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The influence of cognitive styles on entrepreneurs' risk perception of strategic growth in South Africa

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The influence of cognitive styles on entrepreneurs' risk perception of strategic growth in South Africa

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A research report submitted to the Faculty of Commerce, Law and Management, University of the Witwatersrand, in partial fulfilment of the requirements for the degree of Master of Business Administration

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ABSTRACT

Since 1994, South Africa's democracy has striven to reverse the adverse effects of apartheid on the achievement of socio-economic equity. The promotion of entrepreneurship has been highlighted as one avenue of generating the economic growth and job creation vital to promoting this equity.

In this context, South Africa needs entrepreneurs who can perceive inherent risks and opportunities in order to grow successful and sustainable enterprises. The study sought to ascertain the influence of cognitive styles on entrepreneurs' risk perception of strategic growth.

Entrepreneurs in the manufacturing industry were surveyed randomly and their cognitive styles and risk perception measured. Demographic information about these entrepreneurs was also collected and analysed with the use of various statistical tests such as hypothesis testing, the Chi-square test of association and Fisher's exact test.

The study found that cognitive styles influence strategic growth because analytic entrepreneurs proved to have higher annual revenues than intuitive entrepreneurs. On the other hand, intuitive entrepreneurs proved more likely to own a business than analytic ones.

The study highlighted the need to incorporate cognition into the study of entrepreneurship. The different cognitive styles each serve their role in the various stages of growing a successful and sustainable business.

Intuition, which incorporates an impulsive, ideas-driven approach, leads to the birth of new businesses; analysis, which incorporates a rational, objective and detail-oriented approach, is necessary for the growth of sustainable businesses.

Entrepreneurs should learn to incorporate the appropriate decision-making style according to the demands of their situation. Such behaviour will aid their success.

DECLARATION

I, Elizabeth Landa, 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 Business Administration in the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination in this or any other university.

……

Elizabeth Mukami Landa

Signed at ……

On the …….. day of …… 2014.

DEDICATION

I dedicate this study to all aspiring entrepreneurs and business owners.

Greatness resides sometimes in simplicity. The science of entrepreneurship, of growing successful and sustainable businesses, is founded on factual, detail-oriented, objective decision making. On the other hand, the art of entrepreneurship is centred on impulsive, ideas and possibility-driven pro-activeness.

It is by harmonising the art and science of entrepreneurship that one can grow a successful and sustainable business or organisation.

ACKNOWLEDGEMENTS

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Thanks to my husband for his unflinching persistence which pushed me past the finishing line. Appreciation to my parents, family and friends for their support and belief in me.

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CHAPTER 1: INTRODUCTION

1.1. Purpose of the study

The purpose of this study was to ascertain the influence of cognitive styles on entrepreneurs' risk perception of strategic growth in South Africa.

The process of any and all entrepreneurial action is the result of an individual's decision to take action, which is deeply rooted in that individual's personality and cognition (Carland, Carland and Stewart, 1996). However, individuals differ in the way they perceive and assimilate information, which amounts to different styles or practices of thinking, referred to as "cognitive styles". These styles are central to understanding the decision-making process (Hunt, Krzystofiak, Meindl and Yousry, 1989).

The study sought to establish the extent to which cognitive styles influence an entrepreneur's risk perception of strategic growth in South Africa (Barbosa, Gerhardt and Kickul, 2007).

1.2. Context of the study

Since 1994 South Africa has been faced with the dual challenges of re-integration into global markets as part of the global economy and positioning itself to realise the high expectations of its populace regarding a successful transition towards a more democratic order (Al Berry, Cassim, Kesper, Rajaratnam and van Seventer, 2002). These authors further point out that to achieve these objectives; South Africa's small- medium- and micro-enterprise (SMME) sector has been actively promoted since 1995.

For the past 15 years, the South African government has pursued economic growth, employment and equity, which is a vision for 2014 (Republic of South Africa, 2004). Vehicles used to achieve this vision include Broad-Based Black Economic Empowerment (B-BEE) and other vehicles such as the National Small Business Development Promotion Programme, through which the National Small Business Act was introduced in 1996 to provide financial and other support to SMMEs.

If South Africa is to emulate leading world economies as an emerging market, entrepreneurship has to be acknowledged as a major economic development driver through economic empowerment (Cuervo, 2005), growth (Audretsch and Thurik, 2000), innovation (Kropp, Lindsay and Shoham, 2006), skills development and job creation (Al Berry et al., 2002).

Trevor Manuel, during his tenure as Minister of Trade and Industry, emphasised the above in stating that SMMEs in South Africa represent an important vehicle for addressing the challenges of job creation, economic growth and equity (Republic of South Africa, 1995).

According to the US Small Business Administration, over 50% of small businesses fail in their first year and 95% fail within the first five years (Titus, 2009). The organisation for economic co-operation and development (OECD), cited in Parker (2001), indicates that in all the countries for which data is available, some 40 to 50% of all new firms cease to exist within three to four years of their establishment.

As depicted in Figure 1, in South Africa, despite observed rapid growth of new business registrations between 2000 and 2008, the incidence of insolvency and liquidations of SMMEs in particular has been on an upward trend from 2006 to 2008, which indicates their vulnerability (Blottnitz, 2009).

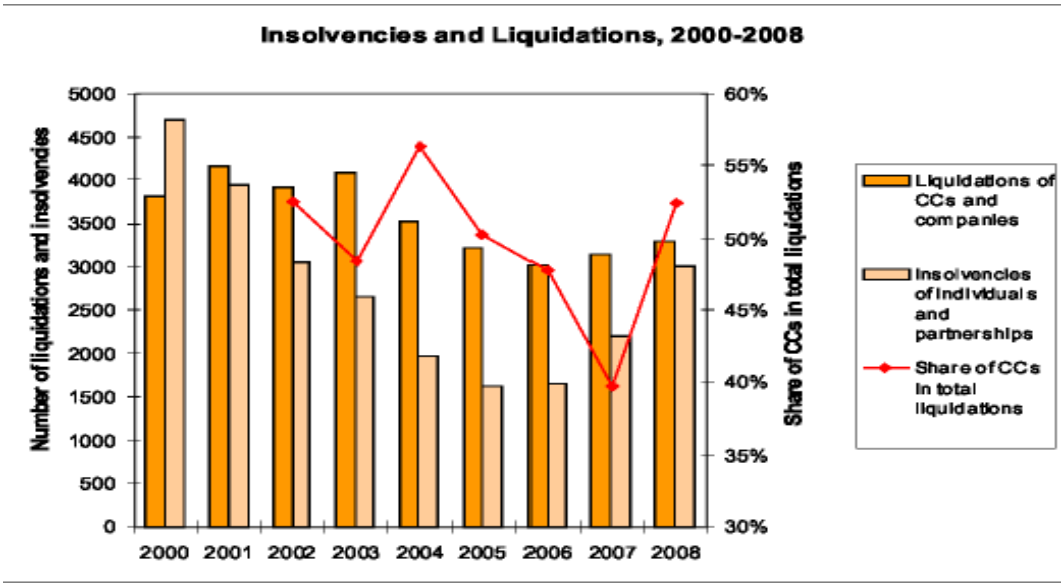

Figure 1: Insolvencies and Liquidations 2000 – 2008 (Blottnitz, 2009)

Similarly, the Global Entrepreneurship Monitor reports that a longitudinal comparison of South Africa's performance indicates an increase in early stage entrepreneurial activity (conception to 3.5 years) from 2006 to 2008 (Herrington, Kew and Kew, 2008), as shown in Figure 2 below. However, the low prevalence rates of both new (2.1%) and established (2.3%) firms indicate a high failure rate for start-ups.

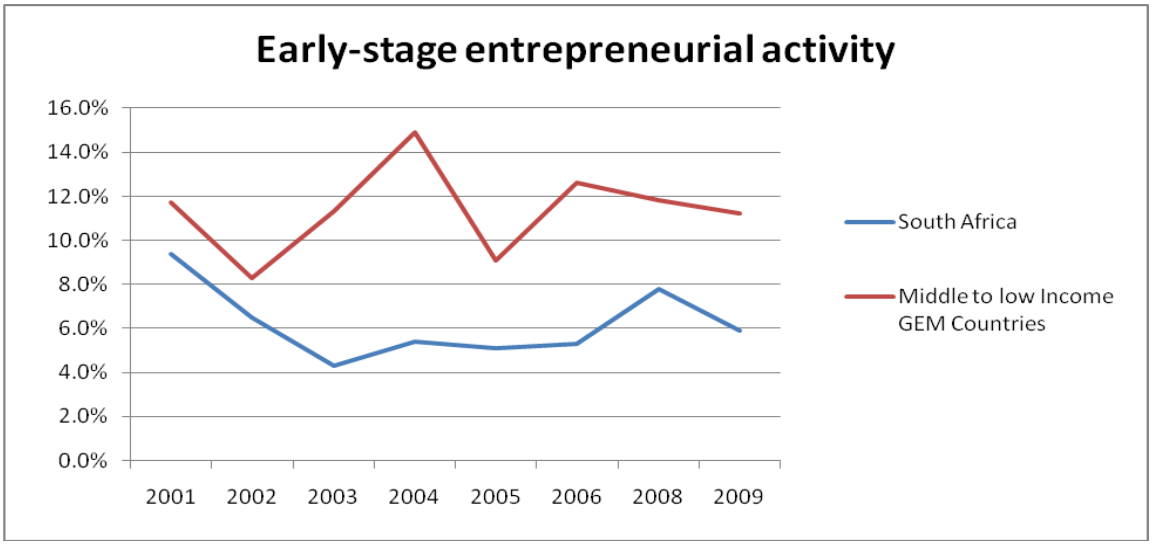

Figure 2: South Africa's early-stage entrepreneurial rate (Blottnitz, 2009)

Challenging the myth that small business promote job creation, their low survival rate actually leads to a higher job destruction rate because, once lost, these jobs are less likely to reappear (Davis, Haltiwanger and Schuh, 1996).This challenge highlights the crucial need to ensure the success and survival of SMMEs in achieving the set objectives of economic growth, job creation and income redistribution through entrepreneurship (Herrington et al., 2008).

For this reason, an innovative integrated approach to small enterprise development is needed to support and grow sustainable businesses in South Africa. This approach must include a mix of elements not previously emphasised (SBP business environment specialists, 2009). These elements include both cognitive and social factors that will provide a better understanding of why some people choose to become entrepreneurs and why some entrepreneurs are more successful than others (Baron, 2004).

Because entrepreneurs often face situations of information overload, uncertainty, novelty and time pressure, they are more susceptible than non-entrepreneurs to cognitive biases such as counter-factual thinking, affect infusion, planning fallacy, self-serving bias and overconfidence, among other things (Baron, 1998). Bringing the role of these cognitive processes in entrepreneurship to the fore offers a unique approach to understanding how entrepreneurs and managers process and organise information in guiding strategic decision making (Baron, 2000; Sadler-Smith, 2004).

The effort to understand why entrepreneurs make different strategic choices when faced with identical information would benefit from additional insight generated by research on cognitive styles, as differences in strategic decisions are due to different interpretations as influenced by the entrepreneur’s cognitive style of processing and analysing information (Nutt, 1986; Hunt et al., 1989; Gallen, 1997; Hough, 2005).

1.3. Problem statement

1.3.1. Main problem

Ascertain the influence of cognitive styles on entrepreneurs' risk perception of strategic growth opportunities.

1.4. Significance of the study

The study fills a gap in that, studies on entrepreneurial research have failed to conclusively identify the most salient features of an entrepreneur as an important facet in the understanding of entrepreneurship. This failure is because non standardised testing instruments, operational definitions and sampling frames of entrepreneurs and entrepreneurship have resulted in diverse and disparate results. This impedes the development of a coherent theory of entrepreneurship (Begley and Boyd, 1987; Bull and Willard, 1993; Stewart, 1999).

Venture capitalists, angel investors and experienced successful entrepreneurs when asked to identify the most important determinant of new venture performance will undoubtedly answer “the entrepreneur” (Herron and Robinson Jr, 1993). Such heuristics and biases have limited the focus of entrepreneurial studies to an entrepreneur’s traits and personality characteristics. The entrepreneur has been identified as the unit level of analysis, but neither the effect of the external and social environment nor the cognition processes within the entrepreneur that aid or deter success during the process of entrepreneurship have been identified (Shaver and Scott, 1991).

Therefore, in conceptualising a multidisciplinary view of the entrepreneur and the entrepreneurship process, a psychological approach to venture creation that focuses on cognitive processes is needed. This approach should aim to understand the person in whose mind decisions involving opportunity identification and evaluation, venture creation and growth become possible and

who has the motivation to persist until success is achieved (Cooper, 1993; Carland et al., 1996; Mitchell, Busenitz, Lant, McDougall, Morse and Smith, 2002; Bouckenooghe, Cools, Vanderheyden and Van den Broeck, 2005).

Research in the domain of entrepreneurial cognition should rightly inform why individuals faced with identical information make different choices (Nutt, 1986) and why some people and not others are able to pursue entrepreneurial opportunities (Mitchell et al., 2002). The present study will contribute towards the development of entrepreneurial cognition research by examining the influence of cognitive styles on entrepreneurs' risk perception of strategic growth opportunities.

The importance of understanding risk perception lies in its role as the link between opportunity recognition and action (Weber and Milliman, 1997), necessitating entrepreneurship.

The study will provide guidance to aspiring entrepreneurship students in the acquisition of practices and skills needed for successful new business ventures. Understanding the thinking patterns related to successful entrepreneurship will enable aspiring entrepreneurs to adapt their own thinking patterns accordingly by building onto their reference schema of perceiving risk (Mitchell, Busenitz, Bird, Gaglio, McMullen, Morse et al., 2007).

