creating an environment where CE will flourish.

The importance of CE has been well documented and it vitally important for any modern organisation to ensure the constant innovation that is required to survive the competitive world we live in. The culture of innovation needs encouragement and ensuring that the enablers to CE are present within the organisation will contribute greatly to its success.

One of the quotes famously misattributed to Charles Darwin is, “It is not the strongest of the species that survives, nor the most intelligent, but rather the one most adaptable to change”. This phrase actually appeared in a speech delivered in 1963 by a Louisiana State University business professor named Leon C. Megginson but despite the confusion as to its origin, it still seems to be applicable to modern organisations seeking to survive in a competitive market. They need to evolve and adapt to both external and internal changes by embracing CE and with it, the desire and willingness to innovate and change.

7.4 Proposals for Future Research

The main recommendations for future research are as follows:

- Whilst no correlation was found between Risk Propensity and Corporate Entrepreneurship the study was limited to the employees of Lombard Insurance Company. These findings were based on a sample of convenience and may therefore not be generalised. Whilst the results could possibly be inferred to short-term insurers operating in South Africa, further research will have to be done to confirm the application of these results to more general population.

- The research only seeks to describe the specific relationship between Risk Propensity and Corporate Entrepreneurship and did not attempt to provide information regarding the causal factors which could influence either Risk Propensity or Corporate

Entrepreneurship. It was outside of the scope of this research to identify the drivers behind either Risk Propensity or Corporate Entrepreneurship and these areas could therefore be the subject of future research.

- The variables used in the analysis of the data were limited by the population. An expanded population could utilise additional variables and these contextual variables could be used to further understand the drivers behind either Risk Propensity or Corporate Entrepreneurship

- The adapted framework has been based on the results obtained. A more comprehensive model could be designed should additional variables be utilised or if the context of the study was expanded.

- Should an improved model or framework be developed, it could be applied to a far wider context in order to test the validity of the framework. Additional contexts such as Government entities or emerging markets could provide a far greater and much broader insight into the subject matter.

Of far greater necessity is the understanding of organisations and their management that studies of this nature are of vital importance if greater understanding into CE is to be achieved.

References

Aaby, N. E., & Slater, S. F. (1989). Management influences on export performance: a review of the empirical literature 1978-1988. *International marketing review, 6*(4).

Andretta, M. (2014). Some Considerations on the Definition of Risk Based on Concepts of Systems Theory and Probability. *Risk Analysis: An International Journal, 34*(7), 1184-1195.

Bagiella, E. (2008). Pearson Correlation Coefficient. In S. Boslaugh, & L. McNutt (Eds.), *Encyclopedia of Epidemiology.* (pp. 792-795). Thousand Oaks, CA: SAGE Publications, Inc.

Balnaves, M., & Caputi, P. (2001). *Introduction to quantitative research methods: An investigative approach*. Sage.

Barringer, B. R., & Bluedorn, A. C. (1999). The relationship between Corporate Entrepreneurship and strategic management. *Strategic Management Journal, 20*(5), 421-444.

Begley, T. M. (1995). Using founder status, age of firm, and company growth rate as the basis for distinguishing entrepreneurs from managers of smaller businesses. *Journal of Business Venturing, 10*(3), 249-263.

Belousova, O., Gailly, B., & Basso, O. (2010). A conceptual model of corporate entrepreneurial behavior. *In Referat przedstawiony na corocznej konferencji Babson College Entrepreneurship Research, Lozanna*.

Bhardwaj, B. R., Jain, S. K., & Sushil. (2010). *Intelligence Generation and Dissemination as Drivers of Innovation: An Empirical Study of Corporate Entrepreneurship.* Paper presented at the 1297-1321. Retrieved from http://search.proquest.com/docview/748838382?accountid=14717

Blais, A. R., & Weber, E. U. (2006). A domain-specific risk-taking (DOSPERT) scale for adult populations. *Judgment and Decision Making, 1*(1), 33-47.

Brockhaus, R. H. (1980). Risk taking propensity of entrepreneurs. *Academy of management Journal, 23*(3), 509-520.

