GORDON INSTITUTE OF BUSINESS SCIENCE

University of Pretoria

DIFFERENCES IN RISK ASSESSMENT ABILITY BETWEEN ENTREPRENEURS AND NON-ENTREPRENEURS

Pieter Ernst

12115755

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

26 September 2012

ABSTRACT

The aim of this exploratory study was to determine whether there was any significance to the proposition that the ability of individuals to assess entrepreneurial risks differed between entrepreneurs and non-entrepreneurs, with a particular focus on the risk identification and risk prioritisation abilities.

A survey strategy was followed which made use of a case study exercise to ascertain what risks the sample groups of entrepreneurs and non-entrepreneurs identified. Demographics and other risk variables, such as risk propensity and risk perception, were also excluded to provide context and eliminate certain alternative explanations.

No significant differences were found between entrepreneurs and non-entrepreneurs with respect the risks that they identified in the case study exercise. Entrepreneurs perceived the case study as more favourable and had a higher risk propensity. Entrepreneurs also found the case study exercise more difficult than non-entrepreneurs.

KEYWORDS

Entrepreneurship, Risk Assessment, Risk Identification, Risk Propensity, Risk Perception

DECLARATION

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

_____

Pieter Ernst

26 September 2012

ACKNOWLEDGEMENTS

I would like to take this opportunity to extend my sincerest gratitude to the following people who have all generously assisted with this research report.

Judi Sandrock – Judi, it was a pleasure working with you. Thank you especially for your practical assistance which was beyond your call of duty as supervisor. I'm referring to allowing me access to your events and even helping me write my case study when I suffered from writer's block. I hope that the findings of this research report will assist and enhance the already great training programmes that you offer at MEDO.

Alex Antonites – Alex, thank you for you guidance throughout the MBA and your advice on this research report. You are a true academic role model.

Greg Fisher – Greg, thank you for sparking the interest in this topic and suggesting the article which served as the foundation of this research report.

Chris Blair – Chris, thank you for allowing me access to your consultants at 21st Century Payment Solutions and for the encouragements you send to them to participate.

All the participants of the survey – Thank you all for your time and answers, this research report and the findings are a result of your efforts.

TABLE OF CONTENTS

Chapter 1: Introduction to the Research Problem 1
1.1 INTRODUCTION 1
1.2 RESEARCH MOTIVATION 1
1.3 RESEARCH PROBLEM 2
1.4 RESEARCH RELEVANCE 4
1.5 RESEARCH SCOPE AND LIMITATIONS 5
Chapter 2: Literature Review 6
2.1 INTRODUCTION 6
2.2 DEFINITION OF ENTREPRENEURSHIP 7
2.3 NEW VENTURE CREATION PROCESS 8
2.4 IMPORTANCE OF RISK IN ENTREPRENEURSHIP 9
2.5 DEFINITION OF RISK 11
2.6 RISK THEORIES 12
2.7 RISK PROPENSITY 14
2.8 RISK PERCEPTION 16
2.9 RISK TOLERANCE 18
2.10 RISK ASSESMENT 20
2.10.1 Risk Identification 20
2.10.2 Categorisation 21
2.10.3 Risk Prioritisation 21
2.11 COGNITIVE PERSPECTIVE 21
2.12 RISK MITIGATION AND BEHAVIOUR 23
2.13 NEED FOR ADDITIONAL RISK RESEARCH 24
2.13.1 Risk in Entrepreneurship Education 24
2.14 CONCLUSION 25
Chapter 3: Research Propositions 26
3.1 INTRODUCTION 26
3.2 RESEARCH PROPOSITIONS 26
Chapter 4: Research Methodology 27
3.1 INTRODUCTION 27
3.2 METHOD 27
3.3 POPULATIONS 28
3.3.1 Entrepreneurs 28

3.3.2 Non-Entrepreneurs....29
3.3.3 Qualifying Characteristics....29
3.4 SAMPLE AND SAMPLING....30
3.4.1 Sampling Technique....30
3.4.2 Sample Size....30
3.4.3 Sample Quotas....31
3.5 DATA COLLECTION INTSTRUMENT AND DESIGN....32
3.6 CASE STUDY....32
3.7 DATA COLLECTION....33
3.8 DATA ANALYSIS....34
3.9 LIMITATIONS....34
Chapter 5: Results....36
5.1 INTRODUCTION....36
5.2 DATA COLLECTION AND RESPONSE RATE....36
5.3 SAMPLE GROUPS....37
5.4 DEMOGRAPHICS....38
5.4.1 Age....38
5.4.2 Gender....40
5.4.3 Education Levels....40
5.5 RISK IDENTIFICATION AND PRIORITISATION....41
5.5.1 Categories....46
5.5.2 Miscellaneous Observations....49
5.6 RISK PERCEPTION....49
5.7 RISK PROPENSITY....50
5.7.1 Correlation of Variables....53
5.8 ENTREPRENEURIAL ABILITY AND DIFFICULTY....54
Chapter 6: Discussion of Results....57
6.1 INTRODUCTION....57
6.2 DEMOGRAPHICS....57
6.2.1 Age....57
6.2.2 Gender....58
6.2.3 Education Levels....58
6.3 RISK IDENTIFICATION AND PRIORITISATION....59
6.4 RISK PERCEPTION....62
6.5 RISK PROPENSITY....64
6.6 ENTREPRENEURIAL ABILITY AND DIFFICULTY....66

6.7 LIMITATIONS 68
Chapter 7: Conclusion 70
7.1 INTRODUCTION 70
7.2 MAIN FINDINGS AND IMPLICATIONS 70
7.3 FUTURE RESEARCH 72
Reference List 73
APPENDIX 1 – CONSISTENCY MATRIX 77
APPENDIX 2 - SURVEY 78

INDEX OF FIGURES

Figure 1 - Entrepreneurial Opportunity vs Entrepreneurial Risk 7
Figure 2 - Variables Affecting Risk Behaviour 13
Figure 3 - Sample Groups..... 38
Figure 4 - Age Distribution by Sample Group 39
Figure 5 - Risk Identification: Entrepreneurs (Categories)..... 43
Figure 6 - Risk Identification: Non-Entrepreneurs (Categories)..... 43
Figure 7 - Risk Identification: Entrepreneurs vs. Non-Entrepreneurs..... 44

INDEX OF TABLES

Table 1 - Data Collection 37
Table 2 - Response Rate 37
Table 3 - Descriptive Statistics: Age by Sample Group 39
Table 4 - Gender by Sample 40
Table 5 - Education Levels by Sample Group 40
Table 6 - Risk Identification Results 42
Table 7 - Summary: Risk Perception 49
Table 8 - Risk Perception by Sample Group 50
Table 9 - Summary: Risk Propensity 51
Table 10 - Difference between Self-Rating and Independent Rating 51
Table 11 - Risk Propensity by Sample Group 52
Table 12 - Correlation of Variables 54
Table 13 - Summary: Entrepreneurial Ability and Exercise Difficulty 55
Table 14 - Entrepreneurial Ability Self-Rating 55
Table 15 - Case Study Difficulty Self-Rating 56

Chapter 1: Introduction to the Research Problem

1.1 INTRODUCTION

The aim of this exploratory study was to determine whether there was any significance to the proposition that the ability of individuals to assess entrepreneurial risks differs between entrepreneurs and non-entrepreneurs. The differing strategies of risk assessment, with a particular focus on risk identification and prioritisation, as well as variables relating to risk propensity and perception, were explored in this context.

An improved understanding of the potentially differing abilities and strategies of risk assessment between entrepreneurs and non-entrepreneurs may build on existing knowledge explaining why certain individuals choose to become entrepreneurs, as well as why certain individuals have proven to be more successful in similar entrepreneurial circumstances.

The potential for the measurement of this ability was therefore of interest to be studied further, not only as this could be suggested as an explanation for the choice to become an entrepreneur, but also as it could assist with the development of a model. This model could enhance the prediction of entrepreneurial inclination and success, in turn increasing the prominence of risk assessment in the context of entrepreneurship education as well.

1.2 RESEARCH MOTIVATION

It is widely accepted that both society and researchers have for many decades been fascinated with the reasons of individuals to become entrepreneurs and have asked the question why certain entrepreneurs are more successful than others, particularly as the importance of entrepreneurship on economic growth and competitiveness is becoming more evident.

Research can back this and has *inter alia* established a consistent association between GDP per capita and the level and nature of entrepreneurial activity in a country, moreover, “there is wide agreement on the importance of entrepreneurship for economic development” (Global Entrepreneurship Monitor, 2011).

Van Stel *et al* (2005:311) also found in their study on the effects of entrepreneurial activity on economic growth "that entrepreneurial activity by nascent entrepreneurs and owner/managers of young businesses affects economic growth", however depending on the per capita income of the country. It is argued that South Africa as a developing economy has reached the threshold to benefit in this regard.

Van Praag en Versloot (2007) concluded in their research - which analysed 57 studies on the topic - that entrepreneurs have a specific, but very important role within the economy. They write that entrepreneurs "engender relatively much employment creation, productivity growth and produce and commercialize high-quality innovations" (Van Praag en Versloot, 2007:351). They also concluded that entrepreneurs are more satisfied than non-entrepreneurs and that furthermore recent studies showed "that entrepreneurial firms produce important spill overs that affect regional employment growth rates of all companies in the region in the long run" (Van Praag en Versloot, 2007:351).

In line with the above arguments, which confirm the importance of the consistent improvement and growth of the entrepreneurial sector, it is suggested that a thorough understanding of the concept of entrepreneurship and its various elements is important, especially in the setting of an emerging economy like South Africa.

1.3 RESEARCH PROBLEM

The study presented in this research report tested the risk assessment ability of entrepreneurs compared to non-entrepreneurs, loosely based on a theory presented by Gilbert and Eyring (2010) who suggested that the risks that start-ups are faced with should be categorised into three different categories. They then made the argument that eliminating these risks in the right categorical order would significantly increase the chances of a start-up company beating the odds of success.

The premise of this research report relates to the suggestion that an important part of risk assessment relies on the ability to identify risks in an entrepreneurial situation. The literature appeared not to have explored this particular element of risk assessment relating to entrepreneurship.

Entrepreneurial risk has been part of the literature for several decades, focussing mainly on elements such as risk attitudes, risk propensity and risk perception with an increasing focus on the cognitive aspects in this regard.

Janney and Dess (2006) in their study on entrepreneurial risk narrowed the opportunity down eloquently, writing that "the challenge lies in describing alternative measures that improve our understanding of the actual risks that entrepreneurs are faced with."

"The idea that entrepreneurs are willing to take higher risks than employees is intuitively appealing" write Caliendo, Fossen and Kritikos (2009:46), but as the literature in this research report will show, research has yet to empirically verify reliable variables to measure this intuitively appealing notion in a manner which can predict entrepreneurial inclination and probability of success.

Mullins and Forlani (2005:48) confirm this argument and elaborate on the contextual importance writing that "despite the central role of risk in entrepreneurial decision making, there has been little empirical study of the various contextual factors that may influence risky new venture decisions."

Mitchell *et al* (2002:94) write that "research that contributes to a better understanding of information processing and entrepreneurial cognition has an important role to play in the development of the entrepreneurship literature." They continue with stating that they "believe that studies in entrepreneurship have not fully explored the possibilities that are offered by social cognition, managerial cognition, or information processing theory."

Any significant difference between entrepreneurs and non-entrepreneurs in the ability to perform these cognitive tasks may be understood as a distinguishing characteristic of an entrepreneur and it is proposed that this ability might be of influence on the decision to become an entrepreneur as well. Many researchers have therefore attempted to isolate the distinguishing characteristics and traits that define entrepreneurs.

Norton and Moore (2006) appear to be one of the first to empirically prove that risk assessment is an element that distinguishes entrepreneurs from non-entrepreneurs (bank managers in their study). Their study however did not sufficiently take into account the different elements within risk assessment, as its intention was to prove that risk assessment instead of risk propensity distinguishes entrepreneurs from others.

This research report looked in more detail at one of the characteristics of entrepreneurs, namely a different attitude towards risk assessment. Based on the results of their study, Norton and Moore (2006) confirmed the need for such an inquiry, emphasising the predictability element, writing that "the scope of this inquiry should be

expanded to study other, relatively homogenous groups selected on attributes that may predict entrepreneurial success."

1.4 RESEARCH RELEVANCE

Popular belief suggests that entrepreneurs are essential in any society to solve problems, create jobs and inspire people. A better understanding of characteristics of entrepreneurs therefore appears to remain of importance.

From a different research angle, Palich and Bagby (1995) stated that "unlike personal traits, cognitive processes can be changed. That is, if certain aspects of cognition are different for entrepreneurs, or more successful entrepreneurs, these processes can be learned and mastered." This implies that a thorough understanding of cognitive processes used by entrepreneurs can have a positive influence on understanding and growing of entrepreneurial success. It is proposed in this regard that risk assessment is a cognitive process and not a personality trait or characteristic.

There are several circumstances in which an improved understanding and the ability to measure risk assessment may be beneficial to entrepreneurship stakeholders, looking at how entrepreneurs understand and deal with the many risks - both foreseen and unforeseen – that they are faced with during the process of establishing their new venture.

Firstly, in the context of (bank) loans to first-time entrepreneurs or the selection of (venture capital) investments, risk assessment ability could be the basis for an alternative measurement tool to ascertain the skills and abilities of an entrepreneur. These measurement tools are becoming increasingly important to mitigate investment risk, especially in developing countries, with the emergence of (unsecured) investment opportunities at the bottom of the pyramid.

MacMillan, Siegel and Narashimha (1985) confirmed in their study that venture capitalists see the quality of the entrepreneur as the ultimate determinant of the decision to fund a venture, with the ability of an entrepreneur to evaluate and react to risk as an important criterion.

Secondly, insights of this research report may prove to be of use in the context of entrepreneurship education. Antonites and Wordsworth (2009) suggested that the entrepreneurship curriculum should be expanded to include constructs of risk identification, assessment and management within an entrepreneurial context.

Fairly and Holleran (2012:368) confirmed in their study "that individuals who are more risk tolerant benefit more from entrepreneurship training than individuals who are less risk tolerant. Entrepreneurship training might benefit risk-tolerant individuals more because they are pre-disposed to take the risk of becoming a business owner and perhaps because the increased information from the training program leads more risk-averse individuals to reconsider business ownership." Selection processes may therefore benefit as well.

Thirdly, this research report presents an opportunity to test a new theory, which could potentially be utilised in this regard and influence future research on the risk assessment topic in relation to cognition, which - as stated earlier – is considered important within the context of entrepreneurial research.

1.5 RESEARCH SCOPE AND LIMITATIONS

The study in this research report tested the ability of risk assessment, specifically focussing on the element of risk identification and prioritisation. Two main sample groups, consisting of entrepreneurs and non-entrepreneurs, were asked to complete a identical case study exercise identifying and ranking risks in an entrepreneurial situation.