Conceivably, one can learn a great deal about oneself by understanding one's values and drives in addition to those that describe successful entrepreneurs (Cunningham and Lischeron, 1991a; Brandstätter, 1997).

The study will also provide guidance to practitioners and entrepreneurship schools in training the necessary skills critical to ensuring a successful and sustainable new venture growth and development (Baron, 2004). Just as leadership can be taught and learned, so can successful entrepreneurship.

Researchers will gain guidance that could aid them to contextualise the challenging weak general relationships between cognition and venture performance, a process that is relevant for understanding entrepreneurs and the entrepreneurship process (Brockhaus and Horwitz, 2002; Mitchell et al., 2002; Baron, 2004).

1.5. Delimitations of the study

Research on entrepreneurs should incorporate situational demands, as personality traits are both mediated and moderated by other variables such as motivation, experience, skills, social learning, external environment and strategy (Herron and Robinson Jr, 1993; Rauch and Frese, 2000). However, this study focuses only on the influence of cognitive styles on an entrepreneurs' risk perception of growth strategies. The study did not cover other related variables that may cause or affect similar influences.

The study sought to reveal any relationship and not to identify unique cognitive styles that characterise successful entrepreneurs. Thus correlation and not causality were evaluated.

1.6. Definition of terms

❖ SMMEs – Small, Medium and Micro Enterprises that generally employ fewer than 250 employees per firm (Republic of South Africa, 2008).

❖ BB-BEE – Broad-Based Black Economic Empowerment means the empowerment of all black people (Africans, Coloureds and Indians), including women, workers, youth, people with disabilities and people living in the rural areas, through diverse but integrated socio-economic strategies that include but are not limited to:

- Ownership, control and management of enterprises and productive assets
- Human resources and skills development
- Achieving equitable representation in all occupational categories and levels in the workforce
- Preferential procurement and
- Investment in enterprises that are owned and managed by black people (Republic of South Africa, 2003).

❖ OECD – Organisation for Economic Co-operation and Development, founded in 1961 and comprising 31 member countries – mainly the European community. In 2007 membership extended to developing countries, including South Africa (Organisation for Economic Co-operation and Development, 2010).

❖ GEM – the Global Entrepreneurship Monitor is a not-for-profit academic research consortium conducting the largest single study of entrepreneurial activity in the world, including South Africa (Global Entrepreneurship Monitor, 2010).

1.7. Assumptions

The following assumptions were made regarding this study:

❖ The total number of respondents would be sufficient to gain adequate data.

❖ The population would be literate, fluent in English and able to complete the questionnaires.

❖ The respondents would provide correct and truthful answers to the questions asked in the survey because of their acknowledgement of confidentiality.

❖ Some essential situational demands are common to all kinds of entrepreneurs (Brandstätter, 1997).

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

With regard to addressing the influence of cognitive styles on an entrepreneur's risk perception of strategic growth opportunities, the context of this study highlighted the crucial role of SMMEs in promoting economic growth and equity in a developing democratic economy such as South Africa. The need to ensure the success and sustainability of SMMEs is congruent to attaining the set objectives of economic development, job creation, empowerment and integration in South Africa.

This chapter will undertake a theoretical review of what defines an entrepreneur by contrasting the psychological and cognitive schools of entrepreneurship. What follows will focus on the influence of cognitive styles on an entrepreneur's risk perception of strategic growth opportunities in South Africa.

2.1.1. Entrepreneurs and Entrepreneurship

2.1.1.1. Historical review

The first meaning of the word "entrepreneur" is found in the French verb "entreprendre" in the 12th century, which means to "undertake" or do something with no economic connotation (Cunningham and Lischeron, 1991b; Paula, 1996). From the 14th century onwards, entrepreneurs were thought of as Frenchmen who undertook military expeditions. By 1700, the term had broadened to include contractors who undertook to build for the military: roads, bridges, harbours and the like (Cunningham and Lischeron, 1991b). It can then be summarised that from the 18th century onwards, the term acquired the additional connotation of undertaking (or founding) an adventure (or venture) with an element of risk-taking, creativity and innovation to grow the economy, in parallel with and as a by-product of industrialisation.

Throughout history, distinct themes have emerged in the economic literature that incorporates the many roles played by entrepreneurs. These roles include risk taking, uncertainty, innovation, ownership, decision making, profit gain, employment of resources and management (Hébert and Link, 1989).

An entrepreneur is therefore thought of as a person who has founded his or her own enterprise (Begley and Boyd, 1987). Webster's *Third New International Dictionary* defines an entrepreneur as one who organises, owns, manages and assumes the risks of an economic venture (Webster, 1961; Brockhaus, 1987) for the purposes of profitability and growth (Olson, 1987). This is the definition of an entrepreneur that was adopted for this study.

2.1.2. The entrepreneurial process

Varying perspectives of researchers and practitioners have resulted in a plethora of definitions of entrepreneurship, which incorporate the following themes:

- The process of creating value by bringing together a unique package of resources to exploit an opportunity (Morris and Sexton, 1996), which results in the creation of an organisation or new business venture (Carland et al., 1996).

- The process of creative destruction (Schumpeter, 1942) wherein existing resources are endowed with new wealth-producing capacity (Drucker, 1985) in satisfying a market deficiency or unmet need (Leibenstein, 1968; Kirzner, 1985).

- The perception of opportunities and the creation of organisations to pursue these opportunities (Bygrave and Hofer, 1991).

The phenomenon of entrepreneurship is also understood as residing within a conceptual space bounded by three dimensions: economic innovation, organisation creation and profit seeking in the market sector. These dimensions are the what, the how and the where of entrepreneurship (Hornaday, 1992).

The act of entrepreneurship, undertaken by entrepreneurs, is best seen as a process rather than an event stemming from attitudes, perceptions and aspirations influenced by a person's beliefs, values and environment or situation (Rwigema, Urban and Venter, 2008; Bosma and Levie, 2010).

2.2. Entrepreneurial traits and attitudes

The industrial and technological revolutions brought along with them a fundamental shift away from a managed towards an entrepreneurial economy (Audretsch and Thurik, 2000).

The success of people such as Michael Dell (Dell Corporation), Bill Gates (Microsoft), Ted Turner (CNN), Fred Smith (FedEx), Richard Branson (Virgin) and Eric Schmidt (Google) has endowed the entrepreneurial personality with a mythical status. The entrepreneur is deemed to have different abilities and traits from those of the general population, which amounts to an availability heuristic error of using easily remembered instances rather than actual data (Shaver, 1995).

This is the school of thought adopted by the psychological perspective of entrepreneurship. This psychological perspective postulates that entrepreneurs can be differentiated from non-entrepreneurs by virtue of their unique personality as characterised by their personal value system, risk-taking propensity and need for achievement. All of these are personality factors (Cunningham and Lischeron, 1991a).

This perception with its focus on personal psychological characteristics has been instrumental in developing an entrepreneurship theory that seeks to identify potential entrepreneurs; attributes that influence their behaviour; and processes and practices that contribute to their success or failure (Hornaday and Aboud, 1971; Begley and Boyd, 1987; Bull and Willard, 1993; Hansemark, 2003).

Several studies have revealed various psychological attributes prevalent among entrepreneurs, as follows: a need for achievement (nAch) (McClelland, 1961; Hornaday and Aboud, 1971; Ahmed, 1985); an internal locus of control (Ahmed, 1985; Duchesneau and Gartner, 1990); moderate risk-taking propensity (McClelland, 1961; BrockhausSr, 1980; Duchesneau and Gartner, 1990); tolerance of ambiguity; and a Type-A behaviour (Begley and Boyd, 1987).

These psychological attributes describe high achievers who compete with their own standards of excellence and continuously seek to improve their performance. These high achievers perceive themselves as being able to influence events in their lives and in control of their destiny. These high achievers are resilient and innovative in dealing with complex, ambiguous situations with little information in driving their ambition towards a set goal or objective (Begley and Boyd, 1987).

Renewed interest in entrepreneurial psychology led to the theory of the Big Five personality factors, which describe an entrepreneur as being extroverted, emotionally stable, agreeable, conscientious and open to experiences (Ciavarella, Buchholtz, Riordan, Gatewood and Stokes, 2004).

In conjunction with the Big Five, other traits used to characterise entrepreneurs include self-efficacy (Bandura, 1986), which refers to one's perceived ability to accomplish a certain level of performance. A proactive disposition (Becherer, 1999), resilience and persistence (Hornaday and Bunker, 1970) and innovativeness (Utsch, 2000) have also been found to strongly correlate with successful entrepreneurs.

The three key dimensions underlying entrepreneurial attitudes and behaviours are as follows:

- Innovativeness, which refers to the seeking of creative, unusual or novel solutions to problems or needs;

- Risk taking, which involves the willingness to commit significant resources to opportunities that have a reasonable chance of costly failure; and

- Proactivity, which is concerned with implementation – doing whatever is necessary (and assuming some responsibility) to bring an entrepreneurial concept to fruition (Morris and Sexton, 1996).

In a study on the proclivity for entrepreneurship, a comparison of entrepreneurs, small business owners and corporate managers reinforced the conceptualisation of the entrepreneur as an achieving, creative risk taker (Stewart, 1999).

Several studies (Brockhaus Sr, 1980; Brockhaus, 1987; Gartner, 1988; Hansemark, 2003) have, however, indicated that there are no significant differences between entrepreneurs and general business managers with regard to the above-mentioned distinguishing psychological attributes.

This indication corroborates the definition of an entrepreneur as adopted for this study as one who organises, owns, manages and assumes the risks of an economic venture (Webster, 1961; Brockhaus, 1987) for the purposes of profitability and growth (Olson, 1987) and has strategic decision-making ability.

The inclusion of a strategic decision-making role incorporates the synthetic definition of an entrepreneur as someone who specialises in taking responsibility for and making judgements that affect the location, form and use of resources for informing business growth (Hébert and Link, 1989; Duchesneau and Gartner, 1990).

2.3. A cognitive approach to entrepreneurship

As discussed above, entrepreneurial research from a psychological perspective has largely focused on the personal characteristics of entrepreneurs. So far, this approach has met with only modest success in uncovering differences between entrepreneurs and non-entrepreneurs and distinguishing successful from unsuccessful entrepreneurs (Begley, 1987; Begley and Boyd, 1987; Duchesneau and Gartner, 1990; Baron, 1998).

The context of this study highlighted the role of SMMEs in achieving South Africa's objectives of economic development and re-integration by promoting their growth and sustainability. For this reason, in trying to understand why some entrepreneurs are successful and not others (Baron, 1998), the focus will shift from a psychological to a cognitive perspective of entrepreneurship (Shaver and Scott, 1991).

Central to understanding the process of entrepreneurship is the person (entrepreneur) in whose mind the processes of opportunity recognition, evaluation and pursuit in the face of risk and uncertainty are made possible. The potential existence of these processes stems from the person's deep-seated beliefs and cognitive structures, which influence his or her attitudes, intentions and entrepreneurial actions (Shaver and Scott, 1991; Krueger Jr, 2007).

Entrepreneurial cognition is defined as the knowledge structures, whether heuristic or scripted, that entrepreneurs use to make assessments and decisions involving opportunity recognition, evaluation and venture creation and growth (Mitchell et al., 2007). This cognition posit that entrepreneurship concerns itself with distinctive ways of thinking and behaving, referred to as cognitive styles. These cognitive styles guide decision making and consistently influence behaviour or action (Rettig and Schulz, 1991; Cools and Van Den Broeck, 2006).

The stability and consistency of cognitive styles is supported in various psychological studies that present cognitive styles as stable preferences in modes of perception, organisation and conceptual categorisation of the external environment (Kagan, Moss and Sigel, 1963). The styles produce consistent behaviours across a wide variety of situations (Robertson, 1985) such as: job or task performance; career choice and communication (Hayes and Allinson, 1994); learning style; (Sadler-Smith, 2001) and strategic decision making (Gallen, 1997; Thunholm, 2004; Hough, 2005).

A study of the cognitive styles of owner-managers and directors of SMMEs supports the context-independence of cognitive styles. From the viewpoint of context-independence, owners and business managers are likely to bring their style consistency to bear across different tasks, situations and environments (Sadler-Smith, 2004).

Cognitive styles predispose individuals to particular behaviours irrespective of personality (Gul, 1984), as individuals with the same personality type (entrepreneurs) may use different cognitive styles in perceiving and interpreting information. In this way, such individuals arrive at different decisions and perform different actions. For this reason, cognitive styles might explain why some people are more successful entrepreneurs than others (Markman and Baron, 2003).

Cognitive style, defined as the way individuals perceive and process information that guides behaviour and decision making (Cools and Van Den Broeck, 2008), influences the way entrepreneurs analyse and perceive risk associated with strategic growth opportunities.

Entrepreneurs will conclude from their gathering and processing of information whether an opportunity is feasible or not and make assessments regarding its likelihood of success or failure (Acedo and Florin, 2007).

The cognitive style dimension of cognition has traditionally been conceptualised as a dichotomy in human thinking represented by two super-ordinate modes of intuition and analysis that reflect distinctive ways of processing information (Allinson and Hayes, 1996; Sadler-Smith, 2004).

Table 1 lists characteristics defining the two cognitive styles.

Table 1: Cognitive Styles (Allinson and Hayes, 1996; Sadler-Smith, 2004; Acedo and Florin, 2007; Cools and Van Den Broeck, 2008).

Analytics	Intuitives
Fact and detail oriented	Ideas and possibilities oriented
Rational	Feeling
Objective	Holistic
Sequential	Heuristic
Logical	Impulsive
Systematic	Flexible

The present study focused on the information processing and perception dimension of cognitive style, adopting the unitary framework of the Cognitive Style Index (CSI) (Allinson and Hayes, 1996; Sadler-Smith, 2004).

