The role of organisational antecedents in driving entrepreneurial orientation and firm performance

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ABSTRACT

The aim of this study was to analyse and investigate the link between organisational antecedents that enhance corporate entrepreneurship, and entrepreneurial orientation, followed by entrepreneurial orientation's impact on firm growth and performance. The study focused primarily on recent graduates in companies operating in South Africa.

The organisational antecedents analysed were management support, work discretion, rewards and reinforcement, time availability, and organisational boundaries. The entrepreneurial orientation factors used were proactiveness, risk-taking, and innovativeness. The impact of entrepreneurial orientation was measured against firms' growth and performance.

A sample of 193 recent graduates, employed in an array of sectors in South Africa was analysed. The findings reveal that recent graduates place a particular emphasis on management support, and rewards and reinforcement as particular enablers for creating the context for corporate entrepreneurship. A significant positive relationship between these antecedents and entrepreneurial orientation, and a strong association between entrepreneurial orientation and firm growth and performance was found.

Population trends reflect that 58.13 percent of South Africans are under the age of 29 (Stats SA, 2016), reflecting that young people, under the age of 30, will serve as the dominant demographic in the workforce in South Africa, over the next 15 years. This study was thus particularly relevant as it aligns the changing external environment that compels companies to become more entrepreneurial, with the perspective of a new generation of workforce that will be primarily responsible for driving this change.

DECLARATION

I, Abdullah Hassen Verachia, declare that this research report is my own work except as indicated in the references and acknowledgements. It is submitted in partial fulfilment of the requirements for the degree of Master of Management in Entrepreneurship and New Venture Creation at the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

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Abdullah Hassen Verachia

Signed at ……

On the ……day of ……..…… 2017.

DEDICATION

This dissertation is dedicated to my four grandparents. We stand on the shoulders of giants.

ACKNOWLEDGEMENTS

I wish to extend my gratitude and appreciation to all those who assisted me in my research journey.

I would like to extend my gratitude to my supervisor, Professor Boris Urban, for his guidance and mentorship.

I would like to extend my appreciation to Manoj Chiba and Nkululeko Ngcongo for their valuable guidance in the analysis of the statistical results contained in this report.

I would also like to express my gratitude to Cathy Sims and colleagues and members of the South African Graduate Employers Association, for partnering with me and supporting me to engage the graduate market in South Africa

I would like to thank my dearest parents, from the bottom of my heart, for having invested innumerably in me and giving me incredible love. My heartfelt thanks goes to my dearest wife Mahfooza who supported me every step of this journey and who continually pushes me and loves me unconditionally. My three babies, Fatima-Zahra, Zaynab, and Mohammed – you often asked where I was during this journey. Thank you for being you and for always bringing me immense joy

Finally, to my siblings, uncles and aunts, cousins, nieces, nephews, and friends for always driving me to do better and be better.

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CE	Corporate Entrepreneurship
CEAI	Corporate Entrepreneurship Assessment Instrument
EO	Entrepreneurial Orientation
SEM	Structural Equation Modelling
SAGEA	South African Graduate Employers Association

CHAPTER 1: INTRODUCTION

1.1 Theoretical background to the study

This study has its base within the realm of corporate entrepreneurship (CE) and entrepreneurial orientation (EO). The study specifically examines the organisational antecedents that contribute to EO among companies operating in South Africa, and how EO affects organisational growth and performance. Analysis of company and individual behaviour is vital in unpacking the behaviours that enhance or inhibit CE (Covin & Slevin, 1991).

Phan, Wright, Ucbasaran, and Tan (2009) argue that the nature and interest of CE is widening beyond the scope of traditional technology or manufacturing organisations. They argue that this is a consequence of an increasingly competitive and financially constrained environment, which has compelled companies to develop a more entrepreneurial culture. They argue that future research should analyse CE in various sectors. This study takes a multi-sectoral approach and thus analyses CE across a spectrum of industries.

1.2 Context of the study

1.2.1 The business landscape

The rapidity of change in the global environment has resulted in a revolution of sorts that has forced companies to look at agility, market responsiveness, competitiveness, and relevance with very different lenses. Drucker (2013) argues that the world is in a phase of discontinuity where traditional economic models, traditional industries, and traditional skills are all being tested in terms of relevance and sustainability. Economic growth and national competitiveness is dependent on the ability of organisations to contribute to the international competitiveness of a country. The pace of change has accelerated significantly in the past decade, resulting in a new entrepreneurial imperative for companies

(Kuratko, 2009a; Morris, Kuratko & Covin, 2010). The rapidly evolving external environment has emphasised an entrepreneurial mindset as the key enabler for growth and success in organisations. Society is “on the cusp of a big shift from an employee society to an entrepreneurial one” where an entrepreneurial mindset is critical for employee success (Hagel, 2016, p. 5).

The global business landscape has seen significant changes over the past 20 years. The rapid growth of emerging market economies, the rise in global trade and investment, the increase in use of technology have all contributed to a more dynamic and competitive business landscape (Morris et al., 2010). The environment of business is characterised by the emergence of digital technologies as well as the rapid disruption of industries. These changes have compelled companies to look at traditional models of management and growth, and to design strategies that are responsive to this rapidly changing business environment (Drucker, 2013). In 2016, the International Monetary Fund (IMF) projected economic growth of 0,1 percent in South Africa, which resulted in increased pressure on companies and their ability to respond to operating in a low-growth economic environment (IMF, 2016). This study played a crucial role in how companies can use CE to build a culture that can respond to the turbulent economic environment.

Companies are faced with finding new ways of remaining relevant and competitive. An integral element of this evolution is the ability to create the requisite organisational setup that allows managers to develop the context for this change and the organisation to develop its agility for change (Kuratko, Hornsby, & Hayton, 2015). The sustainability of companies is dependent on their ability to respond to the vagaries of the changing landscape. At the heart of this sits the ability to continually renew the strategy of the firm, and develop the requisite organisational context and antecedents to stimulate growth (Kuratko, 2009b). This competitive landscape has resulted in companies looking at entrepreneurship and entrepreneurial strategies to drive growth, stimulate internal innovation, and increase competitive advantage (Morris et al., 2010).

1.2.2 CE and EO

CE is often seen as an organisational initiative, however, it can have national economic consequences. CE is defined as a process that results in continual innovation that allows companies to respond effectively to the competitive landscape (Kuratko, Hornsby, & Covin, 2014). The role of CE has thus never been more relevant. Kuratko (2009a) highlights that CE has become a source of competitive advantage for companies. Companies that demonstrate a high level of CE are seen as dynamic and agile enough to respond to market opportunities (Hornsby, Kuratko, Holt, & Wales, 2013). The business context compels executive teams to challenge business decisions continually, and to find unique solutions to address these challenges (Morris et al., 2010). An adjunct to this is the ability of firms to enhance the level of entrepreneurial orientation (EO) within the firm; EO encompasses elements of innovation, risk taking, and proactiveness.

The evolving role of CE has raised considerations around the relationship between the EO of firms and the role of individual agency in enabling this orientation:

- Is CE an individual or firm level consideration or a mix of both?
- Can a firm be setup in a way that drives a culture of EO?
- Are there ways to enhance the efficiency and competitiveness of companies operating in the South African landscape?
- How can organisational antecedents and the makeup of companies contribute to a more entrepreneurial private sector?
- What role can CE play, in improving the competitiveness of South African companies?
- What role can graduates play in driving a CE culture in companies?
- How can firms better create a CE context, specifically aimed at graduates?

South African companies have not been immune to this rapidly changing environment. The rising station and reintegration of South Africa in the global

economy since 1994 has resulted in a more competitive and globalised landscape (Scheepers, 2007). Increased foreign direct investment, new market entrants, growth opportunities in Africa for South African firms, as well as a rising middle class have all contributed to this landscape. South Africa has a robust private sector with a number of companies demonstrating a high level of CE and innovation. However, there exists very little empirical literature on the drivers and levels of CE in South Africa. Furthermore, the impact that CE and EO can have on company growth and performance within these sectors has not been explored in depth (Scheepers, 2007).

Scheepers, Hough, and Bloom (2007) argue that much research has been done to analyse the impact of CE and EO in developed market economies. They highlight that not much research has been done on the organisational antecedents that drive EO and financial performance in South Africa. CE has a particularly important role to play in emerging markets, given factors such as high levels of unemployment and income inequality. Scheepers Hough, and Bloom (2008) highlight that future research should test the level of CE across a broad spectrum of South African companies.

Given the contextual nuances of operating in South Africa, a relevant study, both geographically and generationally, aids in understanding the dynamics of enhancing firm performance in South Africa. This study aimed to have both a geographic and demographic focus to allow for analysis of a specific generation, in the South African context. This study responded to this by looking at the applicability of CE and EO on companies operating in South Africa, and the role that CE plays in driving firm growth and performance. Taylor (2014) argues that the youth are critical to driving innovation and entrepreneurship in organisations, and it is imperative to provide them with the requisite skills and organisational setup to allow this to happen. This study sampled recent graduates employed in South Africa, which should allow organisations to gain insight from a graduate perspective, thus positioning themselves to employ a new generation of workforce.

1.3 Problem statement

The rapidity of change in the global environment and the significant increase in competition has resulted in a renewed interest in CE as a way to increase the competitiveness and relevance of companies. The quickly evolving environment affects all companies.

This study compared the level of organisational antecedents that drive CE, across a group of companies operating in South Africa, and looked at the connection between these organisational antecedents, EO, and organisational growth and performance. The study also aimed to contribute to research on CE and its impact on performance of companies, with specific reference to recent graduates within the South African context.

1.3.1 Main research problem

The problem statement in this study was assessing and comparing the level of organisational antecedents that contribute to CE in South Africa and the relationship of these antecedents with EO and company performance.

1.3.2 Sub-problems

[1] The first sub-problem is to analyse the level of CE organisational antecedents in companies operating in South Africa.
[2] The second sub-problem is to establish whether a relationship exists between the firms' CE organisational antecedents and EO.
[3] The third sub-problem is to establish if a relationship exists between the firm's organisational antecedents and growth and performance.
[4] The fourth sub-problem is to establish if a relationship exists between the firms EO and its growth and performance.

1.4 Objectives of the study

This study undertook an analysis of the level of CE across a broad spectrum of companies, by analysing the internal makeup of companies operating in South Africa. It looked at the drivers and inhibitors of CE and provided recommendations to increase the level of CE and EO in firms operating in South Africa.

Employees in companies all have different roles when it comes to influencing CE strategy. The majority of studies have been homogenous and do not account for this and thus a need exists for focused studies with subsets of employees (Hornsby, Kuratko, Shepherd, & Bott, 2009). The study targeted the graduate space in South African companies. This allowed for a focus on the perspectives of graduates, in their respective organisations, on the organisational antecedents and the level of CE within these organisations. The rationale for positioning this study at the graduate level, and centred on a certain country context, is to look at the manifestation of CE and EO at a specific level within the firm.

The objectives of this study are to:

- Compare the level of CE organisational antecedents in companies operating in South Africa;
- Identify the relationship between these organisational antecedents and EO within these organisations;
- Identify the relationship between these organisational antecedents and company growth and performance;
- Identify the relationship between EO and company growth and performance;
- Identify ways in which to strengthen the level of CE among graduates in South African companies; and
- Make recommendations for enhancing the level of CE in companies, taking into consideration the data from the quantitative analysis in this study.

The results contributed both theoretically and empirically to analysing the organisational antecedents that contribute to CE and innovation in South African companies, with a specific focus on the graduate space.

The study looked at how organisational antecedents contributed to innovation, risk taking, and proactivity and the impact of these on growth and firm performance.

1.5 Significance of the study

The significance of the study was to contribute to increasing the level of CE of South African companies and to enhance the efficiency, competitiveness, and financial performance thereof. It hopes to promote a more competitive, agile and effective South African business environment by demonstrating the relationship between organisational CE antecedents on the EO of various firms and the impact of this on company growth and performance.

Shaker, Zahra and Fayolle (2013) highlight that the majority of studies within the CE realm have been centred on the United States, and there exists a need to analyse the “distinct forces at play in different national settings” (p. 371). South Africa is the second largest economy in Africa, a member of the BRICS grouping, and a member of the Group of 13 countries. A more entrepreneurial corporate sector will allow it to be more responsive to the vagaries of the market, to compete against local and international players, and to be more efficient in its operations. Further research is required to establish how CE is effectively practiced in organisations (Kuratko et al., 2015).

CE plays a dual role in contributing to organisational and national economic development. The interplay between CE and economic development is particularly relevant to the South African context (Antoncic & Hisrich, 2001). This study looked at the role of organisational antecedents in enhancing EO and performance, with specific reference to the South African context. This study

looked at CE not only within a specific country but also within a particular demographic context.

The demographic profile in South Africa points toward a young population. Population trends reflect that 58.13 percent of South Africans are under the age of 29 (Stats SA, 2016). This reflects that young people, under the age of 30 will serve as the dominant demographic, in the workforce in South Africa, over the next 15 years. The study took a focused approach by analysing the graduate space, allowing companies to gain a perspective on the views of recent graduates and to look at ways in which to create a more entrepreneurially conducive environment for graduates. An appreciation of CE, from a recent graduates' perspective, is critical to understand the recent graduates' view of CE and the organisational antecedents that enhance or inhibit it. The majority of studies on organisational drivers for CE have been focused on senior managers in organisations (Hornsby, Kuratko, & Zahra, 2002); therefore this study's focus on recent graduates provided the graduates view of CE strategies and the ability of firms to develop the requisite CE strategies aligned to the strategies.

1.6 Delimitations of the study

- The quantitative survey focused on companies operating in South Africa as part of this study,
- The quantitative survey was directed at graduates (individuals who entered a graduate programme in the last five years). The South African Graduate Employers Association (SAGEA) was consulted to ensure that the quantitative survey reached the desired audience.

1.7 Assumptions

- The respondent sample was across corporate companies, operating in South Africa, and specifically graduates within these companies.
- Respondents reflected their unbiased view toward the research tool.
- Responses were representative of individual perceptions of organisational antecedents, the level of EO, and firm growth and performance.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

The literature review analyses the theoretical background, constructs and perspectives on entrepreneurship, CE, EO, entrepreneurial intensity, firm growth and firm performance.

The review also looks at the applicability of CE and EO in emerging markets and perspectives of the interplay between CE and economic growth.

It provides a context for CE and EO and refers to the numerous definitions that have been postulated by various authors on the subject. The review places a particular emphasis on the internal structure of organisations, EO in organisations, and the impact of each on firm growth and performance.

2.2 Conceptualising entrepreneurship

The field of entrepreneurship has seen significant focus in the last decade with the role of entrepreneurship in driving growth, creating employment, and contributing to country competitiveness, a highlight. Although the term is often used, a standard definition of entrepreneurship does not exist.

The classical definition by Schumpeter (1934) refers to entrepreneurship as a combination of resources to create disequilibrium in the system. Shane and Venkataraman (2000) highlight entrepreneurship as the “discovery, evaluation exploitation of new opportunities” (p. 218).

Morris et al. (2010) refer to entrepreneurship as the creation of value by exploiting an opportunity through a unique combination of resources. They argue that the recognition, evaluation, and exploitation of opportunities is central to the entrepreneurial process.

Hagel (2016) claims the definition of entrepreneurship needs to be expanded to encompass individuals who are able to identify an opportunity and take the requisite risks to capitalise on it.

Audretsch, Kuratko and Link (2015) argue that there are three areas of research that have emerged to contextualise entrepreneurship. This first is based on understanding organisational status and encompasses elements of firm size and age; the second is related to conceptualising entrepreneurship based on behaviour while the third looks at entrepreneurship based on performance.

They contend that a combination of three elements (organisational status, behaviour, and performance) allows for a more lucid and eclectic understanding of entrepreneurship. This is reflected in Figure 1.

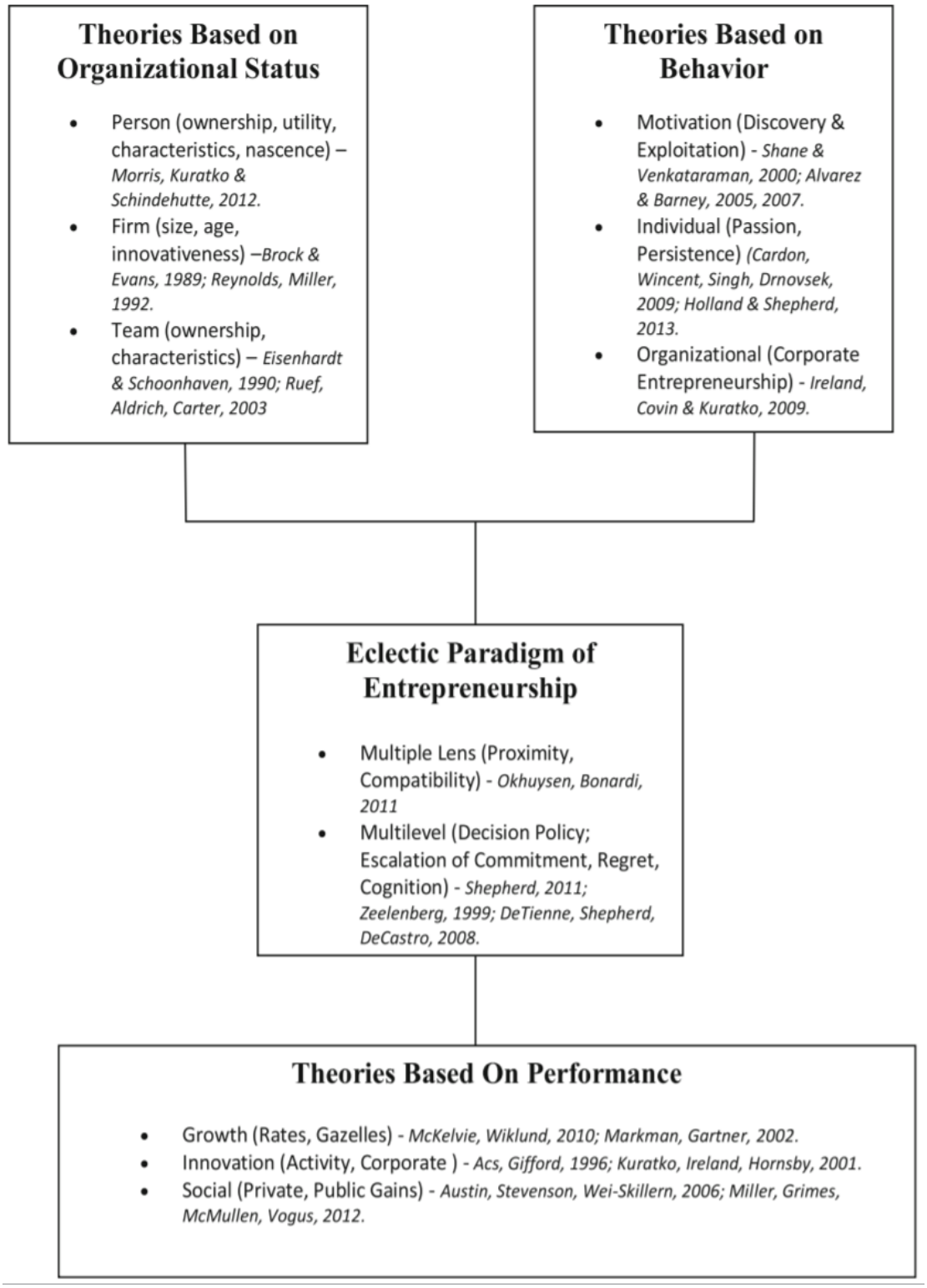

Figure 1: Entrepreneurship contextualised

(Audretsch et al., 2015)

The growing field of entrepreneurship has also resulted in a particular focus on firm level entrepreneurship or CE in the last twenty years. Morris and Sexton (1996) maintain that the similarities between entrepreneurship and CE outweigh the differences, as both are underpinned by individual and collective efforts to exploit opportunities and manage risk associated therewith.

2.3 Entrepreneurship as a driver of growth and competiveness

Many would argue that there exists a logical link between entrepreneurship and economic growth. Entrepreneurs create opportunities and employment, and stimulate the sectors in which they operate, resulting in positive economic consequences. Wennekers and Thurik (1999) believe that CE has a positive impact on economic growth in organisations.

Entrepreneurship plays an integral role in economic development by contributing to job creation and increasing the competitive advantage of firms and countries (Antoncic & Hisrich, 2001). Drucker (2013) states that the changing global context, underpinned by rapid changes in technology and innovation, all have an impact on country competitiveness and economic growth. Entrepreneurship can play a contributory role in ensuring that companies remain competitive and sustainable and therein create employment and contribute to the fiscus through taxes.

Two distinct models have emerged to unpack the distinct relationship between entrepreneurship and economic growth. The first model (Figure 2) investigates the impact of entrepreneurship at an individual, firm, and macro level. This provides further insight on conditions and elements that enhance or inhibit entrepreneurship at these three levels (Wennekers & Thurik, 1999).

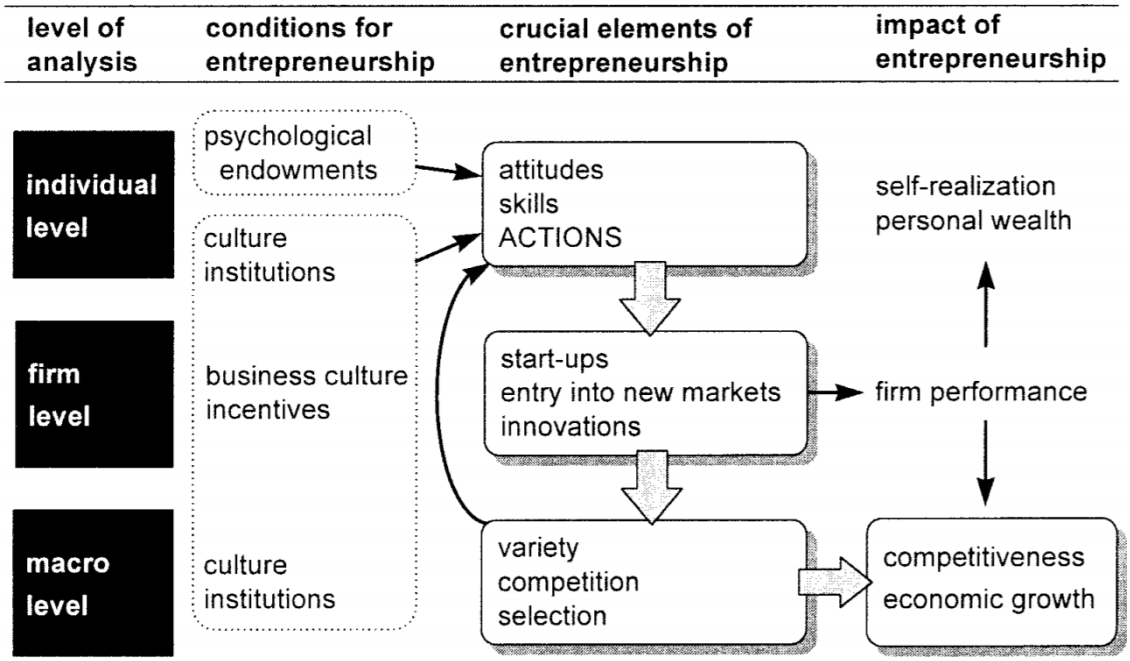

Figure 2: Impact of entrepreneurship model

(Wennekers & Thurik, 1999, p. 33)

At an individual level, entrepreneurial activity looks at the psychological endowments, as reflected by the attitude, skills and actions of the entrepreneur. These individual attributes have to be aligned to the context within which the individual entrepreneur operates. These are reflected by factors such as the business culture and incentives that are prevalent.

Wennekers and Thurik (1999) argue that the aggregation of entrepreneurship, at an individual and firm level, results in an increase in productivity and the opening of new markets and opportunities. This results in an increase in the productive potential of national economies and reflects the collective impact of entrepreneurship on economic growth and national competitiveness.

The Global Entrepreneurship Monitor (GEM) (Bosma & Levie, 2010) provides an alternative statistical model (Figure 3) for analysing the link between entrepreneurship and economic growth.