Other factors, such as risk propensity and risk perception were also included, as well as several demographic factors. Participants were also asked to comment on their strategy with regard to risk identification and prioritisation in order to start understanding certain cognitive elements involved.

There was merely an intention to confirm propositions relating to risk assessment and identification and ascertain if there was any basis for further studies on the difference in cognitive abilities in this regard. Other obvious factors that could influence risk assessment ability, such as age and level education, were also considered.

This study limited itself to two relatively small samples of two defined populations within Johannesburg, South Africa. The case study method also limited the findings to the specific case and industry that was presented to participants.

Chapter 2: Literature Review

2.1 INTRODUCTION

Entrepreneurs have fascinated the general public and researchers alike for many decades. Questions around whether entrepreneurs are born or made, their distinguishing factors, attitudes and personalities and the source of their relentless drive and creativity have been topics of many debates, empirical studies and research undertakings the world around.

During recent years, entrepreneurship research has increasingly been around topics aiming to isolate, often single, distinguishing factors - which could in turn be used to identify entrepreneurs or be used to transform more people into entrepreneurs. In addition, entrepreneurship research incorporating and involving different academic fields and disciplines has flourished, with a particular increase in the area of psychology and cognition.

Brandstätter (2010:222) also observed this as part of his meta-analysis of studies on the entrepreneurial personality and said that: “During the past two decades entrepreneurship has become a very active field of research in various social science disciplines and a prominent concern of economic policy”.

Within the field of entrepreneurship there have recently been a large number of studies looking at the opportunity recognition element of entrepreneurship. This research has generally been trying to understand how entrepreneurs recognise and exploit opportunities. Norton and Moore (2002:281) summarise this research nicely saying that “entrepreneurs hold a dissenting view of the future which often permits the discovery of arbitrage opportunities overlooked by others.”

It is argued that this is an important element of the entrepreneurial process, but that the other side of this coin - namely the risk associated with each opportunity - needs consideration as well. Entrepreneurs find a balance between exploiting an opportunity that presents itself and mitigating the various risks that are associated with this opportunity.

This is not to say that risk has not been considered as a research topic or in the literature, to the contrary. Risk has been the topic of many studies, however, often relating to finance, insurance or investment decisions, as well as on specific sectors or

situations. This research report aimed to look at the element of risk within the field of entrepreneurship, more specifically on an individual level.

Figure 1 - Entrepreneurial Opportunity vs Entrepreneurial Risk

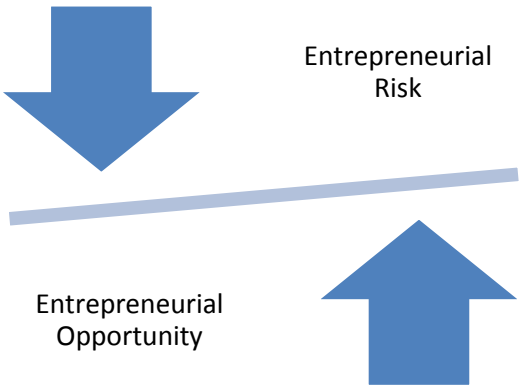


Figure 1: Interpreted from Brandstatter (2010) and Norton and Moore (2002)

2.2 DEFINITION OF ENTREPRENEURSHIP

As the concept of entrepreneurship is considered to be both broad and intriguing, many different definitions and interpretations of word entrepreneurship can be found, both popular and academic.

Thompson (1999:287) for instance defined it as “a pattern of behaviour, a style of management which is concerned with obtaining and managing resources to exploit opportunity” and Norton and Moore (2002:281) defined it referring to the distinguishing factor of entrepreneurs by mentioning that “the ability either to create disequilibria or to recognize disequilibria and move to a position of competitive advantage distinguishes entrepreneurs from non-entrepreneurs.”

According to Gartner’s (1990) often cited study on what the definition of entrepreneurship means to researchers studying the field the debate surrounding the exact definition of entrepreneurship can be characterised by eight themes: The entrepreneur, innovation, organisation creation, creating value, profit or non-profit, growth, uniqueness and the owner-manager. This clearly indicates the wideness of the definition and debate.

The focus of this research was on the first characteristic, the entrepreneur, since it was the individual that was researched. It should however be noted that all other characteristics and elements mentioned in the various definitions above served to build

a context to better understand the environment in which this individual operates and is influenced by.

In their research project aiming to create a framework for entrepreneurship research, Shane and Venkataraman (2002:218) write that "perhaps the largest obstacle in creating a conceptual framework for the entrepreneurship field has been its definition". They furthermore argued that definitions solely around the entrepreneur as a person pose a problem, since "this definition does not include consideration of the variation in the quality of opportunities that different people identify, it leads researchers to neglect to measure opportunities." Shane and Venkataraman (2002:218).

One cannot neglect to also briefly mention the famous entrepreneurship research of the Global Entrepreneurship Monitor. Most probably the most important learning to distil from their reports in the context of this research report is the inclusion of the early entrepreneurial stages within their definitions. It is writing in their latest report on South Africa that "nascent and new business owners together account for the total early-stage entrepreneurial activity measured" (Global Entrepreneurship Monitor: South Africa, 2011:10), on which their report places great emphasis.

Following on the importance early stage entrepreneurial activity, mention should be made of the term 'nascent entrepreneur'. Studies have started to distinguish between those individuals who have already started an enterprise and those who have the credible intention to do so or are in the process of doing so. It is argued that the discussion above on the definition of entrepreneurship could also be applied to nascent entrepreneurship and needs no further elaboration in this context.

2.3 NEW VENTURE CREATION PROCESS

Having reviewed the literature on the definition of entrepreneurship the review continued to examine the process of creating a new venture for which there was substantial literature available.

The model to describe the process of new venture creation proposed by Gartner (1985) provided a suitable framework and good starting point to briefly examine this process. Gartner's model has been widely accepted and adopted and is the first framework in the literature to combine more than two different dimension of new venture creation.

The model consists of four major perspectives in entrepreneurship, namely the characteristics of the entrepreneur, the organisation, the environment and the start-up process. It should be noted that like with the entrepreneurship definition, there is an important emphasises on the individual – with in this case again one perspective dedicated to the individual.

Another study worth mentioning by Bhave (1994) distinguished between internally and externally stimulated elements on the new venture creation. The importance hereof is also noted and Bhave (1994) further described the new venture creation process as "an iterative, nonlinear, feedback driven, conceptual and physical process" and where the entrepreneur introduces "differing amounts of novelty at each core variable during venture creation."

The Global Entrepreneurship Monitor raises the issue about the phases of entrepreneurship. "The GEM project recognises that entrepreneurship is a process that comprises different phases, from intending to start, to just starting, to running new or established enterprises and even discontinuing these. Because the contexts and conditions that affect entrepreneurship in different countries are diverse and complex, it is not possible to conclude that one phase inevitably leads to the next". (Global Entrepreneurship Monitor: South Africa, 2011:9).

Shaver and Scott (1991:37) also spend some time looking at the new venture creation process, more specifically looking at the psychological perspective writing that "new ventures emerge, and take the form they do, because of the deliberate choices made by individual people", hereby emphasising the importance of the choice of an individual to embark on an entrepreneurial journey.

It is argued that while the perspectives and models discussed above aim to provide a practical path for entrepreneurs to follow and a framework for researchers to conduct studies, they fail to include sufficient consideration for the element of risk within the process. This observation starts to suggest the need to explore the risk element in more detail, for instance as an approach to add novelty to each step with the new venture creation process as suggested by Bhave (1994).

2.4 IMPORTANCE OF RISK IN ENTREPRENEURSHIP

So are entrepreneurs such risk-takers? Many studies have in fact aimed to answer this question, including Norton Moore (2006), Palich and Bagby (1995) and Brockhaus

(1980). Although there still is no decisive conclusion drawn in the literature on the exact difference in risk-taking, it is argued that in the context of this research report the influential conclusion of Brockhaus (1980) is followed as a base. Brockhaus (1980) found while reviewing previous literature that most of the previous studies concluded that entrepreneurs are in fact only moderate risk-takers. It was further argued in later studies, such as Norton Moore (2006) who started breaking up the element of risk-taking measuring different variables concluding that other elements, such as risk perception, are of greater influence on risk-taking behaviour – this will be explored further later on.

Risk nonetheless remains an important factor within the entrepreneurial journey. Cressy (2006:104) for instance elaborates on the importance of the ability of an entrepreneur to manage risk by saying that "the external environment must be managed effectively for the business to optimise its response to risk. The ability to do this will be determined in part by factors internal to the firm, including the entrepreneur's own managerial ability and her attitudes to risk." Cressy (2006) herewith also again confirms the importance of the individual in this context.

In the analysis of their study Kahneman and Lovallo (1993) suggested that many failures originate as a result of highly optimistic judgements relating to the risks and opportunities facing a business. If forecasts look optimistic, it is easy to increase the risk taking of a venture according to Kahneman and Lovallo (1993:30), who also write that "a successful effort to improve the realism of assessments could do more harm than good in an organization that relies on unfounded optimism to ward off paralysis". This suggests the important balance displayed in Figure 1.

Willebrands, Lammers and Hartog (2012:345) raise another interesting point. They argue that a "preference for risk may indeed lead to risk-seeking behaviour, much as a gambler may enjoy the excitement that comes with the unpredictability". This is again contrary to some of the research mentioned earlier, establishing the need for additional exploration in this regard.

In addition to the discovering and exploiting of ideas and opportunities one could easily agree however, based on popular belief, that entrepreneurs are being associated with risk-taking. Palich and Bagby (1995:425) write however that "though it occupies the centre of most definitions of entrepreneurship, the concept of risk-taking and its linkages with other constructs (most notably personal traits) have been difficult to capture."

Although difficult to capture, risk remains of great importance. Caliendo, Fossen and Kritikos (2009:153) write that a "person's risk attitude is one of the crucial variables in their choice between entrepreneurship and a salaried job" adding that risk attitudes *ceteris paribus* are a defining characteristic of entrepreneurship".

Another argument made by Busenitz (1999:331) is that "entrepreneurs' insensitivity to risk will be manifested in their greater susceptibility to risk". Overall it is argued in this research report that the importance of risk within the entrepreneurial context remains not only an important element, but also one which is not fully understood yet.

Another interesting note, even before the entrepreneurial journey formally starts is risk of influence. Van Gelderen *et al* (2005:374) looked at factors influencing nascent entrepreneurs. They found in their study that "people who perceive less risk will start earlier, whether their risk perception is accurate or not." Even though they concluded in their study that the element of market risk is of central importance as a success factor in nascent entrepreneurship, they made note of the importance of risk perception as well. In their view "risk perception may be considered a mediator as conceptually all remaining variables may influence success through the heightening or lowering of the perception of risk", this statement confirms the suggestion of Sitkin and Pablo (1992) which will be discussed later.

2.5 DEFINITION OF RISK

The concept of risk can be considered an ancient one. Knight (1921) appears to have been one of the first modern writers attempting to tackle the element of risk in an entrepreneurial context and his contribution to the topic has been influential, but there have been many different definitions and interpretations since.

Still today, there appears to be limited agreement in the literature on the exact meaning or definition of risk. Janney and Dess (2006) write that one of the biggest challenges in research concerning risk refers to the definition. They argue that "part of the problem may stem from differing measurements seeking to capture phenomena that all carry the same name: risk" (Janney and Dess, 2006: 388).

Since there will be substantial discussions on risk still to come, the shortest and arguably most all-encompassing definition of risk is offered, namely the definition of risk of Stone and Grønhaug (1993:43) who defined it as "the subjective expectations of loss".

2.6 RISK THEORIES

After having discussed the problems surrounding the definition of risk, some of the theory was explored in order to at least appreciate the concept of risk better. It was important to understand the different dimensions of risk theory, which was explored in chronological order. The writings of Knight (1921) were therefore the first to be examined.

Knight (1921) made an important contribution to the theory in his book as he was the first to distinguish between economic risk and uncertainty. Rakow (2010:458) writes that Knight (1921) was "commonly credited with defining the distinction between decisions under "risk" (known chance) and decisions under "uncertainty" (immeasurable probability)." Rakow (2010:460) further argues that Knight (1921) foreshadowed the "revolutionary advances in psychological decision theory from the latter half of the 20th century". In retrospect, Knight's (1921) work is therefore an important starting point.

Bearing in mind the important distinction between risk and uncertainty, Jackson *et al* (1972) were next. They argued based on their review of the literature that there were four distinctive dimensions of risk-taking, namely the following:

1. Monetary: Willing to take risks where financial gain is involved, including things such as job security and gambling;
2. Physical: Taking risks where physical danger is involved, thrill-seeking.
3. Social: Expressing oneself freely and willing to take risks resulting in embarrassment and loss of self-esteem.
4. Ethical: Willing to compromise own or society's ethical standards.

Sitkin and Pablo (1992) explored when decisions can be considered riskier than others and came to the conclusion that this was the case when:

1. The expected outcomes were more uncertain;
2. The overall difficulty of achieving goals was greater;
3. The potential outcomes could include some extreme consequences.

Within the risk domain, Sitkin and Pablo (1992), synthesizing much of the literature on risk taking behaviour, also defined three key variables related to risk: risk preference, risk perception and risk propensity. These variables related directly to this research

report and will were explored in more detail as Sitkin and Pablo (1992) argued that "risk perceptions and risk propensity may best be viewed as mediating the effect of a variety of other variables on risk behaviour".

Figure 2 - Variables Affecting Risk Behaviour

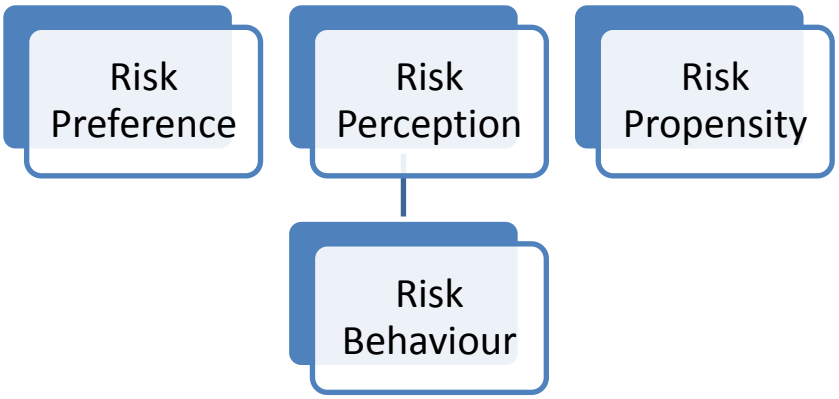


Figure 2: Interpreted from Sitkin and Pablo (1992)

Roth and Espersen (2002) write in the context of auditing that "using common sense ratings of high, medium, and low, many audit departments create a concise risk profile that shows the relative risk in the different areas of the organization. Risk is measured in terms of impact and likelihood. Many traditional risk assessment practices combine these two measurements. As a result, a high-impact risk that is believed to have a low likelihood will appear to be average." The above presents a simple and often used basis for a model on risk categorisation, which could be considered as applicable for the purposes of this research report.