Olson (1985); Busenitz (1999) and Baron (2004) postulate that entrepreneurs who intuitively assess risks associated with opportunity evaluation, venture creation and growth perceive less risk and thus take the plunge. In contrast, depending on whether there is too much or too little information, analytic entrepreneurs will perceive more risk and lose out on their window of opportunity, consequently deterring growth.

2.4. The role of experience

Cognition research posits that entrepreneurs use mental frameworks known as “entrepreneurial cognitions” that are gained through prior experiences (Acedo and Florin, 2007). These serve as reference schemas that aid entrepreneurs to recognise opportunity through pattern recognition (Baron, 2006), information search and evaluation – whether analytic or heuristic (Baron, 2004) – and enactment (Mitchell et al., 2002).

Entrepreneurial capital made up of prior entrepreneurial experience, industry knowledge, managerial experience, education, business role models and entrepreneurial parents (Rwigema et al., 2008) coalesces through experience and socialisation to form entrepreneurial cognition (Acedo and Florin, 2007). This entrepreneurial cognition aids in opportunity identification, evaluation and decision making (Simon, Houghton and Aquino, 2000a).

In addition to their entrepreneurial cognition, entrepreneurs utilise heuristics and cognitive biases as influenced by past experiences to further simplify and quicken the decision-making processes that encourage venture growth and development (Schwenk, 1988; Janney and Dess, 2006; Acedo and Florin, 2007).

Entrepreneurial cognitions and cognitive biases have been found to significantly lower the perception of risk and promote enactment of entrepreneurial opportunities (Cooper, Woo William and Carolyn, 1988; Palich and Bagby, 1995;

Busenitz, 1999; Simon, Houghton and Aquino, 2000b; Baron, 2004). Consequently they will be controlled for this study.

2.5. Entrepreneurial risk perception

As early as 1700, Cantillion portrayed an entrepreneur as an individual who assumes risk for a firm and set risk taking as the earliest identified entrepreneurial characteristic (Carland et al., 1996). Ever since, risk taking has been a common theme running throughout entrepreneurship literature.

Entrepreneurship, the creation of new business ventures, is inherently accompanied by uncertainty and various forms of risk, such as risk of failure, career risk, financial loss, relationship risk and psychic well-being (Busenitz, 1999).

Despite the risks associated with new venture creation and growth, entrepreneurs have been found to perceive lower levels of risk, in that most (95%) believe that their ventures will succeed. This belief flies in the face of the empirical data, according to which over 50% of new ventures fail within the first five years (Simon et al., 2000b).

Thus, risk perception and not risk taking is critical to understanding entrepreneurs and the entrepreneurial process (Simon et al., 2000b).

Risk perception will be defined as the decision maker's evaluation of potential loss inherent within a particular decision context in association with its uncertainty and the perceived level of control over such uncertainty (Sitkin and Weingart, 1995; Forlani and Mullins, 2000; Acedo and Florin, 2007).

Risk perceptions are the driving force behind behaviour (Acedo and Florin, 2007); the question is not who an entrepreneur is but what he or she does, as individuals exhibiting the psychological profile and traits of an entrepreneur will not necessarily behave entrepreneurially (Gartner, 1988; Stewart, 1999), as

perceptions are more easily influenced by context than by an individual's characteristics (Acedo and Florin, 2007).

Cognitive styles have been found to be an important factor in the decision to adopt and assess risk (Henderson, 1980). Thus, risk perception serves to mediate the relationship between cognitive styles and strategic decision making associated with venture growth and performance, as cognitive styles directly influence risk perception, which, in turn, directly influences decisions associated with venture growth (Simon et al., 2000b).

As a result, a better understanding of risk perception and its role in strategic decision making has the potential to improve the quality of decisions made, so aiding the success and sustainability of venture growth and performance (Baron, 1998; Forlani and Mullins, 2000).

An individual's perception of risk can only be studied and understood within a specific decision context (Acedo and Florin, 2007). In this study, the decision context was on strategic growth opportunities for entrepreneurs in South Africa.

2.6. Strategic growth

For an organisation merely to retain its relative position, it must go through continuous growth and change to keep abreast in the race of innovation and competition (Ansoff, 1957).

Strategic growth through market penetration, market development, product development and diversification (Ansoff, 1957), incorporating innovation, serves to distinguish between entrepreneurial organisations and small businesses (Wickham, 2001).

As highlighted in the introduction, to contribute to the economic and democratic objectives of South Africa, SMMEs need to achieve sustainable and profitable growth.

Sustainable growth requires the key strategic objectives of increasing revenues without sacrificing profitability and customer satisfaction (Mascarenhas, Kumaraswamy, Day and Baveja, 2002).

Figure 3 illustrates the four basic growth strategies that can be adopted by a firm.

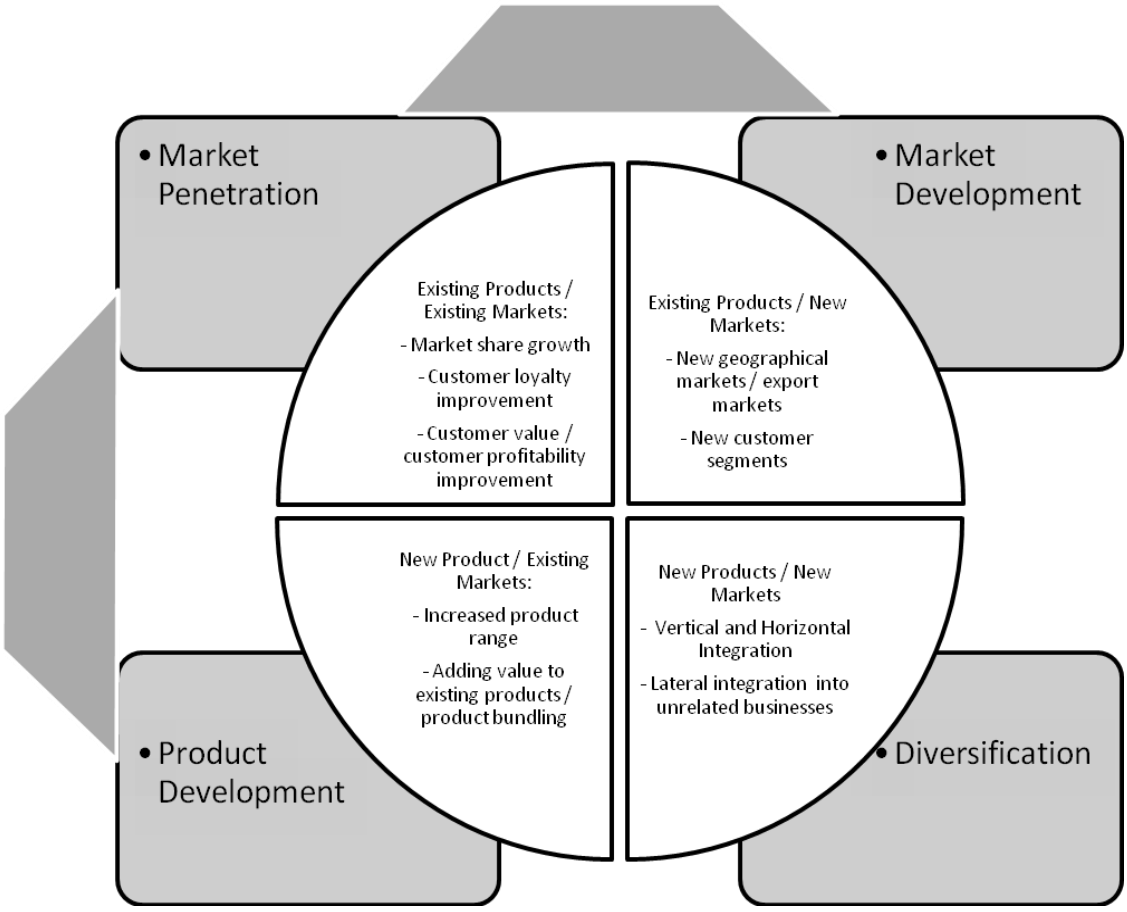

Figure 3: Growth and diversification strategies (Ansoff, 1957)

Research in entrepreneurship has largely focused on why some new ventures grow more than others, creating a gap in understanding how and where they grow. This gap can be filled by researchers studying the strategic decisions in place that drive new venture growth (Gilbert, McDougall and Audretsch, 2006).

Applying the growth strategies shown in Figure 3, a firm can grow either organically or inorganically. Organic growth in the early life of a venture occurs through product development, market development and market penetration. Inorganic growth occurs through licensing agreements, partnerships and joint venture agreements to gain access to distribution channels, large customers and reliable sources for lower-input costs (McCann, 1991).

Figure 4 summarises these organic and inorganic growth strategies.

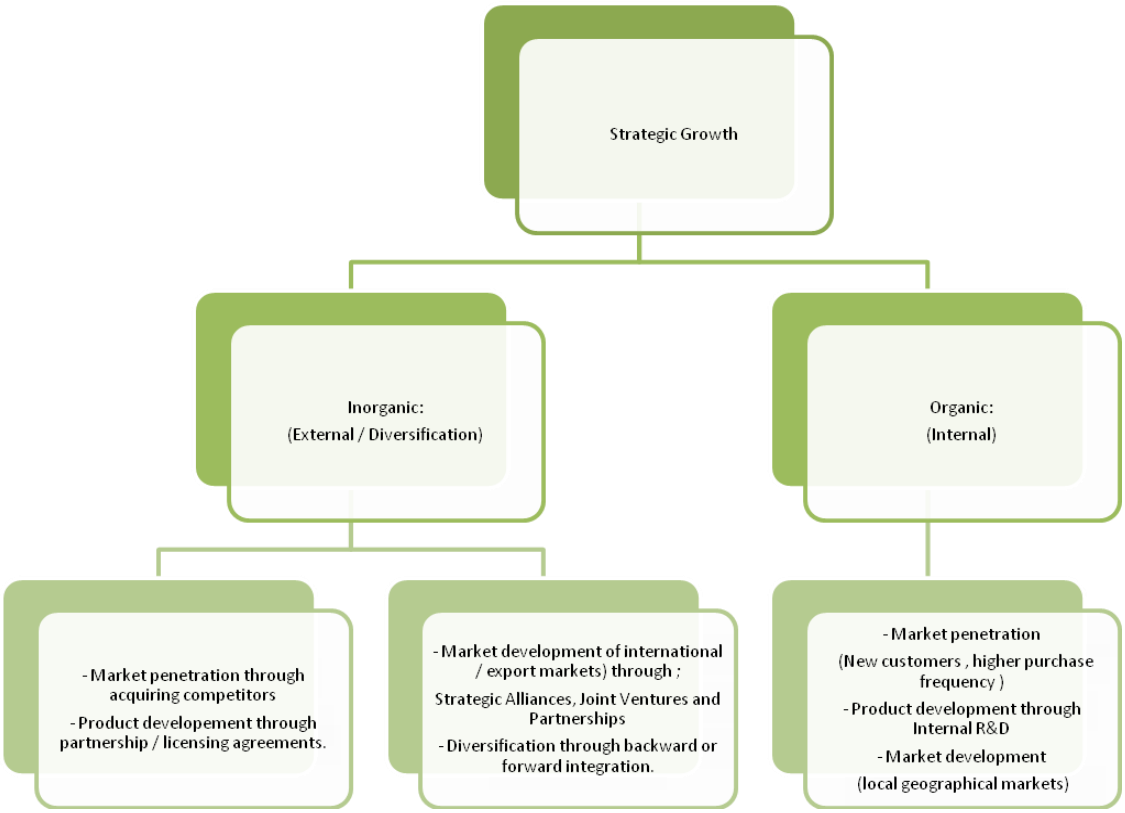

Figure 4: New venture growth review (Gilbert et al., 2006)

Although there is no single overriding measure of new venture growth, a review of the literature suggests that the most important measures of new venture growth are in terms of sales, employment and market share. Several studies confirm that strong relationships exist among these three different measures of growth (Birley and Westhead, 1990; Duchesneau and Gartner, 1990; Chandler and Hanks, 1994; Gray, 1999; Baron and Ward, 2004; Gilbert et al., 2006).

For this study, venture growth will be measured in terms of annual revenues and number of employees, which is synonymous with firm size.

2.6.1. Proposition 1

Intuitive entrepreneurs will as a result of perceived lower risk engage in strategic growth opportunities.

2.6.2. Proposition 2

Analytic entrepreneurs will as a result of perceived higher risk not engage in strategic growth opportunities.

2.7. Conclusion to literature review

Research on entrepreneurship has largely been guided by the entrepreneurial personality myth, which postulates a hypothetical person with an overwhelming need for accomplishment, a desire to control events, an immunity to risk and a highly creative ability to identify and exploit opportunities (Shaver, 1995; Cuervo, 2005).

This myth is gradually being replaced by a fresh reality that incorporates a gestalt of person, process and choice factors that come into play during the process of entrepreneurship. This demands an inquiry into cognitive styles.

Despite the importance of both economic and social environments in determining the success of new ventures (Cuervo, 2005), the success and sustainability of the business venture depend on a person who can perceive opportunities and risks and behave in a way consistent with the demands of the situation (Reddin, 1967; Shaver and Scott, 1991).

Entrepreneurship – the act of new venture creation and growth undertaken by entrepreneurs (Rwigema et al., 2008) – arises from the nexus between an enterprising individual and an opportunity (Acedo and Florin, 2007). Therefore, understanding why and how entrepreneurs act is crucial to comprehending the entrepreneurship process (Baron, 2004).

It has been posited that entrepreneurs engage in seemingly risky business ventures because, given their specialised knowledge structures or entrepreneurial cognitions gained through prior experiences (whether heuristic or scripted), they are able to perceive less risk in a given decision situation (Busenitz, 1999; Simon et al., 2000b; Mitchell et al., 2007).