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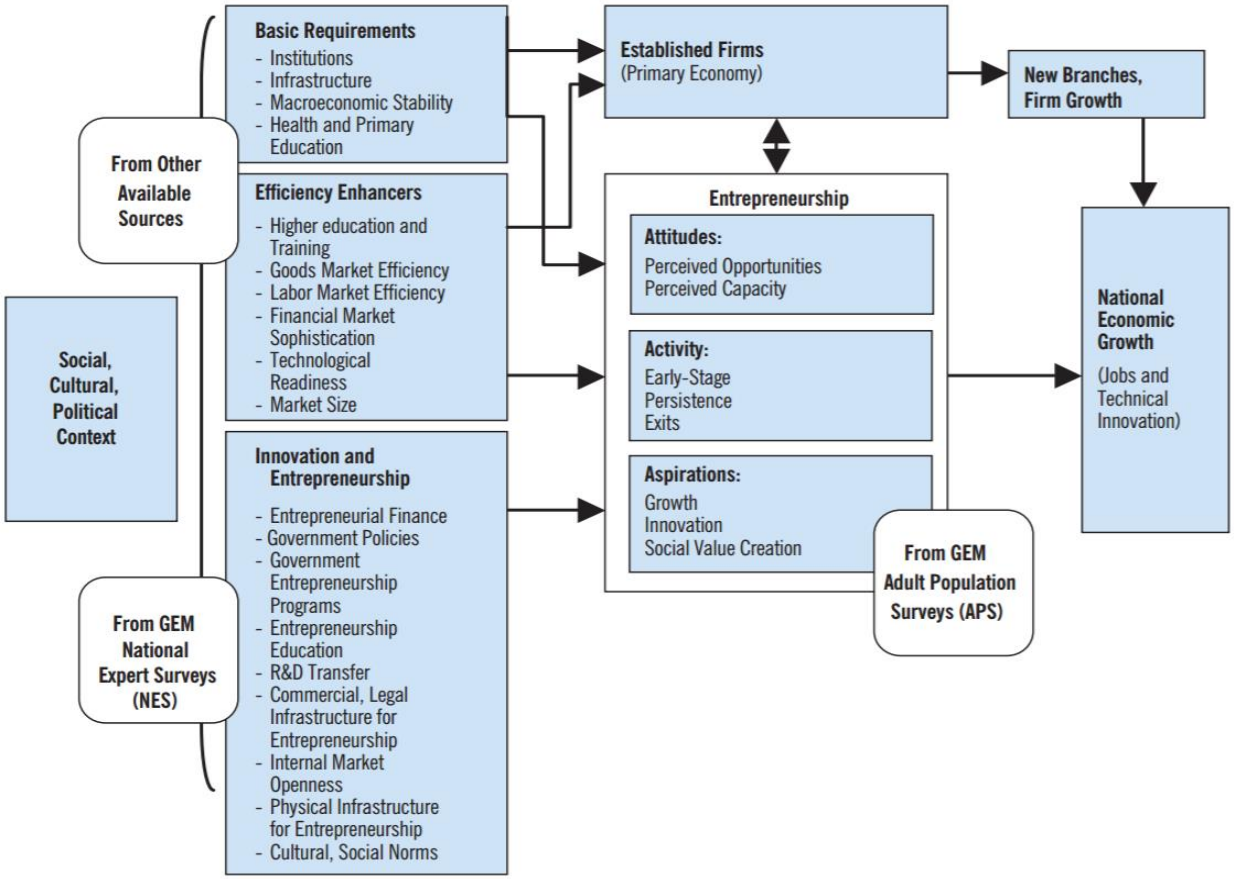

Figure 3: Revised GEM model

(Bosma & Levie, 2010, p. 15)

The GEM runs an annual assessment of entrepreneurship, in various countries and geographies around the world The GEM model argues that the social, cultural, and political context provides the requisite environment for the emergence of entrepreneurship. The impact of these factors could either stimulate or inhibit the development of entrepreneurship.

The GEM model delineates between the basic requirements, efficiency enhancers, and the role of innovation as an enabler for entrepreneurship. All of these factors stimulate the entrepreneurial ecosystem and promote the growth of large firms as well as the development of new firms. The GEM argues that these factors in combination result in the creation of jobs and an increase in technical innovation. A combination of these factors all contribute to economic growth (Bosma & Levie, 2010).

2.4 Entrepreneurship at the firm level

Entrepreneurship at the firm level, or the field of CE, has seen significant research and development over the past 20 years. The rapidity of change in the global environment, a rise in globalisation, the increasing influence of digital technology, and the changing demography of the workforce are just some factors that have contributed to an increased focus on CE (Drucker, 2013; Kuratko et al., 2015).

Morris et al. (2010) delineate between external and internal environments that have an impact on organisations. The external environment encompasses a broad range of factors that include the economic environment, growth within the countries of operation, the state of the sector the company is operating in, the legal and regulatory environment, the availability of skills and labour, and the impact of technology. These could be termed externalities that individual companies are affected by, but have no direct influence on. Dess, Lumpkin, and Covin (1997) argue that the rapidly evolving external environment has resulted in increasing demands on managers of organisations and the necessity for an

entrepreneurial approach when formulating strategy, which might assist firms to respond more effectively.

The internal environment refers to how individual companies respond to these externalities to remain relevant and competitive. Organisations have a much bigger influence on the internal environment. Internally, organisational antecedents stimulate CE (Kuratko et al., 2014; Zahra, Jennings, & Kuratko, 1999). Companies that have values and structures conducive to CE are seen to have a stronger chance of growth in this environment (Rwigema, Urban, & Venter, 2010)

CE is an important element in the growth of businesses (Auer Antoncic & Antoncic, 2011) and the ability of firms to create competitive advantage (Kuratko, 2009b).

2.4.1 Defining CE

CE has been extensively studied in the last 20 years and yet no clear definition of the term exists. In addition, a number of other terms, such as intraprenuership (Lumpkin, 2007), strategic renewal (Guth & Ginsberg, 1990), and organisational entrepreneurship (Hjorth, 2012), are used interchangeably with CE.

Guth and Ginsberg (1990) were early proponents of the concept of CE. They introduced business venturing and strategic renewal as key elements of CE. Business venturing is seen as “the birth of new business within existing organizations”, while strategic renewal is seen as “the transformation of organizations through renewal of the key ideas on which they are built” (Guth & Ginsberg, 1990, p. 5). CE is not a singular event but a critical element of an organisation and embedded in its culture (Scheepers, Hough, & Bloom, 2013).

Covin and Slevin (1991) refer to firm level entrepreneurship and argue that it is dependent on the individual entrepreneurial behaviours that collectively contribute to a firms’ CE make-up. Covin and Miles (1999) argue that innovation is a central element that underpins all forms of CE. It is thus important that the various elements of CE be examined.

Stopford and Baden-Fuller (1994) refer to three types of CE. The first relates to internal venturing and the emergence of new businesses within an existing organisation; the second refers to the renewal of an existing organisation, and the third refers to Schumpeterian innovation where an organisation transforms the environment or industry in which it operates.

Kuratko et al. (2014) refer to CE as a company's ability to innovate continuously in order to remain relevant in a changing global environment. Shaker et al. (2013) argue that CE has developed to include the skills and attributes that drive organisational agility and the interplay between these skills and a rapidly evolving external environment.

Hagel (2016) argues that the speed of external change and the impact on the firm's ability to remain relevant has resulted in a need to reframe the nature of work and the mindset of employees. He argues that a key element of organisational growth is premised on the ability to enhance opportunity identification and increase the propensity for risk among individual employees. In essence, he argues the need for more entrepreneurial employees.

2.4.2 Elements of CE

Antoncic and Hisrich (2001) articulate four distinct elements of CE: new business venturing, innovativeness, self-renewal and proactiveness. Morris et al. (2010) expanded on the work of Zahra et al. (1999) and Kuratko (2009b) by articulating two key pillars within the field of CE, namely: corporate venturing and strategic entrepreneurship.

Corporate venturing is centred on the creation of new business to increase competitiveness. Strategic entrepreneurship refers to innovation within five areas: company strategy, product offerings, markets, internal makeup, or the business model (Morris et al., 2010). Kuratko (2009b) argues that the internal environment is the most critical element within the field of strategic entrepreneurship.

Kuratko (2009b) delineates CE on three levels; the external environment that often prompts organisations to consider an entrepreneurial strategy, the commitment by leaders within the organisation to embed this culture and strategy within the organisation, and the individual agency to realise the outcomes of a CE strategy and to embrace and support it.

Companies that are able to link CE strategic intent with continuous entrepreneurial action at an individual and firm level will be best placed to navigate the new landscape (Hitt, Ireland, Camp, & Sexton, 2001).

2.4.3 Strategic renewal as an element of CE

As the external market has rapidly evolved, firms have used CE as a strategic option to respond. Four external triggers result in a firm developing a CE strategy:

[1] Intense competition;
[2] Rapid technological change;
[3] Short product life cycles; and
[4] Evolving (fragmenting and/or emerging) product-market domains.

These triggers result in a positioning of the firms strategy around an entrepreneurial culture. This allows for the development of organisational architecture that leans towards enhancing a culture of entrepreneurship within the firm (Ireland, Kuratko, & Covin, 2003).

Kuratko (2009b) argues that a CE strategy is underpinned by five critical elements; vision, innovation, environment, managers, and team. Furthermore, Scheepers et al. (2013) highlight that EO cannot be seen in isolation, but rather as an important element of the culture of a company. This organisational culture can only be achieved if the requisite antecedents are in place to stimulate it.

The integration of CE, as an organisational strategy, is thus not a one-off initiative, but rather an ongoing process of developing a CE mindset and approach within the firm. This includes the role of organisational antecedents

that promote CE, the degree and frequency of entrepreneurship, upper management support for CE, and the ability to sustain competitive advantage by continually developing new products to respond to the changing nature of the sector in which the company operates.

Ireland, Covin, and Kuratko (2009) developed an integrative model for a CE strategy. The model (Figure 4) provides analysis at three distinct levels in the organisation, individual member level, senior management level, and organisational level.

They argue that there exist a number of antecedents for a CE strategy. These include the external environmental conditions as well as the individual entrepreneurial cognitions that are required for an entrepreneurial mindset. They argue that this mindset creates the context for opportunity identification and exploitation. They argue further that this has to be coupled with an organisational culture that favours entrepreneurship. These include elements of culture, systems, rewards, and resources (Ireland et al., 2009).

A combination of these factors allows a firm to develop an entrepreneurial strategic vision and therein enhance its competitive capability. This integrative model reflects the nexus between the external environmental conditions, the individual cognition, as well as the organisational architecture that stimulate CE in a firm.

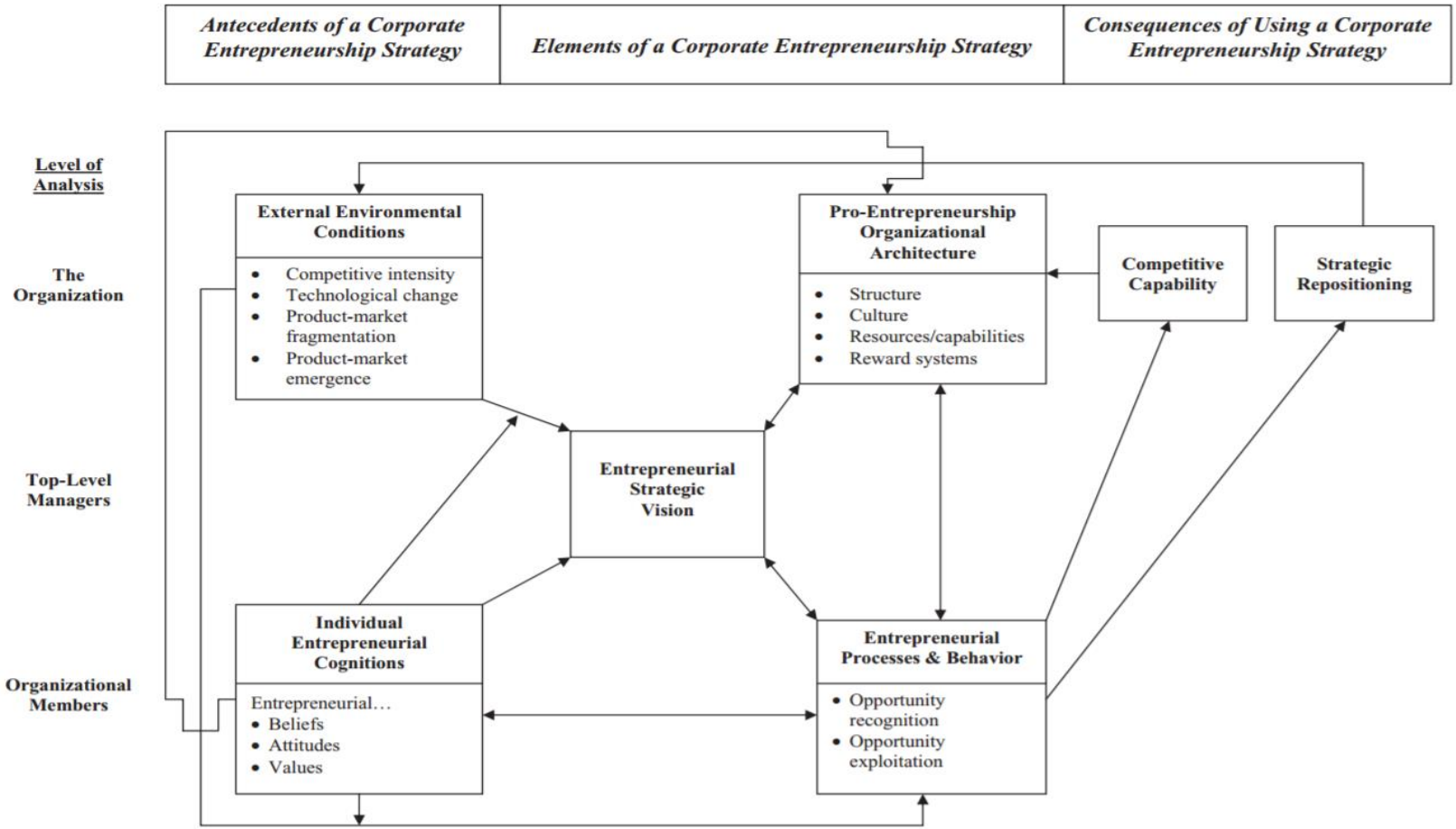

Figure 4: Integrative model of CE strategy

(Ireland et al., 2009, p. 24)

2.5 Conceptualising EO

Wales, Monsen, and McKelvie (2011) argue that EO is a critical element of entrepreneurship. EO is a pre-requisite for a successful CE strategy in a firm and most rapidly growing companies attribute a big part of their success to EO (Dess & Lumpkin, 2005).

The last three decades has been characterised by a significant amount of research on the EO construct and the various elements associated thereto. Rauch, Wiklund, Lumpkin, and Frese (2009) define EO as the “entrepreneurial strategy-making process that key decision-makers use to enact their firms organisational purpose, sustain its vision, and create competitive advantage” (p. 763).

The beginnings of the field of literature around EO can be traced to the work of Khandwalla (1977), who contends that a management style, that is entrepreneurial in nature, is underpinned by a bold and risky approach to management. This positions EO primarily within the field of individual management practices. Contrarily, Miller (1983) developed the notion of entrepreneurship being a firm-level orientation and a combination of elements of innovativeness, risk-taking, and proactiveness.

EO is a combination of a decision-making and management practices that are entrepreneurial in nature (Anderson, Covin, & Slevin, 2009). Covin and Miller (2014) reason that EO can either be seen either as a composite construct encompassing elements of innovative, risk taking, and proactive behaviours, or as a multidimensional construct where innovativeness, risk taking, proactiveness, competitive aggressiveness, and autonomy are all seen as independent characteristics within the realm of EO. Morris et al. (2010) highlight that innovativeness, risk-taking, proactiveness, autonomy, and competitive aggressiveness are all critical elements in analysing the level of entrepreneurship in a company.

Lumpkin and Dess (1996) developed a conceptual model for EO (Figure 5), which is underpinned by four overarching elements. Environmental factors; organisational factors; EO, and performance.

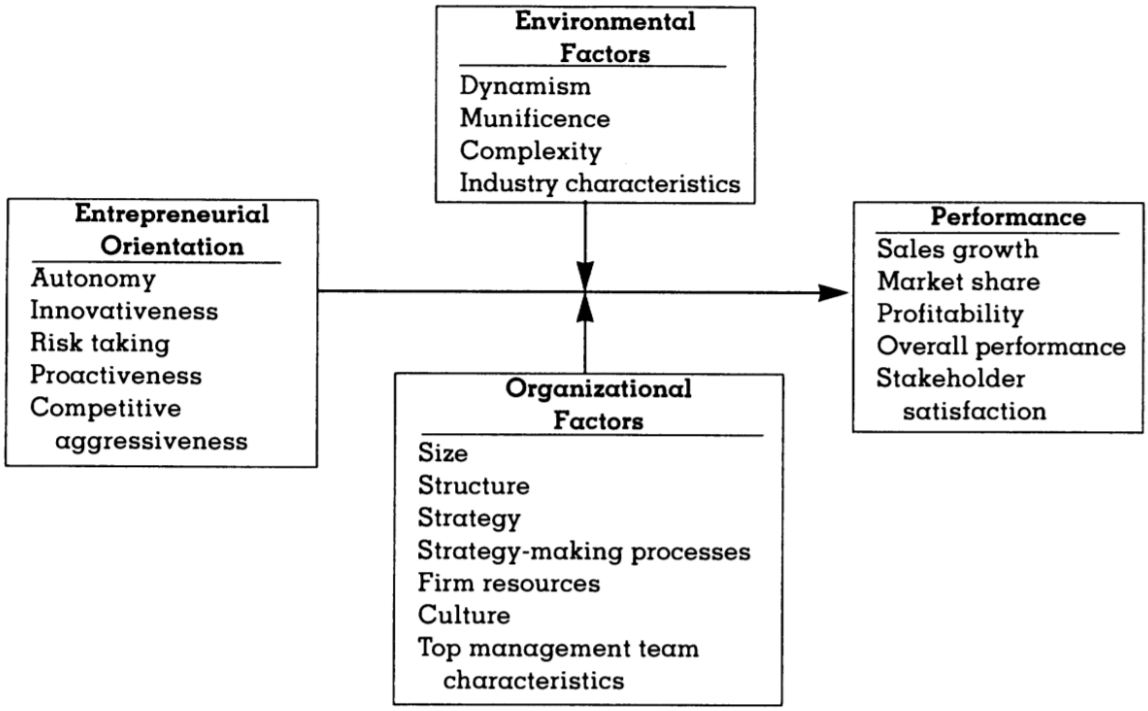

Figure 5: Conceptual framework of EO

(Lumpkin & Dess, 1996, p. 152)

2.5.1 Innovativeness

Innovativeness refers to companies' ability to create value by developing new products or processes (Covin & Lumpkin, 2011). Innovativeness involves the ability to develop new processes, through technology and research and development (R&D) (Rauch et al., 2009). It includes the ability to develop new ideas, despite being uncertain of their value (Dess & Lumpkin, 2005). Different types of innovations are delineated, technological innovativeness, which is largely around developing products and services; innovativeness around product markets, which includes novel ways of analysing the market and product

promotion; and administrative innovativeness, which focuses on systems and structures within organisations.

2.5.2 Risk-taking

Risk-taking refers to the ability of a firm to take calculated risks and to experiment, while taking into account the risk associated thereto. Dess and Lumpkin (2005) differentiate between business, financial, and personal risk and argue that a critical element of all three is the ability to research methods and models for mitigating risk. Firms that embed the right understanding of risk-taking are those that have the ability to analyse the risk and potential impact, and craft adequate strategies in response. They argue that only carefully managed risk leads to competitive advantage.

At an individual level, risk-taking is an integral element of entrepreneurship and is premised on an individual's propensity to take risk and exploit an opportunity. Individuals who have a greater propensity for risk taking are often more entrepreneurial in their approach (Shane, 2003).

Schillo (2011) maintains that risk-taking was seen as a construct within the field of individual entrepreneurship, but has now become an integral element of companies, where managers within the firm have to commit large resources with uncertain outcomes.

2.5.3 Proactiveness

Proactivity refers to the ability to have foresight and adaptability to develop products and services based on future demand (Covin & Lumpkin, 2011; Dess & Lumpkin, 2005). It encompasses the ability of a firm to continually scan the market and act ahead of competitors in response to new market conditions. This includes the ability to understand the trends impacting the sector as well as the changing nature of the industry, and to respond proactively.

2.5.4 Competitive aggressiveness

Competitive aggressiveness refers to the positioning of a firm to aggressively respond to and outperform industry rivals (Dess & Lumpkin, 2005). It includes entering new markets by competing on price, copying the products or processes of competitors or making announcements around key technological developments to upend potential competitors.

This study focused on the EO elements of innovativeness, proactivness, and risk taking.

2.6 Organisational antecedents as a driver of CE

The success of a firm developing a CE strategy is premised on the relationship between the external factors that result in developing a CE posture and the internal organisational antecedents that encourage or inhibit CE.

Zahra et al. (1999) highlight three primary categories for CE antecedents: environmental, strategic, and organisational factors. Environmental factors are external to the firm and thus outside of the influence of the organisation. Executive teams in companies often have to respond to these external factors as they often result in a desire to be more entrepreneurial.

Hornsby, Naffziger, Kuratko, and Montagno (1993) developed a model of corporate entrepreneurship, wherein the nexus between the individual and firm characteristics creates the enabling event that results in the decision to act entrepreneurially. This is reflected in Figure 6.

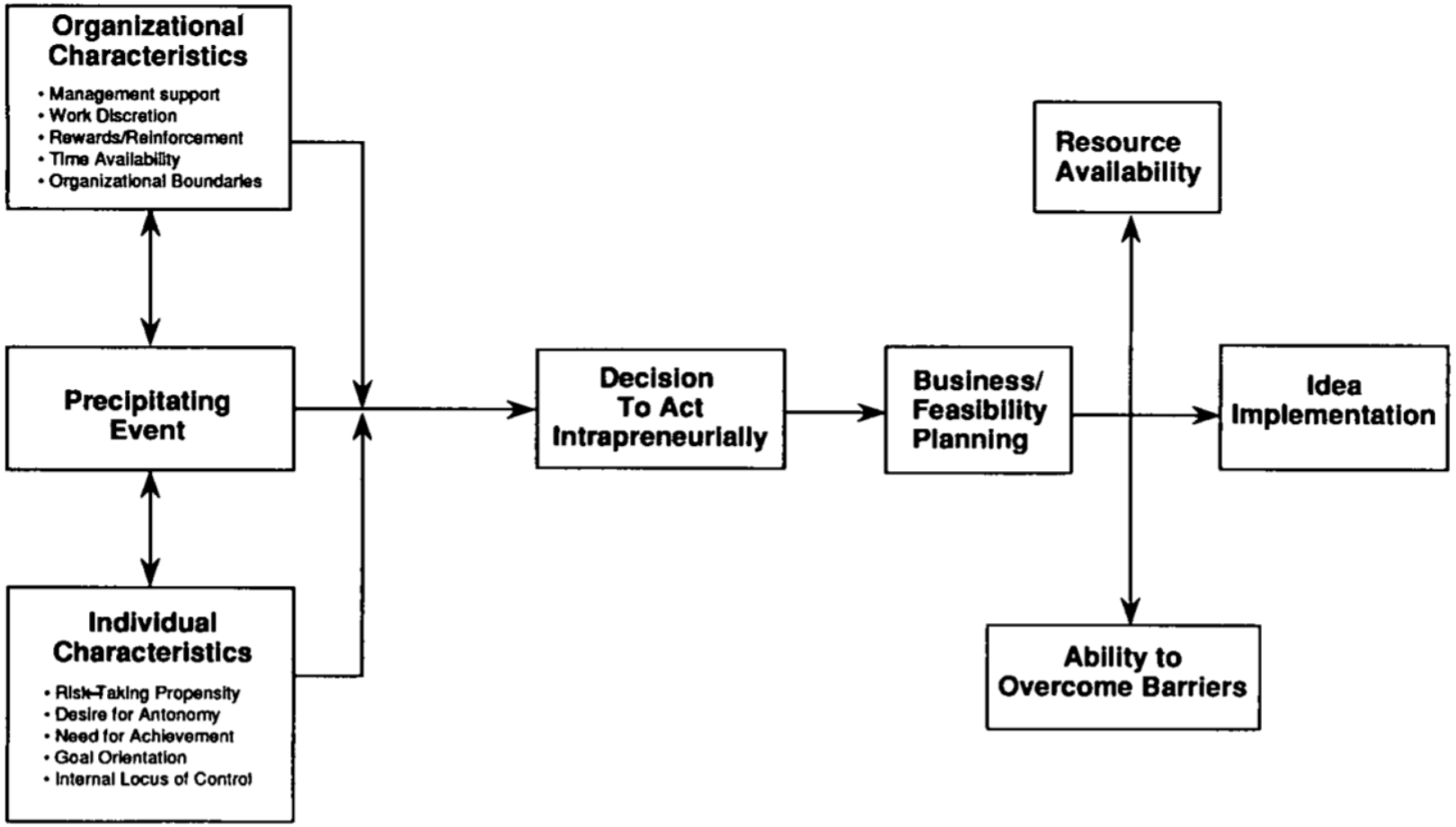

Figure 6: Interactive model of CE

(Hornsby et al., 1993, p. 239)

Organisational factors refer to the internal makeup of an organisation and encompass elements such as organisational leadership, organisational structure, culture, and management support. These elements are more strongly aligned to the firms' internal locus of control as they have a stronger ability to build and influence these elements (Hornsby et al., 1993).