Janney and Dess (2006) attempted to summarise the literature on risk in three dimensions, namely:

1. Risk as variance, which relates to the uncertainty of the level or significance of the outcomes associated with the opportunity.
2. Risk as downside loss, which relates to the potential losses that may be incurred when pursuing an opportunity.
3. Risk as opportunity (opportunity cost), which in other words refers to the alternative opportunity which might be available.

A more recent theory on entrepreneurial risk is suggested by Gilbert and Eyring (2010). It is interpreted from their proposed theory that successful entrepreneurs need to

possess three specific cognitive abilities in order to manage risks and increase their probability of entrepreneurial success, namely the:

- Ability to identify risks that an entrepreneurial opportunity is faced with;
- Ability to categorise these identified risks accordingly;
- Ability to prioritise the mitigation of these categories accordingly.

Gilbert and Eyring (2010) argue that eliminating the risk categories in the right categorical order will increase the probability of survival of the start-up. The study in this research report adopted this theory, in particular the identification element.

2.7 RISK PROPENSITY

After having considered some of the risk theory in the context of this research report, one of the first elements to explore within the risk domain is the risk taking propensity of a person. Sitkin and Pablo (1992:20) offer a simple definition of risk propensity and defined it as “the tendency of a decision maker either to take or to avoid risks.”

Brockhaus (1980:513) offers a more elaborate definition namely that risk propensity is “the perceived probability of receiving the rewards associated with success of a proposed situation, which is required by an individual before he will subject himself to the consequences associated with failure, the alternative situation providing less reward as well as less severe consequences than the proposed situation.” In the context of the study it was argued that this definition adequately described the situation that potential entrepreneurs were faced with when starting a new business.

There has been a considerable debate and inconsistence in the research during the past decades on the question whether there is indeed a difference in risk propensity between entrepreneurs and non-entrepreneurs (often focussed specially on managers in comparative studies).

Two fairly recent meta-analysis studies even disagree. When reviewing previous studies in their meta-analysis of 12 studies published between 1980 and 1999, Stewart and Roth (2001) concluded that there is a difference in risk propensity. Xu and Ruef (2004) however conducted a study a few years later coming to a different conclusion, believing that there is no difference. The study in this research report has therefore included a risk propensity variable to explore this question further.

In essence, risk propensity is the tendency of an individual to take risk and popular belief would suggest that entrepreneurs have a higher tendency in this regard as they are often referred to a risk-seekers. Macko and Tyszka (2009:469) wrote in this regard that "according to the definitions of entrepreneurship and everyday observation, entrepreneurs are perceived as more risk prone than other people." Research however suggests that this is not entirely true.

Brockhaus (1980) was one of the first to compare the risk taking propensity of entrepreneurs with that of non-entrepreneurs and found that was no significant difference between the two groups. Macko and Tyszka (2009) also dismissed this notion in their study. They found that entrepreneurs are not more likely to take risks compared to control groups in well-defined entrepreneurial settings. Other studies relating to risk propensity have found similar results, also failing to establish a significant or conclusive difference between entrepreneurs and non-entrepreneurs.

Sitkin and Pablo (1992) proposed a widely accepted model trying to put risk propensity in perspective. Their model suggested that risk propensity moderates risk behaviour, but that this is ultimately influenced by risk perception. This would in a way be in line with the definition proposed in the initial Brockhaus (1980) study, but placing far more importance on the element of risk perception.

Scott and Shaver (1991) added that "findings are exceedingly difficult to generalize to the creation of a new venture, because the real world rarely presents just two choices."

Norton and Moore (2002) took the debate further and in their study they started to look at the alertness perspective of entrepreneurs. They proposed after reviewing the literature that entrepreneurs don't necessarily have different character traits that predispose them to engage in riskier behaviour, but that they are more confident and optimistic about the possible outcomes.

However, in a later study Norton and Moore (2006) write that "twenty odd years of examining risk taking propensity has yielded inconclusive results". In this study Norton and Moore (2006) empirically proved that entrepreneurs are not different from non-entrepreneurs with regards to their risk taking propensity. More importantly, they confirmed that entrepreneurs have a tendency to assess opportunity and risk differently than non-entrepreneurs. They found that entrepreneurs assess risk and opportunity more favourably. This assessment may in turn then give the impression of greater risk tolerance as compared to non-entrepreneurs.

Nonetheless, the association of risk-taking and adventure with entrepreneurship cannot completely be disregarded. Derr (1982:7) introduced the term 'adventurer entrepreneurs' to describe a category of very high risk taking individuals "who take chances very intuitively and with little analytical rigour. Sometimes this is a successful approach, but their decisions and strategies are always based more on hope than judgment."

However, the attitude towards risk does have a significant impact on the survival and failure rates of entrepreneurs. Caliendo *et al* (2008) confirmed that persons whose risk propensity is in the medium range survive significantly longer as entrepreneurs than persons with a particularly low or high risk propensity. Risk propensity could therefore be considered as an influential variable in predicting entrepreneurial success, but it doesn't distinguish entrepreneurs from non-entrepreneurs.

Finally, another noteworthy study to mention is Mullins and Forlani (2005), who found that the risk propensity of entrepreneurs is also influenced by the source of the funding for the venture – herewith suggesting that there may be many variables which may influence the propensity for risk taking of a person and that it is not necessarily a character trait.

2.8 RISK PERCEPTION

Palich and Bagby (1995:432) summarise the key arguments discussed in this research report on risk propensity above by writing that "entrepreneurs may not think of themselves as being any more likely to take risks than non-entrepreneurs, but they are nonetheless predisposed to cognitively categorise business situations more positively." This is an important notion to bear in mind going forward: Entrepreneurs are not more risk prone, but they may perceive risk differently – which leads us to the element of risk perception.

Sitkin and Weingart (1995:1576) define risk perception as "the decision maker's evaluation of the level of risk inherent in a situation, associated with its uncertainty and the control that individuals perceive they have over such uncertainty." It is argued that this definition is sufficient in the context of this research report, specifically because it includes the perception of both the evaluation of the risks in a certain situation as well as the perceived control over the risks.

Arenius and Minniti (2005:233) confirm the importance of risk perception of entrepreneurs in their study on perceptual variables by arguing that "perceptual variables should be included in economic models of entrepreneurial behaviour".

In their two studies on the mediating factors of risk propensity and risk perception, Sitkin and Weingart (1995) found clear support for the importance of risk perception as a crucial influence on individual risk-taking behaviour.

Writing about their proposed model on risk assessment, Forlani and Mullins (2002:305) argue "that entrepreneurs' perceptions of risk and decisions involving risk are distinct and separate cognitive processes". Forlani and Mullins (2002:308) also found in their study about perceived risks and choices of entrepreneurs that "differences in entrepreneurs' new venture choices were influenced not only by differences in the risks inherent in the patterns of anticipated outcomes for different ventures, but by differences in our entrepreneurs' perceptions of those risks, as well as their propensities to take risk." This confirms the earlier argument that risk propensity influences risk perception.

Scott and Shaver (1991:26) were one of the first ones to provide a context for entrepreneurship research to be viewed from a psychological perspective. They write in the context of risk perception that "the personological approach to business entry has assumed that everyone agrees on the level of risk involved, and that some people (entrepreneurs) are constitutionally more willing to take the chance than are other people (non-entrepreneurs). A variety of well-known cognitive processes suggests an important alternative explanation: Perhaps those who found businesses do not think about the risks in these statistical terms." Scott and Shaver (1991:28) appealed that we "need to know how the business world is represented in the cognitions of people who do, and people who do not, found new ventures."

Simon, Houghton and Aquino (1999) argue that cognitive biases indirectly affect the decision to launch a new venture through their effect on risk perception. Their study found "that individuals who perceive lower levels of risks were more likely to decide to form a venture". (Simon, Houghton and Aquino, 1999:125).

Busenitz (1999:327) proposed "that entrepreneurial risk may be explained by recognizing that entrepreneurs use biases and heuristics more, which is likely to lead them to perceive less risk in a given decision situation."

One could also argue that the perception and understanding of risk amongst entrepreneurs is limited, since "entrepreneurs bear substantial risk, but empirical

evidence shows no sign of a positive premium", although this could be attributed to a difference in motivation as per the study of Vereshchagina and Hopenhayn (2009:1808) on risk taking by entrepreneurs. Nonetheless, it is clear that entrepreneurs perceive risks differently.

The literature seems to agree more or less that entrepreneurs perceive risk differently and see less risk in an entrepreneurial situation, which would mean that a high degree of risk perception stops people from taking entrepreneurial risk or as Simon, Houghton and Aquino (1999:119) put it: "Starting a venture may be so risky that even individuals with a high tolerance for risk will not proceed if they perceive the true risks involved."

In an interesting recent study by Willebrands, Lammers and Hartog (2012:342) tackled the matter from a different angle. They found that the risk perception variable rather "signals the inclination to take precautionary action to contain risk: higher risk perception leads to better performance". This suggests that a business managed by an entrepreneur with a higher degree of risk perception, will actually perform better.

Willebrands, Lammers and Hartog (2012:344) elaborated that "the conventional economic theory predicts that more risk-averse businessmen are less successful: they operate on a smaller scale and they do not collect the premium risky ventures are rewarded with."

But by distinguishing risk perception and risk propensity, Willebrands, Lammers and Hartog (2012:348) found that "risk perception improves business performance, as perceiving more risks leads to preventive measures to contain risks (in particular downside risks).

It is argued that these are important findings and confirm not only the need for risk assessment to be added to the entrepreneurship curriculum, but more importantly to create cognitive processes which are able to recognise risks without decreasing the likelihood of engaging in entrepreneurial activity. It is also argued that in order to increase risk perception, risk identification needs to increase. The more risk one can identify, the better the overall risk of an entrepreneurial situation can be perceived.

2.9 RISK TOLERANCE

This leads us briefly to the next dimension of risk, namely risk tolerance. As we have established that entrepreneurs are indeed faced with risky situations, but do not perceive risks in a similar way to non-entrepreneurs, this presents the question of risk

tolerance and if there is any difference in levels of risk tolerance or aversion between entrepreneurs and non-entrepreneurs. In other words, can entrepreneurs perhaps deal better with risky situations?

It should be mentioned that to an extent risk propensity and tolerance are similar and in literature are sometimes used interchangeably, but the distinction is nonetheless of importance in the context of this study. Risk preference is another term which is used similarly to risk tolerance. Entrepreneurs according to popular belief are expected to be more risk-tolerant than others as economic theory suggests that risk-averse entrepreneurs should be less successful (Cressy, 2006).

Xu and Ruef (2004) suggested and confirmed in their study that the risk tolerant entrepreneur is nothing more than a myth. In fact, they found that entrepreneurs are in fact more risk-averse than the general population when it comes to investment decisions. They explain their findings suggesting that the motives of entrepreneurs to embark on the venture creation journey are not financially motivated.

On the other hand, Cramer *et al* (2000) concluded in their study, where school children were interviewed both in school and ten years later once they had made their career choice, that "entrepreneurship is indeed discouraged by the individual degree of risk aversion."

More recently, Caliendo, Fossen and Kritikos (2009:4) also found in their study that "individuals with lower risk aversion are more likely to become self-employed. Sensitivity analysis reveals, however, that this is true only for people coming out of regular employment, whereas for individuals coming out of unemployment or inactivity, risk attitudes do not seem to play a role in the decision process."

Antonites and Wordsworth (2009) also found that "exposure to and involvement in entrepreneurial activity both correlate positively with increased risk tolerance", which is an interesting finding as it suggests that perhaps risk tolerance may increase as result of entrepreneurial experience.

Forlani and Mullins (2006) propose another dimension to this argument, namely that "entrepreneurs face a different composition of risks than their non-entrepreneurial peers". This argument suggests that the risks differ between the two groups. It is interpreted that these risks mainly relate to personal circumstances, which in turn have an effect on risk tolerance.

It is argued considering the abovementioned studies, that risk tolerance does differ between entrepreneurs and non-entrepreneurs, but varies mainly as a result of influences such as personal circumstances and experience.

2.10 RISK ASSESMENT

Sarasvathy, Simon and Lave (1996) conducted study somewhat similar to the one in this research report. They compared the perception and managing of risk between entrepreneurs and bankers, finding that entrepreneurs "appear to have a discernibly distinct cognitive approach for managing various types of risks." They concluded that "entrepreneurs accept risk as a given and focus on controlling outcomes at any given level of risk. Entrepreneurs "also assume greater personal responsibility for influencing outcomes", whereas bankers (non-entrepreneurs) are "avoiding situations where they risk higher levels of personal responsibility. (Sarasvathy, Simon and Lave, 1996:208).

Also important to note is that when the potential impact can be quantified, it is relatively easy to rate a risk, but the impact in many risk categories is qualitative, and it is usually the qualitative risks that don't occur to anyone until it is too late (Roth and Espersen, 2002).

For the purposes of this research report it is argued that risk assessment should be divided into three elements, namely risk recognition, risk categorisation and risk prioritisation, as per the interpretation of a the theory presented by Gilbert and Eyring (2010). The main focus will be on the identification element, touching on prioritisation and categorisation from a cognitive perspective.

2.10.1 Risk Identification

Baldegger and Schueffel (2011:2) mention that "it is established that uncertainty is an integral part of entrepreneurship" and that "previous studies have generally focused on the opportunities inherent in the entrepreneurial process rather than on the risks." They call entrepreneurial risk recognition "the neglected child of the entrepreneurship family."

They continue to write that "systematic research on risk recognition is virtually non-existent and can be best described as a scattering of studies originating from adjacent academic fields. For management scholars and policy makers alike the lack of transparency regarding the risk recognition process and the required capabilities presents a significant theoretical shortcoming", herewith confirming the necessity to

explore the risk recognition element within risk assessment (Baldegger and Schueffel, 2011:4).

Their most important finding is that they have shown with empirical evidence that "risk recognition capability becomes a determinant of the profitability of a firm". (Baldegger and Schueffel, 2011:5) are however referring to the ability of the firm, rather than the individual. Their research was limited by a small sample size of case studies of companies, leaving a possibility to further build on this research by look at the entrepreneur as an individual.

2.10.2 Categorisation

Other than as part of the risk theories mentioned earlier, there is not a lot of literature available. Therefore, in terms of categorisation of risks, we argue that Gilbert and Eyring (2010) pose an applicable and suitable categorisation theory as a base. They define three categories of risks, namely in order of severity: (1) Deal Killer Risks, (2) Path-Dependent Risks and (3) Easily Resolved Risks.

Palich and Bagby (1995) however mention that entrepreneurs may simply categorize and subsequently frame the same stimuli differently from non-entrepreneurs, which confirms the necessity for exploration of this element.