Entrepreneurs act when the probability of succeeding is high or the perceived level of risk is low (Acedo and Florin, 2007). Consequently, an entrepreneur's cognitive style of perceiving and analysing information, coupled with his or her entrepreneurial cognitions gained from past experiences, will influence his or her perception of risk associated with strategic growth opportunities (Acedo and Florin, 2007).

Through the use of a heuristic, holistic and flexible approach to information processing, entrepreneurs who employ an intuitive style will perceive lower risk inherent in a strategic growth opportunity. On the other hand, through their extensive data collection and analysis and their rational and systematic approach, entrepreneurs who employ an analytic style will perceive higher risk and take too long to participate in quick decision making, which inhibits venture growth (Busenitz, 1999).

2.7.1. Proposition 1

Intuitive entrepreneurs will as a result of lower risk perceived engage in strategic growth opportunities.

2.7.2. Proposition 2

Analytic entrepreneurs will as a result of higher risk perceived not engage in strategic growth opportunities.

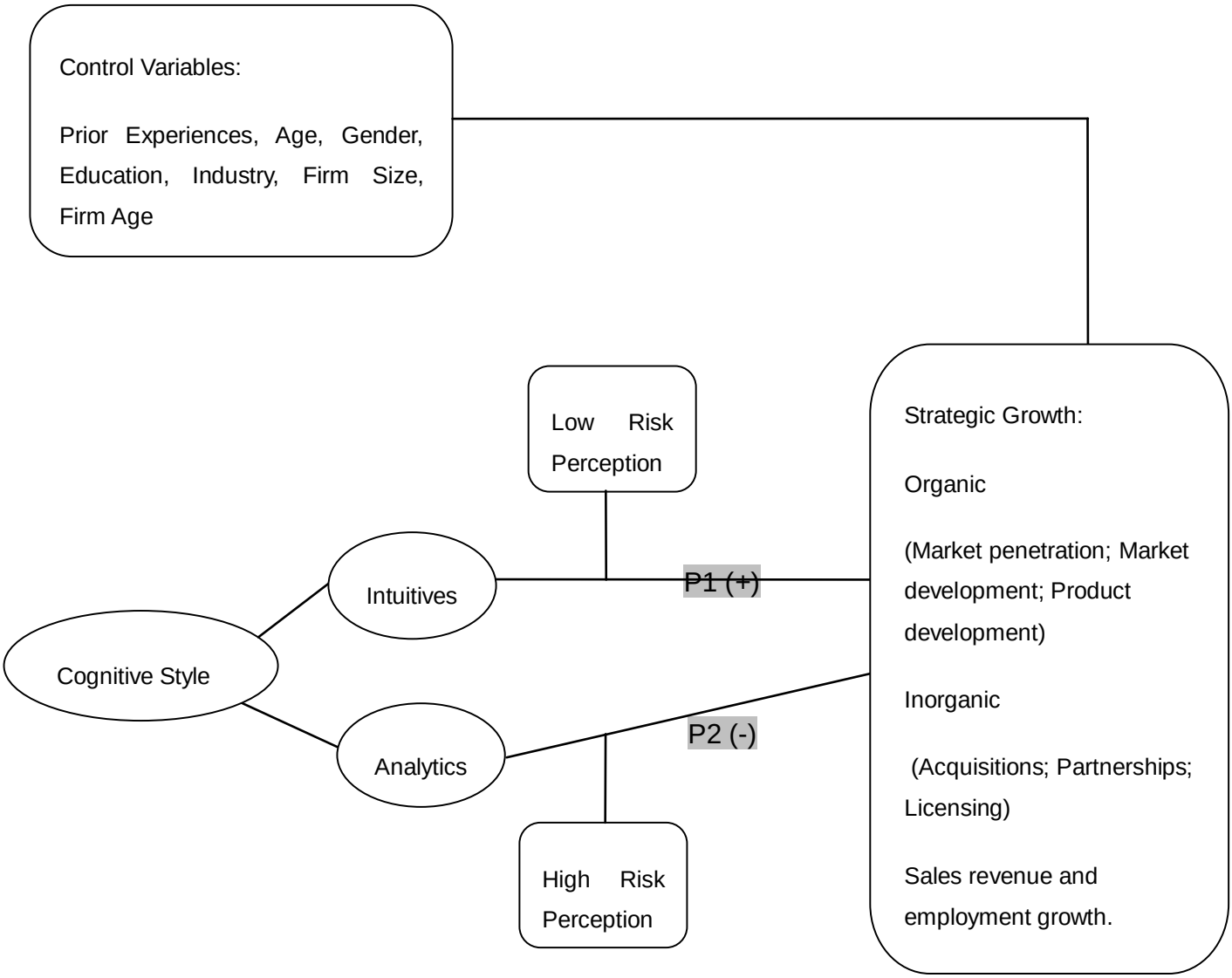

Figure 5: Literature review on the influence of cognitive styles on an entrepreneur's risk perception, associated with strategic growth opportunities (Palich and Bagby, 1995; Allinson and Hayes, 1996; Busenitz, 1999; Simon et al., 2000b; Baron, 2004; Gilbert et al., 2006; Acedo and Florin, 2007; Barbosa et al., 2007; Cools and Van Den Broeck, 2008)

CHAPTER 3: RESEARCH METHODOLOGY

This chapter outlines the methodology and design used in conducting this study. The population, sample and sampling methodology are identified prior to a discussion on how the data was collected and the statistical data analysis. Finally, the reliability and validity of the study are ascertained.

3.1. Research methodology / paradigm

The study made use of a quantitative approach. The research problem sought to better understand the factors influencing a particular outcome – in this case, the influence of cognitive styles on entrepreneurs' risk perception of strategic growth opportunities.

Previous attempts to ascertain personality types as predictors of entrepreneurial success have proven futile (Hornaday and Aboud, 1971; Sexton and Bowman, 1983; Begley and Boyd, 1987; Brockhaus, 1987). Given the aim of better understanding the influence of cognitive styles on entrepreneurial growth, a quantitative methodology was deemed the best approach to test this relationship (Creswell, 2003).

Assumptions of unbiased responses, validity and reliability of the test instruments were fundamental in validating or nullifying the proposed relationship.

3.2. Research design

A survey was conducted and cross-sectional data collected on a predetermined validated test instrument, the CSI (Allinson and Hayes, 1996) and the risk perception scale of strategic growth.

Surveys are the most popular form of data collection in the social sciences and are useful in estimating the prevalence of attitudes and behaviours in a population and examining relationships among variables (Kalof, Dan and Dietz,

2008). Consequently, in this study, a survey was considered appropriate in examining the relationship between entrepreneurs' cognitive styles and their risk perception of strategic growth in South Africa.

The advantages of adopting a quantitative approach in this study are that the use of a validated test instrument employing close-ended questions enables easy quantification and direct comparisons to be made between respondents' answers during data analysis (Kalof et al., 2008). In addition, surveys are also advantageous in collecting data from a large number of people in a relatively short period of time.

Low response rates from surveys offer disadvantages with respect to desired sample size, but for this study, a convenience sample was adopted.

The hypothesised relationship between cognitive styles as the independent variable and strategic growth as the dependent variable measured in terms of firm age and firm size (in terms of number of employees and annual sales revenue) was evaluated.

Risk perception serves to mediate the relationship between cognitive styles and strategic growth (Simon et al., 2000b).

3.2.1. Control variables

3.2.1.1. Gender

Studies comparing the performance of male- and female-owned firms consistently show that businesses headed by women tend to be smaller than those owned by men, whether size is measured in terms of sales revenue, number of employees or profit levels (Cliff, 1998).

Women entrepreneurs tend to be more cautious about growth rates than their male counterparts and deliberately limit the size of their firms as a result of other resource constraints such as time and lifestyles.

Since this study focuses on entrepreneurs' risk perception of strategic growth, gender was controlled for.

3.2.1.2. Entrepreneurs' characteristics

Studies on new venture growth posit that the most important predictors of venture growth include entrepreneurs' characteristics, resources, strategy, industry and organisational structure and systems (Sandberg and Hofer, 1987; Duchesneau and Gartner, 1990; Chandler and Hanks, 1994; Baum, Locke and Smith, 2001; Baum and Locke, 2004).

First and foremost, the entrepreneur must choose growth. That growth will occur when: the entrepreneur possesses financial, human and social resources that enable growth; has a strategy that fosters growth; and develops structures and systems that accommodate growth (Gilbert et al., 2006).

Entrepreneurs' characteristics that have been found to affect sales and employment growth directly include educational background, prior related industry experience and prior entrepreneurial experiences (Gilbert et al., 2006).

The measure of educational background included business education, which was measured by whether the business owner or manager possessed a business-related college diploma or university degree (Cliff, 1998).

Prior industry experience was measured by whether the entrepreneur previously owned or managed another business in the same industry as his or her current firm.

Finally, entrepreneurial and managerial experience was measured by whether the entrepreneur had previously owned or managed another business.

3.2.1.3. Firm characteristics

Management, the environment and the firm's internal resources have been identified as three basic factors influencing choice of strategy. For this reason, these characteristics were controlled for in this study.

Management, in this case, was the owner or manager whose control variables were age, gender, education, industry experience and managerial experience.

The environment was controlled through sampling the same-industry-type firms, as industry characteristics have been found to affect venture performance (Chandler and Hanks, 1994; McDougall, Covin, Robinson and Herron, 1994).

The firm's internal resources were controlled though the financial and human capital resource variables, which have shown to be the most closely related to new venture growth (Gilbert et al., 2006).

Annual sales revenue was used as a measure of financial resources and current number of employees as a measure of human capital.

Consequently, the size of the firm as measured by annual sales revenue and number of employees and its age as measured by years from conception to 2012 were controlled for in the same way the firm's internal resources.

The study was thus controlled for

1) Entrepreneur's characteristics – age, gender, education; prior entrepreneurial, managerial and industry experience (Cliff, 1998; Gilbert et al., 2006)

2) Firm characteristics – age, size (sales revenue and number of employees) and industry sector (Phillips and Kirchhoff, 1989; Kotey and Meredith, 1997; Cuervo, 2005; Gilbert et al., 2006).

3.3. Population and sample

3.3.1. Population

The population for this study comprised manufacturing companies in South Africa listed on online directories, from which the desired sample of entrepreneurs was drawn.

The population was limited to the manufacturing industry to control for industry variances. The manufacturing industry was chosen because of the ease of interpreting growth strategies in terms of product, market and customer development and penetration, as previously depicted in Figure 4.

3.3.2. Sample and sampling method

As reviewed in the literature, no significant differences exist between the psychological characteristics of entrepreneurs and business managers (Brockhaus, 1987; Hansemark, 2003). Thus, both entrepreneurs and business managers were sampled for this study.

A convenience sample of entrepreneurs and business managers was selected from the population and controlled for the following variables: gender, age of entrepreneur, education, prior entrepreneurial and management experiences, firm size and age.

To reduce variances present in the sampling frame of manufacturing firms listed in directories, the sample was defined as small businesses employing 50 – 250 employees in the manufacturing industry (Republic of South Africa, 2008).

The CSI test was administered on the sampled entrepreneurs and business managers to identify their cognitive style, followed by the risk perception test to ascertain their perception of risk towards strategic growth opportunities in their industry.

An adequate sample size of 30 respondents was used to strengthen the external validity of the study.

3.4. The research instrument

Cognitive styles of the sampled entrepreneurs and business managers were measured using the CSI (Allinson and Hayes, 1996), which is a 38-item self-report measure with items drawn from the two domains of intuition and analysis.

Each item is scored by means of a trichotomous response scale (true; uncertain; false). Twenty-one of the items were analytic and scored positively, whereas the other 17 items were intuitive items and scored negatively. For analytic items, the scores were rated as 2=true, 1=uncertain, 0=false, while the intuitive items were rated as 0=True, 1=uncertain and 2=false.

The nearer the total score to the theoretical maximum score of 76, the more analytic the respondent; the nearer the total score to zero, the more intuitive the respondent. The CSI has a theoretical mean of 38.5 (Allinson and Hayes, 1996).

The internal validity and reliability of the CSI has been demonstrated in various studies (Allinson and Hayes, 1996; Sadler-Smith, 1999; Allinson, 2000; SadlerSmith et al., 2000; Hayes et al., 2003; Hodgkinson and Sadler-Smith, 2003; Sadler-Smith, 2004), indicating significant reliability and validity.

The construct validity (a concept explored by Allinson and Hayes (1996)) showed statistically significant relationships between the CSI and scores on a number of personality inventories of the 16PF questionnaire. The CSI correlated positively with the extroversion - introversion (r = 0.57*; p,* 0.001) and feeling judgement – thinking (r= 0.57; *p,* 0.001) dimensions and negatively with the sensing perception – intuitive perception (r = -0.45; *p,* 0.05*)* and judgement perception (r = -0.41; p, 0.01) dimensions of the Myers-Briggs Type Indicator(Sadler-Smith et al., 2000).

3.5. Procedure for data collection

Entrepreneurs and business managers of listed manufacturing companies were first contacted over the telephone to gain consent and thereafter invited to complete the CSI and risk perception questionnaires sent to them electronically.

The questionnaires were distributed by email via the Survey Monkey website.

3.6. Data analysis and interpretation

Data successfully collected electronically via the Survey Monkey website was downloaded onto MS Excel and exported into Statistical Product and Services Solutions (SPSS) for analysis. SPSS is a powerful computer program used to carry out a wide range of statistical analysis.

Firstly, Cronbach's alpha was used to assess the reliability of the 38 item CSI scale.

Hypothesis testing was then conducted to test the research propositions by undertaking one-sided independent sample t-tests analysis at a 5% significance level. This enabled a comparison of the sample means in accepting or rejecting the null hypothesis.