Burgelman, R A. 1983. Corporate Entrepreneurship and strategic management: Insights from a Process study. *Management Science, 29*(12). Pp. 1349 – 1363.

Buskirk, T. (2008). p-Value. In Paul J. Lavrakas (Ed.), *Encyclopedia of Survey Research Methods.* (pp. 648-649). Thousand Oaks, CA: Sage Publications, Inc.

Campagnolo, G., & Vivel, C. (2012). Before Schumpeter: forerunners of the theory of the entrepreneur in 1900s German political economy–Werner Sombart, Friedrich von Wieser. *The European Journal of the History of Economic Thought, 19*(6), 908-943.

Cantillon, R. (1734). *Essai sur la nature du commerce en general.* [Essay on the nature of general commerce](Translated by Henry Higgs). London: MacMillan.

Carlsson, B., Braunerhjelm, P., McKelvey, M., Olofsson, C., Persson, L., & Ylinenpää, H. (2013). The evolving domain of entrepreneurship research. *Small Business Economics, 41*(4), 913-930.

Chakraborty, A., Sheikh, S., & Subramanian, N. (2007). Termination risk and managerial risk taking. *Journal of Corporate Finance*, *13*(1), 170-188.

Chen, J., Zhu, Z., & Anquan, W. (2005). A system model for Corporate Entrepreneurship. *International Journal of Manpower, 26*(6), 529-543.

Chen, Y., Tang, G., Jin, J., Xie, Q., & Li, J. (2014). CEOs' Transformational Leadership and Product Innovation Performance: The Roles of Corporate Entrepreneurship and Technology Orientation. *Journal of Product Innovation Management*, *31*(S1), 2-17.

Covin, J. G., & Slevin, D. P. (1991). A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship Theory and Practice, 76*(1), 7-25.

Crowe, R. M., Horn, R. C., & Hall Jr., C. P. (1967). The Meaning of Risk. *Journal of Risk & Insurance, 34*(3), 459-474.

Deamer, I., & Earle, L. (2004). Searching for entrepreneurship. *Industrial and commercial*

training, 36(3), 99-103.

De Jong, J. P. J., Parker, S. K., Wennekers, S., & Wu, C. (2011). Corporate Entrepreneurship at the individual level: Measurement and determinants. *EIM Research Reports. Zoetermeer: EIM*.

Dess, G. G., Ireland, R. D., Zahra, S. A., Floyd, S. W., Janney, J. J., & Lane, P. J. (2003). Emerging issues in Corporate Entrepreneurship. *Journal of management, 29*(3), 351-378.

Dess, G. G., & Lumpkin, G. T. (2005). The role of entrepreneurial orientation in stimulating effective Corporate Entrepreneurship. *The Academy of Management Executive, 19*(1), 147-156.

De Villiers-Scheepers, M. J. (2012). Antecedents of strategic Corporate Entrepreneurship. *European Business Review, 24*(5), 400–424.

Dionne, G. (2013). Risk Management: History, Definition, and Critique. *Risk Management and Insurance Review*, *16*(2), 147-166.

Douglas, E. J., & Shepherd, D. A. (2002). Self-employment as a career choice: attitudes, entrepreneurial intentions, and utility maximization. *Entrepreneurship Theory and Practice, 26*(3), 81-90.

Duobiene, J. (2013). Corporate Entrepreneurship in Organisational Life-Cycle. *Economics and Management, 18*(3), 584-595.

Gartner, W. B. (1990). What are we talking about when we talk about entrepreneurship?. *Journal of Business venturing*, *5*(1), 15-28.

Goodale, J. C., Kuratko, D. F., Hornsby, J. S., & Covin, J. G. (2011). Operations management and Corporate Entrepreneurship: The moderating effect of operations control on the antecedents of corporate entrepreneurial activity in relation to innovation performance. *Journal of Operations Management, 29*(1), 116-127.

Hagedoorn, J. (1996). Innovation and Entrepreneurship: Schumpeter Revisited. *Industrial & Corporate Change*, *5*(3), 883-897.