Kuratko (2009a) argues that entrepreneurial action is not premised on an instruction from management, but rather by the organisational climate, which facilitates individual entrepreneurial actions. Organisational antecedents are a pre-requisite for the type of culture that promotes or inhibits an organisational culture that fosters entrepreneurship.

The role of organisational antecedents as a key contributor to company competitiveness and performance is also evident in the literature on organisational ambidexterity. Organisational ambidexterity is referred to as a company's ability to align management and the organisational structures to the realities of the market and to be agile enough to respond to any changes (Raisch, Birkinshaw, Probst, & Tushman, 2009). Gibson and Birkinshaw (2004) studied the antecedents for organisational ambidexterity. They found that combinations of "discipline, support, stretch, and trust" (p. 209) were important elements for organisational ambidexterity and contributed to a company's performance.

Matsuno, Mentzer, and Özsomer (2002, p. 19) refer to the concept of entrepreneurial proclivity and define it as "an organisation's predisposition to accept entrepreneurial processes, practices, and decision-making, characterised by its preference for innovativeness, risk-taking, and proactiveness".

The focus on organisational antecedents is vital, given the particular emphasis placed on organisational structure and both company and individual behaviour. Scheepers (2007) argues that organisational antecedents have a more significant impact on EO and financial performance than external factors.

This study focused on organisational factors to determine the level of CE. The emphasis was on organisational antecedents identified in numerous studies

(Kuratko et al., 2014; Kuratko, Ireland, & Hornsby, 2001; Zahra et al., 1999). The organisational antecedents analysed in this study were management support, autonomy/work discretion, rewards/reinforcement, time and resource availability, and organisational boundaries.

Hornsby et al. (2002) highlight the presence of organisational antecedents, which play an integral role in determining whether individual entrepreneurial agency leads to the decision to act entrepreneurially. They argue that a middle manager might have the propensity to act entrepreneurially but that demanding work schedules limit their ability to innovate and experiment. They synthesised the various organisational elements into five distinct areas, despite numerous other organisational antecedents in the literature, these five areas are consistent with the majority of studies in this area and comprise management support for innovation, autonomy/work discretion, rewards and reinforcement, time and resource availability, and organisational boundaries.

2.6.1 Management support for innovation

Bhardwaj, Sushil, and Momaya (2007) refer to management as organisational assets and argue that they are integral to maintaining competitive advantage. Hornsby et al. (1993) argue that, inherent in management support, is the ability to create a culture where every employee embraces innovation as a key element of their work.

Management support is the ability and willingness of managers to promote and stimulate entrepreneurial activity in a firm (Bhardwaj et al., 2007). This willingness and promotion can come in numerous forms, including providing resources, championing ideas, and embedding CE in processes of the firm (Hornsby et al., 2002). Management support is a critical enabler for entrepreneurial behaviour in a firm (Holt, Rutherford, & Clohessy, 2007).

The following hypothesis was formulated.

H1a: Higher levels of management support will have a positive relationship with EO.

2.6.2 Autonomy/work discretion

Hornsby et al. (1993) refer to autonomy as the ability to provide employees with the latitude to make decisions that they believe to be the most effective in the organisation. A critical element to autonomy is the freedom to take calculated risks (Hornsby et al., 2002).

Work discretion includes the ability to take decisions without oversight and allows for the delegation of responsibility (Hornsby et al., 2009). Furthermore, provides the latitude to managers to focus on the salient aspects of their role and thus think more entrepreneurially about the outcomes associated thereto.

The following hypothesis was formulated.

H1b: Greater autonomy/work discretion will have a positive relationship with EO.

2.6.3 Rewards and reinforcement

Rewards have a powerful influence on organisational culture as they anchor the relationship between the individual and the organisation (Kerr & Slocum, 1987). Rewards are one of the most critical elements of embedding a CE culture as they serve as the bridge between aligning individual and organisational goals (Holt et al., 2007).

Rewards and reinforcement often encourage a form of EO as they create a sense of ownership (Kerr & Slocum, 1987). These must be seen from the perspective of the employee and the perception that entrepreneurial actions are rewarded (Hornsby et al., 2002). Rewards and reinforcement have a bigger impact on first line managers as they become more open to taking risk, in lieu of the associated reward (Hornsby et al., 2009).

The following hypothesis was formulated.

H1c: Higher levels of rewards/reinforcement will have a positive relationship with EO.

2.6.4 Time and resource availability

The availability of time, and other resources, is a key element to entrepreneurial outcomes (Slevin & Covin, 1997). Time availability allows employees to focus on salient aspects of their job that have a CE impact (Hornsby et al., 2009).

The following hypothesis was formulated.

H1d: Increased time availability has a positive relationship with EO.

2.6.5 Organisational boundaries

Organisational boundaries refers to an alignment between departments and functions (Scheepers et al., 2013). A flexible organisation allows for ease of transfer of information between the company and the external environment, and among business units within the firm (Miller, Fern, & Cardinal, 2007). This flow of insight and information provides managers with the ability to take quicker decisions (Hornsby et al., 2009). Organisations have to accommodate flatter structures to allow for sufficient flex to take decisions. The key to organisational boundaries is the creation of a context where managers are empowered to take decisions (Burgess, 2013).

The following hypothesis was formulated.

H1e: Flexible organisational boundaries have a positive relationship with EO.

2.7 Entrepreneurial intensity

In their seminal piece on entrepreneurial intensity, Morris and Sexton, (1996) contend that entrepreneurship is not a one-off event, and that organisations who were once entrepreneurial may not always remain entrepreneurial. The concept of entrepreneurial intensity relates to the degree and frequency of entrepreneurship in an organisation. They argue that entrepreneurial intensity is

vital in determining the intensity and regularity of entrepreneurship within an organisation.

Scheepers et al. (2007) argue that CE is becoming increasingly important for company competitiveness and profitability and that entrepreneurial intensity plays a crucial role in driving CE. They argue that entrepreneurial intensity is an iterative process and has to be built into the culture of a company to ensure the degree and frequency of CE.

Morris and Sexton (1996) put together an entrepreneurial grid (Figure 7) to allow companies to plot their degree and frequency of entrepreneurship and thus make a determination of their level of entrepreneurial intensity.

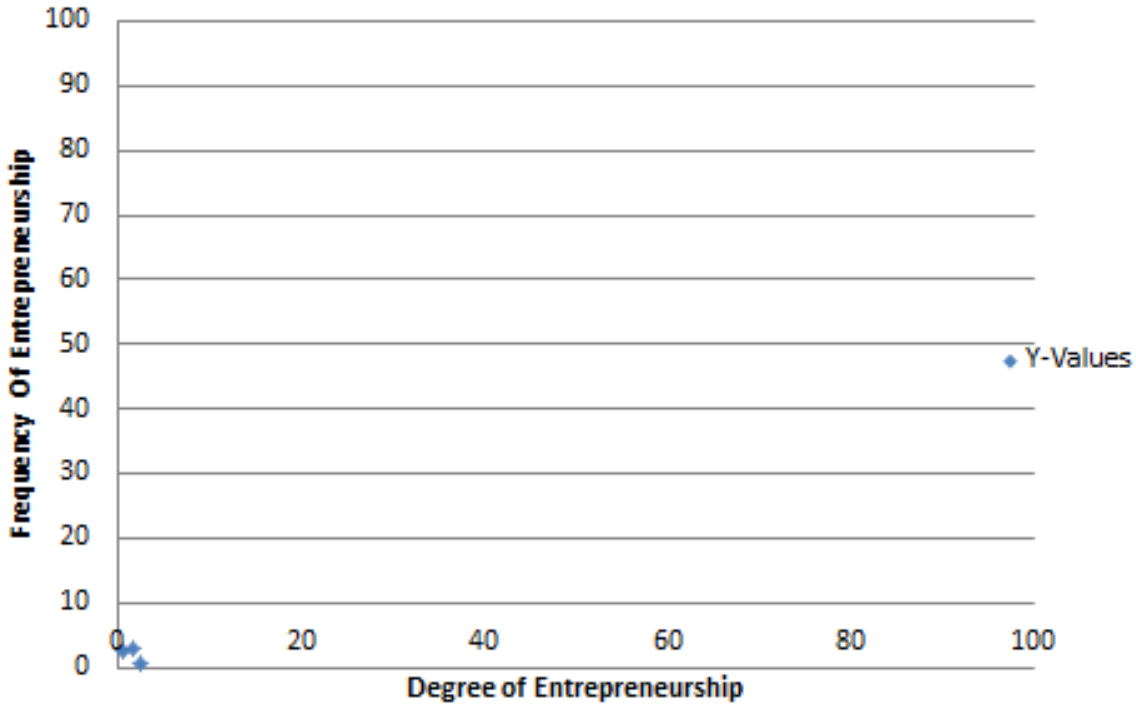

Figure 7: Entrepreneurial grid to determine the level of entrepreneurial intensity

(Morris & Sexton, 1996, p. 7)

2.8 CE in emerging markets

Entrepreneurship research is largely focused on Europe and North America (Bruton, Ahlstrom, & Obloj, 2008). Entrepreneurship in emerging markets have distinctive characteristics that are different to developed markets (Lingelbach, De La Vina, & Asel, 2005) and thus there exists a need for more research in the emerging market context. Entrepreneurial research, from an organisational behaviour perspective is even more limited. (Bruton et al., 2008)

Although CE is a widely researched construct, the focus of the majority of studies have been on developed markets. There are a limited number of papers which focus on the organisational drivers that drive CE in South Africa (Scheepers, Bloom, & Hough, 2008; Urban, 2008).

Urban (2008) argues that the western bias in research inhibits the generalisibility of CE and EO, given the absence of cross-cultural factors. The rising influence of the BRICS economies, the increasing role of Africa and the realignment of growth toward emerging markets has resulted in an increased need in understanding the nature of CE in emerging markets.

2.9 The impact of CE on performance

CE activities in organisations create a distinct advantage and lead to superior firm performance (Kuratko, Ireland, & Hornsby, 2001).

Zahra and Covin (1995) went further to test the link between CE and its impact on firm performance. While CE is not the panacea for increasing financial performance, there is a definite causal link between the two. Their study analysed 108 manufacturing companies in the United States, over a period of seven years. A key finding demonstrates a positive relationship between CE and financial performance over time. They conclude by arguing that CE should be viewed as a long-term strategy to achieve superior financial performance.

Morris et al. (2010) argue that there exists a causal link between EO and firm performance and that this is most pronounced during volatile periods. Numerous studies have analysed the elements that stimulate CE in firms. In their meta-analysis on the connection between EO and performance Rauch et al. (2009) find that the correlation between EO and performance has a causal link to both financial and non-financial performance. The link between CE and performance make these important factors to consider as greater entrepreneurial activity within an organisation can contribute to a more successful company over time.

The link between EO and performance is a key factor in analysing how firms increase growth and performance, especially during times of scarcity and increased competition.

The following hypotheses were formulated.

H2a: EO contributes positively to firm performance (growth in sales turnover).

H2b: EO contributes positively toward future growth in equity.

H2c: EO contributes positively towards companies' speed of growth.

2.10 Conclusion of literature review

This study built on the extensive work already done within the realm of CE by analysing the applicability of CE in companies operating in South Africa. A study of this nature focuses on the internal environments of these organisations and the antecedents within this internal environment that either positively contribute to or inhibit CE. This research emphasised the importance of the internal environment on driving a culture of CE.

In addition, the study focused on South Africa as most research on CE and EO has been conducted in developed markets. This study provided an opportunity to look at the applicability and relevance of CE and EO in the South African landscape and the impact of EO on firm growth and performance

The following hypotheses, restated for convenience, were formulated and tested in this research:

H1a: Higher levels of Management support will have a positive relationship with EO.

H1b: Greater Autonomy/work discretion will have a positive relationship EO.

H1c: Higher levels of Rewards/reinforcement will have a positive relationship with EO.

H1d: Increased time availability has a positive relationship with EO.

H1e: Flexible organisational boundaries have a positive relationship with EO.

H2a: EO contributes positively to firm performance (growth in sales turnover)

H2b: EO contributes positively toward future growth in equity

H2c: EO contributes positively towards companies' speed of growth

Figure 8 provides an overview of the key elements of this study. This study analysed the role of organisational antecedents in driving EO and firm performance.

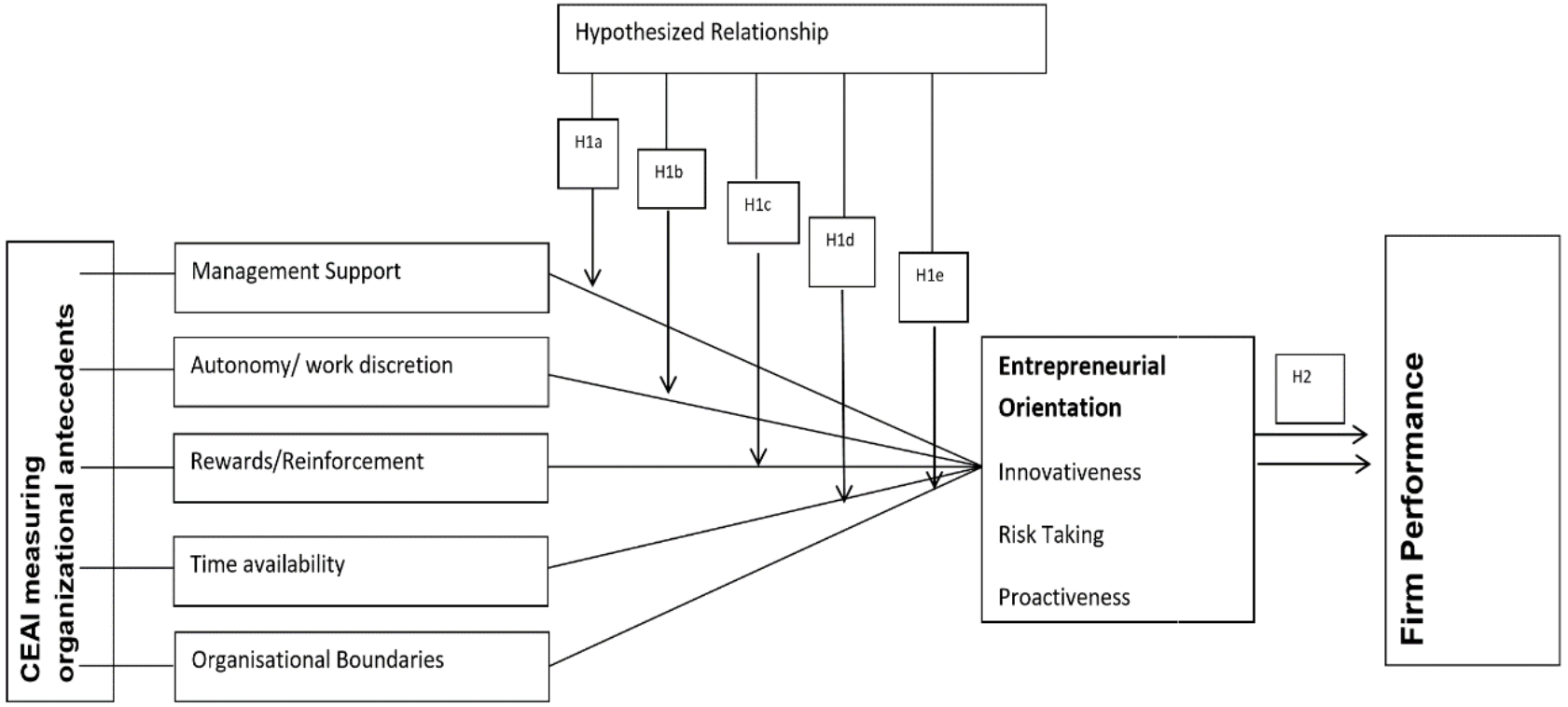

Figure 8: Hypothesised relationship between CE antecedents, EO, and firm growth and performance

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the elements and methodologies employed to test the hypotheses. It will look at the methods employed, define the prioritised sample population group, analyse the research instrument and explore the process of data collection, analysis and interpretation.

3.2 Research approach / paradigm

The research objectives were to analyse the role of organisational antecedents and their impact on EO. This study also aimed to analyse the impact of EO on firm and growth performance of South African companies.

3.2.1 Type of study

The study was exploratory and descriptive and focused on CE in South Africa. A cross sectional survey analysed the role of organisational antecedents in enhancing EO, and firm and growth performance.

The sample was identified on a convenience basis; and the research tool disseminated to 206 firms across South Africa. An online survey (Appendix A) was used, through Survey Monkey. The research tool provided insights on a wide array of recent graduates working in South African companies. The research tool included elements of firm size, firm age, and industry in which survey respondents worked.

This study was defined as both descriptive and correlational. On the one hand, the phenomena mentioned was described, but relationship between variables was also examined. The primary objective of this study was to analyse and

compare the levels of organisational antecedents that drive EO and performance in companies operating in South Africa.

This study utilised the Corporate Entrepreneurship Assessment Instrument (CEAI) to analyse the level of CE across a multi-sectoral spectrum of companies (Hornsby, Kuratko, & Zahra, 2002). While the pilot study only looked at one organisation, the final study analysed 196 individuals working across a spectrum of companies.

EO was measured using an EO scale, which measures entrepreneurial activity and orientation on a seven-point Likert type scale. Eight items were used to measure EO (innovativeness, risk taking, and provocativeness) in the sampled firms. Firm growth and performance was used as a dependent variable. The study measured firm performance using financial and non-financial indicators such as sales growth rate, industry growth comparison, growth in equity, growth in employee numbers, and growth orientation.

The quantitative method of analysis, which primarily focuses on hypotheses, causality, generalisability, and reliability, was used. Quantitative methods use statistics and data collection as a means to test hypotheses (Creswell, 1994). The inferences from the data analysis and the measurement against financial performance was used to test the hypotheses. The size and age of the firm were included as control variables. Firm size was defined by employee numbers, while firm age by the period the company had been in operation,

3.3 Research design

The study aimed to prove the relationship between organisational antecedents and EO and the impact of this on firm growth and performance. The study is exploratory in nature and aims to contribute to the body of knowledge on CE and firm performance in South Africa.

3.3.1 Pilot study

The CEAI was tested on 34 managers in a leading financial services group in South Africa, which is often recognised for its innovative culture.

3.3.2 Pilot study limitations

The CEAI was administered to 34 managers in the organisation and, while inferences were drawn from these data, it was an insufficient sample size to draw an informed view on the level of CE and innovation in the company.

3.3.3 Final study

The final study was disseminated to 206 companies, with a total of complete responses from 193 individuals from an array of companies operating in South Africa.

3.4 Population and sample

3.4.1 Population

Population refers to all of the elements, within an entire group, that are required to draw conclusions (Burns & Grove, 2005). The population in this study were recent graduates working for companies operating in South Africa.

A non-probability judgement sample was used to obtain the perspectives of recent graduates working for firms operating in South Africa, since this allowed for a detailed view of a specific subset of employees in South Africa.

3.4.2 Sample and sampling method

An adequate sample coupled with effective data collection is a critical factor in obtaining reliable, accurate and generalisable data (Bartlett, Kotrlik & Higgins, 2001). The non-probability judgement sample consisted of member companies of

the SAGEA and their graduate employees. The sample was obtained from SAGEA as well as from databases of their 206 member companies. The research tool was disseminated to all 206 companies.

The study focused on a target population of 600 recent graduates, with the objective of attaining 150 respondents across a spectrum of companies in South Africa. The study had 193 complete responses for analysis.

3.5 The research instrument

The research instrument consisted of three sub-instruments in three sections. The first section (Section A) of the instrument comprised a performance and growth assessment. Performance was measured, taking into consideration the multidimensional nature of performance. The measurement variables focused on various subjective, self-reported growth and performance indicators. Research evidence supports the fact that there is a high level of consistency between perception and actual objective firm performance measures (Poon, Ainuddin, & Junit, 2006).

The study measured firm performance using financial and non-financial indicators such as sales growth rate, industry growth comparison, growth in equity, growth in employee numbers, and growth orientation. This was done through a five-point Likert style questionnaire, with respondents focusing on a range from less than six percent to more than 20 percent.

The second section (Section B) of the instrument measured the organisational antecedents of the sampled firms, utilising the CEAI. The CEAI was developed to assess the level of organisational antecedents that promote CE in a company. The instrument was originally designed by Kuratko, Montagno and Hornsby (1990) and refined by Hornsby et al. (2002). Slavec and Drnovšek (2012) highlight that measures, which have not been tested are often used, and they recommend the utilisation of scales that have been previously validated. The CEAI has been used extensively and is recognised as valid and reliable (Kuratko

et al., 2014). The instrument consisted of 78 five-point Likert style questions. The instrument analysed five key areas. The five areas were management support for CE; reward and resource availability; organisational structure and boundaries; risk-taking, and time availability (Hornsby et al., 2002).

(1) *Management support*: This element referred to the extent to which management encouraged innovation across various roles and by different individuals within the company. The intensity with which management integrated innovation as a key element of the role of individuals in the company was analysed, along with the extent to which new ideas were adopted and recognition achieved by innovators in the organisation. The financial support to incubate new projects was also examined.

(2) *Autonomy/work discretion*: This explored the autonomy of workers to make their own decisions about their work, and identify the most efficient way of going about the execution thereof. It also analysed the ability to take independent decisions and be innovative.

(3) *Rewards/reinforcement*: This looked at how the organisation rewards employees for innovation. It analysed a culture of rewards that was contingent on performance and the acknowledgement of innovation within the organisation.

(4) *Time availability*: This reflected on the time available to develop new ideas. It analysed the amount of time that individuals within the organisation had to conceptualise and develop new ideas and innovations and to work on addressing systemic challenges in the organisation.

(5) *Organisational boundaries*: This reflected on whether the organisational environment allowed people to look outside their current role and view the organisation more holistically. This measure analysed whether people are constrained by boundaries and roles that stifle innovation.

Hornsby et al. (2013) tested the content, structural, and convergent validity of the CEAI, and found the instrument to be stable.

The third section (Section C) of the instrument measured EO within the sampled firms. The EO construct was measured using the original instrument developed by Covin and Slevin (1989) and adapted by Kreiser, Marino, and Weaver (2002). The scale is a reduced seven-point Likert type scale that measures the three elements of EO (innovativeness, risk-taking, and proactiveness). The instrument is divided into three sections with the first three items measuring risk-taking, items four and five analysing innovativeness, and items six to nine analysing proactiveness. Responses were analysed on a seven-point Likert-type scale (1 = strongly agree, 4 = neutral, and 7 = strongly disagree) with the overall rating of all nine scales determining the overall level of EO.

3.6 Reliability and validity

The statistical analysis of the pilot study was carried out in SAS and SAS JMP. Internal consistency (reliability of the instrument) was measured by using Cronbach's alpha, and the validity of the constructs measured in the study were assessed through exploratory factor analysis using varimax rotation.

This method was chosen because it maximises the sum of squares of variance of the factor loadings. Each factor had important characteristics of the responders and were named according to the information they carried. The number of factors chosen was based on the cumulative variance explained. Structural equation modelling (SEM) was used to ascertain how each factor influenced EO.

The level of each factor's influence on company sales revenue, future growth, and speed of growth was measured using generalised linear regression model. The robustness of the model was measured using Akaike Information Criteria, mean, squared error, and residuals from the results.

The descriptive statistics (mean, standard deviation, skewness, and kurtosis) were used to describe the data. This study enabled transformation of some of the variables that were skewed and access to the level of outliers. Correlation

analysis determined the relationship between the constructs and confirmatory factor analysis was used to confirm the constructs used in the pilot.

The cut off point for high positive correlation was 0.5, and -0.5 for high negative correlation. The cut off might be considered too high; however, it was necessary so as to avoid spurious results. If a model has high correlated variables, the results are unreliable as the correlated variables are double weighted.