Hypothesis tests were conducted to measure any relationship between: cognitive styles and risk perception; cognitive styles and age of business; and cognitive styles and annual revenue.

A Chi-square test of association was then conducted to assess whether there was any association between categorical variables. Associations measured were between: cognitive style and gender; cognitive style and annual revenues; and gender and annual revenue.

The Chi-square test is based on the cell counts in a cross tabulation. In the application, the expected cell count should not be less than 5. All Chi-square tests were conducted at 5% significance level.

In cases where the sample size is as small as in this study, cell counts of less than 5 can be expected; consequently, Fisher's exact test was used. Fisher's exact test is very useful in analysing contingency tables with both small and large sample size.

The above mentioned tests would strengthen the hypothesis that cognitive styles influence entrepreneurs' risk perception of strategic growth.

Finally, descriptive statistics such as frequency distributions, cross tabulations, mean and standard deviation were used to summarise the data, enabling easier comparison, visualisations and interpretation of the variables.

3.7. Limitations of the study

Trade-offs between cost and accuracy could result in sampling error, an inevitable result of basing a result on a convenience sample rather than the whole population (Albright, Winston and Zappe, 2008). Thus the use of a small convenience sample might be limited in testing the two propositions.

3.8. Validity and reliability

3.8.1. External validity

Validity is concerned with congruence (Kalof et al., 2008) between the details of the research, the evidence and the conclusions drawn from the evidence.

External validity is the ability to generalise from a study to a larger population (Kalof et al., 2008).

The population of listed businesses is assumed to be fairly representative of entrepreneurs and business managers in South Africa; consequently, results can be generalised to the whole population.

3.8.2. Internal validity

Internal validity means that the study draws appropriate conclusions from the data at hand (Kalof et al., 2008). The independent variables of cognitive styles were measured using the validated CSI instrument, which ensured internal validity.

3.8.3. Reliability

Reliability is concerned with consistency (Kalof et al., 2008). For this reason, a study is deemed reliable if its results are replicable with minimal error.

Cronbach's Alpha coefficient (Cronbach α) demonstrates the internal reliability of the items within a construct and is based on the average correlation of items within the construct. Cronbach's Alpha ranges from 0 to 1. The closer the value is to 1, the higher the internal consistency of the scale and, hence, its reliability.

The CSI has previously demonstrated construct validity through confirmatory factor analysis and correlation studies with satisfactory levels of internal reliability (Cronbach α) ranging from 0.79 to 0.92 (Allinson and Hayes, 1996; Sadler-Smith, 1999; Sadler-Smith, Spicer and Tsang, 2000; Hayes, Allinson, Hudson and Keasey, 2003). For this study, Cronbach's Alpha for the 38 items yielded a result of 0.896, implying a high level of internal reliability on the CSI scale in measuring cognitive style, as shown in Table 2.

Table 2: Cronbach's Alpha

Case Processing Summary			
		N	%
Cases	Valid	30	100.0
	Excluded[a]	0	.0
	Total	30	100.0
a. Listwise deletion based on all variables in the procedure.			

Reliability Statistics	
Cronbach's Alpha	N of Items
.896	38

CHAPTER 4: PRESENTATION OF RESULTS

4.1. Introduction

In this chapter, the demographics of the 30 sampled respondents are presented.

Surveyed results of gender, entrepreneur's characteristics (age, education, prior management and entrepreneurial experience) and firm characteristics (number of employees, age of business and revenue) are presented graphically to aid in easier visualisation and description of findings.

The CSI test score results of the sampled respondents are then tabulated and described.

Lastly, the results from the risk perception test instruments are displayed.

4.2. Demographic profile of respondents

4.2.1. Entrepreneurs' profile

4.2.1.1. Gender

As shown in Figure 6, 22 of the 30 respondents (73.3%) were male while the other 8 (26.7%) were female.

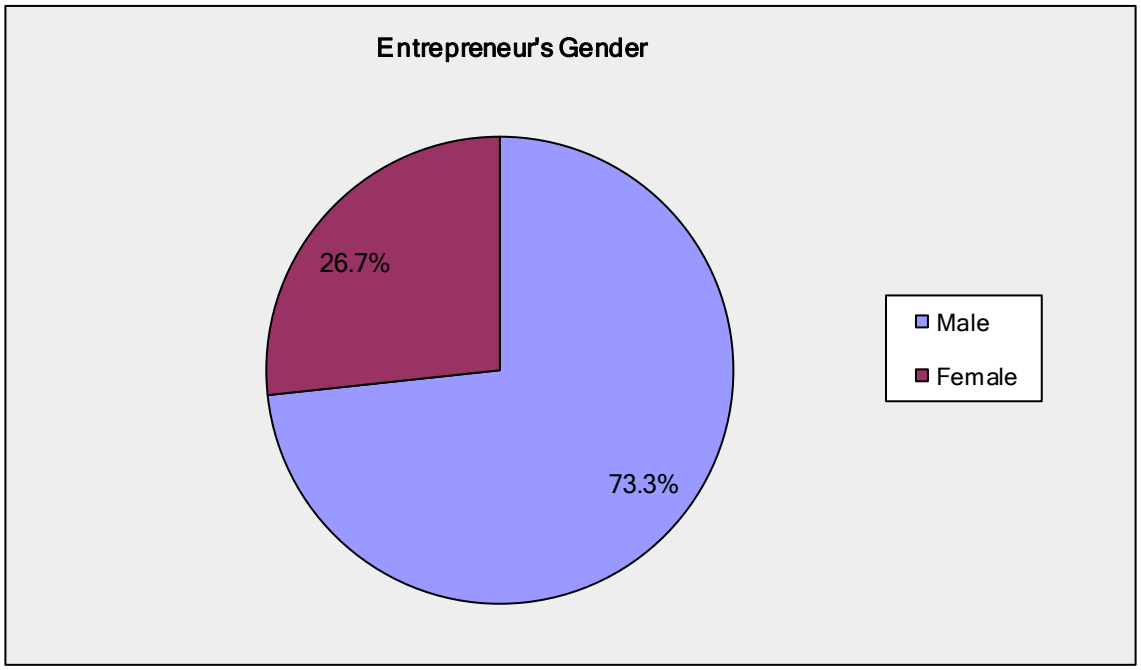

Figure 6: Gender of respondents

4.2.1.2. Entrepreneur's age

The graph below shows the age distribution of the 30 respondents. A majority of 30% were aged between 35 and 44 years, followed by 20% aged between 25 and 34 years. These age groups and the other age groups are as represented in Figure 7.

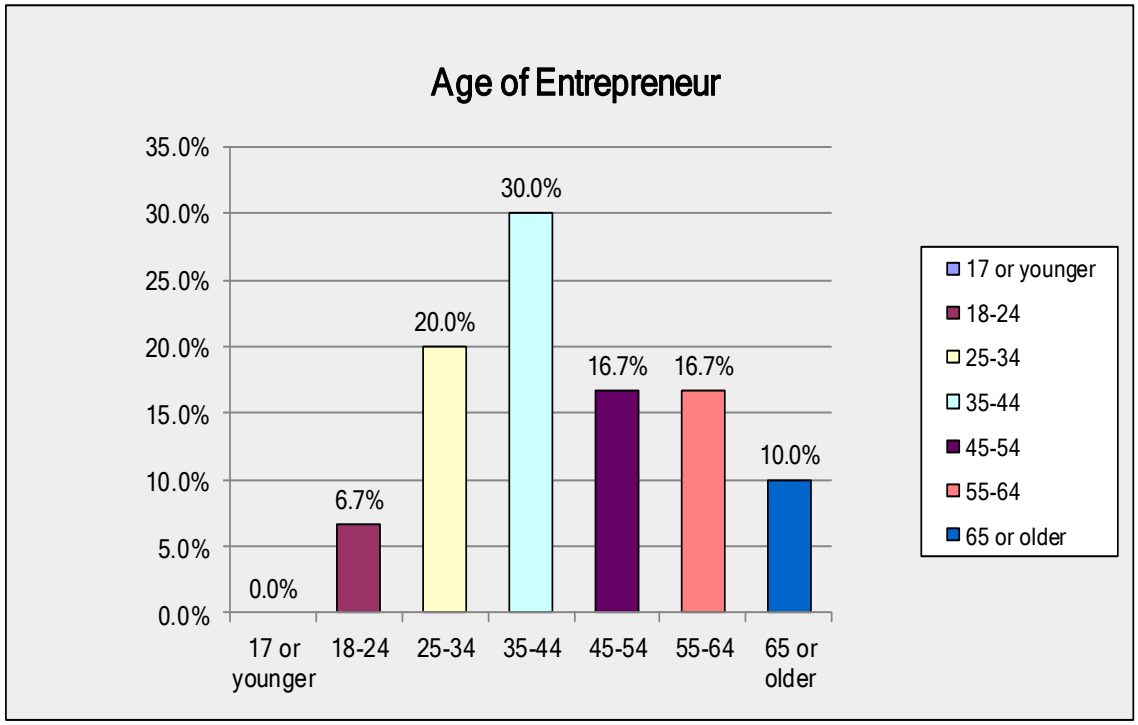

Figure 7: Age of respondents

4.2.1.3. Education

As shown in Figure 8, about a third (33%) of the respondents had attained a high school education; 27% each had college- and university-level education respectively. The other 13% had attained up to postgraduate or masters level.

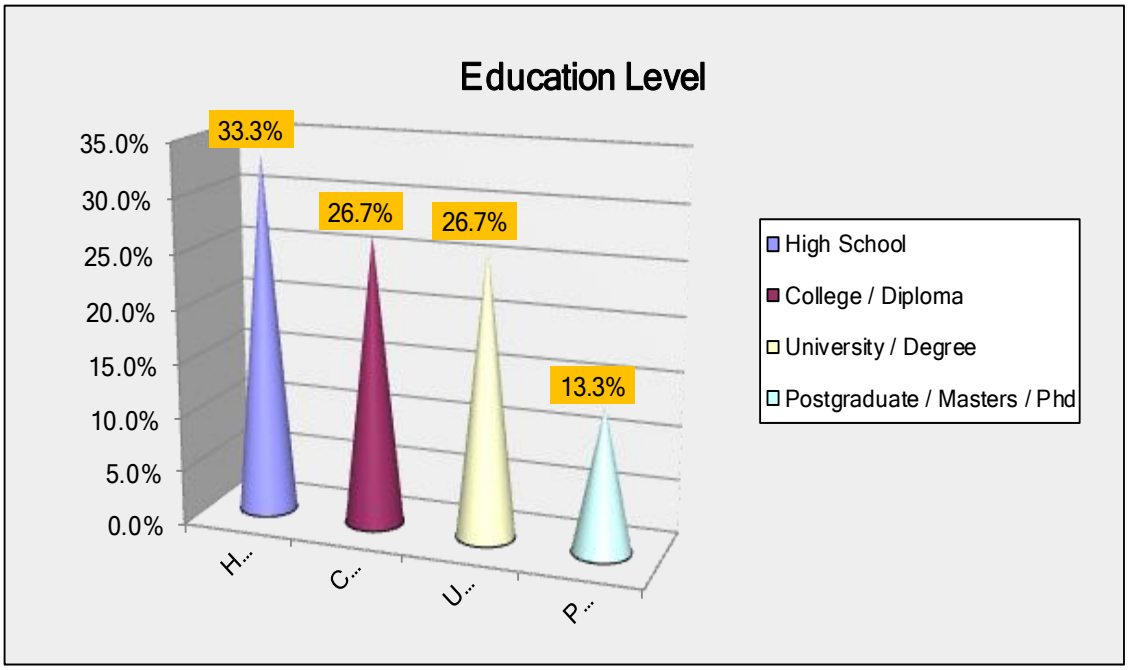

Figure 8: Education level of respondents

4.2.1.4. Business education

The most common business courses undertaken by the entrepreneurs were MBA (10%), and B Comm (10%). Sixty-three per cent of the respondents did not have any business course as part of their education, as shown in Figure 9.

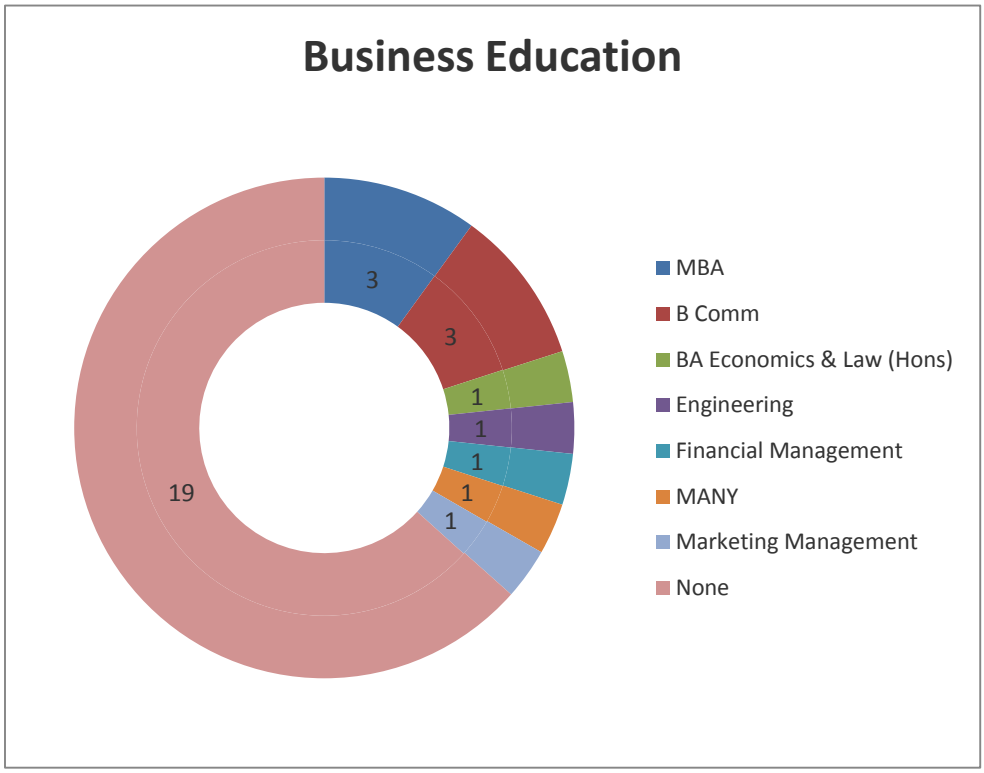

Figure 9: Business education of respondents

4.2.1.5. Managerial experience

A majority of the sampled respondents had previous managerial experience, as shown in Figure 10.