2.10.3 Risk Prioritisation

There is no agreed methodology according to Ball and Golob (1998) to measure risk prioritisation. They elaborate "that even subtle differences in methodologies can generate radically different rankings and, ultimately, actions. Thus, while the ranking of risks as a means of setting goals and prioritizing actions is a crucial activity, the process by which it is conducted may have an overwhelming influence upon the outcome, which in turn might bear little resemblance to the aspirations of stakeholders."

The focus of the study in this research report was only to include risk prioritisation as an influencing variable in analysing risk assessment differences between entrepreneurs and non-entrepreneurs.

2.11 COGNITIVE PERSPECTIVE

The word cognition has already been mentioned in the context of the various variables, but it is suggested that exploring this important perspective will build a better

understanding of the opportunities and challenges that this research report was presented with. Mitchell *et al* (2002:95) mention that the "cognitive perspective provides us with some useful lenses with which to explore entrepreneur-related phenomena and to address some of the meaningful issues that to this point we have been largely ineffective in probing".

Cognition could loosely be defined as thinking processes. Mitchell *et al* (2002:97) define entrepreneurial cognitions as "the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth", therefore specifically focussing on entrepreneurs.

After reviewing several studies in the field of entrepreneurship, Baron (2000:16) concluded that "a growing number of studies suggest that applying the findings of cognitive psychology and social cognition to entrepreneurship may shed new light on the questions of why some individuals, but not others, choose to become entrepreneurs, and why some are so much more successful than others in this activity". This is in line with the aim of this research report.

Baron (1998) tried to explore cognitive mechanisms in the literature to answer why and how entrepreneurs think differently. He explored the cognitive biases of counterfactual thinking, affect infusion, attribution style, planning fallacy and self-justification after having concluded that entrepreneurs were exposed more often and more intensely to conditions increasing susceptibility to these biases.

Conditions include new, unpredictable and complex situations, which are likely to produce information overload in many different ways, as well as the lengthy work-weeks and high levels of stress. Also, "entrepreneurs' commitment to their ideas and businesses is often intense, with the result that many opportunities exist for the powerful emotions stemming from such commitment to influence their thinking." (Baron, 1998:276).

It appears to be generally accepted in the literature that risk assessment ability is influenced significantly by individual cognition. Sarasvathy, Simon and Lave (1996:206) stated that "people perceive risks differently, because they draw different cognitive problem spaces where they search for solutions – not because risk is an objective attribute of decisions and events".

The study of Simon, Houghton and Aquino (1999) also suggests that risk perceptions may differ because of certain types of cognitive biases lead individuals to perceive less risk. Cognition will therefore be an important element to consider within the context of

this study, as it may very well significantly influence the ability of an individual to assess risk.

It should however be noted that after conducting a study on risk assessment, Norton and Moore (2006:216) noted when suggesting future research that they "foresee challenges in capturing aspirants' cognitive processes as they evaluate venture opportunities". This concern was valid and is noted in terms of a limitation to the study in this research report,

2.12 RISK MITIGATION AND BEHAVIOUR

So how does the knowledge in the literature about risk assessment and cognition affect the risk mitigation and behaviour of entrepreneurs?

Firstly, it should be noted that studies and reality are not always similar, which complicates research. Sitkin and Pablo (1992:12) write that "most scholars who have studied decision-making behaviour regarding risky organizational situations have focused on single determinants of this behaviour."

Cressy (2006) made another interesting point in line with the previous chapters, stressing that "entrepreneurs are not the type of individuals who, as risk lovers, just rush into business ventures as a nice opportunity to gamble, but instead they try to optimize their level of risk".

Caliendo et al (2009) wrote that "people with particularly low or particularly high risk attitudes fail as entrepreneurs more often than do persons with a medium-level risk attitude." This suggests that entrepreneurs should operate with a medium risk attitude in order to increase their probability of entrepreneurial success.

Carter et al (1996) discussed the implications of their research findings and advised that "it would seem that the results provide evidence that nascent entrepreneurs should aggressively pursue opportunities in the short-term, because they will quickly learn that these opportunities will either reveal themselves as worthy of start-up or as poor choices that should be abandoned."

2.13 NEED FOR ADDITIONAL RISK RESEARCH

Brandstätter (2010:227) in his meta-analysis study on entrepreneurial traits wrote that "studies could also collect data on mental and behavioural processes that might be conceived of as variables that mediate the influence of personality traits on the results of the entrepreneurs' endeavours."

Brandstätter (2010:228) continues "The influence of personality traits may be stronger with entrepreneurs than with most other professions, because the entrepreneurial role provides more freedom in choosing and changing the environment as well as in acting according to personal preferences and goals. Helping aspiring entrepreneurs not only to learn about economic opportunities, legal regulations, and financial support of a startup, but also about the chances, limits, and risks given with their personality structure (cognitive abilities, motives, values, and temperament) can now rely on the results of highly valuable psychological entrepreneurship research. This topic is a fine example of the value of integrating personality psychology and economic-related behaviour."

The psychology of the entrepreneur has been found to be more important in predicting the chances to start a business than in predicting the chances of the success of a business (Rauch and Frese, 2000).

In their study comparing entrepreneurs and non-entrepreneurs, McGrath and MacMillan (1992) found that questions about risks did evoke different patterns of response. Although entrepreneurs agreed that starting a venture would imply taking risks, they also stated that this added excitement to their lives. They also found that non-entrepreneurs were more worried about losing their income security and returning to their job if their entrepreneurial venture failed.

2.13.1 Risk in Entrepreneurship Education

Arenius and Minniti (2005) found that education is "positively related to the likelihood of starting a new business." Their results suggest that the likelihood of being nascent entrepreneur increases steadily as individuals have higher levels of education.

Fairly and Holleran (2012) confirmed in their study "that individuals who are more risk tolerant benefit more from entrepreneurship training than individuals who are less risk tolerant. Entrepreneurship training might benefit risk-tolerant individuals more because they are pre-disposed to take the risk of becoming a business owner and perhaps

because the increased information from the training program leads more risk-averse individuals to reconsider business ownership."

Kuratko (1996:577) however writes that it is "rare to find risk as part of any curriculum"> It is argued in line with other studies, like Antonites and Wordsworth (2009), and considering the above arguments that skills related to understanding and mitigating risk should play a more important role in entrepreneurship education.

It is argued that there are sufficient arguments above and throughout this literature review to confirming the necessity of additional research on the topic of risk within an entrepreneurial context.

2.14 CONCLUSION

Scott and Shaver (1991:39) wrote about entrepreneurs that "we need a person, in whose mind all of the possibilities come together, who believes that innovation is possible, and who has the motivation to persist until the job is done. Person, process, and choice: for these we need a truly psychological perspective on new venture creation."

Busenitz (1999:326) also summarised it well: "It may be the naïveness of the risk involved that enables entrepreneurs to forge ahead with their new ideas".

The combination of both arguments summarises the literature very well. Considering all the above literature, it is argued that there is sufficient reason and basis to conduct this study with the aim to ascertain and explain the difference in risk assessment ability between entrepreneurs and non-entrepreneurs. It is also argued that there is sufficient theory available to design and conduct the study.

Chapter 3: Research Propositions

3.1 INTRODUCTION

This chapter outlines the research propositions of the research report, which were proposed considering the literature review and introduction.

3.2 RESEARCH PROPOSITIONS

The following research propositions were proposed:

1. Entrepreneurs and non-entrepreneurs identify and prioritise different key risks in an entrepreneurial situation.
2. Entrepreneurs use different strategies for risk identification and prioritisation compared to non-entrepreneurs
3. Entrepreneurs perceive entrepreneurial opportunities more favourably compared to non-entrepreneurs.
4. There is a negative correlation between risk-taking propensity and perceived risk within an entrepreneurial setting.
5. Entrepreneurs find it easier to identify the risk in an entrepreneurial situation compared to non-entrepreneurs.

Chapter 4: Research Methodology

3.1 INTRODUCTION

This chapter outlines the research methodology that was used to conduct the study in an attempt to confirm the research propositions of this research report. This research report focused on the entrepreneur as an individual, rather than on his or her enterprise.

The aim of this research methodology is to ascertain whether there is any difference in the way entrepreneurs assess risk as compared to non-entrepreneurs in an entrepreneurial situation, with a specific focus on risk identification and prioritisation as well as some contextual variables such as risk perception and propensity.

3.2 METHOD

The study conducted was an exploratory study. Saunders, Lewis and Thornhill (1997) define an explanatory study as “a study that establishes causal relationships between variables.” They furthermore elaborate that “the emphasis is on studying a situation … in order to explain relationships between variables.” It is argued that the study in this research report fits the definition of an explanatory study.

Primary data was collected from two populations using a survey strategy. A survey strategy suited this study well as it allows one to collect quantitative data which can be analysed using statistical methods and the data will also be standardised and easy to compare (Saunders, Lewis and Thornhill, 1997). Respondents were invited to complete a self-administered questionnaire - which is form of a data collection technique within a survey strategy - consisting of several questions.

This study furthermore followed a mixed-method approach. The majority of the questions in the questionnaire were to collect quantitative data, however, to ensure the relevance of the findings, some qualitative questions were also included. Mixed-method approach is “a general term for when both quantitative and qualitative data collection techniques and analysis are used in a research design” (Saunders, Lewis and Thornhill, 1997).

Tashakkori and Teddlie (2003) argued that multiple methods, of which the mixed-method approach is one, were useful if they provided better opportunities to answer research questions. It was argued that this is the case in this study in line with several of the plausible reasons for using mixed-method research designs listed in Bryman (2006). The reason of aid interpretation, which is using qualitative data to help interpret quantitative data, is in particular brought forward as argument in the context of this proposed study.

It is also argued that the nature of the study, which *inter alia* aims to measure risk identification abilities, would require open-ended questions in order not to lead respondents towards certain answers.

This study furthermore used a case study method. Yin (2008:1) writes that a strategy using a case study has been "a common research strategy in many disciplines."

The unit of analysis in this study is individuals who either have entrepreneurial experience or no entrepreneurial experience.

3.3 POPULATIONS

The study in this research report explored propositions comparing two defined populations, namely entrepreneurs and non-entrepreneurs, with a distinction within the non-entrepreneur population between entrepreneurially aspiring and non-aspiring individuals.

3.3.1 Entrepreneurs

Referring to the discussion in the literature review, it was acknowledged that there is no consensus amongst stakeholders on the exact definition of the term entrepreneur and it is therefore a widely differing definition. For the purpose of this research it was decided to rely on self-selection of participants.

In addition, the definition used by the Global Entrepreneurship Monitor: South Africa (2010) was chosen as a guideline in for the study. The Global Entrepreneurship Monitor: South Africa (2010) is a study that is published by a leading internationally alliance for entrepreneurship research. It is argued that this definition was most suitable as the Global Entrepreneurship Monitor may be considered as one of the largest and often cited entrepreneurial research endeavours.

The Global Entrepreneurship Monitor uses a wide definition for entrepreneurship to allow for inclusion of all entrepreneurial activity.

"Any attempt at new business or venture creation, such as self-employment, a new business organisation, or the expansion of an existing business organisation by an individual, teams of individuals, or established businesses" (Global Entrepreneurship Monitor, 2011)

Based on this definition, two populations were suggested for the purpose of the study. The populations will be referred to as 'entrepreneurs' and 'non-entrepreneurs'

3.3.2 Non-Entrepreneurs

The population on non-entrepreneurs is based on our first proposed population by means of using the exact opposite. Therefore, the main qualifier for this population is to exclude the definition of entrepreneur as used by Global Entrepreneurship Monitor: South Africa (2010). Another self-selection option was added for the non-entrepreneurs who aspired to fall within this category and who had the credible intent of becoming an entrepreneur in the near future.

3.3.3 Qualifying Characteristics

Both populations were furthermore narrowed down to individuals with certain qualifying characteristics. The same characteristics were used for both populations to exclude any difference in characteristic being used as alternative conclusion for results. The following characteristics were used:

- **Residing in South Africa** – It is argued that differences within cultures may influence the results of the study. Mueller and Thomas (2000:287) for instance examined "the relationship between culture and four personality characteristics commonly associated with entrepreneurial motivation" and found that "motivational differences across cultures can be striking."

- **Between the ages of 18 and 64** – It is assumed that this age group incorporates the working population of South Africa, in other words, school going children and pensioners are excluded. This is also the age group used by the GEM consortium for the purposes of entrepreneurial research. Global Entrepreneurship Monitor: South Africa (2010)

3.4 SAMPLE AND SAMPLING

The study made use of a non-probability sampling strategy stating limited resources available as the key argument. In addition, the nature of this study warranted a non-probability sample despite "the estimates obtained not being statistically projectable to the population" since the non-probability samples "may yield good estimates of the population characteristics" (Malhotra 2010). It is argued that this is sufficient for the purpose of this research.

3.4.1 Sampling Technique

Within non-probability sampling this study will make use of the quota sampling technique based on the following arguments and advantages as listed in Saunders, Lewis and Thornhill (1997):

- The technique is used for large populations, which is the case comparing entrepreneurs with non-entrepreneurs.
- There is no requirement for a sampling frame, which will be difficult to obtain due to the large nature of the populations.
- It is less costly and easy to set-up.

On the other hand, it is suggested that a sample size as large as 2000 or 3000 may be necessary in case of quota sampling for statistical analysis to be done (Saunders, Lewis and Thornhill, 1997). The potential bias associated with a limited sample is noted in this regard.

Samples will be drawn based on the self-selection criteria representing each population. There will therefore be two main sample groups.

3.4.2 Sample Size

Weijers (2008) suggests in relation to conducting confidence intervals that in order for the population to be normally distributed, the sample size needs to exceed 30. We take this argument as a basis for our sample size decision, as this is also practically achievable. To accommodate for any no-shows and outliers, we increase the number to 50 per sample and will therefore aim to conduct a total of 100 questionnaires (50 for each population) of which at least 60 (30 from each sample) need to comply with the stipulated criteria.

It is also interpreted from MacCullam *et al* (1999) that a total sample size of 100 should be sufficient. MacCullam *et al* (1999:96) write that "our theoretical framework and results show clearly that common rules of thumb regarding sample size in factor analysis are not valid or useful. The minimum level of *N,* or the minimum *N:p* ratio, needed to assure good recovery of population factors is not constant across studies but rather is dependent on some aspects of the variables and design in a given study".

It is argued that the practical nature of the study as well as the limited resources made it possible to realistically obtain at least a total of 100 participants within the timeframe of the study. Also, as there will not be any inferences and considering the variables and design of the study, 50 participants in each sample is considered sufficient.

3.4.3 Sample Quotas

The following sample quotas will be used for both samples, as we assume that both populations have the same characteristics used to establish quotas:

Gender – A quota will be used to ensure that the average results are adjusted accordingly based on gender. Although Masters and Meijer (1988) found no difference in risk propensity between males and females, it is argued that because this study explores risk assessment there may be differences in perception between male and females. It is also intended to exclude gender as an alternative conclusion.