The pilot study consisted of 34 respondents. This was below the expected sample size for exploratory factor analysis, confirmatory factor analysis, and SEM. Thus, the pilot study did not aim to ensure that the assumptions of the tests were met, but to see whether the test could be done if given a larger sample size.

3.6.1 Reliability analysis of the instrument

The reliability of the instrument was tested using Cronbach's alpha as shown in Table 1. Cronbach's alpha tested the reliability of the instrument by measuring its internal consistency.

George and Mallery (2003, p. 231) provide the following acceptable bands: ">0.9 = excellent, >0.8 = good, >0.7 = acceptable, >0.6 = questionable, >0.5 = poor, and <0.5 = unacceptable". However, the generally agreed lower limit for Cronbach's alpha is 0.7. In this particular research, 0.6 was used as an acceptable level. The following reliability scores were obtained for the pilot study.

Table 1: Reliability of the instrument

Aspect	Number of items			Cronbach 's alpha	Acceptable level
	Initially	Dropped	Remained		
"Management support"	19	9	10	0.605	Acceptable
"Autonomy/work discretion"	10	3	7	0.631	Acceptable
"Rewards/reinforcement"	6	3	3	0.652	Acceptable
"Time availability"	6	4	2	0.723	Acceptable
"Organisational boundaries"	7	5	2	0.566	Unacceptable
"Specific climate variables"	30	0	30	0.645	Acceptable
Total	**78**	**24**	**54**	**0.710**	**Acceptable**

Hornsby et al. (2013) tested the content, structural, and convergent validity of the CEAI. They found the instrument to be stable, however, their factor analysis found that organisational boundary factors were not correctly categorised and thus should not form part of a revised CEAI.

The reliabilities might be affected with instructions, wording of questions, unsuitable Likert scales (such as using 'strongly agree' instead of 'to a large extent'), incorrect reversing of questions etc. A Cronbach's alpha of 0.7 or more indicates a reliable scale.

When the questions were combined, without dividing into sections, the reliability of the 78 items was 0.721, making the overall instrument reliable; however, section reliability needed to be achieved if a factor analysis or SEM was to be performed.

3.7 Procedure for data collection

The research tool was administered electronically using an online tool. The SAGEA was consulted, they disseminated the research tool to all their 206 member companies who then distributed the online tool to the targeted audience of graduates within these companies. This allowed for a wide dissemination of the research tool.

3.8 Research ethics

The study used a principle of voluntary participation. Survey respondents were assured confidentiality and anonymity of responses.

Every survey commenced with a commitment to confidentiality, as well as recourse for any concerns. Voluntary consent was a pre-requisite for continuing with the survey. All data was analysed as group data thus ensuring no reference to particular individuals or organisations.

CHAPTER 4: PRESENTATION AND DISCUSSION OF RESULTS

4.1 Introduction

The results are discussed using descriptive statistics of the relevant constructs, and then inferential statistics are reported per hypothesis.

4.2 Characteristics of the respondents

A total of 321 individuals attempted the survey of which 193 returned complete responses. These 193 responses were analysed to understand the role of organisational antecedents in enhancing EO, and the impact of this on firm growth and performance.

In cases where some data was missing, the mean of the industry for the respondent was used (Allison, 2001). Of respondents, 22.3 percent were employed in an organisation with more than 100 employees, with 38.9 percent of organisations being in existence between 11 and 20 years. A total of 19.1 percent of respondents were employed in the mining sector, with the remaining respondents spread across various sectors.

4.3 Exploratory data analysis

The most important part in analysing quantitative data is to do exploratory data analysis. This is where each variable is examined to determine its distribution visually using a histogram or box plot, among other measures. Some variables had missing values; therefore, a mean imputation was performed after accessing the level of missing-ness (Allison, 2001). In the data distribution analysis, a combination of histogram and box plot was used.

Distribution analysis helped to identify the type of transformation needed for each variable, for example, if a variable is right skewed then a log transform might be necessary to normalise it. In the distribution analysis, the variable quantiles, summary statistics, and box plots were included. The box plot shows the variable minimum and maximum, average values, quantiles, and outliers.

Figure 9 shows the distribution of variables 1 to 4.

Figure 9: Distribution of variables 1 to 4

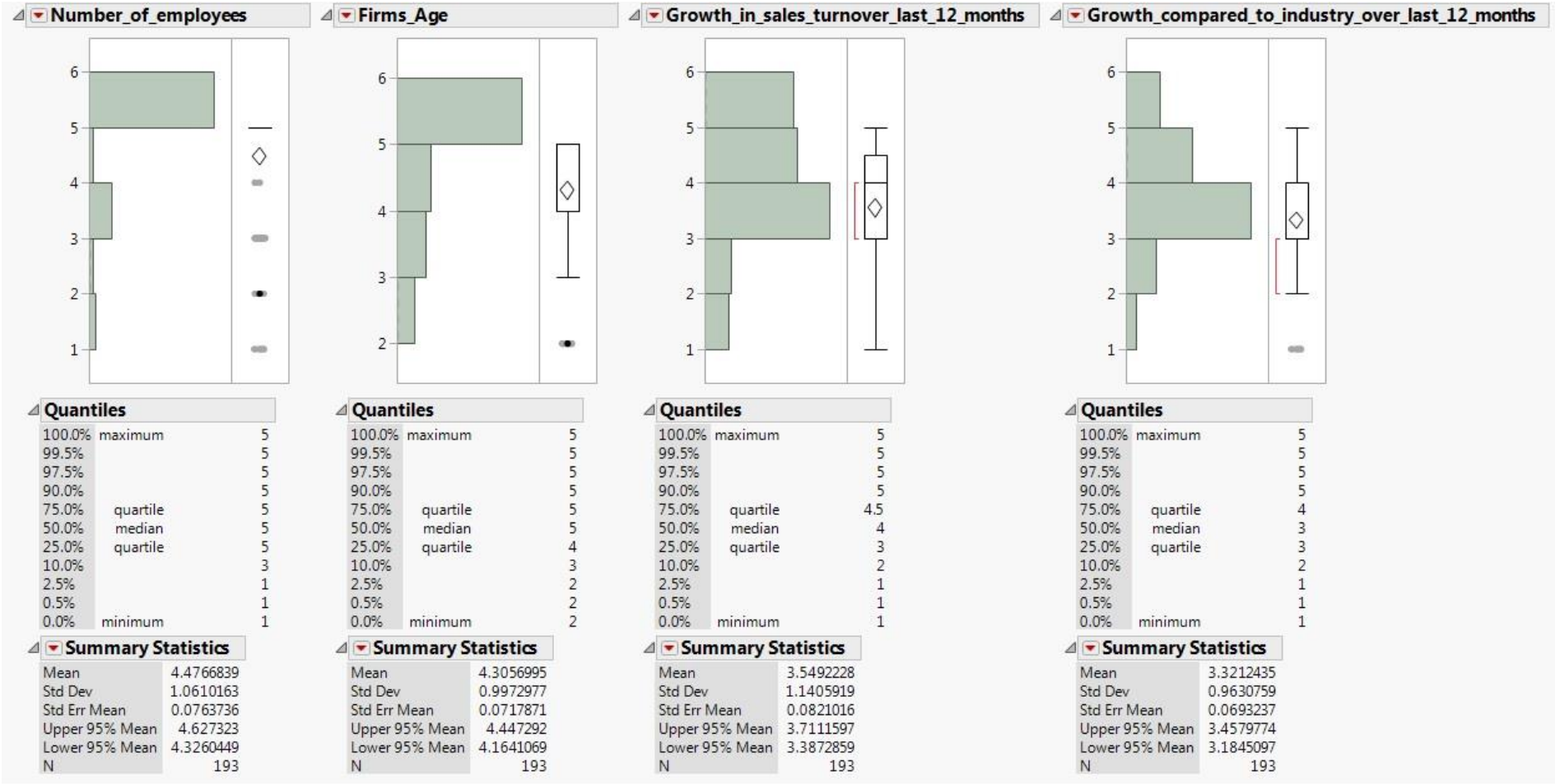

Figure 9 shows the following:

- *Number of employees*: The average response is 4.47, which is the central tendency of response but the majority of the responders are from a firm with more than 100 employees. This demonstrates that the majority of respondents came from larger companies. This distribution is heavily skewed to the right thus this variable was log transformed to centralised the distribution.
- *Firm's age*: The average response is 4.3 which is the central tendency of response but the majority of the responders are from a firm with more than 20 years' tenure. This distribution is heavily skewed to the right thus this variable was log transformed to centralised the distribution.
- *Growth in sales turnover over the last 12 months*: The average response is 3.5 which means on average the growth in sales turnover was between 1 percent and 9 percent for the previous 12 months.
- *Growth compared to industry over the last 12 months*: The average response is 3.3 which means on average the growth when compared to industry over the last 12 months is between 1 percent and 9 percent

All other variable distributions are found in Appendix C.

4.4 Reliability test

To test if the survey is reliable and the responses are consistently random, Cronbach's alpha test statistics was used (Table 2) Any alpha above 0.7 is acceptable and anything below 0.7 is questionable to unacceptable (George & Mallery, 2003).

Table 2: Cronbach's Alpha

Cronbach's Alpha	Consistency
Greater or equal to 0.9	Excellent
[0.8 ; 0.9)	Good
[0.7 ; 0.8)	Acceptable
[0.6 ; 0.7)	Questionable
[0.5 ; 0.6)	Poor
Less than 0.5	Unacceptable

(George & Mallery, 2003)

The Cronbach alpha results from the survey, which was evaluated as an overall survey set, was 0.9165 which shows excellent consistency. The Cronbach alpha score for each variable is shown in Appendix C, and all variables have significant Cronbach alpha scores.

4.5 Factor analysis

Factor analysis is one of the most powerful methods of extracting meaningful information from a survey study and evaluating the interdependence between factors.

Factor analysis enables the use of observed correlated variables from the data to deduce unobserved, uncorrelated factors from these variables. Factor analysis comes from a family of dimension reduction such as principal component analysis, but the two are not similar. On testing the hypotheses it was found that there were no common factors in the data, and that 10 factors were sufficient.

Table 3 shows the results of the hypotheses. The first hypothesis was rejected at a five percent level of significance and it was concluded that there exists

common factors in the data. This was backed by the p-value, which was less than 0.0001.

The second hypothesis was rejected at a five percent level of significance as well. This meant that ten factors were not sufficient. This result was overridden and ten factors were used in the analysis; it was argued that the result was based on a high variance level explained by the 10 chosen factors.

Table 3: Significance test

Test	DF	ChiSquare	Prob>ChiSq
Hypothesis 1			
H0: No common factors	1596	5810,771	<.0001
HA: At least one common factor			
Hypothesis 2			
H0: 10 factors are sufficient	1071	1517,022	<.0001
HA: More factors are needed			

The factors were constructed using maximum variance rotation method, thus ensuring highly distinct factors. The number of factors chosen visually using the scree plot, which shows the eigenvalue on the y-axis and the number of factors on the x-axis. After ten factors, the marginal eigenvalue gives diminishing returns hence the factor cut off point at ten. Figure 10 shows the scree plot for the selected factors.

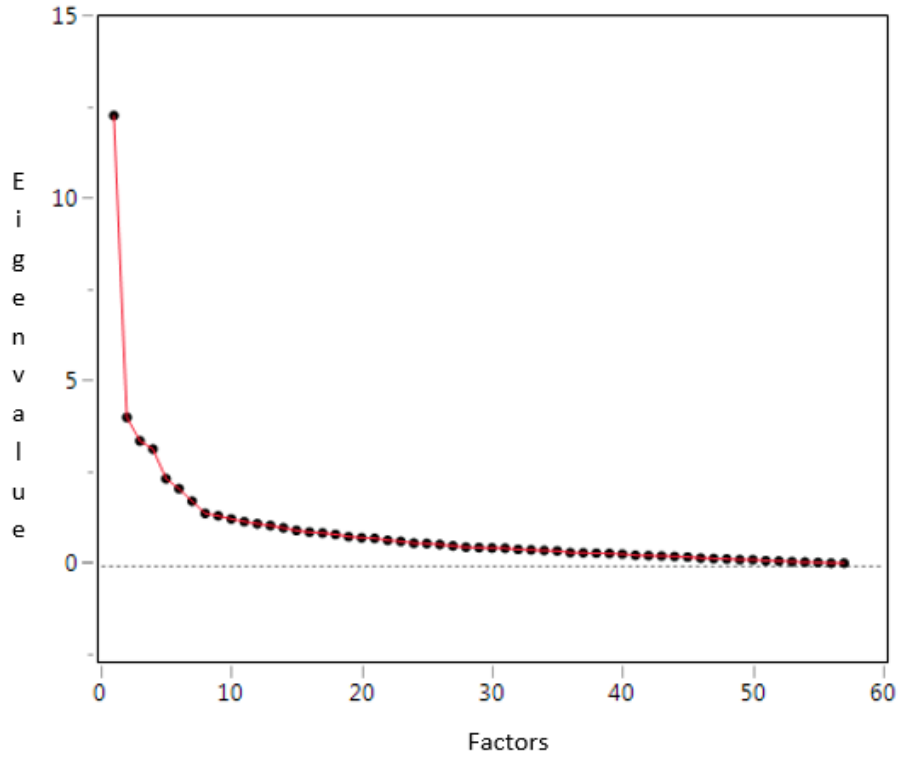

Figure 10: Scree plot

Table 4 shows the variance by factor. The total cumulative variance for ten factors was 50 percent. Increasing the number of factors at this stage added little or infinitesimal variance (factor 9 variance is 0.96 percent and factor 10 variance is 0.93 percent both lower than one percent). Since the dimension was being reduced, the number of chosen factors was less than the initial variables in the model.

Table 4: Variance explained by each factor

Factor	Variance	Percent	Cum Percent
Factor 1	5,6805	9,966	9,966
Factor 2	4,8084	8,436	18,402
Factor 3	4,5923	8,057	26,458
Factor 4	3,3253	5,834	32,292
Factor 5	2,6978	4,733	37,025
Factor 6	2,2078	3,873	40,898
Factor 7	1,7727	3,11	44,008
Factor 8	1,5659	2,747	46,756
Factor 9	0,9605	1,685	48,441
Factor 10	0,9321	1,635	50,076

The factor correlation was evaluated for illustrative purposes and showed that these factors were not correlated. Table 5 shows the correlation matrix for the factors. The heat map ranges from green (high positive correlation) to red (high negative correlation). The correlation plot can be found in Appendix D, number 1 and factor bi-plots in Appendix D, number 2.

Table 5: Correlation matrix

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
Factor 1	1.00	0.04	0.01	0.00	0.02	0.04	0.00	0.00	0.02	0.00
Factor 2	0.04	1.00	0.03	-0.01	0.02	0.04	0.00	0.00	0.05	-0.01
Factor 3	0.01	0.03	1.00	0.02	-0.01	0.01	0.02	-0.03	-0.01	0.02
Factor 4	0.00	-0.01	0.02	1.00	0.02	0.06	0.01	0.03	0.04	-0.02
Factor 5	0.02	0.02	-0.01	0.02	1.00	0.03	0.02	0.00	0.02	0.04
Factor 6	0.04	0.04	0.01	0.06	0.03	1.00	-0.01	-0.04	-0.02	0.03
Factor 7	0.00	0.00	0.02	0.01	0.02	-0.01	1.00	-0.06	-0.01	0.01
Factor 8	0.00	0.00	-0.03	0.03	0.00	-0.04	-0.06	1.00	-0.01	0.01
Factor 9	0.02	0.05	-0.01	0.04	0.02	-0.02	-0.01	-0.01	1.00	-0.02
Factor 10	0.00	-0.01	0.02	-0.02	0.04	0.03	0.01	0.01	-0.02	1.00

4.6 Factor Loadings

4.6.1 Factor 1: EO

Table 6 shows loadings for factor 1, named EO. Only the highest loading for each variable or survey question was examined. Factor 1 captured the respondents' EO with the largest influence variable on this factor being 'decision making with uncertainty'.

Table 6: Factor loadings for factor 1

Question	Factor 1
EO "In general the top managers of my business unit favour: " A "A strong emphasis on the marketing of tried and true products or services" B "A strong emphasis on R&D technological leadership and innovation"	0.62
EO "How many new lines of products or services has your business unit marketed during the past three years?" A "No new lines of product or service" B "Very many lines of product or service"	0.60
EO "How many new lines of products or services has your business unit marketed during the past three years?" A "Changes in services or products have been minor" B "Changes in product or service have been dramatic"	0.60
EO "In dealing with its competitors my business unit:" A "Typically reacts to actions which competitors initiate" B "Typically initiates actions to which competitors respond"	0.66
EO "In dealing with its competitors my business unit is:" A "Very seldom to the first business" B "Often the first business"	0.66
EO "In dealing with its competitors my business unit:" A "Avoids competitive clash" B "Is very competitive"	0.58
EO "In general the top managers of my business unit have:" A "Low risk projects" B "High risk projects"	0.74
EO "In general the top managers of my business unit believe in:" A "Exploring gradually"" B Being bold "	0.71

Question	Factor 1
EO “When confronted with decision making situations involving uncertainty my business unit is:” A “Cautious” B “Aggressive”	0.79

4.6.2 Factor 2: Corporate entrepreneur support for innovative ideas

Table 7 shows only the highest factor loadings for factor 2, which was named corporate entrepreneur support for innovative ideas. Factor 2 concentrates mainly on management support for CE in implementing new innovative ideas. The highest factor loading was “There are several options within the organisation for individuals to get financial support for their innovative ideas and projects”.

Table 7: Factor loadings for factor 2

Question	Factor 2
S1 MCE “A promotion usually follows from the development of new and innovative ideas”	0.55
S1 MCE “Senior management encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track”	0.48
S1 MCE “Many top managers have been known for their experience with the innovation process”	0.50
S1 MCE “Money is often available to get new project ideas off the ground”	0.52
S1 MCE “There are several options within the organisation for individuals to get financial support for their innovative projects and ideas”	0.69
S1 MCE “People are often encouraged to take calculated risks with ideas around here”	0.53
S1 MCE “Individual risk takers are often recognized for their willingness to champion new projects whether eventually successful or not”	0.50
S1 MCE “The term "risk taker" is considered a positive attribute for people in my work area”	0.63
S1 MCE “An employee with a good idea is often given free time to develop that idea”	0.55

4.6.3 Factor 3: Work discretion freedom

Table 8 shows only the highest factor loadings for factor 3, which was called work discretion freedom. This factor focused mainly on work discretion, that is, employees being able to do what is required of them at work, at their own time and pace, and in their own structure. The highest factor loading was “I have the freedom to decide what I do in my job”.

Table 8: Factor loadings for factor 3

Question	Factor 3
S2 WD “I feel that I am my own boss and do not have to double check all of my decisions with someone else”	0.68
S2 WD “The organisation provides the freedom to use my own judgement”	0.48
S2 WD “I have the freedom to decide what I do in my job”	0.83
S2 WD “It is basically my own responsibility to decide how my job gets done”	0.63
S2 WD ”I almost always get to decide what I do on my job”	0.78
S2 WD “I have much autonomy on my job and am left on my own to do my own work”	0.75
S2 WD “I seldom have to follow the same work methods or steps for doing my major tasks from day to day”	0.57

4.6.4 Factor 4: Reward for input

Table 9 shows only the highest factor loadings for factor 4, which was named reward for input. This factor focused mainly of rewarding employees based on performance but also touched on the challenge that the job comes with, and the ability to utilise employee’s skills to the fullest. The highest factor loading was “My supervisor will give me special recognition if my work performance is especially good”.

Table 9: Factor loadings for factor 4

Question	Factor 4
S2 WD “This organisation provides the chance to do something that makes use of my abilities”	0.48
S3 RR “My manager helps me get my work done by removing obstacles and roadblocks”	0.52
S3 RR “My supervisor will increase my job responsibilities if I am performing well in my job”	0.53
S3 RR “My supervisor will give me special recognition if my work performance is especially good”	0.85
S3 RR “My manager would tell his/her boss if my work was outstanding”	0.70
S3 RR “There is a lot of challenge in my job”	0.49

4.6.5 Factor 5: Organisation boundaries employee requirements

Table 10 shows only the highest factor loadings for factor 5, which is called organisation boundaries employee requirements. This factor focused mainly on organisational boundaries and awareness of what was required in the current role of the employee. The highest loading factor was “My job description clearly specifies the standards of performance on which my job is evaluated”.

Table 10: Factor loading for factor 5

Question	**Factor 5**
S5 OB “On my job I have no doubt of what is expected of me”	0.66
S5 OB “During the past year my immediate supervisor discussed my work performance with me frequently”	0.52
S5 OB “My job description clearly specifies the standards of performance on which my job is evaluated”	0.71
S5 OB “I clearly know what level of work performance is expected from me in terms of amount quality and timelines of output”	0.69

4.6.6 Factor 6: Corporate entrepreneur support for idea implementation

Table 11 shows only the highest loadings for factor 6, which was called corporate entrepreneur support for idea implementation. This factor focused mainly on CE support for implementation and improving ideas. The highest loading for this factor was “In my organisation developing one’s own ideas is encouraged for the improvement of the corporation”.

Table 11: Factor loadings for factor 6

Question	Factor 6
S1 MCE “My organisation is quick to use improved methods that are developed by workers”	0.43
S1 MCE “In my organisation developing one's own ideas is encouraged for the improvement of the corporation”	0.60
S1 MCE “Upper management is aware and very receptive to my ideas and suggestions”	0.55
S1 MCE “Those employees who come up with innovative ideas on their own often receive management encouragement for their activities”	0.57

4.6.7 Factor 7: Time availability delivering under pressure

Table 12 shows only the highest loadings for factor 7, which was called time availability delivering under pressure. This factor focused on time availability and pressure to complete tasks. The highest loading for this factor was “My job is structured so that I have very little time to think about wider organisational problems”.

Table 12: Factor loadings for factor 7

Question	Factor 7
S4 TA “During the past three months my work load kept me from spending time on developing new ideas”	0.67
S4 TA “My job is structured so that I have very little time to think about wider organisational problems”	0.69

4.6.8 Factor 8: Time availability managing workload

Table 13 shows only the highest loadings for factor 8, which was called time availability managing workload. This factor focused on time availability and managing time to finish all required tasks. The highest loading for this factor is “I have just the right amount of time and work load to do everything well”.

Table 13: Factor loadings for factor 8

Question	Factor 8
S4 TA “I always seem to have plenty of time to get everything done”	0.51
S4 TA “I have just the right amount of time and work load to do everything well”	0.55

4.6.9 Factor 9: Corporate entrepreneurial risk takers

Table 14 shows only the highest loadings for factor 9, which was called corporate entrepreneurial risk takers. There was only one significant variable that had a high loading for factor 9. This factor talks about corporate entrepreneurial ability to reward individuals that take on high-risk projects or initiatives.

Table 14: Factor loadings for factor 9

Question	Factor 9
S1 MCE “Individual risk takers are often recognized for their willingness to champion new projects whether eventually successful or not”	0.61

4.6.10 Factor 10: Support for exotic projects

Table 15 shows only the highest loadings for factor 10, which was called support for exotic projects. The highest loadings for this factor were very low. The variance for factor 10 explained approximately one percent of the total variation in the data. The highest loading for this factor was “The organisation supports many small and experimental projects realising that some will undoubtedly fail”.

Table 15: Factor loadings for factor 10

Question	Factor 10
S1 MCE “The organisation supports many small and experimental projects realising that some will undoubtedly fail”	0.32
S2 WD “The organisation provides the freedom to use my own judgment”	0.27
S2 WD “This organisation provides the chance to do something that makes use of my abilities”	0.29
EO “How many new lines of products or services has your business unit marketed during the past three years?” A “No new lines of product or service” B “Very many lines of product or service”	0.29

Appendix D, number 3 shows the full factor loading analysis for all variables and all factors analysed in this study.

4.7 Variable correlation

The next step on the exploratory data analysis was to look at variable correlations. Only those variables that were not going to form part of the factor analysis were correlated. These variables were used as the dependent variables in order to address the main research problem.