Hair, J.E., Black, W.C., Babin, B.J., Anderson, R.E. & Tatham, R.L. (2006). *Multivariate Data Analysis (Sixth Edition).* New Jersey: Pearson Prentice Hall.

Harms, R. (2013). Part III: Corporate Entrepreneurship in Context: 1. From Entrepreneurial Orientation to Performance: inside the black box of Corporate Entrepreneurship. *M@N@Gement*, *16*(4), 410-421.

Hayton, J. C., Hornsby, J. S., & Bloodgood, J. (2013). Part II: The Contribution of HRM to Corporate Entrepreneurship: a review and agenda for future research. *M@N@Gement*, *16*(4), 381-409.

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.

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., Naffziger, D. W., Kuratko, D. F., & Montagno, R. V. (1993). An Interactive Model of the Corporate Entrepreneurship Process. *Entrepreneurship: Theory & Practice, 17*(2), 29-37.

Ireland, R., & Webb, J. W. (2009). Crossing the great divide of strategic entrepreneurship: Transitioning between exploration and exploitation. *Business Horizons*, *52*(5), 469-479.

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

Josien, L. (2012). Entrepreneurial Orientation: An Empirical Study of the Risk-Propensity Dimension of Entrepreneurs. *Academy of Entrepreneurship Journal, 18*(1).

Kumar, V., Mudambi, R., & Gray, S. (2013). Internationalization, Innovation and Institutions: The 3 I's underpinning the competitiveness of emerging market firms. *Journal of International Management*, *19*(3), 203-206.

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.

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.

Lassen, A., & Nielsen, S. (2009). Corporate Entrepreneurship: Innovation at the Intersection between Creative Destruction and Controlled Adaptation. *Journal of Enterprising Culture*, *17*(2), 181-199.

Lassen, A. H. (2007). Corporate Entrepreneurship: an empirical study of the importance of strategic considerations in the creation of radical innovation. *Managing Global Transitions, 5*(2), 109-131.

Lechner, C., & Gudmundsson, S. V. (2014). Entrepreneurial orientation, firm strategy and small firm performance. *International Small Business Journal, 32*(1), 36-60.

Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *Academy of Management Review. 27*(1). 135-172.

Lumpkin, G. T., & Dess, G. G. (2001). Linking Two Dimensions of Entrepreneurial Orientation to Firm Performance: The Moderating Role of Environment and Industry Life Cycle. *Journal of Business Venturing*, *16*(5), 429.

McFadzean, E., O'Loughlin, A., & Shaw, E. (2005). Corporate Entrepreneurship and innovation part 1: The missing link. *European Journal of Innovation Management, 8*(3), 350-372.

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

Miller, D., & Friesen, P. H. (1982). Innovation in Conservative and Entrepreneurial Firms: Two Models of Strategic Momentum. *Strategic Management Journal*, *3*(1), 1-25.

Miller, K. D. (2007). Risk and rationality in entrepreneurial processes. *Strategic*

Entrepreneurship Journal, 1(1-2), 57-74.

Mitton, D. G. (1989). The Complete Entrepreneur. *Entrepreneurship Theory and Practice, 13*(3), 9-19.

Multon, K., & Coleman, J. (2010). Coefficient Alpha. In Neil J. Salkind (Ed.), *Encyclopedia of Research Design.*(pp. 160-164). Thousand Oaks, CA: SAGE Publications, Inc.

Nasution, H. N., Mavondo, F. T., Matanda, M. J., & Ndubisi, N. O. (2011). Entrepreneurship: Its relationship with market orientation and learning orientation and as antecedents to innovation and customer value. *Industrial Marketing Management*, *40*(3), 336-345.

Nicholson, N., Soane, E., Fenton-O'Creevy, M., & Willman, P. (2005). Personality and domain-specific risk taking. *Journal of Risk Research*, *8*(2), 157-176.

Norton Jr, W. I., & Moore, W. T. (2002). Entrepreneurial risk: Have we been asking the wrong question?. *Small business economics, 18*(4), 281-287.

Pallant, J. (2011). *SPSS Survival Manual: A step by step guide to data analysis using SPSS (Fourth Edition).* New South Wales: Allen & Unwin.