According to AMPS (2011), 47,4 % of the South African population is male and 52.6% is female. We therefore aimed to have at least population 40% of each gender represented in both sample groups.

3.4.4 Sample Process

To ensure that the samples were representative of the populations, defining characteristics based on the population were used to pre-select potential participants. Participants were then randomly selected to participate in the events. It is acknowledged that there is an element of convenience to this process with the same consequences as using a convenience sample.

The aim was to ensure that each sample group had at least 30 respondents, as suggested by Weijers (2008) to be able to infer any statistical conclusion.

As this is a convenience sample, it is argued that response rates are not a good measure of the quality of the survey data and not too much emphasis should be placed on them.

3.5 DATA COLLECTION INTSTRUMENT AND DESIGN

The research was conducted by means of a survey strategy using a self-administered questionnaire. Both samples received identical questionnaires either physically or electronically.

The physical survey differed slightly from the electronic version allowing participants to categorise and prioritise risks in a more detailed way. It was unfortunately not possible to extend this option to the electronic version. This however did not affect the quality of the data in any way and the data was analysed in an equal fashion.

No complete instrument which met the objective of testing risk assessment in the context of this proposed study existed. A new instrument was therefore developed, however based partly on the following previous research in which similar tests were conducted which were adapted or in which indications for future research were made.

The following variables were measured as part of the survey:

Age	Quantitative	MacCrimmon and Wehrong (1990)
Gender	Quantitative	Masters and Meijer (1988)
Level of Education	Quantitative	Baron & Ensley (2006)
Risk Perception (Case Study)	Quantitative	Palich and Bagby (1992)
Risk Propensity (Self-Rating)	Quantitative	Caliendo et al (1999)
Risk Propensity (Independent)	Quantitative	Adapted from Keh et al (2002)
Entrepreneurial Ability (Self-Rating)	Quantitative	Original Suggestion
Level of Difficulty - Case Study (Self-Rating)	Quantitative	Kickul *et al* (2009)
Risk Identification (Case Study)	Quantitative / Qualitative	Baldegger and Schueffel (2011) Ball and Golob (1999)
Prioritisation Strategy (Case Study)	Qualitative	Roth and Espersen (2002)

3.6 CASE STUDY

The survey made use of a case study. It was argued that the nature of the research and the survey supported the necessity of this strategy. Dul and Hak (2012:4) define a case study as “a study in which one case (single case study) or a small number of

cases (comparative case study) in their real life context are selected and scores obtained from these cases are analysed".

Dul and Hak (2012) furthermore mention that "business researchers usually make a choice between the survey and the case study as the main strategy in their research, particularly if an experiment is not feasible." It was argued that the combination or both in this study would generate the best results. Dul and Hak (2012) do make provision for this possibility calling this a quasi-survey case study.

They further more mention that a case study method is "too small for conducting statistical anylysis of the data" and that therefore "qualitative analysis of the few instances available can be conducted". Dul and Hak (2012)

We will be conducting a survey which will incorporate a single case study. Yin (2008) suggests that one rationale to choose a single case in a study is when the case is typical or representative. "The objective is to capture the circumstances and conditions of an everyday or commonplace situation." (Yin, 2008:41)

Please refer to the survey in Appendix 2 for the full case study. The case study was adapted from an unpublished case study by Judi Sandrock (2012) designed and written specifically for the purpose of this study and incorporated several indications of risks that were similar to real-life entrepreneurial situations.

3.7 DATA COLLECTION

Three separate groups/databases were used to invite participants to complete the survey over a period of several months.

- Firstly, the survey was distributed during a classroom session of a a leading enterprise development agency for the entrepreneurs. This group consisted of 26 entrepreneurs who were currently undergoing entrepreneurship training.
- Secondly, the survey was distributed to the employees (non-entrepreneurs) of a leading consulting firm specialising in remunerations. 46 employees received the survey with a request to participate.
- Thirdly, an invitation to participate in an online survey was send to the MBA class of 2012 of the Gordon Institute of Business Science. 206 students received an invitation to participate.

The data was collected anonymously and in line with the ethical standards set by the University.

3.8 DATA ANALYSIS

All the physical survey data was digitised and combined with the electronically collected data. The data was placed in a spread sheet for further analysis.

Firstly, descriptive statistics were derived from the various variables to create demographic data which could provide for a context around the study.

Secondly, descriptive statistics were derived from the various variables, most importantly to obtain the respective means of each individual sample group. These means were then compared with the support and context of further descriptive statistics.

All variables were then correlated to establish whether there were any correlations between variables.

In terms of the risk identification variable, categories of answers were created based on the qualitative answers. The answers were then placed into categories by means of distributing points based on the ranking of the identified risk. Six points were given for the highest ranked risk, four points for the second highest and two points for the third identified risk. In case of more than one risk or in case of a possible placement within two categories, the points were divided accordingly.

Qualitative data on the strategy used to identify and prioritise the risks was then analysed and where possible related back to existing risk theories as outlined in the literature review. The data however did not prove to be sufficient for this process and only observations where mentioned in the final results.

3.9 LIMITATIONS

The research methodology that was used in this study posed the following limitations:

This study used a non-probability sample, which implies that no inferences could be made on the entire population based on the results derived by this study using the sample groups.

There was a wide spread of participants in terms of age, background, experience, demographics. This was as a result of the convenience sampling method used.

There were limitations in terms of the case study. Only one case study was used presenting a very specific entrepreneurial opportunity.

The sample size used was too small to give statistical relevance to findings of this study.

Chapter 5: Results

5.1 INTRODUCTION

This chapter of the research report presents the results of the survey study conducted as per the research methodology outlined in the previous chapter. The context of the data collection will be presented, as well as the results outlined per topic within the research report.

As discussed in previous chapters, the data was collected using a survey strategy to determine whether there was any difference in the way entrepreneurs assess risk as compared to non-entrepreneurs in an entrepreneurial situation. There was a specific focus on risk identification and prioritisation as well as some contextual variables such as risk perception and propensity.

5.2 DATA COLLECTION AND RESPONSE RATE

The survey was conducted amongst three groups of individuals representing different backgrounds. The following groups of individuals generously volunteered their time and energy to participate in the survey:

MEDO Entrepreneurship Event – The survey was distributed amongst the students of MEDO, a micro enterprise development organisation. These students all run small businesses and received the survey during one of their training sessions.

21st Century Payment Solutions – The staff and consultants of 21st Century Payment Solutions, a remuneration consultancy, were asked to complete the surveys. Their backgrounds were generally those of non-entrepreneurs in full-time employment.

GIBS MBA Class of 2012 – An electronic invitation was send to the MBA Class of 2012 at the Gordon Institute of Business Science, including the full-time entrepreneurship class. The class provided a good mix of both entrepreneurs, aspiring and non-aspiring non-entrepreneurs.

The following table (Table 1) presents the types of surveys used, as well as the number of responses collected per group. As the table indicates, a total of 103 useable responses were collected with the majority of the participants being GIBS MBA students.

Table 1 - Data Collection

	Type	Number or Responses
MEDO: Entrepreneurship Event	Physical Survey	24 Responses
21st Century Payment Solutions	Physical Survey	14 Responses
GIBS: MBA Class of 2012	Electronic Survey	65 Responses
	Total	**103 Responses**

The following table (Table 2) presents the response rate data of the survey that was conduction.

Table 2 - Response Rate

	Invited	Responses	Response Rate
MEDO: Entrepreneurship Event	26	24	92%
21st Century Payment Solutions	42	14	33%
GIBS: MBA Class of 2012	205	65	32%
Total	**273**	**103**	**38%**

The table above indicates that a total of 273 individuals were invited of which 103 participated. This resulted in a total average response rate of 38%. This is in line with the requirements outlined in the research methodology chapter. A total of 103 responses were used in the data analysis, although it should be noted that on occasion certain questions were not answered, which may reflect in the results.

5.3 SAMPLE GROUPS

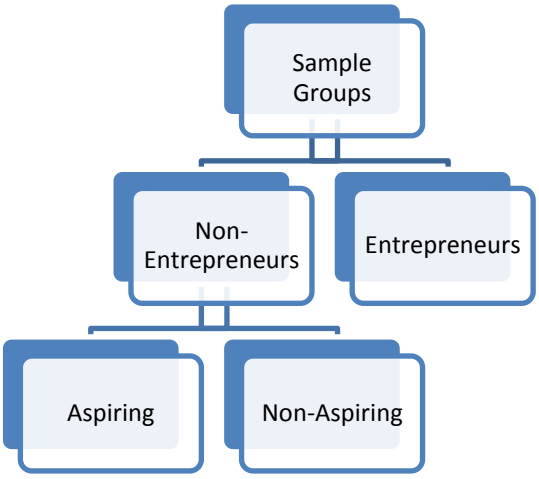
As per the research methodology, the two main sample groups of this study were entrepreneurs and non-entrepreneurs. The non-entrepreneurs could be further narrowed down to an aspiring group and a non-aspiring group of entrepreneurs.

There was a self-selection process in the form of a survey question where participants were asked to place themselves into the appropriate sample group, based on the following criteria:

- Non-Aspiring Entrepreneurs: "*You have no intention of becoming an entrepreneur in the near future*"
- Aspiring Entrepreneurs: "*You have the credible intention to start a business, but don't have any entrepreneurial experience*"
- Entrepreneurs: *"You have started your own business"*

The non-aspiring and aspiring groups of entrepreneurs combined made up the non-entrepreneurs sample. The figure below (Figure 3) shows the hierarchy of samples and groups.

Figure 3 - Sample Groups



5.4 DEMOGRAPHICS

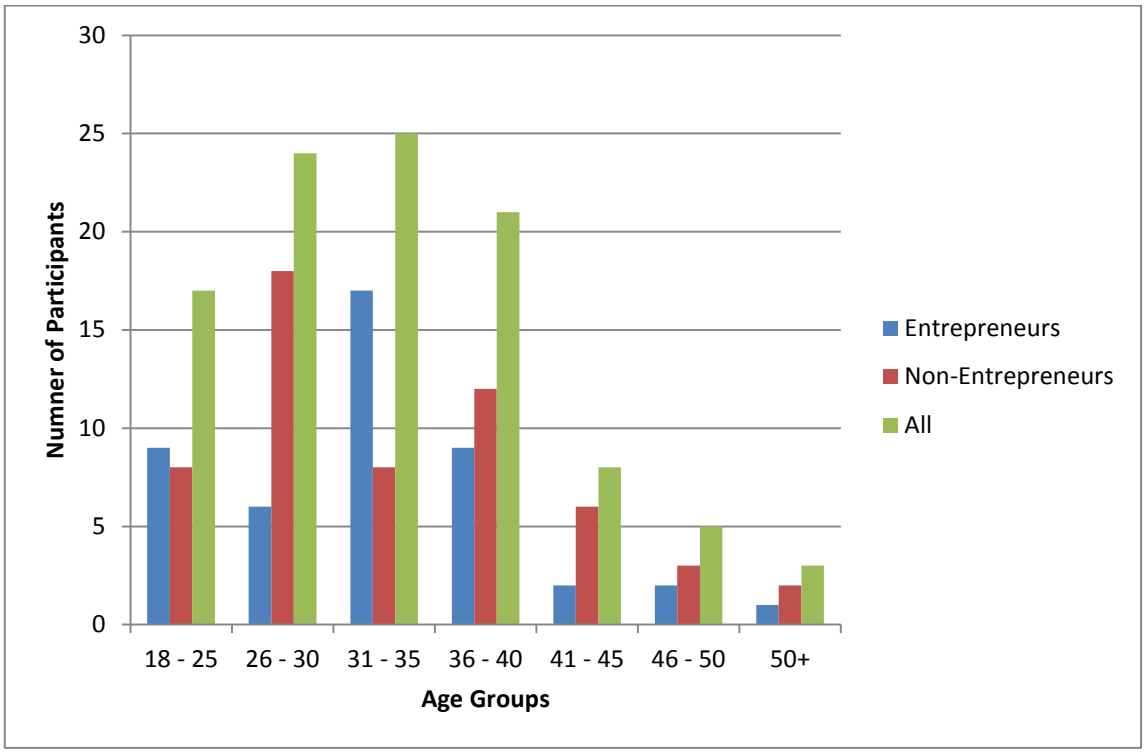
The following demographics will provide a context for further presentation and discussion of the results of this research report. Gender, education levels and age are explored in this regard and results are presented per sample and in some instances narrowed down further.

5.4.1 Age

The following figure presents the age distribution of the samples used in this study. It is argued that the age of the combined samples is fairly normally distributed as the green bars will indicate, with an underrepresentation of non-entrepreneurs in the 31 – 35 years of age group. Entrepreneurs are slightly overrepresented in this category.

In the 26 – 30 years of age group, entrepreneurs were slightly underrepresented and the majority of participants in this age group fell within the non-entrepreneurs sample.

Figure 4 - Age Distribution by Sample Group



The following table (Table 3) provides descriptive statistics on the age distribution of the samples. As the table indicates, the average age of both samples was 33 years with the youngest participants being 18 and 19 years of age and the oldest 60 and 61 years of age. The range of ages is therefore equal in both sample groups. The average age of the non-entrepreneurs was slightly increased due to a few outliers, hence the larger standard deviation. The sample of the non-entrepreneurs was slightly larger.

Table 3 - Descriptive Statistics: Age by Sample Group

Entrepreneurs	
Mean	33.15217
Standard Error	1.138253
Median	33.5
Mode	34
Standard Deviation	7.72001
Sample Variance	59.59855
Kurtosis	2.719525
Skewness	1.014043
Range	42
Minimum	19
Maximum	61
Count	46

Non-Entrepreneurs	
Mean	33.24561
Standard Error	1.14852
Median	31
Mode	27
Standard Deviation	8.671136
Sample Variance	75.1886
Kurtosis	0.456099
Skewness	0.612463
Range	42
Minimum	18
Maximum	60
Count	57

5.4.2 Gender

The following table (Table 4) shows the distribution of gender within the sample groups. The results in indicate that the majority of the participants in the samples was male, with a significant overrepresentation in the entrepreneurs sample increasing the combined average. It is acknowledged that the entrepreneurs sample is therefore not entirely representative of the South African population, unlike the non-entrepreneurs sample.

Table 4 - Gender by Sample

	Non-Entrepreneurs		**Entrepreneurs**		**Total**	
	in numbers	in %	in numbers	in %	in numbers	in %
Male	31	54%	33	72%	64	62%
Female	26	46%	13	28%	39	38%
Total	57	55%	46	45%	103	100%

5.4.3 Education Levels

The following table (Table 5) shows the distribution of the (entrepreneurial) education levels within the sample groups. The majority of the sample has a university education or higher. This is due to the majority of the sample being current post-graduate students. It should be noted that some MBA students indicated completion of their post-graduate degree, where others indicated to have only obtained a university degree. It is suggested that this is a result of distributing this survey towards the very end of the MBA course.