Table 16: Pearson correlation matrix

Variable	No. of employees	Firms Age	Growth in turnover last 12M	Growth compared to industry last 12M	Growth turnover next 12M	Growth employees previous 12M	Growth employees next 12M	Growth equity previous 12M	Growth equity next 12M	Growth as objective	Speed of growth
No. of employees	1.00	0.73	-0.21	-0.18	-0.36	-0.20	-0.26	-0.20	-0.17	0.05	0.02
Firms Age	0.73	1.00	-0.35	-0.29	-0.41	-0.36	-0.37	-0.29	-0.29	-0.06	-0.09
Growth in turnover last 12M	-0.21	-0.35	1.00	0.76	0.75	0.68	0.63	0.71	0.61	0.38	0.32
Growth compared to industry last 12M	-0.18	-0.29	0.76	1.00	0.68	0.60	0.55	0.66	0.55	0.36	0.28
Growth turnover next 12M	-0.36	-0.41	0.75	0.68	1.00	0.64	0.69	0.63	0.67	0.33	0.29
Growth employees previous 12M	-0.20	-0.36	0.68	0.60	0.64	1.00	0.83	0.68	0.68	0.39	0.33
Growth employees next 12M	-0.26	-0.37	0.63	0.55	0.69	0.83	1.00	0.61	0.70	0.34	0.35
Growth equity previous 12M	-0.20	-0.29	0.71	0.66	0.63	0.68	0.61	1.00	0.81	0.42	0.29
Growth equity next 12M	-0.17	-0.29	0.61	0.55	0.67	0.68	0.70	0.81	1.00	0.45	0.29
Growth as objective	0.05	-0.06	0.38	0.36	0.33	0.39	0.34	0.42	0.45	1.00	0.55
Speed of growth	0.02	-0.09	0.32	0.28	0.29	0.33	0.35	0.29	0.29	0.55	1.00

Table 16 shows the Pearson correlation values. The heat map ranges from green (high positive correlation) to red (high negative correlation). The correlation ranges from -1 to 1, and the diagonals in the correlation matrix are equal to 1 as this is the variable correlated with itself. The analysis found that growth in the number of employees in the next twelve months was highly correlated with growth in the number of employees in the previous twelve months (0.83). Company or firm age was highly correlated with the number of employees (0.73).

Growth in sales turnover in the last twelve months was highly correlated with industry growth in the last twelve months (0.76), growth in sales turnover over the next twelve months (0.75), growth in number of employees in the previous twelve months (0.68) and growth in equity on the previous twelve months (0.71).

Figure 11 shows variable correlation in a visual fashion. On the diagonal is the variable in question and the dots represent the bivariate study between the variable in the diagonal and the next one. The ellipsoid in red represents the area of high density of the points. It must be noted that when there is a high positive or negative correlation the point will be scattered along the line y=x.

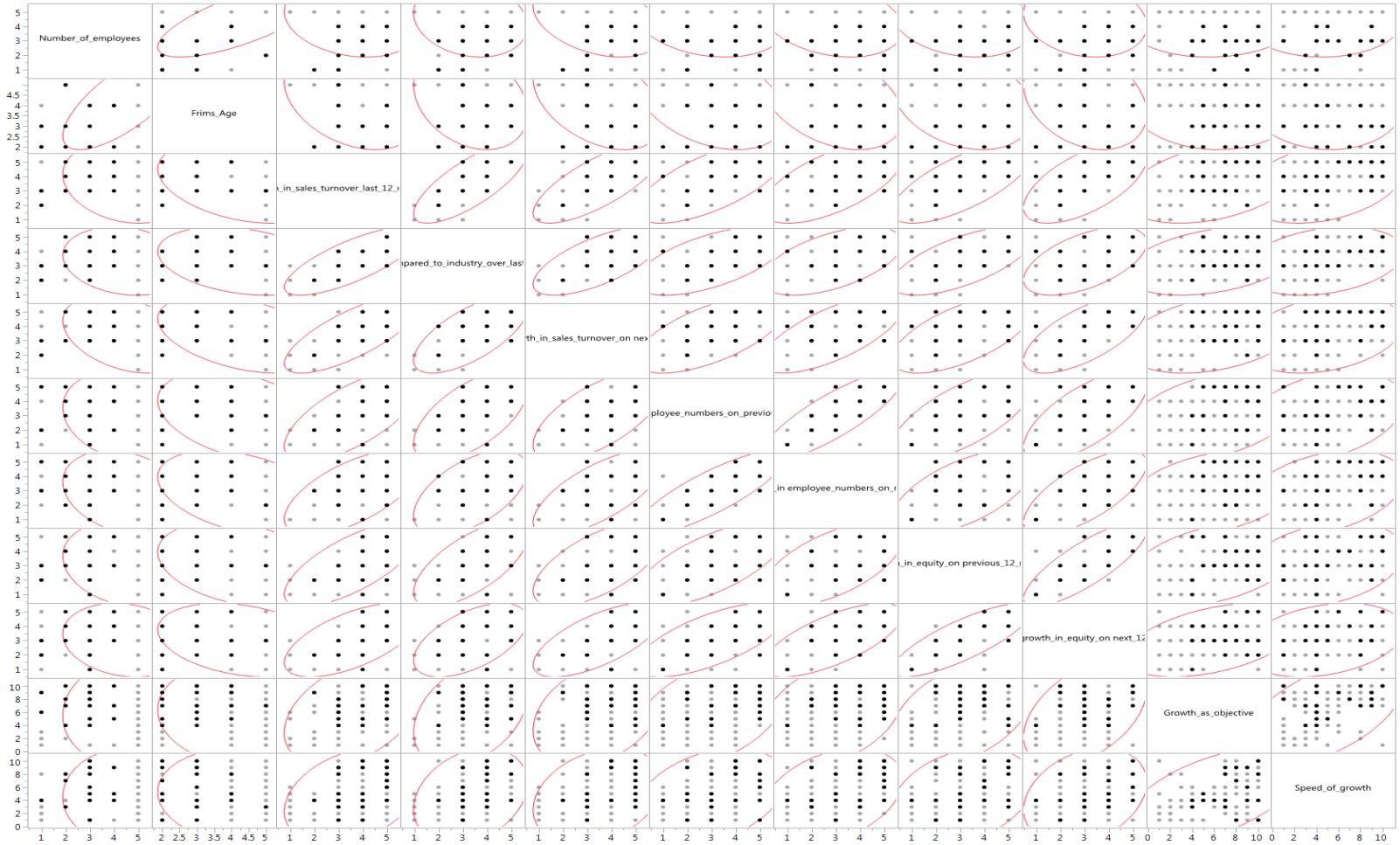

Figure 11: Variable correlation visual

4.8 Hypothesis testing

4.8.1 Hypothesis 1a to 1e

In this section, Hypothesis 1a to 1e covered in section 2.10, are addressed.

H1a: Higher levels of management support will have a positive relationship with EO.

H1b: Greater autonomy/work discretion will have a positive relationship with EO.

H1c: Higher levels of rewards/reinforcement will have a positive relationship with EO.

H1d: Increased time availability has a positive relationship with EO.

H1e: Flexible organisational boundaries have a positive relationship with EO.

SEM was used to determine how each factor on the survey questionnaire influences EO.

The impact of EO on company growth in turnover and sales was analysed using SAS Proc CALIS. The influence of each of the survey factors on EO was examined. The path analysis is shown in Figure 12.

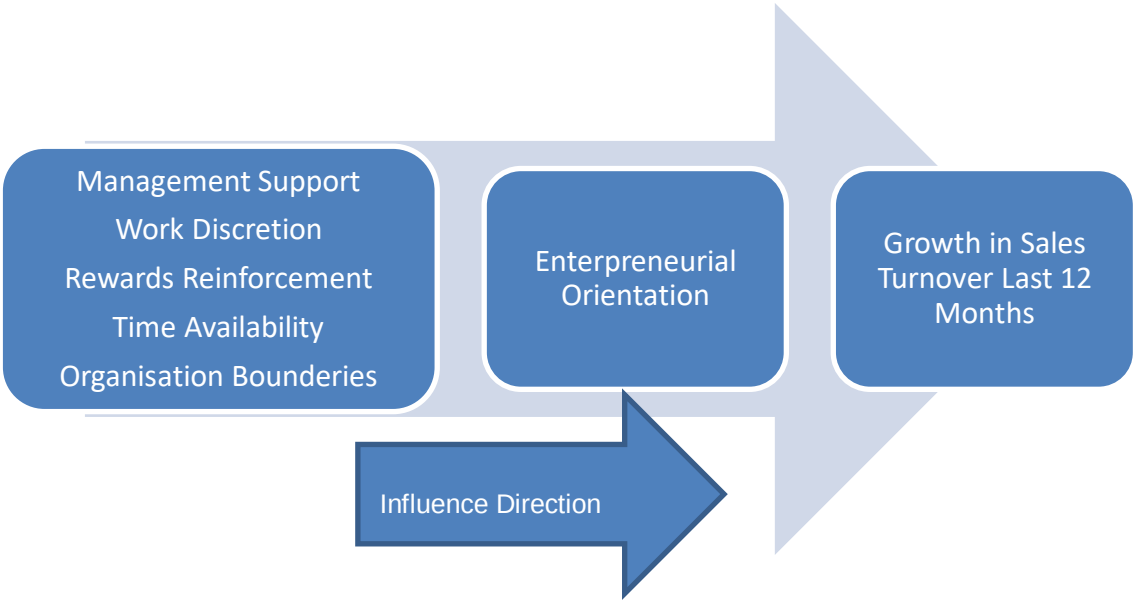

Figure 12: Path analysis

First, each response was combined with each factor by taking the mean for each predetermined factor, transforming the mean for normality assumptions, and standardising the variables so that they are in the same scale (all variables follow a normal distribution with zero mean and variance equal to 1).

The goodness of fit index (GFI) of the model was 1, which means it is performing well. The Chi-Square value at 21 degrees of freedom is 287, supporting the existence of a path relationship between the factors used in the model. The goodness of fit is shown in Table 17.

Table 17: Goodness of fit

Fit Summary	Score
Number of observations	193.00
Number of variables	7.00
Number of moments	28.00
Number of parameters	23.00
Baseline model function value	1.50
Baseline model Chi-Square	287.25
Baseline model Chi-Square DF	21.00
Goodness of Fit Index (GFI)	0.98
Pr > Baseline model Chi-Square	<.0001

Table 18 shows the path from one factor to EO and from EO to growth in sales turnover over the last 12 months. At five percent level of significance it could be concluded that management support for CE and reward reinforcement had a positive relationship with EO since the t-values were is 4.6 and 2.18 respectively, and the probability values were less than 0.001 and 0.03 respectively.

It was evident that EO influences company's growth in sales at one percent level of significance. This was the strongest relationship out of all assessed relationships based on the t-statistics value of 6.3.

Other factors (time availability, work discretion, and organisational boundaries) had a low influence on EO.

Table 18: EO path results

Path			Estimate	Standard Error	t Value	Pr > |t|
"Management support"	===>	EO	0.333	0.073	4.550	<.0001
"Work discretion"	===>	EO	0.117	0.076	1.536	0.1245
"Rewards reinforcement"	===>	EO	0.167	0.077	2.179	0.0294
"Time availability"	===>	EO	0.023	0.066	0.348	0.728
"Organisation boundaries"	===>	EO	0.052	0.070	0.739	0.4601
"EO"	===>	Growth in sales turnover last 12 months	0.411	0.066	6.253	<.0001

The covariance within each factor and the level of significance was evaluated. Table 19 shows the link between exogenous variables used in the SEM. All factors had a significant interlink at one percent level of significance, except for organisational boundaries to work discretion, which had a probability value of 0.79.

Table 19: Covariances among exogenous variables

Variable 1	Variable Two	Estimate	Standard Error	t Value	Pr > |t|
“Work discretion”	“Management support”	0.43388	0.07867	5.5152	<.0001
“Rewards reinforcement”	“Management support”	0.44442	0.07897	5.6273	<.0001
“Rewards reinforcement”	“Work discretion”	0.46794	0.07968	5.8728	<.0001
“Time availability”	“Management support”	0.24106	0.07424	3.2472	0.0012
“Time availability”	“Work discretion”	0.24227	0.07426	3.2626	0.0011
“Time availability”	“Rewards reinforcement”	0.17175	0.07323	2.3455	0.019
“Organisation boundaries”	“Management support”	0.26006	0.07457	3.4875	0.0005
“Organisation boundaries”	“Work discretion”	-0.019	0.07218	-0.2632	0.7924
“Organisation boundaries”	“Rewards reinforcement”	0.31824	0.07574	4.202	<.0001
“Organisation boundaries”	“Time availability”	0.27068	0.07477	3.6204	0.0003

The model fit was further evaluated by looking at the residual or error term in the model. Figure 13 shows the residual plot for EO, with the points scattered randomly along the zero line, which meant they were normally distributed with zero mean and the model is performing well. The P-P Plot for residuals was plotted (Figure 14); the line y=x passes through the first and the third quartile of the data, and the errors were close to this line. This proved that the model fits well.

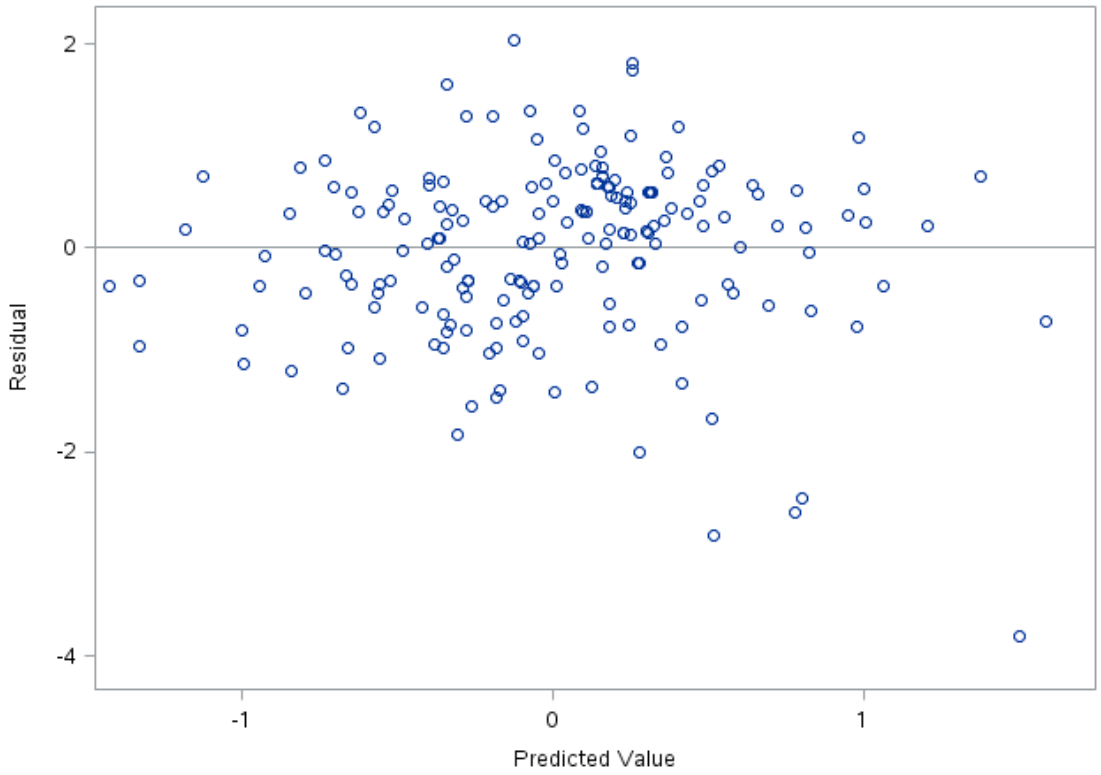

Figure 13: Residual on fit plot for EO

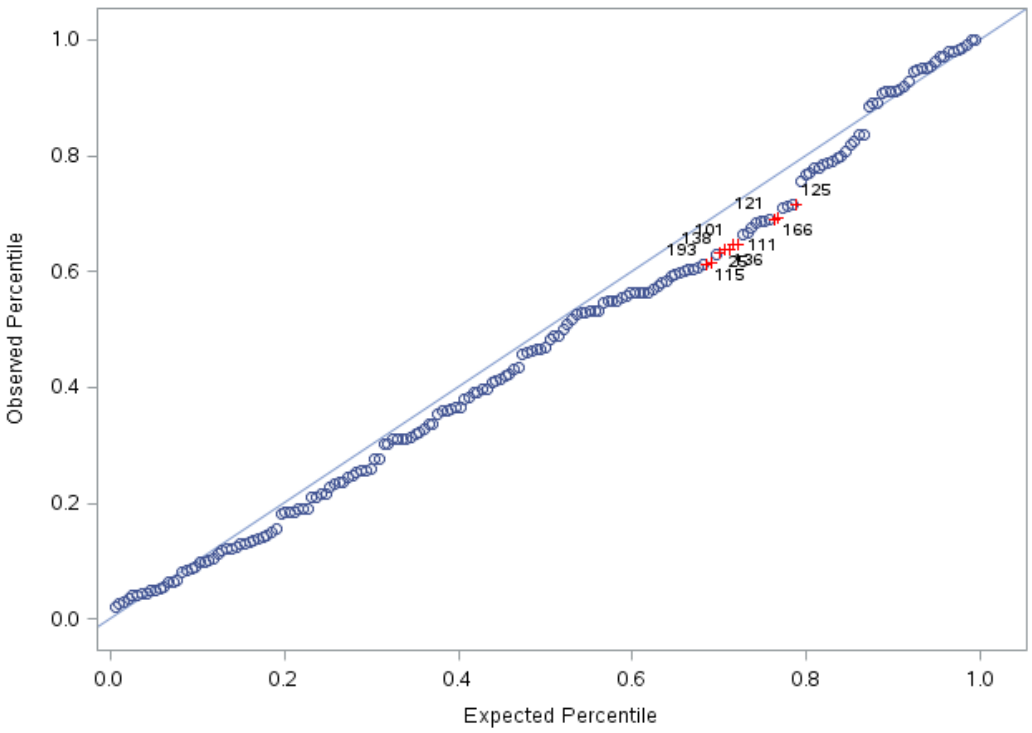

Figure 14: P-P plot of residuals

Figure 15 shows path analysis, significant routes, and path statistics in the SEM. The arrows point the direction of influence, the values are the parameter estimate of the model, ** means the path is significant at one percent level of significance, and * means the path is significant at five percent level of significance.

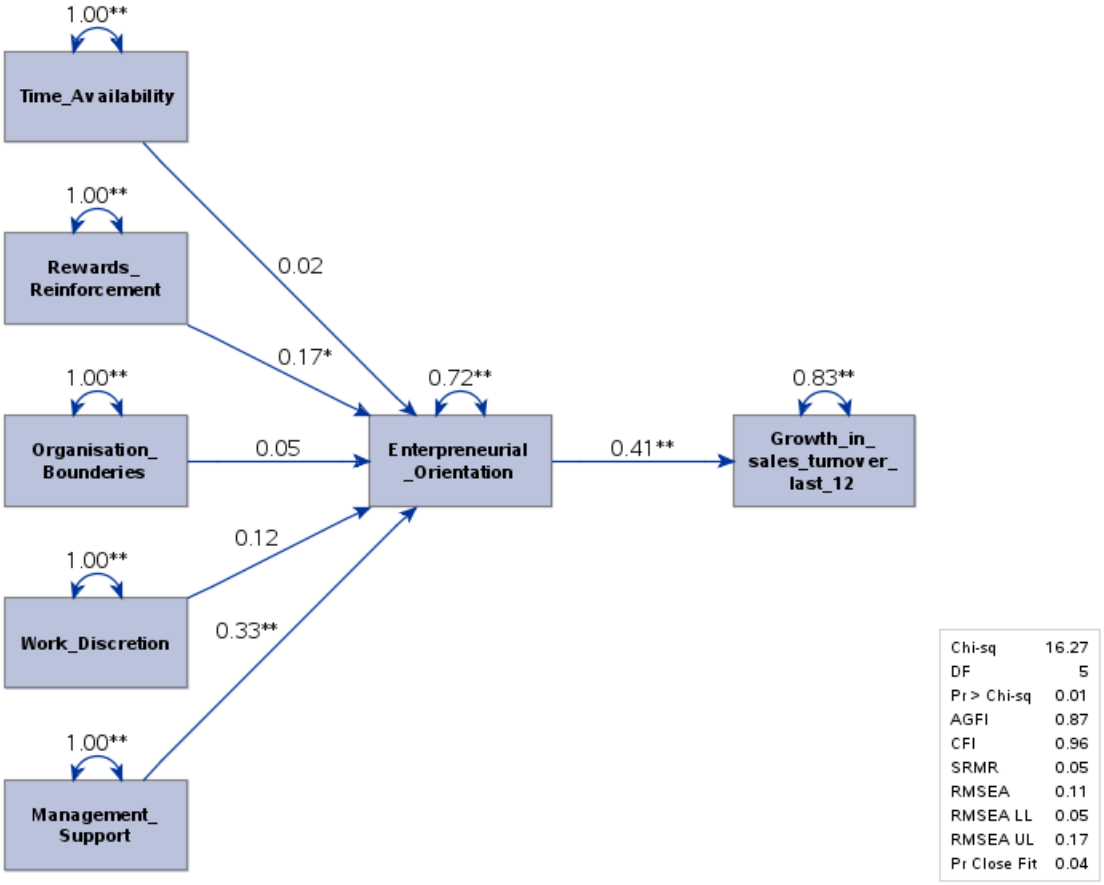

Figure 15: Unstandardised solution

It is concluded, without loss of generality, that management support for CE and rewards and reinforcement have positive influences on EO, and EO has a positive influence on companies' growth in sales turnover.

Thus the results of hypothesis 1 were as follows:

H1a: Higher levels of management support has a positive relationship with EO.

H1b: Greater autonomy/work discretion does not have a statistically significant positive relationship with EO

H1c: Higher levels of rewards/reinforcement has a positive relationship with EO.

H1d: Increased time availability does not have a statistically significant positive relationship with EO.

H1e: Flexible organisational boundaries do not have a statistically significant positive relationship with EO.

4.8.2 Hypothesis 2a to 2c

In this section, Hypothesis 2a to 2c covered in section 2.10, are addressed

H2a: EO contributes positively to firm performance (growth in sales turnover).

H2b: EO contributes positively toward future growth in equity.

H2c: EO contributes positively towards companies' speed of growth.

One of the hypotheses (H2a) addressed in this research is the relationship between EO and firm performance (growth in sales turnover). It was noted from the analysis section that factor 1 refers to EO.

In order to prove or disprove this assertion a generalised linear regression model was built using firms' growth in sales turnover in the last twelve months as the dependent variable, and the ten deduced factors as independent variables. The model was tested to ensure that at least one factor was significant in the model.

The model was constructed as follows:

$$Y = X\beta + \mu$$

Under the assumptions that: $E(Y) = X\hat{\beta}$ and $var(Y_{ij}) = \sigma^2$; $\mu \sim N(0,1)$

Where Y_{ij} is the dependent variable (firms or company's performance), $X\beta$ is the vector of dependent variables time the beta coefficients and u_{ij} is the error matrix associated with the model.

The model results are shown and explained in the sections that follow.

The model was tested (Table 20) and at one percent level of significance it was concluded that at least one variable was significant. The Chi-Square value was 82.1 at 10 degrees of freedom and the probability value (p-value) was significantly less than 0.0001, thus concluding that at least one factor is significant in the model.

Table 20: Whole Model test H2a

Model	Log Likelihood	L-R Chi Square	DF	Prob> Chi Square
Difference	41.0324221	82.0648	10	<.0001
Full	257.710054			
Reduced	298.742476			

Under the effect summary (Figure 16) the following were noted:

- *Source*: Variable or factor in the regression model;
- *Log Worth*: Importance of the variable or factor ranked from the highest contributor to the lowest;
- *Rotated Bar Chart*: For visualizing the log worth or factor importance in the model; and
- *P-Value*: Probability value for inclusion or exclusion of factor or variable in the model.

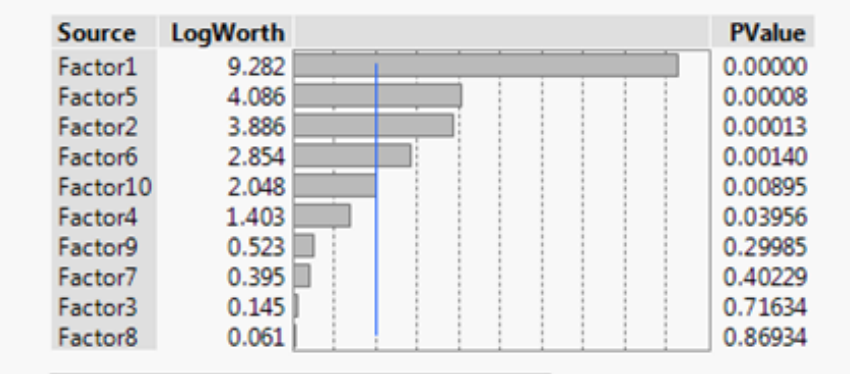

Figure 16: Effect summary H2a

In the effect tests (Table 21), factor 1 had the highest Chi-Square, while factors 3, 7, 8 and 9 had the lowest log worth in the model and the highest p-value. These were rejected in the model at the five percent level of significance.