Palmer, M. (1971). The application of psychological testing to entrepreneurial potential. *California management review, 13*(3).

Phan, P. H., Wright, M., Ucbasaran, D., & Tan, W. L. (2009). Corporate Entrepreneurship: Current research and future directions. *Journal of Business Venturing, 24*(3), 197-205.

Rauch, A., Wiklund, J., Lumpkin, G., & Frese, M. (2009). Entrepreneurial Orientation and Business Performance: An Assessment of Past Research and Suggestions for the Future. *Entrepreneurship: Theory & Practice*, *33*(3), 761-787.

Ribeiro-Soriano, D., & Urbano, D. (2010). Employee-organization relationship in collective entrepreneurship: An overview. *Journal of Organizational Change Management*, *23*(4), 349-359.

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.

Rutterford, M. W., Buller, P. F. & McMullen, P. R. (2003). Human resource management problems over the life cycle of small to medium-sized firms. *Human Resource Management*, 42(4), 321-335.

Salkind, N. J. (2013). *Statistics for people who think they hate statistics*. 3rd Ed. Thousand Oaks: Sage.

Salkind, N. J. (Ed.). (2010). *Encyclopedia of Research Design*. Thousand Oaks, CA: SAGE Publications, Inc. doi: http://0-dx.doi.org.innopac.up.ac.za/10.4135/9781412961288

Saunders, M., & Lewis, P. (2012). *Doing research in business and management: An essential guide to planning your project*. Harlow, Essex: Financial Times Prentice Hall.

Schmelter, R., Mauer, R., Börsch, C., & Brettel, M. (2010). Boosting Corporate Entrepreneurship through HRM practices: Evidence from German SMEs. *Human Resource Management*, *49*(4), 715-741.

Schoorman, F. D., Mayer, R. C., & Davis, J. H. (2007). An Integrative Model of Organizational Trust: Past, Present, and Future. *Academy Of Management Review*, *32*(2), 344-354.

Schreiber, J. (2008). Descriptive Statistics. In Lisa M. Given (Ed.), *The SAGE Encyclopedia of Qualitative Research Methods.* (pp. 210-213). Thousand Oaks, CA: SAGE Publications, Inc.

Schwab, K., & Sala-i-Martín, X. (2014). Insight Report: The Global Competitiveness Report 2014–2015. In *Geneva: World Economic Forum*.

Sharma, P., & Chrisman, J. J. (1999). Toward a Reconciliation of the Definitional Issues in the Field of Corporate Entrepreneurship. *Entrepreneurship: Theory & Practice, 23*(3), 11-27.

Sitkin, S. B., & Pablo, A. L. (1992). Reconceptualizing the determinants of risk behavior. *Academy of management review, 17*(1), 9-38.

Sitkin, S. B., & Weingart, L. R. (1995). Determinants of risky decision-making behavior: A test of the mediating role of risk perceptions and propensity. *Academy of management Journal, 38*(6), 1573-1592.

SPSS Inc. (2005). *SPSS Base 14.0 User's Guide.* Chicago: SPSS, Illinois.

Tajeddini, K., & Mueller, S. L. (2009). Entrepreneurial characteristics in Switzerland and the UK: a comparative study of techno-entrepreneurs. *Journal of International Entrepreneurship, 7*(1), 1-25.

Thornberry, N. (2001). Corporate Entrepreneurship: Antidote or Oxymoron?. *European Management Journal, 19*(5), 526.

Urban, B., & Nikolov, K. (2013). Sustainable Corporate Entrepreneurship initiatives: a risk and reward analysis. *Technological and Economic Development of Economy*, *19*(sup1), S383-S408.

Venkatraman, M. P. (1989). Involvement and Risk. *Psychology & Marketing*, *6*(3), 229-247.

Vogt, W. P. (Ed.) (2005). *Dictionary of Statistics & Methodology.* (3rd ed., p. 174). Thousand Oaks, CA: SAGE Publications, Inc.

Weber, E. U., Blais, A. R., & Betz, N. E. (2002). A domain-specific risk-attitude scale: Measuring risk perceptions and risk behaviors. Journal of behavioral decision making, 15(4), 263-290.