Table 5 - Education Levels by Sample Group

	Entrepreneurs		**Non-Entrepreneurs**		**Total**	
	in numbers	in %	in numbers	in %	in numbers	in %
High School / Matric	1	2%	5	9%	6	6%
Certificate or Some Courses	18	39%	4	7%	22	21%
University Degree	6	13%	21	37%	27	26%
Post-Graduate	18	39%	24	42%	42	41%
None / Other	3	7%	3	5%	6	6%
Total	46	100%	57	100%	103	100%

Certain responses were combined to give a more meaningful view of the data. These include the combination of 'post-graduate diplomas' and 'post-graduate degrees' into the 'post-graduate' category and the 'certificate' and 'some courses' into a combined category. The 'none' and 'other' options were also combined.

5.5 RISK IDENTIFICATION AND PRIORITISATION

The following section covers the risk identification and prioritisation part of this research report. Participants were presented with a case study in which they were asked to identify and prioritise the key risks.

The first proposition within this topic to be explored was:

Proposition 1: Entrepreneurs and non-entrepreneurs identify different key risks in an entrepreneurial situation.

Based on the answers collected, categories were created to categorise the answers accordingly and start comparing answers between sample groups. Participants of the electronic survey were asked to identify three key risks in order of importance, whereas participants in the physical survey were asked to identify risks, categorise them and rank the categories.

Based on the priority given to an answer in either the electronic or physical survey, points were assigned. Six points for the first category or risk, four for the second category and two for the third. If more than one risk was mentioned within an answer or category the points were split up accordingly to best place the answer within the created categories. If a risk mentioned could fall within two categories, the points were also split.

Based on this methodology the following table (Table 6) was created, presenting the respective percentages for each category in both the entrepreneurs and non-entrepreneurs sample. The categories were furthermore grouped by different business disciplines to better interpret the data. A detailed breakdown of all the categories is given towards the end of this section.

Table 6 - Risk Identification Results

	Entrepreneurs	Non-Entrepreneurs	Difference
Financial	**24%**	**26%**	**2%**
Access to Finance	6%	6%	0%
Cash Flow / High Fixed Cost	12%	13%	1%
Financial Risks (Various)	6%	7%	1%
Marketing	**23%**	**31%**	**8%**
Market Understanding	6%	6%	0%
Market Size	6%	5%	-1%
No Franchise / New Brand	6%	11%	5%
Competition	4%	7%	4%
Marketing (Various)	2%	2%	-1%
Personal	**32%**	**24%**	**-8%**
Lack of Skills and Experience	25%	21%	-4%
Personal (Various)	7%	3%	-4%
Operations	**14%**	**15%**	**1%**
Safety	3%	1%	-2%
Limited Hours	6%	9%	3%
Cash Business	2%	3%	1%
Location	3%	2%	-2%
Operational Risks (Various)	4%	1%	-3%
Other	**2%**	**3%**	**1%**

As the table above indicates, the risks that were identified by the two different samples were very similar in nature. Risks were further sorted into groups to reflect the nature of the business discipline. Within the disciplines, the largest differences were found in marketing and personal, both with a difference of eight percentage points. This shows that entrepreneurs are slightly more concerned about the required business skills and experience and the home situation of the entrepreneur in the case study.

The marketing discipline is mainly of greater concern to the non-entrepreneurs because of the risk of the non-existent brand and the potential competition.

The following figures (Figure 5 and Figure 6) show the risk identification results of the entrepreneurs by sample and by category.

Figure 5 - Risk Identification: Entrepreneurs (Categories)

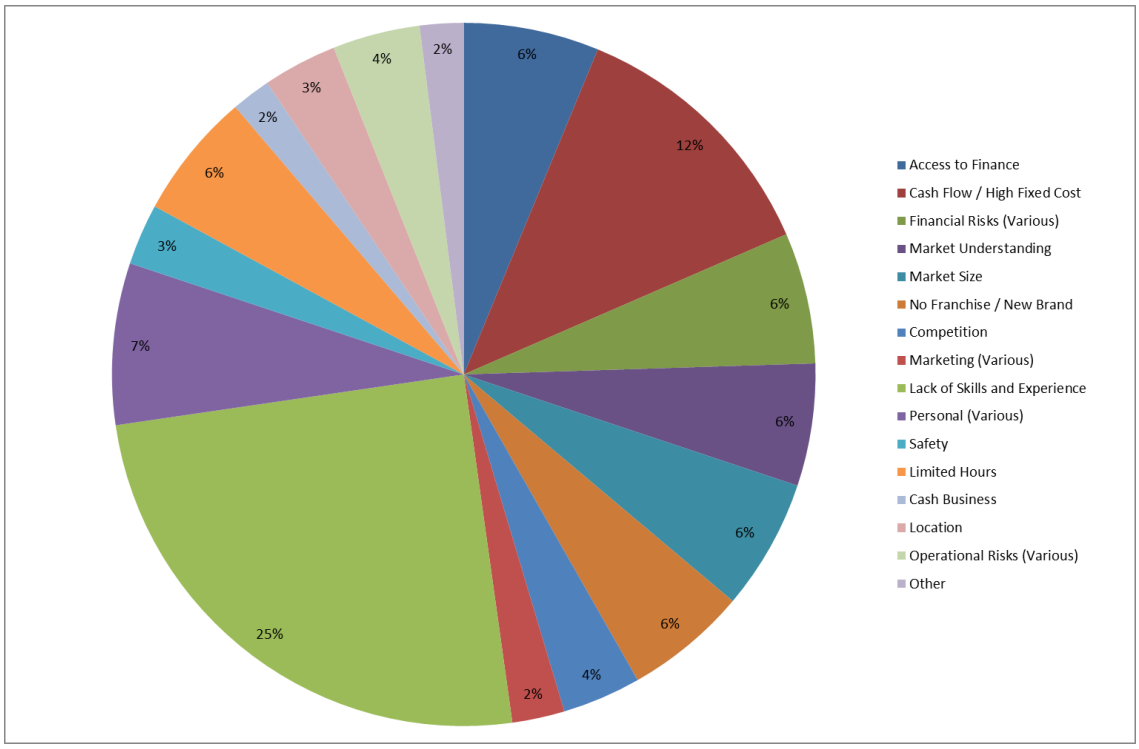
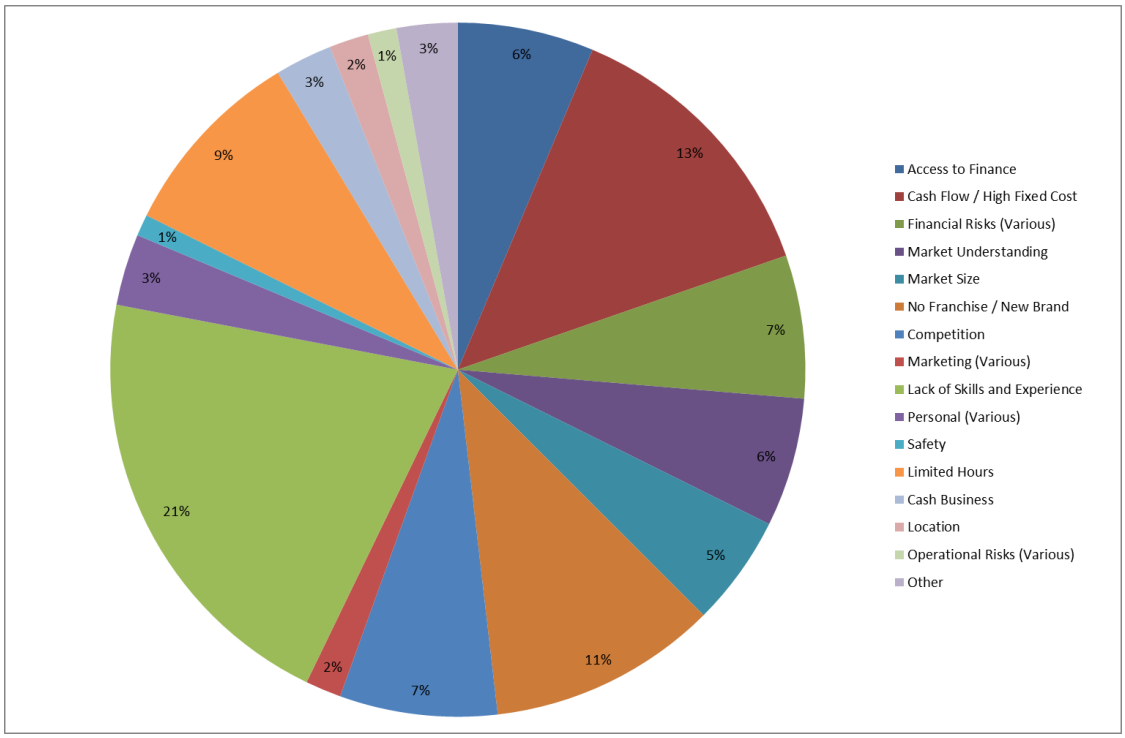
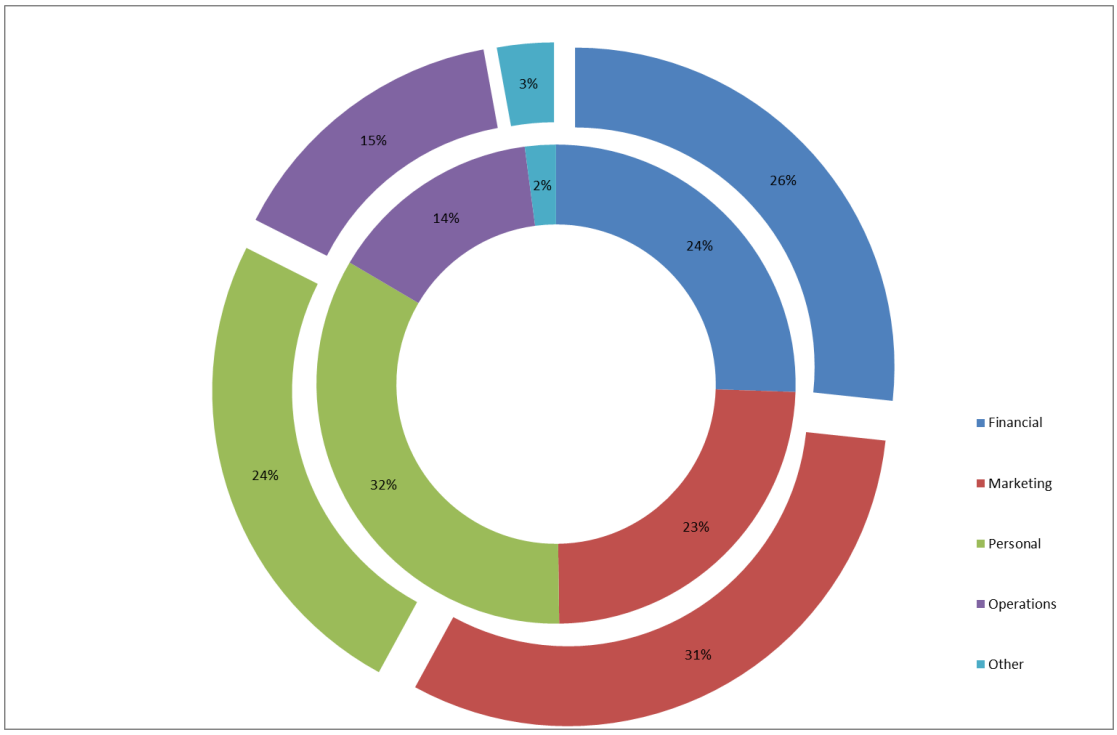


Figure 6 - Risk Identification: Non-Entrepreneurs (Categories)



The following figure (Figure 7) compares the results from both samples by the various business disciplines. The similarities and minor differences between the samples are clearly visible.

Figure 7 - Risk Identification: Entrepreneurs vs. Non-Entrepreneurs



Please not that in the above figure, the inner circle represents the entrepreneurs sample, whereas the outer circle represents the non-entrepreneurs sample.

The second proposition within this topic to be explored was:

Proposition 2: Entrepreneurs prioritise different risks in an entrepreneurial setting compared to non-entrepreneurs.

The majority of the participants in both samples answered the related question in the survey by elaborating on and defending the risks which they identified as key, however, without mentioning the risk assessment strategy they followed. Proper analysis of the risk assessment strategies - similar to the analysis of the identified risks above - as intended was therefore unfortunately not possible.

There were only a very small number of answers which could be related to risk theories. These answers included:

"From intrinsic (non-controllable) to endogenous (controllable) risks"

"These are the main reasons why businesses fail so these are the highest risks that must be managed"

"I listed them in order of severity"

"Gut feel and business knowledge"

"I followed the route of using general business categories to categorise the risks, such as sales, marketing, finance …"

The following selection of answers drawn from the samples should illustrate and confirm the difficulty in analysing the risk assessment strategy as the answers merely commented on the identified risks:

"The fixed costs are high and the turnover should be very high to break even. Experience will always help. People carry less cash nowadays."

"A direct food supply business without franchise infrastructure requires hands on management by the entrepreneur"

"A moral support from family is always required to succeed and he is also newly married. Should have the capability to repay the loan/borrow in case of adverse situations. He will lose business if the restaurant closes early"

There were also a few answers which acknowledged that there was no strategy used at all. An example is:

"These are things that are needed to be successful in running a business. No specific order of priority."

It should however be noted that the answers did give further insight to the risk identification abilities and allowed for better categorisation in this regard. In addition, a few answers should be highlighted as they presented some innovative solutions offered by true entrepreneurs – who immediately went on to find mitigating solutions for the identified risks.

"I would hire or give a percentage of my shares to someone who's done it before to help me out."

"Start being innovative by utilising existing events, community centres and structures such as schools, early childhood development centres"

5.5.1 Categories

In order to compare the answers that the participants of the survey gave, answers of a similar nature were categorised together. The following categories were created based on the answers of participants. Each category comprises of a description and several examples of answers given by participants.

Cash Flow / High Fixed Cost – This category included all answers related to the high fixed costs of the venture described in the case study and/or the required cash flow to sustain these costs. The case study made mention of the fixed costs related to setting up the business as well as the variable costs.

"Will not be able to cover fixed cost"
"High fixed costs for takeaway - must sell a large number of meals daily to break even"
"Quantity of food need to sell to cover fixed costs is huge"

Lack of Skills and Experience – This category included all answers relating to the case study protagonist his skills or experience, including financial, business and operational skills. The case study made mention of the lack of a business or restaurant background of the protagonist.

"Compatibility with the trade (background engineer might struggle in food industry)"
"Engineer to chef (lack of experience in food industry)"
"He has no any business experience"

Market Understanding – This category covered all answers relating to understanding the market and the customers. The case study for instance provided for an uncertainty related to the type of menu that the restaurant would offer.