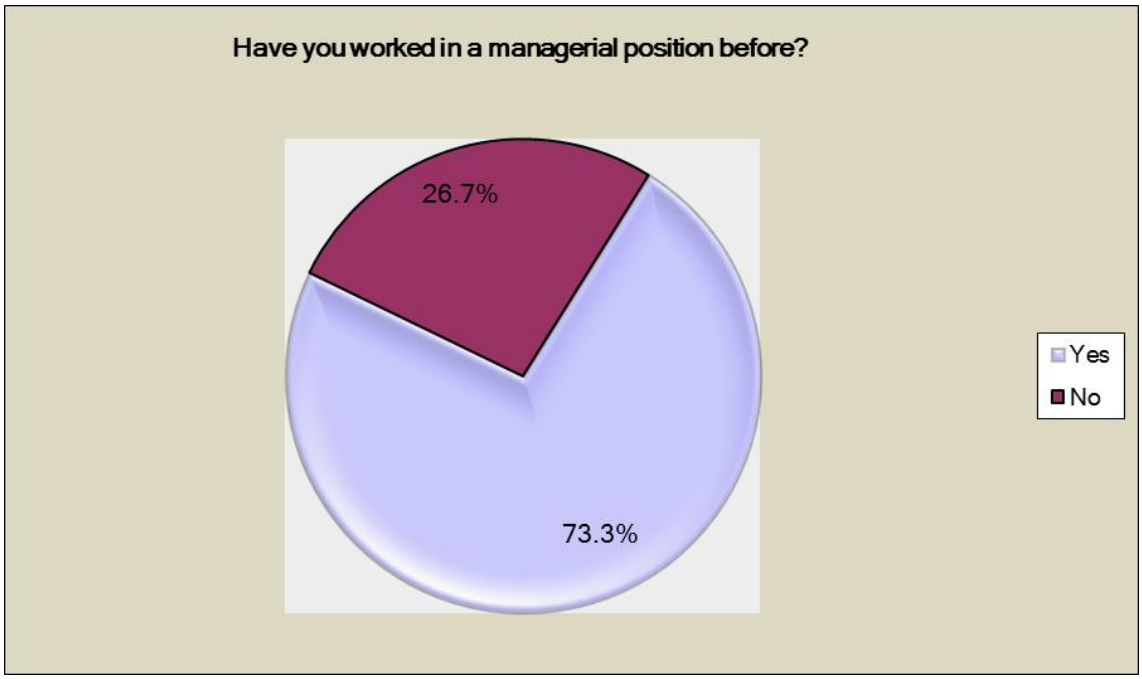

Figure 10: Managerial experience of respondents

4.2.1.6. Entrepreneurial experience

Of the sampled 30 respondents, 80% were currently owners, whereas 20% were managers, as shown in Figure 11.

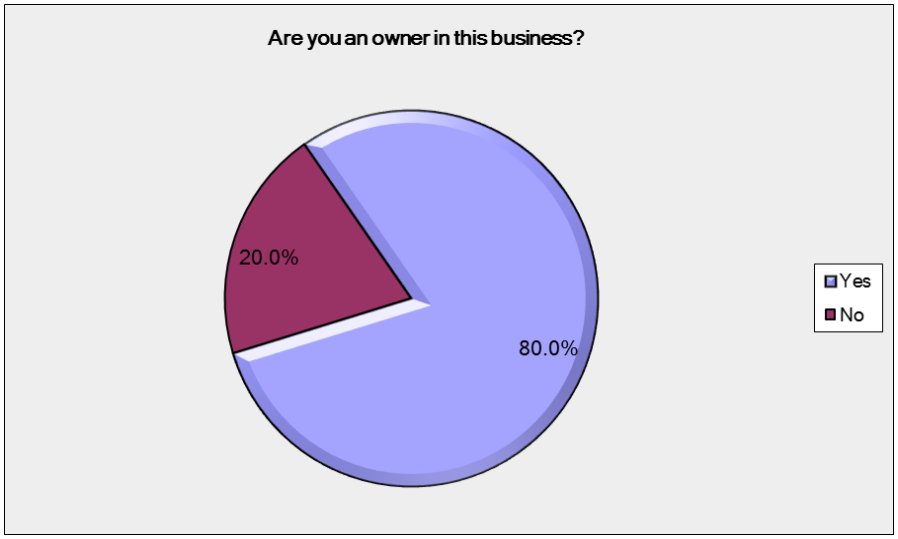

Figure 11: Business owners versus managers

Furthermore, only 13 (43.3%) of the 30 surveyed respondents had owned another business before, whereas the other 17 (56.7%) had never owned a business before, as shown in Figure 12.

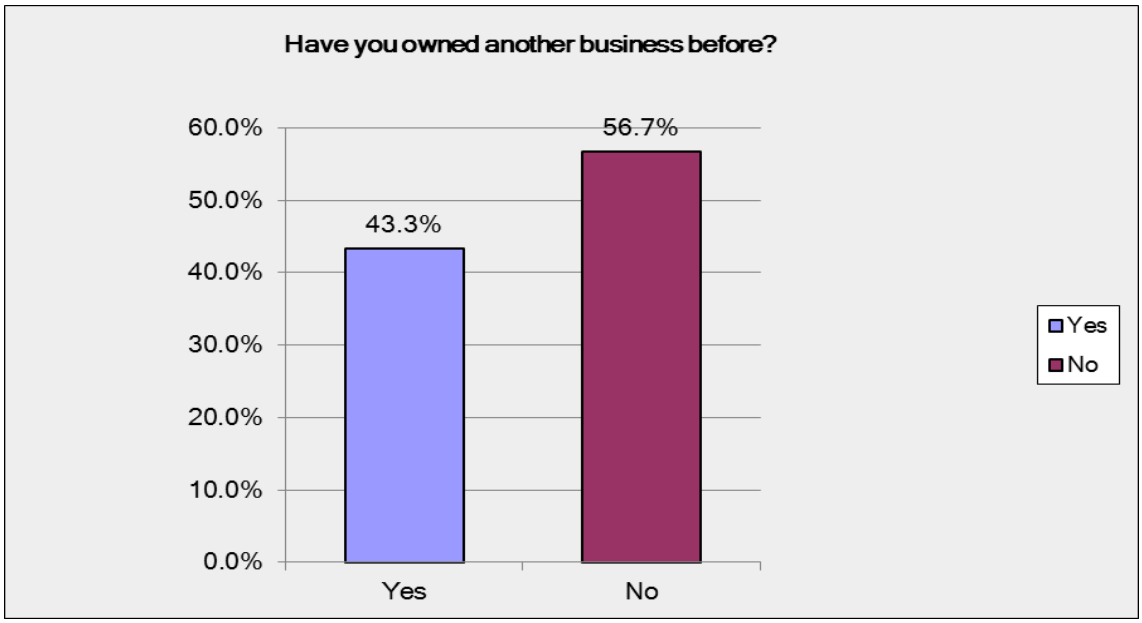

Figure 12: Previous entrepreneurial experience

4.2.2. Firm's profile

4.2.2.1. Age of business

Figure 13 shows the age distribution of the 30 sampled SMME businesses. The youngest business was 2 years old, while the oldest was 45 years old.

A majority of 37% of the sampled businesses were aged between 6 and 10 years.

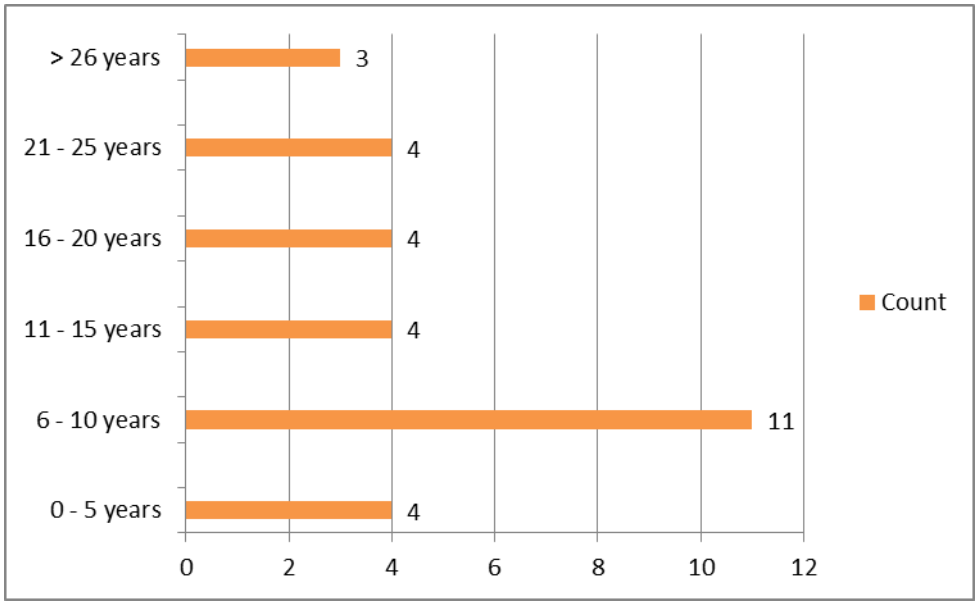

Figure 13: Age of business

4.2.2.2. Size of business

4.2.2.2.1. Number of employees

The sampled respondents of SMMEs in South Africa's manufacturing sector were predominantly small businesses with 29 out of 30 (97%) employing fewer than 100 employees. Only 1 of the respondents owned a medium-sized business with between 200 and 250 employees, as depicted in Table 3.

Table 3: Number of employees in respondents' firms

Number of Employees.		
Range	Response Percent	Response Count
0 - 50	83.3%	25
51 - 100	13.3%	4
101 - 150	0.0%	0
151 - 200	0.0%	0
200 - 250	3.3%	1
250 and above	0.0%	0
Total	*100%*	30

4.2.2.2.2. Annual sales revenue

Thirty-seven per cent of the respondents had an annual sales revenue of less than R5 million, while 33% had a revenue of between R5 million and R15 million per annum. The rest are represented in Figure 14.

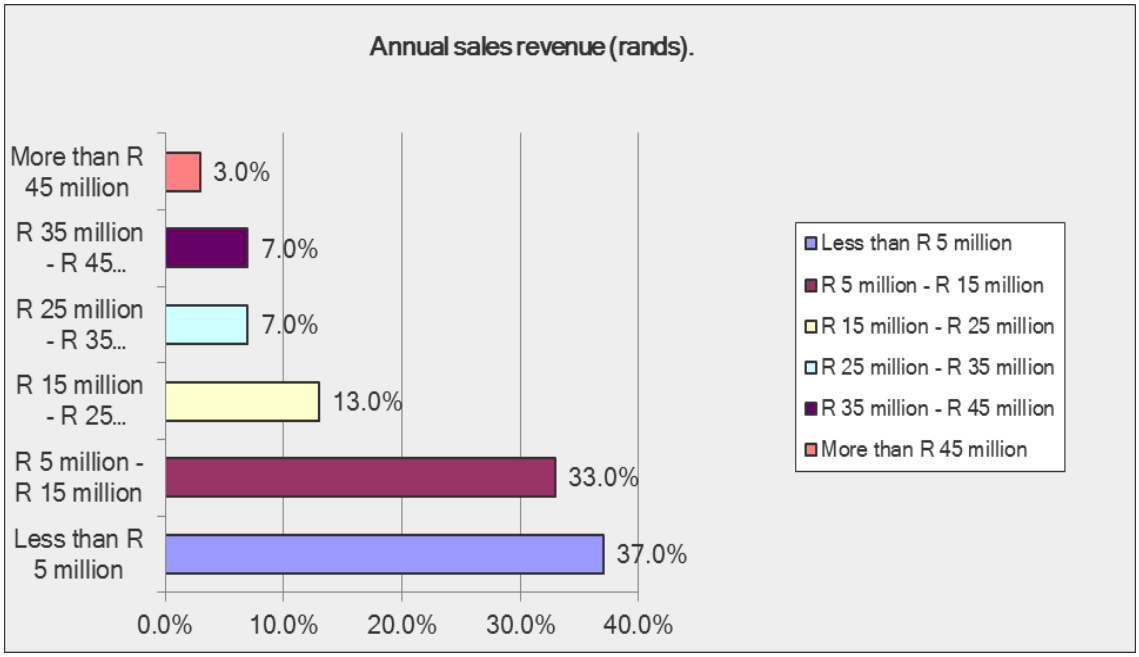

Figure 14: Annual sales revenue (rands) of respondents

4.3. Cognitive styles

All 30 respondents were tested for their cognitive style, and more than half (56.7%) were found to be analytic, while the rest (43.3%) were intuitive, as shown in Figure 15.

The analytic entrepreneurs scored more than 38.5, while the intuitive entrepreneurs scored less than 38.5, the theoretical mean of the CSI.