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

Zahra, S. A., Randerson, K., & Fayolle, A. (2013). Part I: The Evolution and Contributions of Corporate Entrepreneurship Research. *M@N@Gement*, *16*(4), 362-380.

Zaleskiewicz, T. (2001). Beyond risk seeking and risk aversion: Personality and the dual nature of economic risk taking. *European Journal of Personality, 15*(S1), S105-S122.

Zhang, Z., & Jia, M. (2010). Using social exchange theory to predict the effects of high-performance human resource practices on Corporate Entrepreneurship: Evidence from

China. *Human Resource Management, 49*(4), 743-765.

Appendix

8.1 DOSPERT Scale

Table 30: Domain-Specific Risk-Taking (Adult) Scale—RT scale (Blais & Weber, 2006)

For each of the following statements, please indicate the likelihood that you would engage in the described activity or behaviour if you were to find yourself in that situation. Provide a rating from Extremely Unlikely to Extremely Likely, using the following scale: (Scales are shown in Table 3)

1. Admitting that your tastes are different from those of a friend. (S)
2. Going camping in the wilderness. (R)
3. Betting a day's income at the horse races. (F)
4. Investing 10% of your annual income in a moderate growth mutual fund. (F)
5. Drinking heavily at a social function. (H/S)
6. Taking some questionable deductions on your income tax return. (E)
7. Disagreeing with an authority figure on a major issue. (S)
8. Betting a day's income at a high-stake poker game. (F)
9. Having an affair with a married man/woman. (E)
10. Passing off somebody else's work as your own. (E)
11. Going down a ski run that is beyond your ability. (R)
12. Investing 5% of your annual income in a very speculative stock. (F)
13. Going white-water rafting at high water in the spring. (R)
14. Betting a day's income on the outcome of a sporting event (F)
15. Engaging in unprotected sex. (H/S)
16. Revealing a friend's secret to someone else. (E)
17. Driving a car without wearing a seat belt. (H/S)
18. Investing 10% of your annual income in a new business venture. (F)
19. Taking a skydiving class. (R)
20. Riding a motorcycle without a helmet. (H/S)
21. Choosing a career that you truly enjoy over a more secure one.11 (S)
22. Speaking your mind about an unpopular issue in a meeting at work. (S)
23. Sunbathing without sunscreen. (H/S)
24. Bungee jumping off a tall bridge. (R)
25. Piloting a small plane. (R)
26. Walking home alone at night in an unsafe area of town. (H/S)

27. Moving to a city far away from your extended family. (S)
28. Starting a new career in your mid-thirties. (S)
29. Leaving your young children alone at home while running an errand. (E)
30. Not returning a wallet you found that contains $200. (E)

Note: E = Ethical, F = Financial, H/S = Health/Safety, R = Recreational, and S = Social.

Table 31: Scales used in DOSPERT (Blais & Weber, 2006)

Risk Taking						
1 Extremely Unlikely	2 Moderately Unlikely	3 Somewhat Unlikely	4 Not Sure	5 Somewhat Likely	6 Moderately Likely	7 Extremely Likely
Risk Perception						
1 Not at all Risky	2 Slightly Risky	3 Somewhat Risky	4 Moderately Risky	5 Risky	6 Very Risky	7 Extremely Risky

8.2 The Stimulating-Instrumental Risk Inventory

Table 32: The Stimulating-Instrumental Risk Inventory (Zaleskiewicz, 2001)

	SCALE AND ITEM
F1: Stimulating Risk Taking	
1	If I play a game (e.g. cards) I prefer to play for money
2	I enjoy risk taking
3	I often take risk just for fun
4	I take risk only if it is absolutely necessary to achieve an important goal
5	I am attracted by different dangerous activities
6	While taking risk I have a feeling of a very pleasant flutter
7	I avoid activities whose results depend too much on chance
8	Gambling seems something very exciting to me
9	In business one should take risk only if the situation can be controlled
10	I make risky decisions quickly without an unnecessary waste of time
F2: Instrumental Risk Taking	
1	At work I would prefer a position with a high salary which could be lost easily to a stable position but with a lower salary
2	To achieve something in life one has to take risks
3	If there is a big chance of profit I can even take very high risks