"Uncertainty on the menu, customer wishes"
"Consumer tastes are fickle"
"No marketing research"

Access to Finance – In this category, all answers relating to the capital requirements mentioned in the case study were included. Particularly answers on raising the required capital for the venture.

"Cash required for growth"

"Getting a loan"

No Franchise / New Brand – Answers relating to choice mentioned in the case study to establish a new brand instead of opting for the franchise options were placed in this category.

"Unknown brand in un-established mall"

"It's a completely new brand and people don't know it so customer base won't be as wide due to brand loyalty to other brands"

"Own Brand – Unproven"

Market Size – Any answers that related to the number of potential customers that could be served and the risk of the market being too small were included in this category.

"Not enough clientele"

"Whether he will have a market for it"

Personal (Various) – This category covered all the answers relating to personal issues - such as the family situation or personal financial situation - that the protagonist was or could be faced with.

"Support from family"

"Pressures at home"

Financial (Various) – This category covered all the financial issues raised other than for which there were specific categories created.

"Rental escalation"

"Inconsistent income"

Location – All answers which mentioned the risks relating to the mall or area or relating to the location of the mall or shop were put into this category.

"Bad Location"

"Location in the mall"

Marketing (Various) – All marketing related mentions that do not fall within another specific category fell into this category.

"Needs to have USP"

".. does not appear to have information on his target market"

Operational (Various) – All mentions related to operating the restaurant where added to this category.

"Hygiene issues"

"Operational Risk"

Safety – This category encompassed the risks identified relating to safety issues, mostly due to the cash nature of the business and the location being a township.

"Dangerous place"

"Crime"

Competition – All answers relating to competition, whether it was competition in general or specific mentions of other restaurants were placed into this category.

"Competition from Spar"

"Potential franchisee competitors such as KFC & Nando's entering the space"

Limited Hours – Relates the mention of the limited trading hours in the case study. Answers that were included related to everything in this regard.

"Even though it's prime location, if the restaurant is closed by 6PM he won't attract people for dinner which will impact business"

"Lack of evening trade"

Cash Business – All answers placed in this category related to the cash nature of the business. The case study mentioned that no card machine would be available in the first year of operations.

"No card machine for the first year, in today's circumstances, is not suitable."

Other – All other answers that did not fall within any specific criteria and where there was no sufficient basis to create a separate category.

"Not enough details about profit projections"

5.5.2 Miscellaneous Observations

During the analysis of the data a difference was noticed in the level of sophistication of the answers, where the answers of the MBA students were generally of a more detailed and precise nature.

It should also be mentioned that some answers suggested a higher level of experience within the sector, mentioning more specific details.

It is argued that although there was no significant difference in the answers with regards to type of risk, but that there was a very wide difference in the nature and detail of the answers.

5.6 RISK PERCEPTION

The following section of this chapter presents the findings relating to risk perception, aiming to shed some light on the following research proposition:

Proposition 3: Entrepreneurs perceive entrepreneurial opportunities more favourably compared to non-entrepreneurs.

Participants of the survey were asked to rate the riskiness of a case study on a scale from 1 to 10, where 1 meant very low risk and 10 meant very high risk. The following table (Table 7) presents the key results, comparing the means of both samples.

Table 7 - Summary: Risk Perception

	Risk Perception
Entrepreneurs	6.775
Non-Entrepreneurs (All)	7.440
Non-Aspiring	8.095
Aspiring	6.966

As the table above (Table 7) indicates, non-entrepreneurs perceive the entrepreneurial opportunity presented in the case study to be of higher risk than entrepreneurs. When further breaking down the non-entrepreneurs group into aspiring entrepreneurs and individuals with no entrepreneurial ambitions, the data is even more evident showing that aspiring entrepreneurs only perceive the situation to be slightly more risky compared to entrepreneurs.

Table 8 - Risk Perception by Sample Group

Entrepreneurs	
Mean	6.775
Standard Error	0.344345347
Median	7
Mode	9
Standard Deviation	2.177831196
Sample Variance	4.742948718
Kurtosis	-1.038636916
Skewness	-0.229124031
Range	7
Minimum	3
Maximum	10
Count	40

Non-Entrepreneurs (All)	
Mean	7.440
Standard Error	0.2573967
Median	8
Mode	8
Standard Deviation	1.820069521
Sample Variance	3.312653061
Kurtosis	0.55180278
Skewness	-0.841000918
Range	8
Minimum	2
Maximum	10
Count	50

Aspiring	
Mean	8.095238095
Standard Error	0.344374947
Median	8
Mode	8
Standard Deviation	1.578124263
Sample Variance	2.49047619
Kurtosis	1.332034263
Skewness	-0.931524482
Range	6
Minimum	4
Maximum	10
Count	21

Non-Aspiring	
Mean	6.965517241
Standard Error	0.345565712
Median	8
Mode	8
Standard Deviation	1.860928313
Sample Variance	3.463054187
Kurtosis	0.302201586
Skewness	-0.803373954
Range	8
Minimum	2
Maximum	10
Count	29

The table above (Table 8) presents the descriptive statistics of the risk perception variable. Again, the non-entrepreneurs sample was slightly larger and had a slightly lower standard deviation. The non-entrepreneurs sample was also skewed slightly to the lower end.

5.7 RISK PROPENSITY

The following section presents the results relating to risk propensity, aiming to explore the following research proposition:

Proposition 4: There is a negative correlation between risk-taking propensity and perceived risk within an entrepreneurial setting.

Participants of the survey were asked to complete two questions relating to their risk propensity. One was a self-rating question asking them about their general inclination to take risk and one was an independent measure in the form of a question relating to an investment / gambling opportunity. In the investment / gambling opportunity participants were asked to invest R100.000 in an opportunity. The results shown are therefore in Rands out of R100.000. The table below (Table 9) presents a summary of the results in the form of means of the sample groups.

Table 9 - Summary: Risk Propensity

	Risk Propensity (Self-Rating)	Risk Propensity (Independent)
Entrepreneurs	6.455	42127
Non-Entrepreneurs (All)	5.723	30871
Non-Aspiring	5.278	22500
Aspiring	6.000	36252

As the data indicates, entrepreneurs have a higher risk propensity compared to non-entrepreneurs in both the self-rating variable and the independent variable, with the aspiring entrepreneurs being more closely to the actual entrepreneurs.

The table below (Table 10) looked at the difference between the self-rating variable and the independent rating variable to explore the difference per sample group in this regard.

Table 10 - Difference between Self-Rating and Independent Rating

	Difference (in %)
Entrepreneurs	22.42%
Non-Entrepreneurs (All)	26.36%
Non-Aspiring	30.28%
Aspiring	23.75%

The results show that the highest difference is in the non-aspiring group of the non-entrepreneurs sample. They rate themselves on average as 30.28% more risk taking than they actually are when an opportunity presents itself. With entrepreneurs this is

only at 22.42%. Also, the aspiring entrepreneurs group was very close to the entrepreneurs group.

The table below (Table 11) shows the descriptive statistics of the risk perception variable. The range of the entrepreneurs sample was larger as there were participants in the sample willing to bet the entire amount. The standard deviations of the self-rating variables are differ more in the self-rating variable compared to the independent rating.

Table 11 - Risk Propensity by Sample Group

Entrepreneurs

Self-Rating	
Mean	6.45454545
Standard Error	0.43102
Median	7
Mode	8
Standard Deviation	2.47602137
Sample Variance	6.13068182
Kurtosis	0.03532243
Skewness	-0.8363153
Range	9
Minimum	1
Maximum	10
Count	33

Independent Rating	
Mean	42127.2727
Standard Error	4166.82259
Median	50000
Mode	50000
Standard Deviation	23936.5734
Sample Variance	572959545
Kurtosis	0.09912156
Skewness	0.10764445
Range	100000
Minimum	0
Maximum	100000
Count	33

Non-Entrepreneurs

Self-Rating	
Mean	5.72340426
Standard Error	0.24653403
Median	6
Mode	7
Standard Deviation	1.69015214
Sample Variance	2.85661425
Kurtosis	0.18211722
Skewness	-0.6723393
Range	8
Minimum	1
Maximum	9
Count	47

Independent Rating	
Mean	30870.8696
Standard Error	3062.27762
Median	30000
Mode	50000
Standard Deviation	20769.3773
Sample Variance	431367035
Kurtosis	-0.5320209
Skewness	0.20010206
Range	80000
Minimum	0
Maximum	80000
Count	46

Aspiring Non-Entrepreneurs

Self-Rating	
Mean	6
Standard Error	0.33292257
Median	7
Mode	7
Standard Deviation	1.79284291
Sample Variance	3.21428571
Kurtosis	0.68515353
Skewness	-0.9186045
Range	8
Minimum	1
Maximum	9
Count	29

Independent Rating	
Mean	36252.1429
Standard Error	3980.2594
Median	40000
Mode	50000
Standard Deviation	21061.5531
Sample Variance	443589017
Kurtosis	-0.3631573
Skewness	0.02369326
Range	80000
Minimum	0
Maximum	80000
Count	28

Non-Aspiring Non-Entrepreneurs

Self-Rating	
Mean	5.27777778
Standard Error	0.34113953
Median	5.5
Mode	6
Standard Deviation	1.44733246
Sample Variance	2.09477124
Kurtosis	-0.0418545
Skewness	-0.6779916
Range	5
Minimum	2
Maximum	7
Count	18

Independent Rating	
Mean	22500
Standard Error	4186.22859
Median	22500
Mode	0
Standard Deviation	17760.6637
Sample Variance	315441176
Kurtosis	-1.1367695
Skewness	0.22590585
Range	50000
Minimum	0
Maximum	50000
Count	18

5.7.1 Correlation of Variables

The table below (Table 12) shows the correlations between all the variables used in this study. As the various correlations of the numerical variables measured in the survey indicate, there is no significant correlation between any of the variables. The highest correlation is measured between self-rated risk propensity and self-rated entrepreneurial ability, where the entrepreneurial ability increases when there is a higher risk-propensity.

Table 12 - Correlation of Variables

	Risk Propensity (Self Rating)	Entrepreneurial Ability	Case Study Difficulty	Risk Propensity (Independent)	Risk Perception (Case Study)	Age
Risk Propensity (Self Rating)	1.0000					
Entrepreneurial Ability	0.1461	1.0000				
Case Study Difficulty	-0.0105	0.1301	1.0000			
Propensity (Independent)	0.0559	0.0879	0.0924	1.0000		
Risk Perception (Case Study)	0.1340	-0.0476	-0.1736	-0.1120	1.0000	
Age	-0.0301	-0.0606	-0.0236	0.0443	0.0831	1.0000

In terms of the proposition, the table above (Table 12) indicates that there is a positive correlation between risk perception and the self-rated risk propensity variable of 0.1340. The correlation between risk perception and the independent risk propensity variable is negative at -0.1120.

5.8 ENTREPRENEURIAL ABILITY AND DIFFICULTY

Participants of the survey were asked to self-rate their entrepreneurial ability and the difficulty of the case study. They were asked to rate both variables on a scale from 1 to 10. The aim of these questions was to explore the following research proposition:

Proposition 5: Entrepreneurs find it easier to identify the risk in an entrepreneurial situation compared to non-entrepreneurs.

The following table (Table 13) summarises the results of the two variables showing the respective means of the variables per sample and group.

Table 13 - Summary: Entrepreneurial Ability and Exercise Difficulty

	Entrepreneurial Ability	Difficulty
Entrepreneurs	7.409	4.547
Non-Entrepreneurs (All)	5.766	3.391
Non-Aspiring	5.000	2.889
Aspiring	6.241	3.714

The entrepreneurs sample rates itself the highest when it comes to ability, followed by the aspiring entrepreneurs and the non-entrepreneurs. However, despite the higher self-rating on entrepreneurial ability, entrepreneurs rated that they experienced the case study exercise as more difficult than aspiring entrepreneurs or non-entrepreneurs.

Table 14 - Entrepreneurial Ability Self-Rating

Entrepreneurs	
Mean	7.409090909
Standard Error	0.289561493
Median	7.5
Mode	7
Standard Deviation	1.920733651
Sample Variance	3.689217759
Kurtosis	0.462168648
Skewness	-0.700373668
Range	8
Minimum	2
Maximum	10
Count	44

Non-Entrepreneurs (All)	
Mean	5.765957447
Standard Error	0.282405365
Median	6
Mode	6
Standard Deviation	1.936073637
Sample Variance	3.748381129
Kurtosis	0.937449777
Skewness	-0.761311564
Range	9
Minimum	0
Maximum	9
Count	47

Aspiring	
Mean	6.24137931
Standard Error	0.353222925
Median	6
Mode	6
Standard Deviation	1.902163663
Sample Variance	3.618226601
Kurtosis	3.041417647
Skewness	-1.241624463
Range	9
Minimum	0
Maximum	9
Count	29

Non-Aspiring	
Mean	5
Standard Error	0.420084025
Median	5
Mode	5
Standard Deviation	1.782265577
Sample Variance	3.176470588
Kurtosis	0.026234568
Skewness	-0.420812706
Range	7
Minimum	1
Maximum	8
Count	18

The table (Table 14) above shows the descriptive statistics for the entrepreneurial ability variable. The range and standard deviation of both samples is similar, as well as the skewness of the normal distribution.

Table 15 - Case Study Difficulty Self-Rating

Entrepreneurs	
Mean	4.546875
Standard Error	0.417219685
Median	5
Mode	5
Standard Deviation	2.360150949
Sample Variance	5.5703125
Kurtosis	0.006222536
Skewness	0.665671564
Range	9
Minimum	1
Maximum	10
Count	32

Non-Entrepreneurs (All)	
Mean	3.391304348
Standard Error	0.277111151
Median	3
Mode	2
Standard Deviation	1.879459271
Sample Variance	3.53236715
Kurtosis	-0.555033319
Skewness	0.63914038
Range	7
Minimum	1
Maximum	8
Count	46

Aspiring	
Mean	3.714285714
Standard Error	0.359515925
Median	3.5
Mode	2
Standard Deviation	1.902379462
Sample Variance	3.619047619
Kurtosis	-0.583507351
Skewness	0.442658933
Range	7
Minimum	1
Maximum	8
Count	28

Non-Aspiring	
Mean	2.888888889
Standard Error	0.419218764
Median	2
Mode	2
Standard Deviation	1.778594584
Sample Variance	3.163398693
Kurtosis	0.272225258
Skewness	1.105025608
Range	6
Minimum	1
Maximum	7
Count	18

The table (Table 15) above shows the descriptive statistics for the case study difficulty variable. The range of the entrepreneurs sample is slightly larger, impacting the standard deviation. Both samples are slightly skewed towards the lower end of the scale.

Chapter 6: Discussion of Results

6.1 INTRODUCTION

In this chapter the results of the study conducted as part of this research report that were presented in the previous chapter are discussed, either accepting or rejecting the research propositions outlined in Chapter 3.