Table 21: Effect tests H2a

Source	DF	L-R ChiSquare	Prob> Chi Square
Factor 1	1	38,591486	<.0001
Factor 2	1	14,6427	0,0001
Factor 3	1	0,1320249	0,7163
Factor 4	1	4,2367408	0,0396
Factor 5	1	15,51107	<.0001
Factor 6	1	10,206178	0,0014
Factor 7	1	0,7014577	0,4023
Factor 8	1	0,0270603	0,8693
Factor 9	1	1,0748737	0,2998
Factor 10	1	6,833001	0,0089

The parameter estimate report (Table 22) showed the coefficient of beta in the regression model, the Chi-Square value for all variables in the model, the p-value for each factor or variable, and whether to reject the variable or not. The following were noted:

- The intercept term in the model was the highest significant variable with a Chi-Square value of 533.8;
- The next significant variable was factor 1 (EO) with a Chi-Square value of 38.6; and
- The highest insignificant factor was factor 8 (time availability managing work load) with a Chi-Square value of 0.02 and a p-value of 0.86.

Table 22: Parameter estimates H2a

Term	Estimate	Std Error	L-R ChiSquare	Prob> Chi Square	Lower CL	Upper CL
Intercept	3,5493189	0,066206	533,79596	<.0001	3,418909	3,6797287
Factor 1	0,4558213	0,0697392	38,591486	<.0001	0,3184519	0,5931907
Factor 2	0,2803883	0,0718886	14,6427	0,0001	0,1387852	0,4219913
Factor 3	0,0254933	0,0701495	0,1320249	0,7163	-0,112684	0,1636709
Factor 4	-0,144008	0,0695795	4,2367408	0,0396	-0,281062	-0,006953
Factor 5	0,2941233	0,0731854	15,51107	<.0001	0,1499659	0,4382807
Factor 6	0,2490738	0,076936	10,206178	0,0014	0,0975285	0,4006191
Factor 7	0,0640366	0,0763893	0,7014577	0,4023	-0,086432	0,2145049
Factor 8	0,0127392	0,0774389	0,0270603	0,8693	-0,139797	0,1652751
Factor 9	-0,082354	0,0793232	1,0748737	0,2998	-0,238601	0,0738936
Factor 10	-0,211093	0,0800409	6,833001	0,0089	-0,368754	-0,053431

From the result, it can be seen that only five factors contributed significantly to the model at one percent level of significance with 99 percent confidence. These factors, in order of importance, were:

- EO (factor 1);
- Organisation boundaries employee requirements (factor 5);
- Corporate entrepreneur support for innovative ideas (factor 2);
- Corporate entrepreneur support for idea implementation (factor 6); and
- Support for exotic projects (factor 10).

At one percent level of significance is can be concluded that not only did EO contribute positively to firm performance (growth in sales turnover) but that it was also the largest contributor when compared to the other factors.

Another hypotheses (H2b) addressed in this research is how EO contributes to future equity growth. It was noted from the analysis section that factor 1 refers to EO.

In order to prove or disprove this assertion another generalised linear regression model was built using future equity growth as the dependent variable, and ten deduced factors the independent variables. The model was tested to ensure that at least one factor was significant in the model.

The model results are shown and explained in the sections that follow.

The model was tested (Table 23) and at one percent level of significance it was concluded that at least one variable was significant. The Chi-Square value was 69.9 at 10 degrees of freedom and the probability value (p-value) is significantly less than 0.0001, thus concluding that at least one factor is significant in the model.

Table 23: Whole model test H2b

Model	Log Likelihood	L-R Chi Square	DF	Prob>Chi Square
Difference	34,9597882	69,9196	10	<.0001
Full	246,031593			
Reduced	280,991381			

Figure 17 summarises the effect of each factor or variable in the generalised linear model. Factor 1 was the variable with the highest log worth and thus the most significant variable, followed by factor 5.

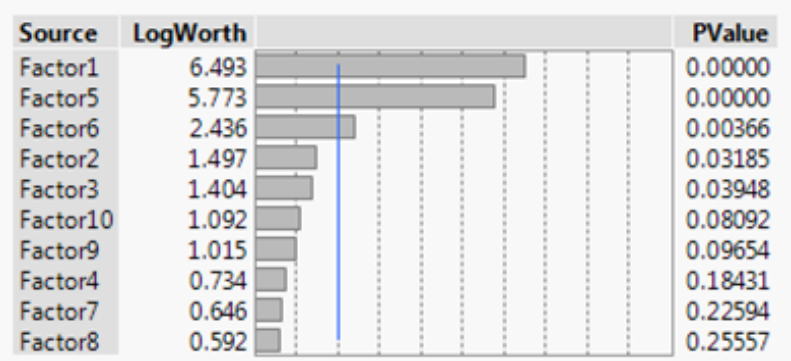

Figure 17: Effect summary H2b

In the effect tests (Table 24), factor 1 had the highest Chi-Square in the model while factor 2 and 3 were found to be not significant at the five percent level of significance.

Table 24: Effect tests H2b

Source	DF	L-R Chi Square	Prob> Chi Square
Factor 1	1	26,11524	<.0001
Factor 2	1	4,6063511	0,0319
Factor 3	1	4,2401306	0,0395
Factor 4	1	1,7625182	0,1843
Factor 5	1	22,92266	<.0001
Factor 6	1	8,4445035	0,0037
Factor 7	1	1,4662099	0,2259
Factor 8	1	1,2925771	0,2556
Factor 9	1	2,7618391	0,0965
Factor 10	1	3,046405	0,0809

The parameter estimates (Table 25) show the coefficient of beta in the regression model, the Chi-Square value for each variable in the model, the p-value for each factor or variable, and whether or not to reject the variable. The following were noted:

- The intercept term in the model was the highest significant variable with a Chi-Square value of 498.9; and
- The next significant variable was Factor 1 (EO) with a Chi-Square value of 26.1, factor 5 (organisation boundaries employee requirements) with a Chi-Square value of 22.9 and factor 6 (corporate entrepreneur support for idea implementation) with a Chi-Square value of 8.44.

Table 25: Parameter estimates H2b

Term	Estimate	Std Error	L-R Chi Square	Prob> Chi Square	Lower CL	Upper CL
Intercept	3,0316115	0,0623187	498,8828	<.0001	2,9088588	3,1543642
Factor 1	0,3471379	0,0656445	26,11524	<.0001	0,2178342	0,4764415
Factor 2	0,1461018	0,0676676	4,6063511	0,0319	0,0128131	0,2793905
Factor 3	0,1367177	0,0660306	4,2401306	0,0395	0,0066534	0,266782
Factor 4	-0,087149	0,0654941	1,7625182	0,1843	-0,216156	0,0418587
Factor 5	0,3398603	0,0688882	22,92266	<.0001	0,2041672	0,4755534
Factor 6	0,2127675	0,0724186	8,4445035	0,0037	0,0701203	0,3554147
Factor 7	0,0872322	0,071904	1,4662099	0,2259	-0,054401	0,2288657
Factor 8	-0,083011	0,0728921	1,2925771	0,2556	-0,226591	0,0605686
Factor 9	-0,124531	0,0746657	2,7618391	0,0965	-0,271604	0,0225428
Factor 10	-0,132021	0,0753413	3,046405	0,0809	-0,280425	0,0163831

It was concluded that not only did EO contribute positively to company's future growth but that it was the largest contributor when compared to the other factors.

The final hypotheses (H2c) addressed in this research was how EO contributes to speed of growth. It was noted from the analysis section that factor 1 refers to EO.

In order to prove or disprove this assertion, another generalised linear regression model was built using future speed of growth as the dependent variable, and ten deduced factors as the independent variables. The model was tested to ensure that at least one factor was significant in the model.

The model results are shown and explained in the sections that follow

The model was tested (Table 26) and at one percent level of significance it was concluded that at least one variable was significant. The Chi-Square value was 44.2 at 10 degrees of freedom and the probability value (p-value) was significantly less than 0.0001 thus concluding that at least one factor was significant in the model.

Table 26: Whole model test H2c

Model	Log Likelihood	L-R Chi Square	DF	Prob> Chi Square
Difference	22,0874735	44,1749	10	<.0001
Full	461,252105			
Reduced	483,339578			

Figure 18 summarises the effect of each factor or variable in the generalised linear model. Factor 10 was the variable with the highest log worth and thus the most significant variable, followed by factor 1.

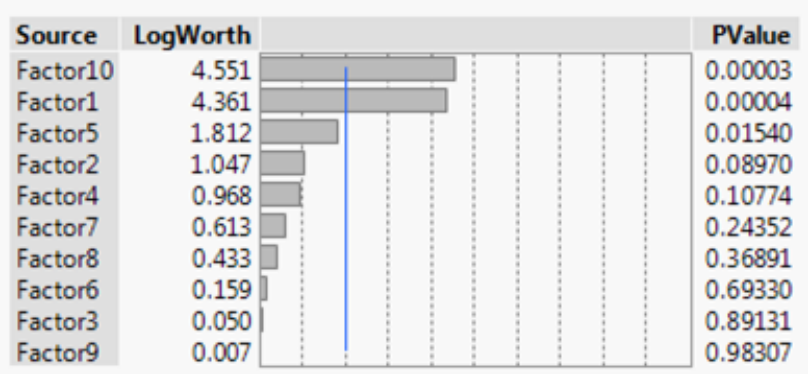

Figure 18: Effect summary H2c

In the effect test (Table 27), Factor 10 had the highest Chi-Square in the model while factor 5 was found to be not significant at the five percent level of significance.

Table 27: Effect tests H2c

Source	DF	L-R Chi Square	Prob> Chi Square
Factor 1	1	16,711001	<.0001
Factor 2	1	2,8797211	0,0897
Factor 3	1	0,0186725	0,8913
Factor 4	1	2,5870861	0,1077
Factor 5	1	5,8700324	0,0154
Factor 6	1	0,1555408	0,6933
Factor 7	1	1,3601021	0,2435
Factor 8	1	0,807328	0,3689
Factor 9	1	0,0004504	0,9831
Factor 10	1	17,540961	<.0001

The parameter estimates (Table 28) shows the coefficient of beta in the regression model, the Chi-Square value for each variable in the model, the p-value for each factor or variable, and whether or not to reject the variable. The following was noted.

- The intercept term in the model was the highest significant variable with a Chi-Square value of 272.6;
- The next significant variable was Factor 10 (support for exotic projects) with a Chi-Square value of 17.5;
- The highest insignificant factor was factor 9 (corporate entrepreneurial risk takers) with a Chi-Square value of 0.0004 and a p-value of 0.983; and
- Factor 1 was found to be significant and had a Chi-Square value of 16.7.

Table 28: Parameter estimates H2c

Term	Estimate	Std Error	L-R Chi Square	Prob> Chi Square	Lower CL	Upper CL
Intercept	4,653653	0,1900703	272,60301	<.0001	4,2792607	5,0280452
Factor 1	0,8364958	0,2002137	16,711001	<.0001	0,4421234	1,2308682
Factor 2	0,3515391	0,2063842	2,8797211	0,0897	-0,054988	0,7580658
Factor 3	0,0275203	0,2013915	0,0186725	0,8913	-0,369172	0,4242127
Factor 4	-0,322374	0,1997552	2,5870861	0,1077	-0,715843	0,0710948
Factor 5	0,512946	0,2101071	5,8700324	0,0154	0,0990859	0,926806
Factor 6	0,0871276	0,2208748	0,1555408	0,6933	-0,347942	0,5221974
Factor 7	0,2562125	0,2193052	1,3601021	0,2435	-0,175766	0,6881906
Factor 8	0,1999656	0,2223187	0,807328	0,3689	-0,237948	0,6378794
Factor 9	-0,004833	0,2277282	0,0004504	0,9831	-0,453402	0,4437361
Factor 10	-0,984686	0,2297887	17,540961	<.0001	-1,437314	-0,532058

It was concluded that EO contributed positively toward company's speed of growth. However, it was the companies' ability to engage on exotic projects and initiation that contributed the highest towards the speed of growth.

Thus the results of hypothesis 2 were as follows:

H2a: EO contributes positively to firm performance (growth in sales turnover).

H2b: EO contributes positively toward future growth in equity.

H2c: EO contributes positively toward companies' speed of growth.

4.8.3 Summary of Hypothesis testing

The hypotheses are restated, for convenience, in Table 29.

Table 29: Hypotheses test results

Research Hypotheses	Result
H1a: Higher levels of Management support have a positive relationship with EO.	Accepted
H1b: Greater Autonomy/work discretion have a positive relationship EO.	Rejected
H1c: Higher levels of Rewards/reinforcement have a positive relationship with EO	Accepted
H1d: Increased Time availability has a positive relationship with EO.	Rejected
H1e: Effective management of Organisational boundaries has a positive relationship with EO	Rejected
H2a: EO contributes positively to firm performance (growth in sales turnover)	Accepted
H2b: EO contributes positively toward future growth in equity	Accepted
H2c: EO contributes positively toward companies' speed of growth	Accepted

CHAPTER 5: CONCLUSIONS, IMPLICATIONS AND RECOMMENDATIONS

5.1 Introduction

The role of EO in organisations has been extensively researched but not much has been done to analyse EO at different levels in the organisation (Wales, 2015). The majority of studies have been homogenous in nature and thus a focus on a specific subset allowed for a more granular perspective on how various organisational antecedents influence EO and the impact of this on firm growth and performance.

This study provided the context to look at these phenomena from a recent graduate perspective. The study focused on a leading emerging market economy – South Africa. The western bias in the majority of studies on CE and EO, inhibits its generalisability (Urban, 2008).

This study placed a geographic lens on South Africa and thus allowed for a more nuanced view of CE, EO and firm performance. It provided the context for the inclusion of cross-cultural factors, which are often different in emerging markets (Urban, 2008). This study was thus particularly important in assisting organisations and managers to align their firms, based on the quantitative analysis of a new generation of workforce operating in the South African context.

5.2 Key findings

The results from the study provided a granular view of how graduates perceive the key organisational antecedents that enhance CE and firm and growth performance, delineating the most significant contributors. The relationship between these organisational antecedents and EO, and the impact on firm growth, performance, and future growth was examined.

The study found, without loss of generality, that management support for CE and rewards and reinforcement significantly influenced EO. It was established that EO had a strong influence on firm performance. However, other organisational antecedents (time availability, work discretion and organisational boundaries) had a low influence on EO.

The results from this study demonstrated that, graduates working for South African companies, placed a particular emphasis on innovativeness, risk taking and proactiveness of firms, which had a positive association with turnover, firm growth and performance, as well as future growth. This demonstrated the importance of an EO posture and strategy to enhance firm growth and performance.

The study exposed a subset of factors that had a particular impact. The generalised linear regression model highlighted first, that EO (factor 1), organisation boundaries employee requirements (factor 5), corporate entrepreneur support for innovative ideas (factor 2), corporate entrepreneur support for idea implementation (factor 6), and support for exotic projects (factor 10), all had a significant positive relationship with firm revenue. This reinforced the particular importance that recent graduates placed on management support for CE and the relationship between these and firm revenue.

Second, that EO (factor 1), organisation boundaries employee requirements (factor 5), and corporate entrepreneurial support for idea implementation (factor 6) contributed positively to company's future growth. This reinforced the particular emphasis that recent graduates placed on management support, particularly toward supporting new ideas. Third, that support for exotic projects (factor 10) and EO (factor 1) contributed significantly towards company speed of growth (acceleration in growth).

The following factors, reward for input (factor 4), time availability delivering under pressure (factor 7), time availability managing workload (factor 8), and corporate entrepreneurial risk takers (factor 9) were found to be not significant in the generalised regression model.

A key element of what drives EO is management support for CE. This was a recurring output from the analysis, which revealed the particular emphasis that recent graduates placed on management support for their innovations and ideas and the ability to support the implementation thereof. This reflects the critical role graduates could play in enhancing CE, if provided with the requisite management support.

5.3 Implications and recommendations

This study began with reflecting on the rapidly evolving economic environment and the ability to construct strategies that drive and accelerate growth (Covin & Miles, 1999; Drucker, 2013; Kuratko, 2009a). This study allowed for the analysis of recent graduates' perspectives on the organisational antecedents that enhance EO and contribute to firm and growth performance. The results demonstrate that firms should position their internal and external strategy to align with these distinct factors.

The role of managers is articulated in the literature review (Bhardwaj et al., 2007; Holt et al., 2007; Hornsby et al., 2009; Hornsby et al., 2002) and demonstrates the view, from graduates, that managers play an integral role in driving a culture of EO and thus growing the organisation. This study found that recent graduates working in South Africa place a particular emphasis on rewards and reinforcement, which has a positive influence on sales growth within a firm. In addition, recent graduates want to get involved in new projects to accelerate growth. This is considered the most significant enabler to accelerating the speed of growth. Firms that want to embed CE as a strategic enabler should create the context for recent graduates to get involved in new projects. This includes the ability to get involved in small experimental projects.

While this study was unique, in that it had a particular focus on recent graduates working for firms in South Africa, it did provide the basis on which to compare the outcomes with other studies.

Burgess (2013) specifically analysed the organisational antecedents that contribute to EO among middle managers working in the hotel industry in the United Kingdom. The study found that middle managers in the hotel industry place a particular emphasis on management support for CE and the lack thereof is seen as a significant disabler for them to act entrepreneurially.

A key differentiator was a particular emphasis on work discretion and a focus on a flat organisational structure. This was seen as an important enabler for middle managers to act entrepreneurially; however, the impact of work discretion was not considered statistically significant by graduates in South Africa. The study, of graduates in South Africa, showed a more significant relationship between rewards and reinforcement, and support for new projects, which were not identified as critical amongst middle managers in the hotel industry in the UK (Burgess, 2013)

Hornsby et al., 2002) analysed the organisational antecedents that contribute to CE among 761 middle managers in the United States and Canada. Their study found that management support was the most significant contribution to CE in the sample.

(Hornsby et al., 2009) analysed the impact of organisational antecedents at different levels in a variety of organisations. Their study analysed 458 managers in various levels, with the view to contrast the impact of these organisational antecedents at these different levels, and was conducted across an array of sectors in the US.

Their study found a more significant positive relationship between managerial support and CE, in higher levels of management. In addition, work discretion had a more significant positive relationship at higher levels in the organisation. These two factors were the most significant contributors to CE in the sampled firms. The outcomes further reinforce the importance of the role of management in enhancing CE, and provide a granular view of the levels of management and the differentiating impact of these antecedents at these different management levels.

Petzer, De Meyer, Svensson, and de Villiers-Scheepers (2012) analysed the impact of organisational antecedents on entrepreneurial intensity. Entrepreneurial intensity was defined as a measure of innovativeness, risk taking, and proactiveness in the sampled firms. Their study analysed the responses of 146 senior managers working for ICT companies in South Africa. This study allowed the contrast of the view of senior managers in the same country context, and also found that management support had the most statistically significant relationship with entrepreneurial intensity. This was followed by work discretion, and rewards and reinforcement; however, the study found no statistically significant relationship between organisational antecedents and organisational boundaries and time availability.

Urban and Oosthuizen (2009) analysed the impact of organisational antecedents on CE in the mining industry in South Africa. The study surveyed 103 individuals, across management levels, and found that management and leadership support for new ideas had a statistically significant relationship with EO. It also found a statistically significant relationship between rewards and reinforcement, and EO.

This study reinforces the recurring finding that demonstrates the significance placed on management support as the most critical enabler of CE, regardless of country context or level within the organisation. It demonstrates the specific emphasis of rewards and reinforcement on studies conducted in South Africa. This provides the base for companies to design adequate internal strategies that would enhance their level of CE.

Population trends reflect that 58.13 percent of South Africans are under the age of 29 (Stats SA, 2016). This shows that young people, under the age of 30, will serve as the dominant demographic, in the workforce in South Africa, over the next 15 years. This study was thus particularly relevant as it aligns the changing external environment, which compels companies to become more entrepreneurial, with the perspective of a new generation of workforce that will be primarily responsible for driving this change. It is critical that CE is embedded across all levels of the organisation (Holt et al., 2007) and thus a lens on recent

graduates allows for organisations to embed the organisational antecedents that enhance CE at this level.

This has specific application to how firms are set up, the ability to attract and retain talent, as well as the ability to align organisational culture with the aspirations of graduates entering the workplace. It obliges firms to craft a CE culture with an appreciation of the perspectives of recent graduates.

Companies that are able to create, stimulate, and enable an organisational culture that drives a culture of EO will be able to enhance firm growth and performance.

5.4 Suggestions for further research

This study lays the basis for gaining a graduate perspective of CE and the organisational antecedents that stimulate EO, firm growth, and performance. Further research could explore whether a CE posture serves as an enabler for talent attraction and retention. This would enable better positioning of firms' human capital strategies to enhance their attractiveness in the market.

A key differentiator was the specific emphasis on rewards and reinforcement in studies conducted in South Africa. Rewards and reinforcement were not highlighted as key enablers in studies from a developed market context. Further studies should explore the impact of rewards and reinforcement in other emerging market contexts, along with drivers for the particular emphasis on rewards and reinforcement. This will allow for comparisons among similar emerging market economies.

The sample population focused on South Africa. Further studies could explore comparative emerging markets to test similarities and/or differences. This study focused specifically on recent graduates. A follow up study could look at graduates from other emerging markets.

This study highlights the importance of management support as well as support for new projects as key enabler for CE. Further studies could explore the modalities of implementing management practices that are aligned with a new generation of workforce.

This study has reflected that different countries and management levels result in different factors that contribute to EO and firm growth and performance. The limited amount of research in this area make follow up research particularly relevant and important, so as to provide firms with a better contextual appreciation of the modalities of different markets and levels within the firm.

5.5 Conclusion

The rapidly evolving global environment has resulted in increased pressure on firms to drive growth and performance (Drucker, 2013; Kuratko, 2009b; Kuratko, Hornsby, & Hayton, 2015). Firms have to find new and innovative ways to understand and appreciate this new context and to respond to it adequately. An integral element is the structure of organisations and the mindset of employees to react effectively to this new economic reality. The role of CE is thus crucial to enhance the competiveness and agility of firms.

The ability of firms to respond to the external shifts varies by country and management level (Burgess, 2013; Hornsby, et al., 2009; Urban, 2008). This study confirms the view of previous studies that different countries and regions have different contextual factors that make it necessary to understand and appreciate the nuances of these markets.

This study is ground-breaking in that it provides a lens on recent graduates in an emerging market – South Africa. A number of studies have focused on developed markets and at upper and middle management in firms. These results, focusing on recent graduates, thus allow deeper understanding into a specific geographic and demographic grouping wherein not much research has been undertaken.

Insights from recent graduates provide firms operating in South Africa with a better understanding and appreciation of the contextual nuances that will enhance their specific CE posture. This enhances their attraction and retention strategies toward the graduate market.

The study identified the relationship between organisational antecedents and EO, and looked at the relationship between EO and firm growth and performance. In a low growth economic environment, strategies that contribute to enhancing growth are particularly relevant as they provide competitive advantage for firms. Internal factors that could contribute to growth and performance fall within the locus of control of management teams and thus provide managers with the immediate opportunity to realign their strategies with the mind-set of recent graduates.

A number of key observations have emerged from this study. The study found that recent graduates in South Africa place a particular emphasis on management support for innovative ideas and new projects and want to be involved in innovative projects. It also found that recent graduates place an emphasis on reward for contributing to new projects.

The demographic focus of this study makes it particularly important to firms operating in South Africa, as 58.13 percent of South Africans are under the age of 29 (Stats SA, 2016). Firms operating in South Africa will thus have to create the requisite enabling context to retain and engage a younger workforce. In addition, firms have to develop the right internal context to enhance CE and firm growth and performance.

The population trend in South Africa will result in an increased number of new entrants into the workplace. Firms have to understand and appreciate this new context in order to remain future fit.

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APPENDIX A

Actual Research Instrument

Who I am

My name is Abdullah Verachia, I am conducting research for the purpose of completing my Master in management with specialisation in Entrepreneurship and New Venture Creation at Wits Business School

What I am doing

I am conducting research on Building organisations for the future: Corporate Entrepreneurship and Innovation. The role of organisational antecedents in driving entrepreneurial orientation and financial performance: A graduate perspective.