4	To gain high profits in business one has to take high risks
5	If there was a big chance to multiply the capital I would invest my money even in the shares of a completely new and uncertain firm
6	I willingly take responsibility in my work-place
7	The skill of reasonable risk taking is one of the most important managerial skills

8.3 Corporate Entrepreneurship Assessment Instrument (CEAI)

Table 33: Factor structure for the revised CEAI (Hornsby, Kuratko, & Zahra, 2002)

Factors	
Factor 1: Management support for Corporate Entrepreneurship	
1	My organization is quick to use improved work methods.
2	My organization is quick to use improved work methods that are developed by workers.
3	In my organization, developing one's own ideas is encouraged for the improvement of the corporation.
4	Upper management is aware and very receptive to my ideas and suggestions.
5	Promotion usually follows the development of new and innovative ideas.
6	Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.
7	The ''doers'' are allowed to make decisions on projects without going through elaborate justification and approval procedures.
8	Senior managers encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track.
9	Many top managers have been known for their experience with the innovation process.
10	Money is often available to get new project ideas off the ground.
11	Individuals with successful innovative projects receive additional reward and compensation for their ideas and efforts beyond the standard reward system.
12	There are several options within the organization for individuals to get financial support for their innovative projects and ideas.
13	Individual risk takers are often recognized for their willingness to champion new projects, whether eventually successful or not.
14	People are often encouraged to take calculated risks with new ideas around here.
15	The term ''risk taker'' is considered a positive attribute for people in my work area.
16	This organization supports many small and experimental projects realizing that some will undoubtedly fail.
17	A worker with a good idea is often given free time to develop that idea.
18	There is considerable desire among people in the organization for generating new ideas without regard to crossing departmental or functional boundaries.
19	People are encouraged to talk to workers in other departments of this organization about ideas for new projects.
Factor 2: Work discretion	

1	I feel that I am my own boss and do not have to double check all of my decisions.
2	Harsh criticism and punishment result from mistakes made on the job.
3	This organization provides the chance to be creative and try my own methods of doing the job.
4	This organization provides freedom to use my own judgment.
5	This organization provides the chance to do something that makes use of my abilities.
6	I have the freedom to decide what I do on my job.
7	It is basically my own responsibility to decide how my job gets done.
8	I almost always get to decide what I do on my job.
9	I have much autonomy on my job and am left on my own to do my own work.
10	I seldom have to follow the same work methods or steps for doing my major tasks from day to day.
Factor 3: Rewards/reinforcement	
1	My manager helps me get my work done by removing obstacles.
2	The rewards I receive are dependent upon my work on the job.
3	My supervisor will increase my job responsibilities if I am performing well in my job.
4	My supervisor will give me special recognition if my work performance is especially good.
5	My manager would tell his boss if my work was outstanding.
6	There is a lot of challenge in my job.
Factor 4: Time availability	
1	During the past three months, my work load was too heavy to spend time on developing new ideas.
2	I always seem to have plenty of time to get everything done.
3	I have just the right amount of time and work load to do everything well.
4	My job is structured so that I have very little time to think about wider organizational problems.
5	I feel that I am always working with time constraints on my job.
6	My co-workers and I always find time for long-term problem solving.
Factor 5: Organizational boundaries	
1	In the past three months, I have always followed standard operating procedures or practices to do my major tasks.
2	There are many written rules and procedures that exist for doing my major tasks.
3	On my job I have no doubt of what is expected of me.
4	There is little uncertainty in my job.
5	During the past year, my immediate supervisor discussed my work performance with me frequently.
6	My job description clearly specifies the standards of performance on which my job is evaluated.
7	I clearly know what level of work performance is expected from me in terms of amount, quality, and timeliness of output.