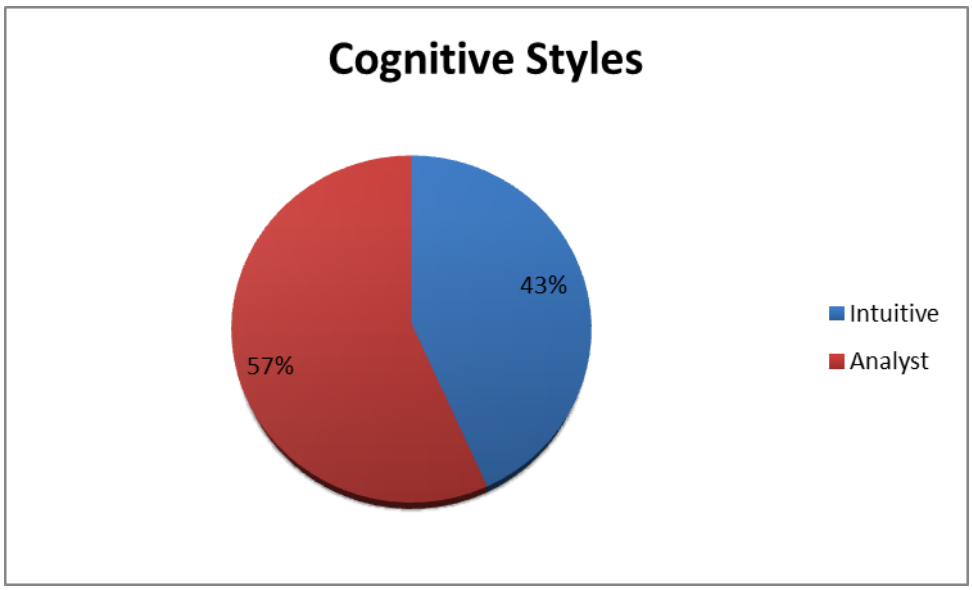

Figure 15: Cognitive styles of respondents

The most analytic entrepreneur had a CSI score of 68, while the most intuitive scored 10. The average CSI score for this study was 41.27 with a standard deviation of 15.30, as shown in Table 4.

Table 4: CSI descriptive statistics

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
CSI Score	30	10.00	68.00	41.27	15.30

If the respondents are grouped into five groups – intuitive (0-28), quasi-intuitive (29-38), adaptive (39-45), quasi-analyst (46-52) and analyst (53-72) – Figure 16 depicts their distribution.

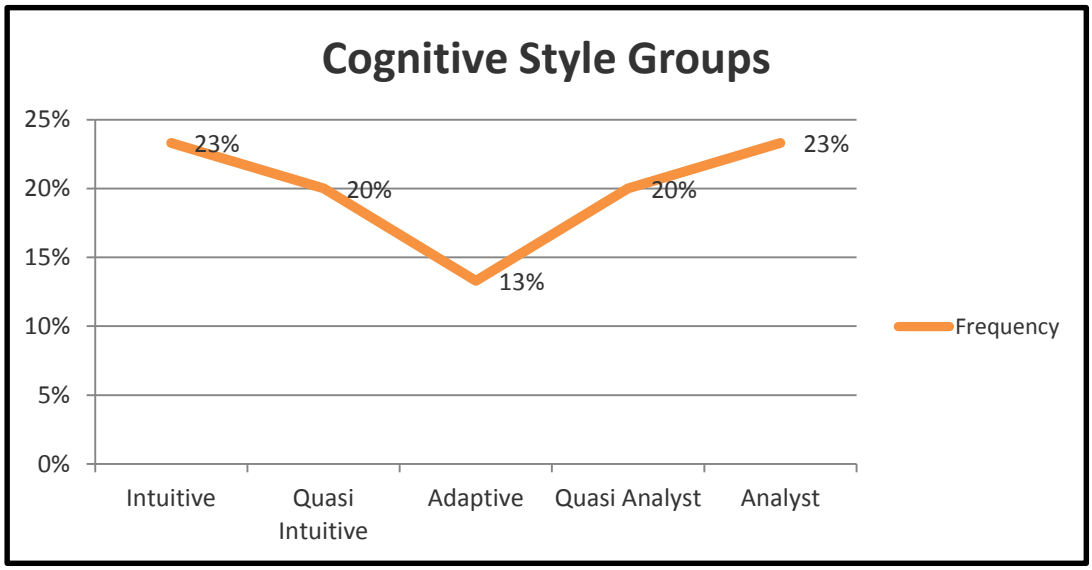

Figure 16: Cognitive styles of respondents

This distribution reveals an equal proportion of intuitive and quasi-intuitive entrepreneurs to quasi-analytic and analytic entrepreneurs of 43.3% each, with the rest (13.3%) falling under the adaptive cognitive style.

4.4. Results pertaining to propositions

Independent sample t-tests were conducted to assess whether there was a difference in opinion of risk associated with different growth strategies as per Appendix A (II).

The null hypothesis was that there is no relationship between cognitive styles and risk perception associated with strategic growth; the alternative hypothesis was that analytic entrepreneurs would attach higher risk to the different growth strategies than the intuitive ones.

The test was conducted at a 5% significance level and the test was one-sided.

The results are as shown in Table 5.

Table 5: Independent samples t-test for equality of means comparing analytic and intuitive entrepreneurs

Group Statistics					Independent samples t-test for Equality of Means	
CSI Group		N	Mean	Std. Deviation	t-test	P-Value (One sided)
Adopting a marketing strategy aimed at increasing purchasing frequency of current customers.	Intuitive	13	2.85	1.214	-.447	.329
	Analyst	17	3.06	1.345		
Acquiring new customers in local markets.	Intuitive	13	3.08	1.382	-.081	.468
	Analyst	17	3.12	1.364		
Exporting current product offerings to international markets.	Intuitive	13	3.23	1.092	1.165	.873
	Analyst	17	2.71	1.312		
Exporting new product offerings to international markets.	Intuitive	13	3.62	1.325	1.572	.936
	Analyst	17	2.88	1.219		
Undertaking new product development for new customers in existing markets.	Intuitive	13	3.54	.877	-.504	.309
	Analyst	17	3.71	.920		
Undertaking product improvement for existing customers and markets.	Intuitive	13	2.54	.776	-2.033	.026
	Analyst	17	3.35	1.272		
Acquiring a competitor firm.	Intuitive	13	2.77	1.363	-.239	.406
	Analyst	17	2.88	1.219		
Acquiring a complementary business firm.	Intuitive	13	2.85	1.281	1.156	.871
	Analyst	17	2.35	1.057		
Participating in strategic alliances or partnerships e.g. for technology or product development.	Intuitive	13	3.23	1.092	1.329	.903
	Analyst	17	2.76	.831		
Participating in a joint venture initiative e.g. partnering with a local firm in a foreign market.	Intuitive	13	3.00	1.000	1.760	.955
	Analyst	17	2.35	.996		

The analytic entrepreneurs only differed significantly in opinion with the intuitive entrepreneurs on the statement that measured risk associated with undertaking product improvement for existing customers and markets (p-value = 0.026 < 0.05). The analytic entrepreneurs rated the risk at 3.35 out of 5, while the intuitive ones rated it at 2.54.

Their opinion concerning the other statements was not significantly different, as the p- values were greater than 0.05 (significance level).

This finding indicates that there was no significant difference in risk perception between analytic and intuitive entrepreneurs for the measured strategic growth opportunities.

4.5. Summary of the results

The study had a response rate of 38.5%, as 30 out of the 78 entrepreneurs invited to participate in the study responded.

A majority of 73% of the respondents were male, while 27% were female.

A predominant 50% were aged between 25 and 44 years, with 67% having attained college-, university- or postgraduate education. About 30% had a business-related qualification, with 10% having achieved an MBA.

Of the sampled respondents, 80% were business owners. While 73% had prior managerial experience, only 43% had prior entrepreneurial experience of having owned another business before.

The study focused on SMMEs, with a principal of 50% of the businesses being younger than 10 years, employing fewer than 100 employees and generating an annual revenue of less than R15 million.

The study yielded a predominance of analytic (57%) entrepreneurs compared to intuitive entrepreneurs (43%).

CHAPTER 5: DISCUSSION OF RESULTS

5.1. Introduction

This chapter discusses the empirical results of this study, which was aimed at ascertaining the influence of cognitive styles on entrepreneurs' risk perception of strategic growth.

Identified variables of gender, age of business, firm revenue, and entrepreneurial cognition are discussed in relation to the literature.

The results of the data analysis undertaken are then presented and discussed in accordance with the findings.

5.2. Demographic profile of respondents

5.2.1. Gender

In accordance with the research design for this study, gender was controlled for, as female-owned firms tend to be smaller sized in terms of revenue and employee growth than those of their male counterparts (Cliff, 1998).

5.2.1.1. Association between gender and annual sales revenue

To assess whether there was an association between gender and annual sales revenue, a Chi-square test of association was conducted.

The null hypothesis was that there is no association between gender and annual sales revenue. The alternative hypothesis was that there is an association between gender and annual sales revenue.

Table 6 depicts the results of the Chi-square test of association between gender and annual sales revenue.

Table 6: Association between gender and annual sales revenue

Annual sales revenue (rands). * Gender. Cross tabulation					
			Gender		Total
			Male	Female	
Annual sales revenue (rands)	Less than R 5 million	Count	7	4	11
		% within Gender	31.8%	50.0%	36.7%
	R 5 million - R 15 million	Count	7	3	10
		% within Gender	31.8%	37.5%	33.3%
	R 15 million - R 25 million	Count	4	0	4
		% within Gender	18.2%	0.0%	13.3%
	R 25 million - R 35 million	Count	2	0	2
		% within Gender	9.1%	0.0%	6.7%
	R 35 million - R 45 million	Count	1	1	2
		% within Gender	4.5%	12.5%	6.7%
	More than R 45 million	Count	1	0	1
		% within Gender	4.5%	0.0%	3.3%
Total		Count	22	8	30
		% within Gender	100.0%	100.0%	100.0%

Chi-Square Tests				
	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	3.688[a]	5	.595	.674
Fisher's Exact Test	3.504			.704
N of Valid Cases	30			

a. 10 cells (83.3%) have expected count less than 5. The minimum expected count is .27.

The p-value of the Fisher's test (p-value = 0.704) was greater than 0.05 (significance level). Consequently, the null hypothesis was not rejected. For this study, there was no association between gender and annual sales revenue.

The Fisher's test result is reported because 10 cells had an expected count of less than 5; consequently, the Chi-square statistics would have been unreliable.

5.2.1.2. Association between gender and cognitive style

To assess whether there was an association between cognitive styles and gender, a Chi-square test of association was conducted.

The null hypothesis was that there is no association between cognitive style and gender. The alternative hypothesis was that there is an association between cognitive styles and gender.

Table 7 depicts the results.

Table 7: Association between cognitive style and gender

Please indicate your gender. * CSI Group Cross tabulation					
			CSI Group		Total
			Intuitive	Analyst	
Gender	Male	Count	9	13	22
		% within CSI Group	69.2%	76.5%	73.3%
	Female	Count	4	4	8
		% within CSI Group	30.8%	23.5%	26.7%
Total		Count	13	17	30
		% within CSI Group	100.0%	100.0%	100.0%

Chi-Square Tests				
	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	.197[a]	1	.657	.698
Fisher's Exact Test				.698
N of Valid Cases	30			

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.47.

b. Computed only for a 2x2 table

The p-value of the Fisher's test (p-value = 0.698) was greater than 0.05 (significance level); consequently, the null hypothesis was not rejected. The results show no association between cognitive style and gender.

The Fisher's test result was reported because two cells had an expected count of less than 5; consequently, the Chi-square test would have been unreliable.

5.3. Entrepreneurial cognition

Entrepreneurial cognition aids in opportunity identification, evaluation and decision making (Simon, Houghton and Aquino, 2000a). This cognition influences the perception of risk inherent within the decision context of strategic growth opportunities in South Africa.

For this study, entrepreneurial cognition was measured through prior industry knowledge, prior managerial experience and prior entrepreneurial or ownership experience.

5.3.1. Association between cognitive style and prior industry knowledge

To assess whether an association existed between entrepreneurs' cognitive style and their having worked or owned another business in the same industry before, the Chi-square test of association was conducted.

The null hypothesis was that there is no association between cognitive style and prior industry knowledge, while the alternative hypothesis was that there is an association between cognitive style and prior industry knowledge.

The results are set out in Table 8.

Table 8: Association between cognitive style and having worked or owned another business in the same industry before

Crosstab					
			CSI Group		Total
			Intuitive	Analyst	
Did you work or own another business in the same industry before?	Yes	Count	3	4	7
		% within CSI Group	23.1%	23.5%	23.3%
	No	Count	10	13	23
		% within CSI Group	76.9%	76.5%	76.7%
Total		Count	13	17	30
		% within CSI Group	100.0%	100.0%	100.0%

Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	.001[a]	1	.977	1.000
Fisher's Exact Test				1.000
N of Valid Cases	30			

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.03.

b. Computed only for a 2x2 table

The p-value of the Fisher's test (p-value = 1.000) was greater than 0.05 (significance level). Consequently, the null hypothesis was not rejected, and it was concluded that no association exists between entrepreneurs' cognitive style and their having worked or owned another business in the same industry before.

5.3.2. Association between cognitive style and prior managerial experience

To assess whether there was an association between cognitive style and prior managerial experience, the Chi-square test of association was conducted.

The null hypothesis was that there is no association between entrepreneurs' cognitive styles and their having worked in a managerial position before. The

alternative hypothesis was that there is an association between entrepreneurs' cognitive styles and their having worked in a managerial position before.

The results are set out in Table 9.