Confidentiality

Any study records that identify you will be kept confidential to the extent possible by law. The records from your participation may be reviewed by people responsible for making sure that research is done properly, including my academic supervisor/s. (All of these people are required to keep your identity confidential.)

All study records will be destroyed after the completion and marking of my thesis

Risks/discomforts

At the present time, I do not see any risks in your participation. The risks associated with participation in this study are no greater than those encountered in daily life.

Benefits

There are no immediate benefits to you from participating in this study. However, this study will be extremely helpful to us in understanding how companies operating in South Africa can create an entrepreneurial culture to drive corporate entrepreneurship and innovation.

Who to contact if you have been harmed or have any concerns

This research has been approved by the Wits Business School. If you have any complaints about ethical aspects of the research or feel that you have been harmed in any way by participating in this study, please contact the Research Office Manager at the Wits Business School, Mmabatho Leeuw (Mmabatho.leeuw@wits.ac.za).

If you have concerns or questions about the research you may contact my academic research supervisor, Professor Boris Urban (Boris.Urban@wits.ac.za).

CONSENT

I hereby agree to participate in research on corporate entrepreneurship. I understand that I am participating freely and without being forced in any way to do so. I also understand that I can stop participating at any point should I not want to continue and that this decision will not in any way affect me negatively.

I understand that this is a research project whose purpose is not necessarily to benefit me personally in the immediate or short term.

I understand that my participation will remain confidential.

Section A: Firm Details

1. "Please indicate the firm's employee numbers"

1. Less than 5	2. 5-10	3. 11-50	4. 51-100	5. More than 100

2. "Please indicate the firm's age"

1. Less than 3 months	2. 3-42 months	3. 5-10 years	4. 11-20 years	5. More than 20 years

3. "Please indicate growth in sales turnover on previous 12 months"

1. less than - 6%	2. - 5 - 0%	3. 1- 9 %	4. 10 -19 %	5. more than 20 %

4. "Please indicate growth compared to industry sector on previous 12 months"

1. less than - 6%	2. - 5 - 0%	3. 1- 9 %	4. 10 -19 %	5. more than 20 %

5. "Please predict growth in sales turnover on next 12 months"

1. less than - 6%	2. - 5 - 0%	3. 1- 9 %	4. 10 -19 %	5. more than 20 %

6. "Please indicate growth in employee numbers on previous12 months"

1. less than - 6%	2. - 5 - 0%	3. 1- 9 %	4. 10 -19 %	5. more than 20 %

7. "Please predict growth in employee numbers on next 12 months"

1. less than - 6%	2. - 5 - 0%	3. 1- 9 %	4. 10 -19 %	5. more than 20 %

8. "Please indicate growth in equity on previous12 months"

1. less than - 6%	2. - 5 - 0%	3. 1- 9 %	4. 10 -19 %	5. more than 20 %

9. "Please predict growth in equity on <u>next</u> 12 months"

1. less than - 6%	2. - 5 - 0%	3. 1- 9 %	4. 10 -19 %	5. more than 20 %

	"Growth Orientation"	
"Growth is not necessarily our top objective. Long-term survival may be at least as important"	1 2 3 4 5 6 7 8 9 10	"It is generally known throughout the firm that growth is our top objective"
"It is generally known throughout the firm that steady and sure growth is the best way to expand"	1 2 3 4 5 6 7 8 9 10	"It is generally known throughout the firm that our intention is to grow as big and as fast as possible"

4. "Please indicate your industry"

Section B: CE Climate Instrument

	Questions	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
		1	2	3	4	5
Section 1: "Management Support for Corporate Entrepreneurship"						
1	"My organisation is quick to use improved methods"					
2	"My organisation is quick to use improved methods that are developed by workers"					
3	"In my organisation, 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	"A promotion usually follows from 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 on projects" are allowed to make decisions without going through elaborate justification and approvals procedures"					
8	"Senior management 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 rewards and compensation beyond the standard reward system for their ideas and efforts"					
12	"There are several options within the organisation for individuals to get financial support for their innovative projects and ideas"					
13	"People are often encouraged to take calculated risks with ideas around here"					
14	"Individual risk takers are often recognized for their willingness to champion new projects, whether eventually successful or not"					
15	"The term "risk taker" is considered a positive attribute for people in my work area"					
16	"The organisation supports many small and experimental projects, realizing that some will undoubtedly fail"					
17	"An employee with a good idea is often					

	Questions	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
		1	2	3	4	5
	given free time to develop that idea"					
18	"There is considerable desire among people in the organisation for generating new ideas without regard for crossing departmental or functional boundaries"					
19	"People are encouraged to talk to employees in other departments of this organisation about ideas for new projects"					
	Section 2: "Work Discretion"					
20	"I feel that I am my own boss and do not have to double check all of my decisions with someone else"					
21	"Harsh criticism and punishment result from mistakes made on the job"					
22	"The organisation provides the chance to be creative and try my own methods of doing the job"					
23	"The organisation provides the freedom to use my own judgement"					
24	"This organisation provides the chance to do something that makes use of my abilities"					
25	"I have the freedom to decide what I do on my job"					
26	"It is basically my own responsibility to decide how my job gets done"					
27	"I almost always get to decide what I do on my job"					
28	"I have much autonomy on my job and am left on my own to do my own work"					
29	"I seldom have to follow the same work methods or steps for doing my major tasks from day to day"					
	Section 3: "Rewards/Reinforcement"					
30	"My manager helps me get my work done by removing obstacles and roadblocks"					
31	"The rewards I receive are dependent upon my innovation on the job"					
32	"My supervisor will increase my job responsibilities if I am performing well in my job"					
33	"My supervisor will give me special recognition if my work performance is especially good"					
34	"My manager would tell his/her boss if my work was outstanding"					
35	"There is a lot of challenge in my job"					
	Section 4: "Time Availability"					
36	"During the past three months, my work load kept me from spending time on developing					

	Questions	Strongly Disagree	Disagree	Not Sure	Agree	Strongly Agree
		1	2	3	4	5
	new ideas”					
37	“I always seem to have plenty of time to get everything done”					
38	“I have just the right amount of time and work load to do everything well”					
39	“My job is structured so that I have very little time to think about wider organisational problems”					
40	“I feel that I am always working with time constraints on my job”					
41	“My co-workers and I always find time for long term problem solving”					
Section 5: “Organisational Boundaries”						
42	“In the past three months, I have always followed standard operating procedures or practices to do my major tasks”					
43	“There are many written rules and procedures that exist for doing my major tasks”					
44	“On my job I have no doubt of what is expected of me”					
45	“There is little uncertainty in my job”					
46	“During the past year, my immediate supervisor discussed my work performance with me frequently”					
47	“My job description clearly specifies the standards of performance on which my job is evaluated”					
48	“I clearly know what level of work performance is expected from me in terms of amount, quality and timelines of output”					

Section C: Entrepreneurial Orientation

"Please circle the numbers in the following scales which best describe the orientation of your business unit. Circle number "1" if the statement on the left hand side of the scale best describes your reaction to the item. Circle number "7" if the statement on your right hand side of the scale best describes your reaction to the item. Circle numbers "2" through "6" depending upon your best estimate of an intermediate position."

49. "In general, the top managers of my business unit favour…"								
"A strong emphasis on the marketing of tried and true products or services"	1	2	3	4	5	6	7	"A strong emphasis on R&D, technological leadership and innovation"
50. "How many new lines of products or services has your business unit marketed during the past three years?"								
51aa. "No new lines of product or services"	1	2	3	4	5	6	7	"Very many new lines of products or services"
51bb. "Changes in product or service lines have been mostly of a minor nature"	1	2	3	4	5	6	7	"Changes in product or service lines have usually been quite dramatic"
52. "In dealing with its competitors, my business unit…"								
53a. "Typically responds to actions which competitors initiate"	1	2	3	4	5	6	7	"Typically initiates actions to which competitors then respond"
53b. "Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc."	1	2	3	4	5	6	7	"Is very often the first business to, introduce new products/services, administrative techniques, operating technologies, etc."
53c. "Typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture"	1	2	3	4	5	6	7	"Typically adopts a very competitive, "undo-the-competitors" posture"
54. "In general, the top managers of my business unit have…"								
"A strong proclivity for low risk projects (with normal and certain rates of return)"	1	2	3	4	5	6	7	"A strong proclivity for high risk projects (with chances of very high returns)"
55. "In general, the top managers of my business unit believe that…"								
"Owing to the nature of the environment, it is best to explore it gradually via cautious, incremental behaviour"	1	2	3	4	5	6	7	"Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives"
56. "When confronted with decision making situations involving uncertainty, my business unit…"								

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

APPENDIX B

Descriptive Statistics

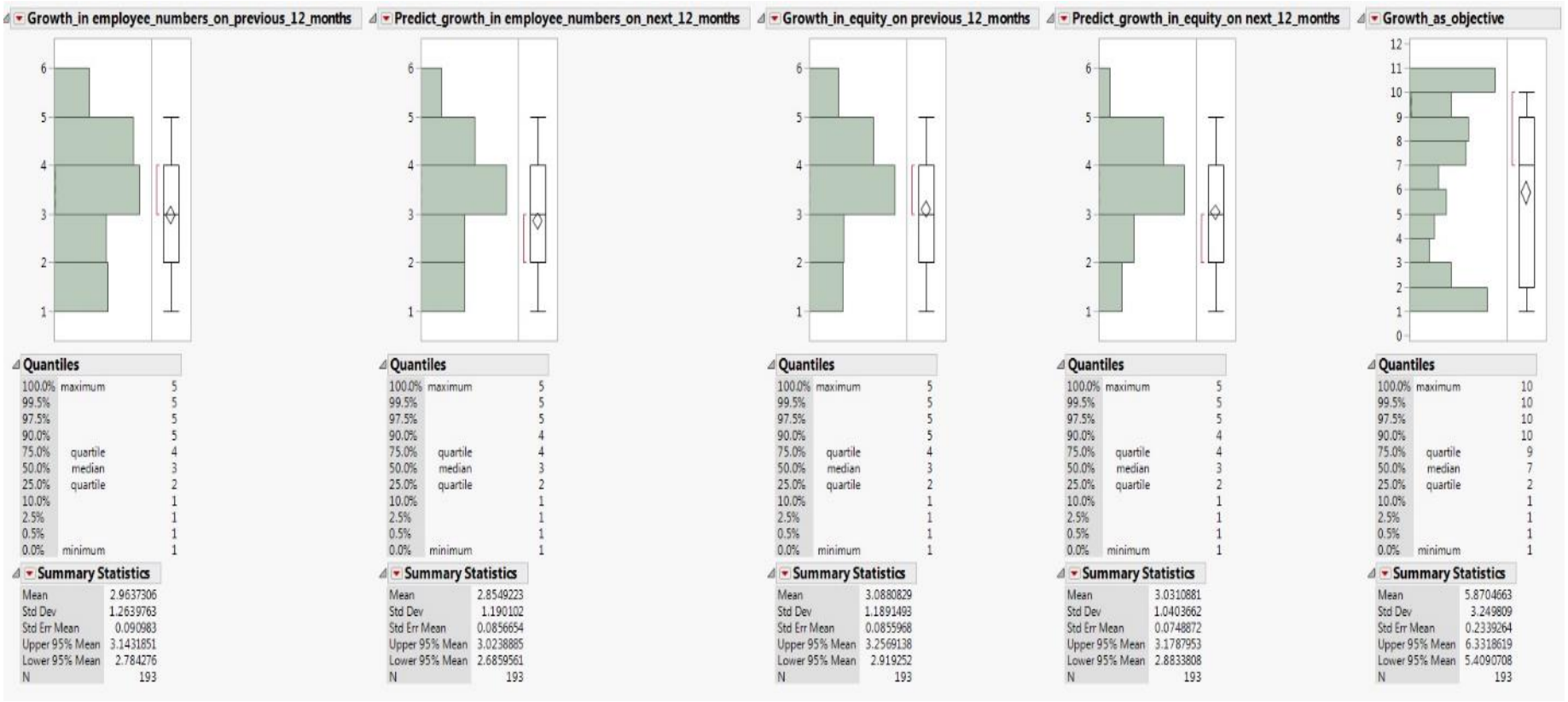
	N	Mean	Std. Deviation
S1 MCE My organization is quick to use improved methods	193	3,687	,9562
S1 MCE My organization is quick to use improved methods that are developed by workers	193	3,741	,9359
S1 MCE In my organization, developing one's own ideas is encouraged for the improvement of the corporation	193	3,938	,8938
S1 MCE Upper management is aware and very receptive to my ideas and suggestions	193	3,782	,8735
S1 MCE A promotion usually follows from the development of new and innovative ideas	192	3,250	,9648
S1 MCE Those employees who come up with innovative ideas on their own often receive management encouragement for their activities	193	3,834	,8380
S1 MCE Many top managers have been known for their experience with the innovation process	193	3,506	,9598
S1 MCE Money is often available to get new project ideas off the ground	193	3,443	1,0424
S1 MCE Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts	193	3,501	1,0365
S1 MCE There are several options within the organization for individuals to get financial support for their innovative projects and ideas	193	3,425	1,0224
S1 MCE People are often encouraged to take calculated risks with ideas around here	192	3,533	,9418
S1 MCE People are encouraged to talk to employees in other departments of this organization about ideas for new projects	193	3,894	,8027

	N	Mean	Std. Deviation
S5 OB In the past three months, I have always followed standard operating procedures or practices to do my major tasks	193	3,572	,9615
S5 OB There are many written rules and procedures that exist for doing my major tasks	193	3,458	1,0498
S5 OB On my job I have no doubt of what is expected of me	192	3,843	,9470
S5 OB There is little uncertainty in my job	191	3,237	1,1143
S5 OB During the past year, my immediate supervisor discussed my work performance with me frequently	193	3,624	1,0894
S5 OB My job description clearly specifies the standards of performance on which my job is evaluated	193	3,613	1,0424
S5 OB I clearly know what level of work performance is expected from me in terms of amount, quality and timelines of output	192	3,893	,8742
Valid N (listwise)	190		

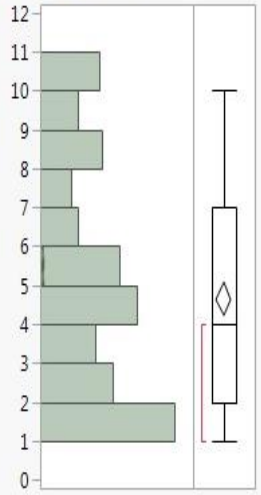
	N	Mean
S3 RR My manager helps me get my work done by removing obstacles and roadblocks	193	3,694
S3 RR The rewards I receive are dependent upon my innovation on the job	193	3,130
S3 RR My supervisor will increase my job responsibilities if I am performing well in my job	192	3,843
S3 RR My supervisor will give me special recognition if my work performance is especially good	192	3,782
S3 RR My manager would tell his/her boss if my work was outstanding	193	3,786

APPENDIX C

1. Variable Distribution



Speed_of_growth



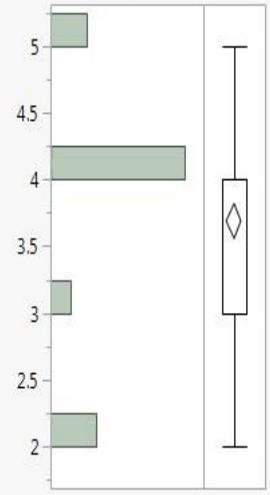
Quantiles

100.0%	maximum	10
99.5%		10
97.5%		10
90.0%		9
75.0%	quartile	7
50.0%	median	4
25.0%	quartile	2
10.0%		1
2.5%		1
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	4.6528497
Std Dev	2.9683582
Std Err Mean	0.2136671
Upper 95% Mean	5.074286
Lower 95% Mean	4.2314135
N	193

S1_MCE_My_organization_is_quick_to_use_improved_methods



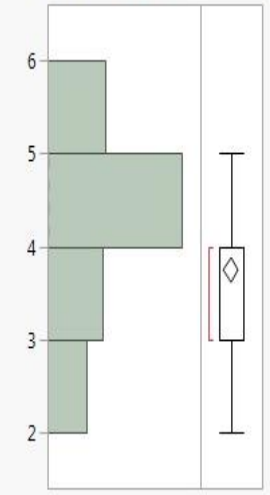
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	4
25.0%	quartile	3
10.0%		2
2.5%		2
0.5%		2
0.0%	minimum	2

Summary Statistics

Mean	3.6914508
Std Dev	0.956603
Std Err Mean	0.0688578
Upper 95% Mean	3.8272656
Lower 95% Mean	3.5556359
N	193

S1_MCE_My_organization_is_quick_to_use_improved_methods_that_are_developed_by_workers



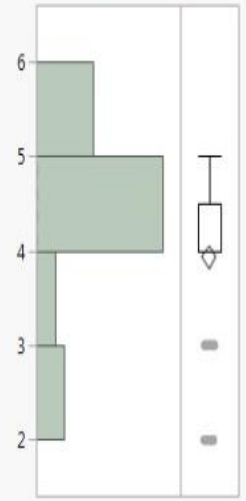
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	4
25.0%	quartile	3
10.0%		2
2.5%		2
0.5%		2
0.0%	minimum	2

Summary Statistics

Mean	3.7409326
Std Dev	0.9327564
Std Err Mean	0.0671413
Upper 95% Mean	3.8733619
Lower 95% Mean	3.6085034
N	193

S1_MCE_In_my_organization_developing_one's_own_ideas_is_encouraged_for_the_improvement_of_the_corporation



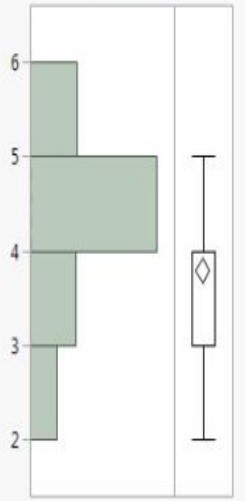
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4.5
50.0%	median	4
25.0%	quartile	4
10.0%		2
2.5%		2
0.5%		2
0.0%	minimum	2

Summary Statistics

Mean	3.9274611
Std Dev	0.8984491
Std Err Mean	0.0646718
Upper 95% Mean	4.0550195
Lower 95% Mean	3.7999028
N	193

S1_MCE_Upper_management_is_aware_and_very_receptive_to_my_ideas_and_suggestions



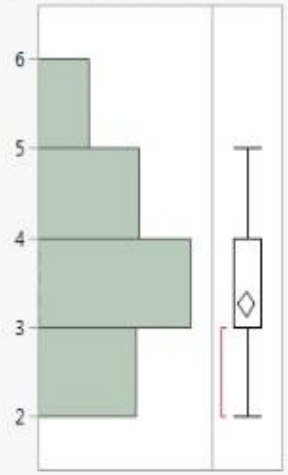
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	4
25.0%	quartile	3
10.0%		2
2.5%		2
0.5%		2
0.0%	minimum	2

Summary Statistics

Mean	3.7875648
Std Dev	0.8788314
Std Err Mean	0.0632597
Upper 95% Mean	3.9123379
Lower 95% Mean	3.6627916
N	193

S1_MCE_A_promotion_usually_follows_from_the_development_of_new_and_innovative_ideas



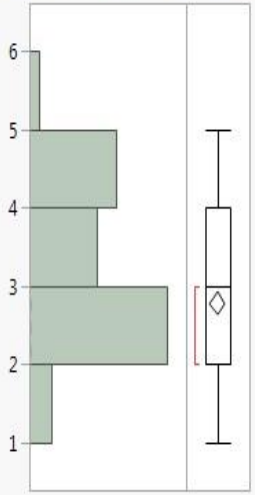
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	3
25.0%	quartile	3
10.0%		2
2.5%		2
0.5%		2
0.0%	minimum	2

Summary Statistics

Mean	3.2552083
Std Dev	0.9667097
Std Err Mean	0.0697663
Upper 95% Mean	3.3928196
Lower 95% Mean	3.117597
N	192

S2_WD_Harsh_criticism_and_punishment_result_from_mistakes_made_on_the_job



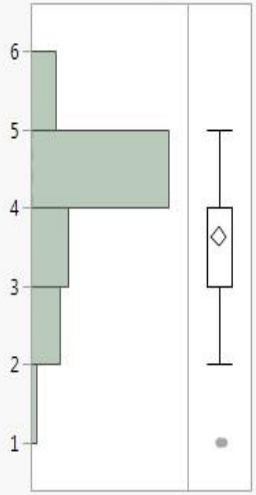
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		4
75.0%	quartile	4
50.0%	median	3
25.0%	quartile	2
10.0%		2
2.5%		1
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	2.7720207
Std Dev	1.0205414
Std Err Mean	0.0734602
Upper 95% Mean	2.9169133
Lower 95% Mean	2.6271281
N	193

S2_WD_The_organization_provides_the_chance_to_be_creative_and_try_my_own_methods_of_doing_the_job



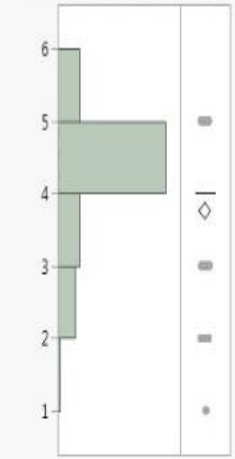
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	4
25.0%	quartile	3
10.0%		2
2.5%		1.825
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	3.6302083
Std Dev	0.9058992
Std Err Mean	0.0653776
Upper 95% Mean	3.7591632
Lower 95% Mean	3.5012534
N	192

S2_WD_The_organization_provides_the_freedom_to_use_my_own_judgement



Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	4
25.0%	quartile	4
10.0%		2
2.5%		2
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	3.761658
Std Dev	0.8386381
Std Err Mean	0.0603665
Upper 95% Mean	3.8807247
Lower 95% Mean	3.6425914
N	193

S2_WD_This_organization_provides_the_chance_to_do_something_that_makes_use_of_my_abilities

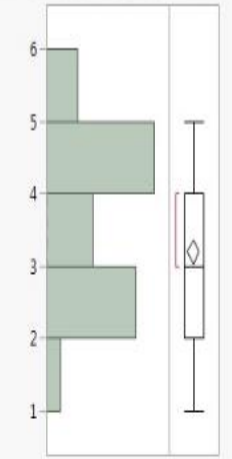
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	4
25.0%	quartile	4
10.0%		3
2.5%		2
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	3.859375
Std Dev	0.7833447
Std Err Mean	0.056533
Upper 95% Mean	3.9708843
Lower 95% Mean	3.7478657
N	192

S2_WD_I_have_the_freedom_to_decide_what_I_do_on_my_job



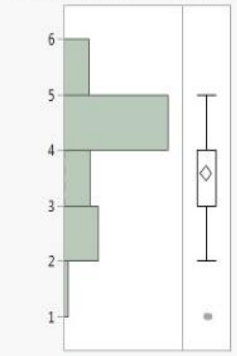
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	3
25.0%	quartile	2
10.0%		2
2.5%		1
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	3.1865285
Std Dev	1.1302769
Std Err Mean	0.0813591
Upper 95% Mean	3.3470009
Lower 95% Mean	3.0260561
N	193

S2_WD_It_is_basically_my_own_responsibility_to_decide_how_my_job_gets_done



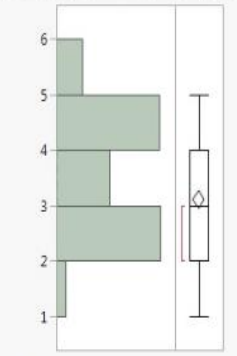
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	4
25.0%	quartile	3
10.0%		2
2.5%		1.85
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	3.5803109
Std Dev	0.9921703
Std Err Mean	0.071418
Upper 95% Mean	3.7211755
Lower 95% Mean	3.4394463
N	193

S2_WD_I_almost_always_get_to_decide_what_I_do_on_my_job



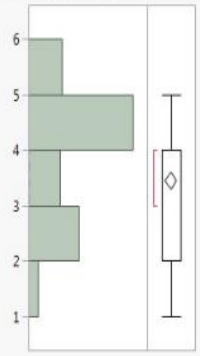
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		4
75.0%	quartile	4
50.0%	median	3
25.0%	quartile	2
10.0%		2
2.5%		1
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	3.1088083
Std Dev	1.081846
Std Err Mean	0.077873
Upper 95% Mean	3.2624047
Lower 95% Mean	2.9552119
N	193