8.4 Research Questionnaire

Demographic Data

1	**Gender**	Male Female

2	**Age**	23 and younger 24 - 30 31 - 40 41 - 50 51 and older

3	**Highest level of education**	Matric Diploma Undergraduate Degree Postgraduate Degree

4	**Which of the following best describes your current job level?**	Executive Senior Management Management Intermediate Entry Level

Risk Propensity

	Factor 1: Stimulating Risk Taking
1	If I play a game (e.g. cards) I prefer to play for money.
2	I enjoy risk taking.
3	I often take risk just for fun.
4$_i$	*I take risk only if it is absolutely necessary to achieve an important goal.*
5	I am attracted by different dangerous activities.
6$_i$	I *avoid activities whose results depend too much on chance.*
7	Gambling is something that seems very exciting to me.
8$_i$	*In business one should take risk only if the situation can be controlled.*
9	I make risky decisions quickly without an unnecessary waste of time.
	Factor 2: Instrumental Risk Taking
1	At work I would prefer a position with a high salary which could be lost easily over a stable position with a lower salary.
2	To achieve something in life one has to take risks.
3	If there is a good chance of profit I would possibly take very high risks.
4	To gain high profits in business one has to take high risks.

5	If there was a good chance to multiply the capital, I would invest my money in the shares of a completely new and uncertain company.
6	I willingly take responsibility in my work-place.
7	The skill of reasonable risk taking is one of the most important managerial skills.

Note: (i) refers to reverse scoring

Corporate Entrepreneurship

	Factor 1: Management Support for Corporate Entrepreneurship
1	My organisation is quick to use improved work methods.
2	In my organisation, developing one's own ideas is encouraged for the improvement of the business.
3	Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.
4	Individual risk takers are often recognised for their willingness to champion new projects, whether eventually successful or not.
5	There is considerable desire among people in the organisation to generate new ideas without regard for crossing departmental or functional boundaries.
6	People are encouraged to talk to employees in other departments within the organisation about ideas for new projects.
	Factor 2: Work Discretion
1	I feel that I am my own boss and do not have to double check all of my decisions.
2	This organisation provides the chance to be creative and to try my own methods of doing the job.
3	This organisation provides freedom to use my own judgment.
4	It is basically my own responsibility to decide how my job gets done.
5	I have much autonomy on my job and am left on my own to do my own work.
6	I seldom have to follow the same work methods or steps for doing my major tasks from day to day.
	Factor 3: Rewards and Reinforcement
1	My manager helps me get my work done by removing obstacles.
2	The rewards I receive are dependent upon my work on the job.
3	My manager will increase my job responsibilities if I am performing well in my job.
4	My manager will give me special recognition if my work performance is especially good.
5	My manager would tell his boss if my work was outstanding.
6	There is a lot of challenge in my job.
	Factor 4: Time Availability
1$_i$	*During the past three months, my work load was too heavy to spend time on developing new ideas.*
2	I always seem to have plenty of time to get everything done.
3	I have just the right amount of time and work load to do everything well.
4$_i$	*My job is structured so that I have very little time to think about wider organisational problems.*
5$_i$	*I feel that I am always working with time constraints on my job.*
6	My co-workers and I always find time for long-term problem solving.

	Factor 5: Organisational Boundaries
1	In the past three months, I have always followed standard operating procedures or practices to do my major tasks.
2	There are many written rules and procedures that exist for doing my major tasks.
3	On my job I have no doubt of what is expected of me.
4	During the past year, my manager discussed my work performance with me frequently.
5	My job description clearly specifies the standards of performance on which my job is evaluated.
6	I clearly know what level of work performance is expected from me in terms of amount, quality and timeliness of output.

Note: (i) refers to reverse scoring

8.5 Reliability Analysis

8.5.1 Risk Propensity

Factor 1: Stimulating Risk Taking

Reliability Statistics	
Cronbach's Alpha	N of Items
,752	9

[Risk Propensity][Factor 1: Stimulating Risk Taking]	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
If I play a game (e.g. cards) I prefer to play for money.	,526	,712
I enjoy risk taking.	,555	,711
I often take risk just for fun.	,718	,677
q5_4i	,488	,720
I am attracted by different dangerous activities.	,414	,732
q5_6i	,241	,759
Gambling is something that seems very exciting to me.	,464	,723
q5_8i	,036	,783
I make risky decisions quickly without an unnecessary waste of time.	,450	,726