Table 9: Association between cognitive style and having worked in a managerial position before

Crosstab					
			CSI Group		Total
			Intuitive	Analyst	
Have you worked in a managerial position before?	Yes	Count	10	12	22
		% within CSI Group	76.9%	70.6%	73.3%
	No	Count	3	5	8
		% within CSI Group	23.1%	29.4%	26.7%
Total		Count	13	17	30
		% within CSI Group	100.0%	100.0%	100.0%

Chi-Square Tests				
	Value	Df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	.151[a]	1	.697	1.000
Fisher's Exact Test				1.000
N of Valid Cases	30			

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 3.47.

b. Computed only for a 2x2 table

The p-value for the Fisher's test (p-value = 1.000) was greater than 0.05 (significance level). Consequently the null hypothesis was not rejected and it was concluded that there is no association between cognitive style and prior managerial experience.

5.3.3. Association between cognitive style and prior entrepreneurial / ownership experience

To assess whether there was an association between entrepreneurs' cognitive styles and their having prior entrepreneurial experience, the Chi-square test of association was conducted.

The null hypothesis was that there is no association between cognitive style and having owned a business before, while the alternative hypothesis was that there is an association between cognitive style and having owned a business before.

The results are set out in Table 10.

Table 10: Association between cognitive style and having owned another business before

Crosstab					
			CSI Group		Total
			Intuitive	Analyst	
Have you owned another business before?	Yes	Count	6	7	13
		% within CSI Group	46.2%	41.2%	43.3%
	No	Count	7	10	17
		% within CSI Group	53.8%	58.8%	56.7%
Total		Count	13	17	30
		% within CSI Group	100.0%	100.0%	100.0%

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.074[a]	1	.785
N of Valid Cases	30		

a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 5.63.

b. Computed only for a 2x2 table

The p-value of the Chi-square test (p-value = 0.785) was greater than 0.05 (significance level). Consequently, the null hypothesis was not rejected, and it was concluded that there is no association between cognitive style and prior entrepreneurial / ownership experience.

5.3.4. Association between cognitive style and current business ownership

To assess whether there was an association between entrepreneurs' cognitive styles and being the owner of the business, the Chi-square test of association was conducted.

The null hypothesis was that there is no association between cognitive style and business ownership, while the alternative hypothesis was that there is an association between cognitive style and business ownership.

The results are set out in Table 11.

Table 11: Association between cognitive style and business ownership

Crosstab

			CSI Group		Total
			Intuitive	Analyst	
Are you an owner in this business?	Yes	Count	13	11	24
		% within CSI Group	100.0%	64.7%	80.0%
	No	Count	0	6	6
		% within CSI Group	0.0%	35.3%	20.0%
Total		Count	13	17	30
		% within CSI Group	100.0%	100.0%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	5.735[a]	1	.017	.024
Fisher's Exact Test				.024
N of Valid Cases	30			

a. 2 cells (50.0%) have expected count less than 5. The minimum expected count is 2.60.

b. Computed only for a 2x2 table

The p-value of the Fisher's test (p-value= 0.024) was less than 0.05 (significance level); consequently, the null hypothesis is rejected. It is thus concluded that there is an association between cognitive styles and current business ownership.

The cross-tabulation above shows that of the entrepreneurs who were current business owners, 100% were intuitive and 64.7% were analytic.

This result supports the findings from the literature that, through their impulsive, ideas-driven decision-making approach, intuitive entrepreneurs will be more likely to take the plunge and open their own business (Busenitz, 1999; Baron, 2004).

5.4. Cognitive style

5.4.1. Association between cognitive style and age of business

An independent sample t-test was applied to assess whether there was an association between entrepreneurs' cognitive styles and the age of their business.

The null hypothesis was that there is no relationship between entrepreneurs' cognitive styles and age of business ($\mu_1 = \mu_2$), and the alternative hypothesis was that there is a difference between the age of businesses owned by analytic versus intuitive entrepreneurs ($\mu_1 \neq \mu_2$). The test was conducted at a 5% significance level and the test was two-sided.

Table 12 depicts the results.

Table 12: Independent samples t-test for equality of means of age of business and cognitive style

Group Statistics					Independent samples t-test for Equality of Means	
CSI Group		N	Mean	Std. Deviation	t-test	P-Value (One sided)
Age of business (years)	Intuitive	13	12.04	9.726	-1.124	0.135
	Analyst	17	16.41	11.153		

The p-value of the test (p-value = 0.135) was greater than 0.05 (significance level); consequently, the null hypothesis was not rejected. Thus, in this study, there was no significant difference between ages of businesses owned by analytic compared to the intuitive entrepreneurs.

5.4.2. Association between cognitive style and annual sales revenue

To assess whether there was an association between entrepreneurs' cognitive style and annual sales revenue, the Chi-square test of association was conducted.

The null hypothesis was that there is no association between cognitive style and annual sales revenue. The alternative hypothesis was that there is an association between cognitive style and annual sales revenue.

Table 13 shows the results.

Table 13: Association between cognitive style and annual sales revenue

Crosstab					
			CSI Group		Total
			Intuitive	Analyst	
Annual sales revenue (rands)	Less than R 5 million	Count	6	5	11
		% within CSI Group	46.2%	29.4%	36.7%
	R 5 million - R 15 million	Count	3	7	10
		% within CSI Group	23.1%	41.2%	33.3%
	R 15 million - R 25 million	Count	4	0	4
		% within CSI Group	30.8%	0.0%	13.3%
	R 25 million - R 35 million	Count	0	2	2
		% within CSI Group	0.0%	11.8%	6.7%
	R 35 million - R 45 million	Count	0	2	2
		% within CSI Group	0.0%	11.8%	6.7%
	More than R 45 million	Count	0	1	1
		% within CSI Group	0.0%	5.9%	3.3%
Total		Count	13	17	30
		% within CSI Group	100.0%	100.0%	100.0%

Chi-Square Tests				
	Value	df	Asymp. Sig. (2-sided)	Exact Sig. (2-sided)
Pearson Chi-Square	10.341[a]	5	.066	.037
Fisher's Exact Test	9.116			.046
N of Valid Cases	30			

a. 10 cells (83.3%) have expected count less than 5. The minimum expected count is .43.

The p-value of the Fisher's test (p-value = 0.046) was less than 0.05, hence significant. For this reason, the null hypothesis was rejected.

The findings for this study reveal an association between cognitive style and annual sales revenue.

From the cross tabulation above, it follows that of the entrepreneurs with annual revenues of less than R5 million, 46.2% were intuitive and only 29.4% analytic. Furthermore, of the entrepreneurs with annual revenues of more than R25 million, 29.5% were analytic as compared to 0% intuitive.

Thus, it would appear that the more analytic an entrepreneur is, the higher the growth in terms of revenue.

5.5. Discussion pertaining to propositions

The literature review suggests that analytic entrepreneurs should, as a result of their fact and detail-oriented approach to decision making, perceive higher risk associated with strategic growth opportunities. It was assumed that this perception would hinder their firms' growth. On the other hand, it was assumed that intuitive entrepreneurs would, as a result of their impulsive and flexible approach, perceive less risk and thus take advantage of strategic opportunities to grow their businesses.

However, this proposition was rejected as the results show that the analytic entrepreneurs in our study had significantly higher annual revenue growth than the intuitive entrepreneurs.

The finding that analytic entrepreneurs achieved higher annual revenue growth concurs with the view expressed in the literature that entrepreneurship concerns itself with distinctive ways of thinking and behaving (Mitchell et al., 2007).

Consequently, as a result of their rational and logical approach to strategic decision making, analytic entrepreneurs remain objective and take only calculated risks, which behaviour assists their chances of success, sustainability and growth.

This finding also supports Acedo and Florin's (2007) view that the important consideration is not who an entrepreneur is but what he or she does in behaving entrepreneurially.

The alternative hypothesis of there being an association between cognitive styles and revenue was accepted. The analytic entrepreneurs were found to have higher growth and revenue than the intuitive entrepreneurs.

5.6. Conclusion

The study found that there was no association between gender and size of business measured in terms of annual revenue, a finding in contrast to a finding in the literature (Cliff, 1998). The finding of the current study could be the result of the adopted convenience sample of 30 respondents, of whom only eight were female compared to 22 males.

The finding of no association between gender and cognitive style affirms the independence, consistency and stability of cognitive styles.

There was also no association between cognitive styles and age of business, probably because of the age distribution of the sampled businesses, 50% of which were less than ten years old.

The study did not reveal any association between cognitive styles and entrepreneurial cognition as measured by prior experiences. However, it was found that intuitive entrepreneurs were more likely to own a business than analytic entrepreneurs.

The study, however, did find that analytic entrepreneurs had significantly higher annual sales revenue than intuitive ones. This result nullified the proposition that analytic entrepreneurs would perceive higher risks associated with strategic growth opportunities and that this perception would hinder their growth.

There was no significant difference between the analytic and intuitive entrepreneurs with regard to their risk perception of strategic growth opportunities.

Consequently, in this study, risk perception was not found to be a mediating variable between cognitive styles and strategic growth decisions (Simon et al., 2000b).

The adoption of a small convenience sample could have hindered the measure of risk perception as a mediating variable.

This finding could also have been the result of not taking into account the external and social context influencing an entrepreneur's strategic decisions (Shaver and Scott, 1991), such as political, socio-economic and environmental factors.

CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1. Introduction

This chapter highlights the findings of this study and makes recommendations on its significance to the various stakeholders named in Chapter 1.

Suggestions for further research appear at the conclusion of the chapter.

6.2. Conclusions of the study

The study found no significant association between gender and size of business measured in terms of annual revenue. This finding might have been a result of the convenience sample of 30.

The alternative hypothesis was accepted, as there was found to be a significant association between cognitive styles and strategic growth measured in terms of annual revenue.

Analytic entrepreneurs exhibited higher growth than intuitive entrepreneurs. This result was not expected because of the findings of the literature review, which had indicated that intuitive entrepreneurs would exhibit higher strategic growth as a result of their perception of less risk.

The measured risk perception between analytic and intuitive entrepreneurs was found to be insignificant; consequently, risk perception could not be ascertained as either a moderating or mediating variable.

However, intuitive entrepreneurs were found to be more likely to own a business than analytic ones, as a result of their impulsive, ideas-driven decision-making approach.

In conclusion, the study found a significant difference between the annual revenue and growth of analytic and intuitive entrepreneurs, which indicates an association between cognitive styles and strategic growth.

Consequently, to ensure the growth of sustainable businesses that promote employment and equality, South African entrepreneurs should focus on analytic decision-making styles that incorporate fact-driven, detail-oriented and rational objectivity.

6.3. Recommendations

This study sought to guide aspiring entrepreneurs and students in developing practices and skills necessary for the growth of successful and sustainable SMMEs. This guidance should ultimately aid in achieving economic growth and equity through job creation in South Africa.

The study found that the key to achieving successful growth was to adopt systematic decision-making skills and practices and make logical, factual, rational and objective decisions. Analytic entrepreneurs adopting these skills and practices were found to have higher annual revenues.

The finding should also be applied by trainers and entrepreneurial schools in teaching these decision-making skills and practices, which are vital in building successful and sustainable entrepreneurial businesses.

Researchers in the field of entrepreneurship gained guidance in contextualising the relationship between cognitive style and entrepreneurial growth, as the study found that analytic entrepreneurs achieved higher revenue growth than intuitive ones.

6.4. Suggestions for further research

First, for the enrichment of empirical knowledge gained through research, target audiences for data collection should be more interested in participating, as the larger sample size, the richer the research.

Further research can be undertaken to ascertain the influence of cognitive styles on the various stages of business growth from inception to maturity.

Further comparisons can be done on the influence of cognitive styles in varying industry types.

Further research can be undertaken to ascertain the influence of cognitive styles in relation to business size, that is, by comparing small, micro- and medium-sized businesses.

Research on a wider sample group can help reveal any relationship between risk perception and strategic growth as either a moderating or mediating variable.

Further research can also be conducted on entrepreneurs in other OECD countries in relation to South Africa.

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APPENDIX A

Actual Research Instrument

I. THE COGNITIVE STYLE INDEX

Items		TRUE	Uncertain	FALSE
1	To solve a problem, I have to study each part of it in detail.			
2	My philosophy is that it is better to be safe than risk being sorry.			
3	I am more at home with ideas rather than facts and figures			
4	I make many of my decisions on the basis of intuition.			

II. THE RISK PERCEPTION QUESTIONNAIRE

Risk perception of strategic growth	Very Low	Low	Moderate	High	Very High
Adopting a marketing strategy aimed at increasing purchasing frequency of current customers					
Acquiring new customers in local markets					
Exporting current product offerings to international markets					
Exporting new product offerings to international markets					
Undertaking new product development for new customers in existing markets					
Undertaking new product development for new customers and markets					
Acquiring a competitor firm					
Acquiring a complementary business firm					
Participating in strategic alliances or partnerships e.g. for technology or product development					
Participating in joint venture initiatives e.g. partnering with a local firm in a foreign market					

APPENDIX B

Consistency matrix

Research Problem: Ascertain the influence of cognitive styles on an entrepreneur's risk perception of strategic growth opportunities.

Sub-problem	Literature Review	Propositions	Source of data	Type of data	Analysis
Ascertain the influence of cognitive styles on an entrepreneur's risk perception of strategic growth opportunities.	(Acedo and Florin, 2007) (Allinson and Hayes, 1996) (Ansoff, 1957) (Baron, 2000) (Baron, 2004) (Carland et al., 1996) (Hunt et al., 1989) (Hough, 2005) (Mitchell et al., 2002) (Nutt, 1986) (Palich and Bagby, 1995) (Simon et al., 2000a) (Simon et al., 2000b)	***Proposition 1****:* Intuitive entrepreneurs will as a result of lower risk perceived engage in strategic growth opportunities. ***Proposition 2:***Analytic entrepreneurs will as a result of higher risk perceived not engage in strategic growth opportunities.	Appendices (pg**Error! Bookmark not defined.**)	The data will be collected on a 3 and 5 point scales thus categorical and cross-sectional.	Hypothesis testing Pearson Chi-square test of association Fisher's Exact test