S2_WD_I_have_much_autonomy_on_my_job_and_am_left_on_my_own_to_do_my_own_work



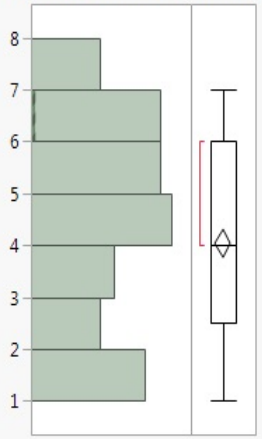
Quantiles

100.0%	maximum	5
99.5%		5
97.5%		5
90.0%		5
75.0%	quartile	4
50.0%	median	4
25.0%	quartile	2
10.0%		2
2.5%		1
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	3.4479167
Std Dev	1.1103491
Std Err Mean	0.0801325
Upper 95% Mean	3.6059751
Lower 95% Mean	3.2898583
N	192

EO_When_confronted_with_decision_making_situations_involving_uncertainty_my_business_unit_A_Cautious_B_Aggresive



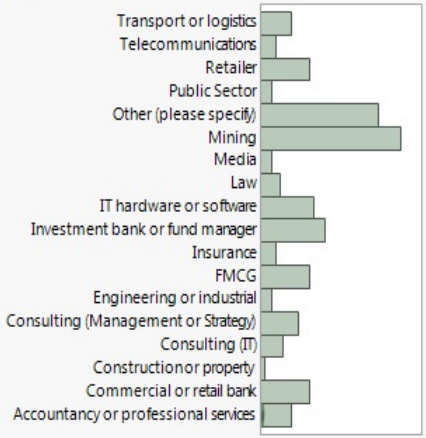
Quantiles

100.0%	maximum	7
99.5%		7
97.5%		7
90.0%		6
75.0%	quartile	6
50.0%	median	4
25.0%	quartile	2.5
10.0%		1
2.5%		1
0.5%		1
0.0%	minimum	1

Summary Statistics

Mean	4.0414508
Std Dev	1.9034897
Std Err Mean	0.1370162
Upper 95% Mean	4.311701
Lower 95% Mean	3.7712005
N	193

Industry



Frequencies

Level	Count	Prob
Accountancy or professional services	8	0.04145
Commercial or retail bank	13	0.06736
Construction or property	1	0.00518
Consulting (IT)	6	0.03109
Consulting (Management or Strategy)	10	0.05181
Engineering or industrial	3	0.01554
FMCG	13	0.06736
Insurance	4	0.02073
Investment bank or fund manager	17	0.08808
IT hardware or software	14	0.07254
Law	5	0.02591
Media	3	0.01554
Mining	37	0.19171
Other (please specify)	31	0.16062
Public Sector	3	0.01554
Retailer	13	0.06736
Telecommunications	4	0.02073
Transport or logistics	8	0.04145
Total	193	1.00000

N Missing 0

18 Levels

2. Variable Cronbach Alpha Test

Column	α
“Number of employees”	0.92
“Firms’ age”	0.92
“Growth in sales turnover last 12 months”	0.91
“Growth compared to industry over last 12 months”	0.91
“Predict growth in sales turnover on next 12 months”	0.91
“Growth in employee numbers on previous 12 months”	0.91
“Predict growth in employee numbers on next 12 months”	0.91
“Growth in equity on previous 12 months”	0.91
“Predict growth in equity on next 12 months”	0.91
“Growth as objective”	0.92
“Speed of growth”	0.92
“My organisation is quick to use improved methods”	0.91
“My organisation is quick to use improved methods that are developed by workers”	0.91
“In my organisation developing one's own ideas is encouraged for the improvement of the corporation”	0.91

Column	α
“Upper management is aware and very receptive to my ideas and suggestions”	0.91
“A promotion usually follows from the development of new and innovative ideas”	0.92
“Those employees who come up with innovative ideas on their own often receive management encouragement for their activities”	0.92
“The "doers on projects" are allowed to make decisions without going through elaborate justification and approvals procedures”	0.92
“Senior management encourage innovators to bend rules and rigid procedures in order to keep promising ideas on track”	0.92
“Many top managers have been known for their experience with the innovation process”	0.91
“Money is often available to get new project ideas off the ground”	0.92
“Individuals with successful innovative projects receive additional rewards and compensation beyond the standard reward system for their ideas and efforts”	0.91
“There are several options within the organisation for individuals to get financial support for their innovative projects and ideas”	0.92
“People are often encouraged to take calculated risks with ideas around here”	0.91
“Individual risk takers are often recognized for their willingness to champion new projects whether eventually successful or not”	0.91
“The term "risk taker" is considered a positive attribute for people in my work area”	0.92
“The organisation supports many small and experimental projects realizing that some will undoubtedly fail”	0.92
“An employee with a good idea is often given free time to develop that idea”	0.92

Column	α
“There is considerable desire among people in the organisation for generating new ideas without regard for crossing departmental or functional boundaries”	0.92
“People are encouraged to talk to employees in other departments of this organisation about ideas for new projects”	0.92
“I feel that I am my own boss and do not have to double check all of my decisions with someone else”	0.92
“Harsh criticism and punishment result from mistakes made on the job”	0.92
“The organisation provides the chance to be creative and try my own methods of doing the job”	0.91
“The organisation provides the freedom to use my own judgement”	0.91
“This organisation provides the chance to do something that makes use of my abilities”	0.92
“I have the freedom to decide what I do on my job”	0.91
“It is basically my own responsibility to decide how my job gets done”	0.92
“I almost always get to decide what I do on my job”	0.92
“I have much autonomy on my job and am left on my own to do my own work”	0.92
“I seldom have to follow the same work methods or steps for doing my major tasks from day to day”	0.92
“My manager helps me get my work done by removing obstacles and roadblocks”	0.92
“The rewards I receive are dependent upon my innovation on the job”	0.91
“My supervisor will increase my job responsibilities if I am performing well in my job”	0.92

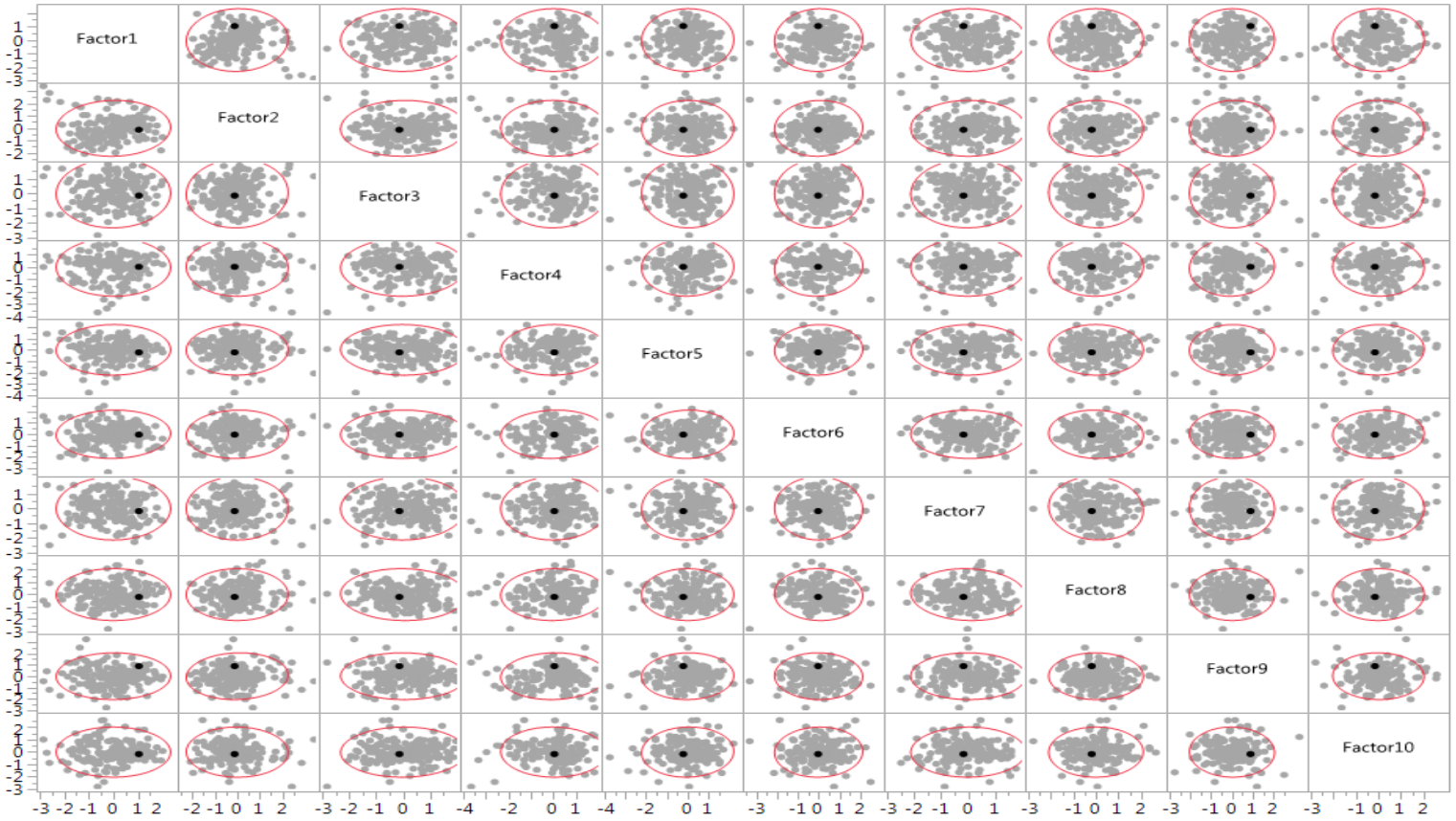
Column	α
“My supervisor will give me special recognition if my work performance is especially good”	0.92
“My manager would tell his/her boss if my work was outstanding”	0.92
“There is a lot of challenge in my job”	0.92
“During the past three months my work load kept me from spending time on developing new ideas”	0.92
“I always seem to have plenty of time to get everything done”	0.92
“I have just the right amount of time and work load to do everything well”	0.92
“My job is structured so that I have very little time to think about wider organisational problems”	0.92
“I feel that I am always working with time constraints on my job”	0.92
“My co-workers and I always find time for long term problem solving	0.91
“In the past three months I have always followed standard operating procedures or practices to do my major tasks”	0.92
“There are many written rules and procedures that exist for doing my major tasks”	0.92
“On my job I have no doubt of what is expected of me”	0.92
“There is little uncertainty in my job”	0.92
“During the past year my immediate supervisor discussed my work performance with me frequently”	0.92
“My job description clearly specifies the standards of performance on which my job is evaluated”	0.92

Column	α
“I clearly know what level of work performance is expected from me in terms of amount quality and timelines of output”	0.92
“In general the top managers of my business unit favour:” A “A strong emphasis on the marketing of tried and true products or services” B ”A strong emphasis on R&D technological leadership and innovation”	0.91
“How many new lines of products or services has your business unit marketed during the past three years?” A “No new lines of product or service” B “Very many lines of product or service”	0.91
“How many new lines of products or services has your business unit marketed during the past three years?” A “Changes in services or products have been minor” B “Changes in product or service have been dramatic”	0.91
“In dealing with its competitors my business unit:” A “Typically react to actions which competitors initiate” B “Typically initiates actions to which competitors respond”	0.91
“In dealing with its competitors my business unit:” A “Very seldom to the first business” B “Often the first business”	0.91
“In dealing with its competitors my business unit:” A “Avoid competitive clash” B “Very competitive”	0.91
“In general the top managers of my business unit have:” A “Low risk projects” B “High risk projects”	0.91

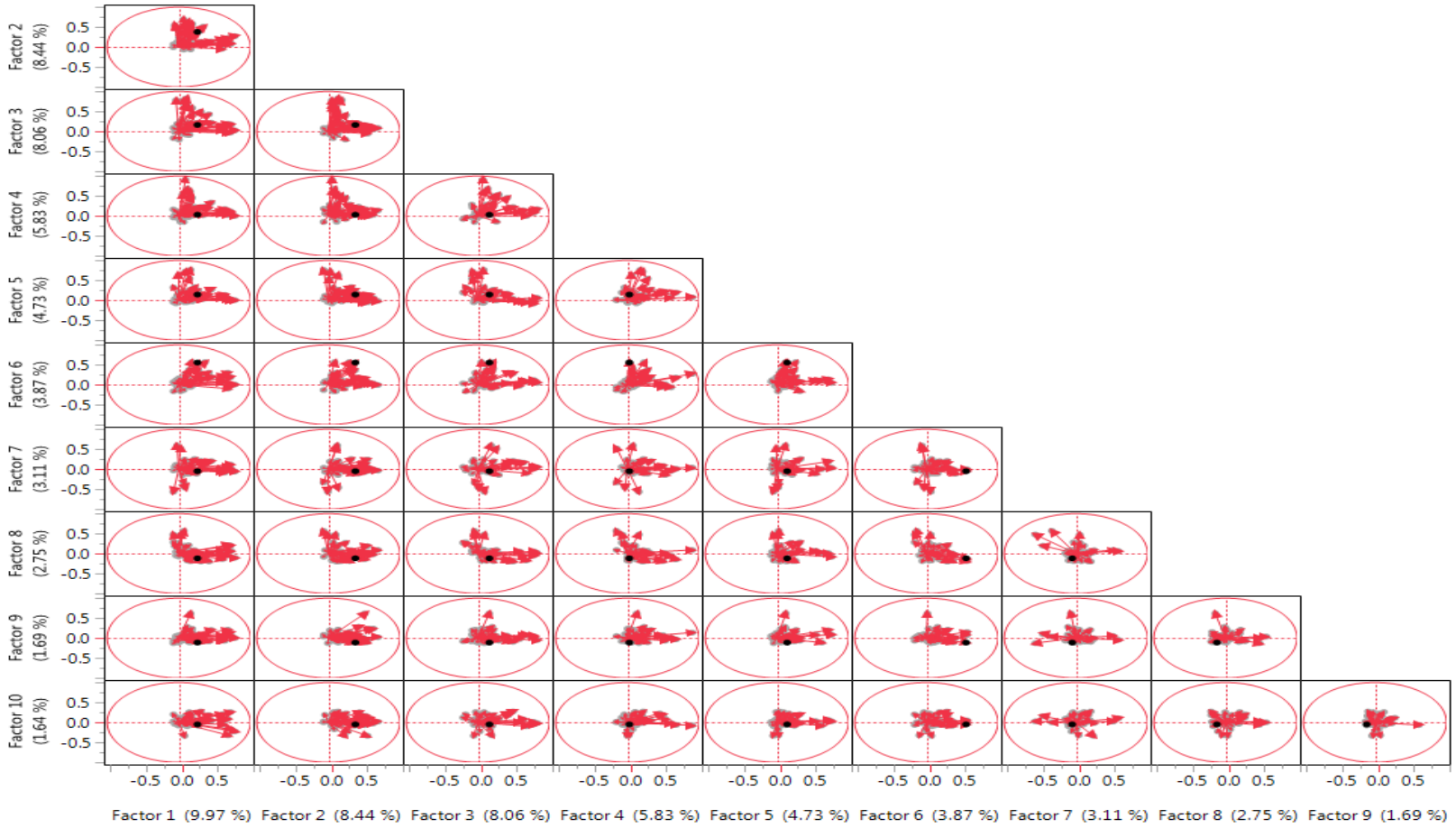
Column	α
“In general the top managers of my business unit believe that:” A “Explore gradually” B “Bold”	0.91
“When confronted with decision making situations involving uncertainty my business unit:” A “Cautious” B “Aggressive”	0.91

APPENDIX D

1. Factor Correlation Plot



2. Factor Biplots



3. Factor Loadings

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
S1_MCE_1	0.27	0.37	0.21	0.05	0.27	0.37	0.02	-0.06	0.01	-0.11
S1_MCE_2	0.24	0.33	0.22	0.05	0.12	0.43	0.03	-0.12	0.01	-0.02
S1_MCE_3	0.35	0.08	0.20	0.27	0.09	0.60	-0.07	0.02	0.06	-0.05
S1_MCE_4	0.26	0.37	0.17	0.07	0.14	0.55	-0.09	-0.09	-0.12	0.01
S1_MCE_5	0.06	0.55	-0.04	-0.01	-0.04	0.03	-0.13	0.13	-0.06	-0.27
S1_MCE_6	0.18	0.30	0.04	0.08	0.23	0.57	-0.14	-0.07	0.13	0.05
S1_MCE_7	-0.03	0.38	0.20	0.03	0.00	0.18	-0.09	0.01	0.10	0.00
S1_MCE_8	-0.04	0.48	0.07	0.03	-0.08	0.08	-0.02	0.08	0.02	-0.01
S1_MCE_9	0.33	0.50	0.06	0.01	0.06	0.17	-0.07	0.11	-0.08	-0.04
S1_MCE_10	0.16	0.52	0.05	0.15	0.08	0.08	0.02	-0.04	-0.10	0.17
S1_MCE_11	0.26	0.42	0.12	0.15	0.16	0.17	0.02	-0.02	0.04	0.00
S1_MCE_12	0.06	0.69	0.08	0.15	0.02	-0.03	0.11	0.01	0.01	-0.01
S1_MCE_13	0.17	0.53	0.14	0.01	0.11	0.05	0.07	0.02	0.21	0.07
S1_MCE_14	0.17	0.50	0.16	0.14	0.10	0.05	-0.05	-0.07	0.61	-0.05

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
S1_MCE_15	0.14	0.63	0.06	0.00	0.07	0.03	-0.02	-0.03	0.25	0.03
S1_MCE_16	0.14	0.40	0.08	0.09	0.10	0.00	0.05	0.00	0.03	0.32
S1_MCE_17	-0.03	0.55	-0.04	0.05	-0.02	0.04	0.10	0.13	-0.15	0.03
S1_MCE_18	0.12	0.40	0.16	0.26	0.03	0.20	0.10	-0.05	0.31	0.12
S1_MCE_19	0.15	0.30	0.13	0.26	0.08	0.36	-0.16	-0.09	-0.10	0.08
S2_WD_1	0.12	0.04	0.68	0.01	-0.06	0.11	-0.07	-0.13	0.12	-0.04
S2_WD_2	0.04	0.11	-0.06	-0.08	0.04	-0.20	0.36	0.20	-0.07	-0.11
S2_WD_3	0.41	0.07	0.40	0.27	0.18	0.30	-0.19	0.13	-0.09	0.18
S2_WD_4	0.29	0.12	0.48	0.25	0.02	0.31	-0.21	0.17	-0.08	0.27
S2_WD_5	0.20	0.18	0.36	0.48	0.18	0.06	-0.12	0.05	0.08	0.29
S2_WD_6	0.11	0.13	0.83	0.18	0.07	0.03	0.00	0.04	-0.05	0.05
S2_WD_7	0.08	0.10	0.63	0.15	-0.01	0.10	-0.10	0.14	0.04	0.06
S2_WD_8	0.06	0.20	0.78	0.10	-0.02	0.10	0.04	0.06	0.02	-0.06
S2_WD_9	-0.04	0.05	0.75	0.11	-0.10	0.08	0.02	0.04	0.05	0.03
S2_WD_10	0.18	0.07	0.57	0.10	-0.01	-0.02	0.01	0.20	-0.04	-0.03
S3_RR_1	0.16	0.16	0.21	0.52	0.19	-0.04	-0.18	0.03	0.10	0.20

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
S3_RR_2	0.44	0.14	0.20	0.36	0.26	0.19	-0.06	0.21	0.17	-0.04
S3_RR_3	0.19	0.09	0.12	0.53	0.06	-0.02	-0.01	-0.08	0.04	0.05
S3_RR_4	0.12	0.10	0.03	0.85	0.00	0.24	0.02	0.09	0.02	-0.09
S3_RR_5	0.11	0.08	0.13	0.70	0.17	0.15	-0.14	-0.05	-0.01	-0.10
S3_RR_6	0.00	0.08	0.20	0.49	0.18	0.02	0.14	-0.03	-0.03	0.05
S4_TA_1	-0.07	-0.02	0.07	0.18	-0.06	0.05	0.67	-0.32	-0.15	0.03
S4_TA_2	0.03	0.12	0.25	-0.15	0.01	-0.07	-0.11	0.51	0.03	-0.02
S4_TA_3	-0.03	0.12	0.16	0.08	0.11	-0.07	-0.15	0.55	-0.06	0.04
S4_TA_4	0.08	-0.08	-0.07	-0.15	0.02	-0.12	0.69	-0.04	0.04	-0.03
S4_TA_5	0.08	0.12	-0.02	0.01	0.00	0.02	0.42	-0.26	0.13	0.11
S4_TA_6	0.22	0.33	0.09	0.20	0.34	0.05	-0.05	0.23	-0.04	-0.02
S5_OB_1	-0.01	0.24	-0.20	-0.10	0.24	0.02	0.21	0.13	-0.10	0.07
S5_OB_2	-0.08	0.05	-0.18	-0.04	0.30	-0.15	0.26	0.08	-0.05	0.21
S5_OB_3	0.02	0.13	0.06	0.05	0.66	0.10	-0.08	-0.10	-0.22	-0.02
S5_OB_4	0.15	0.14	-0.05	-0.03	0.28	0.05	0.12	0.08	-0.21	-0.05
S5_OB_5	0.15	-0.01	-0.11	0.33	0.52	0.13	0.14	-0.03	0.12	0.03

Variable	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Factor 7	Factor 8	Factor 9	Factor 10
S5_OB_6	0.09	0.00	-0.10	0.26	0.71	0.15	-0.04	0.22	0.22	0.01
S5_OB_7	0.14	-0.08	0.02	0.22	0.69	0.08	-0.03	0.02	0.14	0.08
EO_1	0.62	0.05	0.07	0.12	0.12	0.21	-0.06	-0.03	-0.08	0.00
EO_2	0.60	0.19	0.12	0.13	0.02	0.08	-0.06	-0.05	-0.01	0.29
EO_3	0.60	0.07	0.12	0.22	0.10	0.11	0.01	-0.09	-0.04	0.10
EO_4	0.66	0.14	-0.06	0.08	0.06	0.32	0.17	0.18	0.15	0.03
EO_5	0.66	0.05	-0.06	0.12	-0.01	0.20	0.16	0.27	0.05	0.15
EO_6	0.58	-0.06	0.04	0.09	0.09	0.11	0.14	0.03	0.07	0.17
EO_7	0.74	0.09	0.17	0.07	0.04	-0.02	0.04	0.00	0.02	-0.15
EO_8	0.71	0.22	0.22	-0.01	0.07	-0.12	-0.09	-0.06	0.08	-0.25
EO_9	0.79	0.28	0.04	-0.01	0.02	0.00	-0.09	-0.15	0.00	-0.13

APPENDIX E

Consistency Matrix

Analysing the level of organisational antecedents that drive CE in the private sector in South Africa and the impact on EO, firm growth and performance.					
Research Aims	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Analyse and compare the internal organisational CE climate among companies operating in South Africa Identify the impact of organisational antecedents on Entrepreneurial orientation	Antoncic & Hisrich (2001) Covin & Slevin (1991) Kuratko et al. (2014) Hornsby et al. (2013).	H1a Management support contributes positively to entrepreneurial orientation H1b Autonomy/work discretion contributes positively to entrepreneurial orientation H1c Rewards/reinforcement contributes positively to entrepreneurial orientation H1d Time availability contributes positively to entrepreneurial orientation H1e Organisational boundaries contributes positively to entrepreneurial orientation	Administering the CEAI, EO and performance scales on a sample of 400 individuals in South African companies The organisational antecedents that drive a corporate entrepreneurial culture will be measured by analysing – Management support (1 – 19) – Autonomy/work discretion (20 – 29) – Rewards/reinforcement (30 – 35) – Time availability (36 – 41) – Organisational boundaries (42 – 48)	Median Frequencies Standard deviation Co-efficient of variance	Cronbach's alpha Correlation analysis Principal component analysis Frequency distribution Factor analysis Multivariate tests

Analysing the level of organisational antecedents that drive CE in the private sector in South Africa and the impact on EO, firm growth and performance.					
Research Aims	**Literature Review**	**Hypotheses or Propositions or Research questions**	**Source of data**	**Type of data**	**Analysis**
Identify the impact of Entrepreneurial Orientation on firm growth and performance Make recommendations for how South African companies can utilise the internal makeup to increase EO and impact firm growth and performance	Scheepers (2007). Kuratko et al. (2001). Phan, et al. (2009). Morris & Sexton (1996).	H2a: EO contributes positively to firm performance (growth in sales turnover). H2b: EO contributes positively toward future growth in equity. H2c: EO contributes positively towards companies' speed of growth.	Entrepreneurial Orientation scale which measures innovativeness, risk taking, and proactiveness in the sample group	Ordinal data Secondary data	Cronbach's alpha Correlation analysis Principal component analysis Frequency distribution Factor analysis Multivariate tests