Factor 2: Instrumental Risk Taking

Reliability Statistics	
Cronbach's Alpha	N of Items
,714	7

[Risk Propensity][Factor 2: Instrumental Risk Taking]	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
At work I would prefer a position with a high salary which could be lost easily over a stable position with a lower salary.	,554	,645
To achieve something in life one has to take risks.	,420	,685
If there is a good chance of profit I would possibly take very high risks.	,483	,666
To gain high profits in business one has to take high risks.	,553	,646
If there was a good chance to multiply the capital, I would invest my money in the shares of a completely new and uncertain company.	,421	,684
I willingly take responsibility in my work-place.	,084	,736
The skill of reasonable risk taking is one of the most important managerial skills.	,411	,686

8.5.2 Corporate Entrepreneurship

Factor 1: Management Support for Corporate Entrepreneurship

Reliability Statistics	
Cronbach's Alpha	N of Items
,696	6

[Corporate Entrepreneurship][Factor 1: Management Support for Corporate Entrepreneurship]	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
My organisation is quick to use improved work methods.	,434	,656
In my organisation, developing one's own ideas is encouraged for the improvement of the business.	,514	,631
Those employees who come up with innovative ideas on their own often receive management encouragement for their activities.	,583	,611
Individual risk takers are often recognised for their willingness to champion new projects, whether eventually successful or not.	,389	,668

There is considerable desire among people in the organisation to generate new ideas without regard for crossing departmental or functional boundaries.	,312	,693
People are encouraged to talk to employees in other departments within the organisation about ideas for new projects.	,371	,675

Factor 2: Work Discretion

Reliability Statistics	
Cronbach's Alpha	N of Items
,864	6

[Corporate Entrepreneurship][Factor 2: Work Discretion]	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
I feel that I am my own boss and do not have to double check all of my decisions.	,585	,863
This organisation provides the chance to be creative and to try my own methods of doing the job.	,784	,825
This organisation provides freedom to use my own judgment.	,792	,831
It is basically my own responsibility to decide how my job gets done.	,728	,830
I have much autonomy on my job and am left on my own to do my own work.	,721	,831
I seldom have to follow the same work methods or steps for doing my major tasks from day to day.	,530	,872

Factor 3: Rewards and Reinforcement

Reliability Statistics	
Cronbach's Alpha	N of Items
,838	6

[Corporate Entrepreneurship][Factor 3: Rewards and Reinforcement]	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
My manager helps me get my work done by removing obstacles.	,569	,820
The rewards I receive are dependent upon my work on the job.	,589	,817
My manager will increase my job responsibilities if I am performing well in my job.	,701	,795
My manager will give me special recognition if my work performance is especially good.	,828	,767
My manager would tell his boss if my work was outstanding.	,614	,811
There is a lot of challenge in my job.	,412	,851

Factor 4: Time Availability

Reliability Statistics	
Cronbach's Alpha	N of Items
,691	6

[Corporate Entrepreneurship][Factor 4: Time Availability]	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
q10_1i	,504	,621
I always seem to have plenty of time to get everything done.	,447	,642
I have just the right amount of time and work load to do everything well.	,502	,624
q10_4i	,159	,724
q10_5i	,501	,624
My co-workers and I always find time for long-term problem solving.	,415	,653

Factor 5: Organisational Boundaries

Reliability Statistics	
Cronbach's Alpha	N of Items
,776	6

[Corporate Entrepreneurship][Factor 5: Organisational Boundaries]	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
In the past three months, I have always followed standard operating procedures or practices to do my major tasks.	,448	,762
There are many written rules and procedures that exist for doing my major tasks.	,414	,773
[Corporate Entrepreneurship][Factor 5: Organisational Boundaries]On my job I have no doubt of what is expected of me.	,566	,734
During the past year, my manager discussed my work performance with me frequently.	,461	,760
My job description clearly specifies the standards of performance on which my job is evaluated.	,744	,682
I clearly know what level of work performance is expected from me in terms of amount, quality and timeliness of output.	,549	,739