The aim of this research report was to determine differences in risk assessment abilities between entrepreneurs and non-entrepreneurs. The chapters are ordered by topic and combine background, results and interpretation.

6.2 DEMOGRAPHICS

The following section discusses the demographics of the sample groups with respect to the validity of the research propositions with a particular focus of excluding the demographic variables as alternative explanations for the research results. Three demographic variables were measured within this study, namely gender, age and education levels. The results of all three variables will be discussed below.

6.2.1 Age

In terms of the age distribution of both samples, it is argued that both samples are sufficiently equally distributed for the purposes of this research. It was important to incorporate the age demographic within this study as age may very well have affected some of the results in this study. Age may for instance be interpreted as a proxy for life stage, experience or attitude towards risk or opportunity, in turn influencing results of the study.

It should however be noted that entrepreneurs were slightly underrepresented in the 26 – 30 years of age group and non-entrepreneurs in the 31 – 35 years of age group.

It is also acknowledged that the distribution of the samples may have been too wide. A convenience sample strategy was used resulting in an age range of 42 years in both sample groups. The minimum and maximum ages of both sample groups were fairly similar, with only one year difference. It is nonetheless argued that the samples were sufficiently similar in terms of age distribution in order to compare the means of the

various variables within this study and that the age could not be brought forward as an alternative explanation for the results.

However, MacCrimmon and Wehrong (1990) suggested that risk propensity differs by age, where older individuals become increasingly risk-averse. Considering the skewness of 0.612463 of the non-entrepreneurs sample, which suggests that the distribution of age leans more towards younger individuals in this sample, it should be noted that the means of the risk propensity variables may be less reliable.

6.2.2 Gender

Gender was included as a demographic variable as the study in this research report aimed to look at cognitive processes around risk and it is well established that cognition differs between genders. It is argued that because this study explores risk assessment, which is a cognitive process, there may be differences in assessment between male and females.

Some conclusions regarding the influence of gender on the variables used in this study have already been established. Masters and Meijer (1988) for instance found that there is no difference in risk propensity between males and females.

It unfortunately has to be concluded that within the entrepreneurs sample, males were overrepresented making up 72% of the sample versus 28% females. The non-entrepreneurs sample was more equal and in line with the population at 54% being male and 46% being female. Therefore gender may have been of influence on some variables except for risk propensity.

As a point of reference, according to AMPS (2011), 47,4 % of the South African population is male and 52.6% is female.

6.2.3 Education Levels

The final demographic that was included in the study was level of education. As cognition may change, it was argued that education levels may have a significant influence on the results. The very nature of education is to improve people's skills and popular belief suggests that one goes to school or university to 'learn to think'.

The main differences between the two sample groups were firstly that in the non-entrepreneurs sample the university degree category was larger, 37% of the non-entrepreneurs had a university degree as opposed to 13% of the entrepreneurs sample. This is most likely as a result of the data collection as most entrepreneurs who

participated in the survey were on an entrepreneurial skills building programme for micro enterprises. However, in reality, for someone who has obtained a university degree the choice to enter into full-time employment would be more likely as they are not required to become entrepreneurs out of necessity.

In the entrepreneurs sample group the category certificate or some courses was higher once again, similar to the above description, as a result of the data collection amongst micro entrepreneurs.

In both sample groups the post-graduate category was well represented as a result of conducting the survey amongst MBA students. This degree of difference in education level resulted in an exciting observation during the data analysis. It was interesting to notice that the answers of individuals were of similar nature, but that rather the level of sophistication in the answer differed.

This could in theory imply that entrepreneurship education with regards to risk identification is not as necessary as was suggested in Antonites and Wordsworth (2009). It is however argued that with regards to risk prioritisation - as the answers to the question on the strategy followed were not in line with most of the theory – there would still be a need for education in this regard, especially as this may improve entrepreneurial results, as suggested by Willebrands, Lammers and Hartog (2012), which were not measured in this study.

It is also accepted that the case study exercise or the wording of the question may have influenced the answers in this regard.

Other than the considerations mentioned above, it is proposed that the education levels of both sample groups were sufficiently similar allowing for the rejection of suggestions that difference in education levels may have influenced the results.

6.3 RISK IDENTIFICATION AND PRIORITISATION

The main premise of this research report was around risk identification and prioritisation parts of risk assessment aiming to confirm propositions suggesting that entrepreneurs and non-entrepreneurs identify and prioritise risks in an entrepreneurial opportunity differently, which in turn may affect their decision the embark on an entrepreneurial journey.

A case study presenting an entrepreneurial opportunity in the fast-food restaurant industry at the lower end of the market was used as to simulate an entrepreneurial opportunity. Participants were asked to identify and list the key risks within the case study. Participants in the electronic survey were asked to rank the three key risks and participants of the physical survey were asked to categorise and rank the risk which they identified.

Approximately twenty different risks were mentioned directly or indirectly in the case study in line with risks within real-life entrepreneurial situations. Appendix X presents the case study and highlighting some of the risks.

The different elements of risk identification and prioritisation were explored with several propositions, which are discussed below.

Proposition 1: Entrepreneurs and non-entrepreneurs identify and prioritise different key risks in an entrepreneurial situation.

As the results of table 6 in the previous chapter indicate, the only noticeable differences between the two sample groups were noticed in two of the business disciplines. Firstly, the entrepreneurs sample was more inclined to identify risks related to the personal situation of the protagonist in the case study. It is argued that this is a result of experiencing the pressures of family life while trying to establish a business.

Secondly, the non-entrepreneurs appeared to identify risks in the marketing category slightly more often. Sarasvathy, Simon and Lave (1996) argued that entrepreneurs assumed greater personal responsibility when it came to influencing business outcomes. Non-entrepreneurs however appeared to avoid these higher levels of responsibility.

MacGrath and MacMillan (1992) found that “non-entrepreneurs were more worried about losing their income security and returning to their job if their entrepreneurial venture failed”. The results of this study appear to suggest the opposite, although no specific question around this issue was included.

It is argued that this might relate to confidence. Entrepreneurs are known to be overconfident about their abilities and outcomes (Baron 2006). Risks identified in the context of the case study were mostly related to the choice of the protagonist to establish their own brand, rather than joining an established franchise or restaurant chain.

There was no significant difference in the risks that the entrepreneurs sample identified compared to non-entrepreneurs sample. It is therefore argued that this research proposition should be rejected.

It is therefore argued that the research proposition should be rejected.

The second proposition within this topic was:

Proposition 2: Entrepreneurs use different strategies for risk identification and prioritisation compared to non-entrepreneurs.

It has to unfortunately be concluded that the data collected in the survey was not sufficient to draw any conclusions in this regard.

The survey included a question asking participants to comment on the strategy they used to identify and prioritise the risks. However, this question was mostly answered supporting or elaborating on their risk choices without any clear indication of the reasoning for these choices or the ranking thereof.

It is acknowledged that the wording of the question or the context of the case study and other questions may have not clarified the intention of the question enough; however, it should be considered that perhaps participants did not have adequate knowledge of risk or risk theory to understand or answer the questions. This in turn could be an interesting observation.

Looking at how participants have rated the difficulty of the case study, one could generally conclude that these numbers are relatively low. Table 13 in the previous chapter shows that on a scale from 1 to 10 none of the sample means was higher than 5. This indicates that participants did not experience this exercise to be very difficult and could imply that participants used some form of cognitive process to complete the question.

However, this cognitive process is therefore biased in some way as the very majority of the participants would not know how to fully assess the riskiness of an entrepreneurial opportunity. They will make use of mental shortcuts, gut feelings and – with a high probability of not identifying or seeing the most critical risks or mitigating risks in the wrong categorical order as Gilbert and Eyring (2010) suggest. This may result in a higher chance of their venture going under or at least prohibit the venture from creating value as rapid as would have been possible.

It should also be noted that there certainly were some very short answers or participants who did not take the question serious, but participants had generally put a lot of effort into answering this question in much detail. Participants may therefore have relied more on their cognition to identify the risks, but while they were writing the answer to the question on their strategy in this regard, they had a lot more time to analyse their situation.

Different research methodologies may shed some more light on this question. Focus groups of more in-depth research debriefing participants who do similar case study exercises may prove to be useful. Research involving the scanning of participants brains to highlight the active parts may also be of interest.

Considering all of the above, it is concluded that the data was not suitable to draw any conclusions to whether the proposition should be accepted or rejected, but it is emphasised that the validity of the inquiry is still valid and that alternative research strategies may need to be developed to better understand the strategies of individuals in risk identification and prioritisation.

6.4 RISK PERCEPTION

One of the aims of this study was to ascertain whether entrepreneurs perceived the risks in an entrepreneurial opportunity presented in the form of a case study differently than non-entrepreneurs. The basis for this inquiry was to confirm the suggestions made in the literature and provide support and context to the other propositions proposed in this research report.

The literature suggested that entrepreneurs recognise fewer risks in an entrepreneurial situation and therefore perceive the situation to be more favourable. Palich and Bagby (1995) wrote that entrepreneurs are predisposed to categorise risks more positively and Simon, Houghton and Aquino (1999) argued that individuals who perceived less risk were more likely to start a business.

Individuals do not perceive risks objectively, but use cognitive processes to do so according to Sarasvathy, Simon and Lave (1996). The perception of fewer risks or perceiving a lower severity of risks is therefore a result of the cognitive process of entrepreneurs. Baron (1998) suggests that these are in fact cognitive biases, or mental shortcuts, and the intense commitment of entrepreneurs to their business makes them more susceptible to these biases.

One could therefore argue that low risk perception leads to increased entrepreneurial activity and in order to change risk perception, cognitive processes need to be better understood and then changed. If entrepreneurs are better equipped to mitigate risk, then in turn they may perceive the risk of an entrepreneurial situation to be less as well. Willebrands, Lammers and Hartog (2012) confirmed in their study that the effect of risk perception on the revenue of a business is significantly positive and robust and that education in this regard brings substantial return.

It was argued considering the above that risk perception should be included in this study to confirm the suggestions made in the literature and provide a context for the further exploration of risk assessment.

The following proposition for this study was therefore suggested:

> **Proposition 3: Entrepreneurs perceive entrepreneurial opportunities more favourable compared to non-entrepreneurs.**

The results of the survey suggested based on the comparison of the means of both samples that non-entrepreneurs rated the entrepreneurial opportunity presented in the case study on average as slightly less risky compared to the non-entrepreneur sample group.

As the results in Table 7 in the previous chapter indicate, the mean of the risk perception variable of entrepreneurs was only 6.775, whereas the mean of the non-entrepreneurs sample came to 7.440. Within the non-entrepreneurs sample, the mean of the non-aspiring group was even higher at 8.095. This could be considered as relatively risky as the scale of the risk perception variable was from 1 to 10, where 1 was considered not risky at all and 10 considered very high risk. Within the non-entrepreneurs sample groups, the perceived risk variable of aspiring entrepreneurs, however, was closer to the one of the entrepreneurs sample group at 6.966. This implies that the aspiring non-entrepreneurs perceived the riskiness of the entrepreneurial opportunity presented in the case study only slightly more risky.

It should be noted that the standard deviation of the data is high, suggesting a wide distribution of answers. This was in line with expectations as this is partly as a result of the relatively small sample size, as well as the nature of the question asked. Samples were not drawn from a particular background or industry. This is furthermore confirmed by the range of the answers. The highest answer in both of the samples was 10 and the lowest answer was 2 in the non-entrepreneurs sample and 3 in the entrepreneurs sample, which again suggests a wide distribution of answers.

Also interesting to note is that the mode of the entrepreneurs sample is 9, suggesting that there were still quite a few entrepreneurs who perceived the entrepreneurial opportunity presented as very risky.

The results of the survey are in line with the suggestions made in the literature, which appear to agree that non-entrepreneurs perceive more risks in an entrepreneurial situation compared to entrepreneurs.

The discussion on cognition in the literature review should also be considered in this regard.

Considering the above discussion and arguments, it is therefore argued that the research proposition should be accepted.

6.5 RISK PROPENSITY

Although the literature increasingly seems to agree that risk propensity is not necessarily an accurate predictor of entrepreneurial activity or success, it nonetheless remains an important variable in research on entrepreneurship. Brockhaus (1980) confirmed with his study that there is no difference in risk propensity between entrepreneurs and non-entrepreneurs, but subsequent literature has not always agreed with this conclusion.

In the context of this research, it was suggested that in order to fully understand risk identification and prioritisation differences between samples, the effect of risk propensity on variables has to be considered. Sitkin and Pablo (1992) provided support for this suggestion stating that risk propensity influences risk perception and other variables related to entrepreneurial activity.

It was argued that an increased propensity towards risk would negatively correlate with perceiving risk within an entrepreneurial situation, implying that individuals who are more inclined to engage in risky behaviour perceive less risk. This relationship has been explored within the literature and it was suggested that the risky behaviour was in fact a result of the lack of risk perception ability (Palich and Bagby, 1995).

The following proposition was therefore proposed to be explored:

Proposition 4: There is a negative correlation between risk-taking propensity and perceived risk within an entrepreneurial setting.

Risk propensity was measured in the study in two different ways. Firstly participants were asked to rate their own risk propensity by rating their tendency to take risks on a scale from 1 to 10. This first risk propensity variable therefore measured participant's own perceived risk-taking.

The second measurement was an independent one. Participants were requested to answer a question relating to the amount of their lottery winnings they would gamble if the odds were equal and the payoff would be doubling their gambled sum. Pennings and Smidts (2000) confirmed in their article that a better predictor of actual risk behaviour may be found in models relating to expected winnings in lotteries.

Firstly, it was established that participants in both sample groups rated their own risk taking propensity as higher than their gambling contribution would suggest – or as implied from Pennings and Smidts (2000) findings, their more accurate likelihood to engage in risk-taking.

This also relates to the aspect of simulation, where it is difficult to simulate reality in a survey and it is argued that this will always in some way affect the results. It is therefore interesting to have measured two different risk propensity variables and compare the results.

The largest difference between the self-reported and independent risk propensity variables was found in the non-aspiring non-entrepreneurs group within the non-entrepreneurs sample, suggesting that this group is actually more risk prone than they are willing to agree to or that they are aware of.

Further suggestions could be made around the interpretation of this result, for instance that the sample of entrepreneurs is more in touch and aware of their risk-taking propensity due to experience in entrepreneurial risk-taking.

Moving on to the means of each sample, non-entrepreneurs rated their risk propensity level at 5.277 against 6.454 indicating that entrepreneurs perceive themselves as more risk seeking. This result could have partly been influenced by popular belief as entrepreneurs belief that they are more risk seeking. The independent measure however appears to show a similar trend. Entrepreneurs scored higher on this variable again with the mean being at R 42 127 out of R 100 000 and non-entrepreneurs at R 22 500 on average.

These results suggest that the entrepreneurs sample therefore has a higher risk propensity than the non-entrepreneurs sample, which is conflicting with studies such as

Brockhaus (1980), but in line with Antonites and Wordsworth.(2009), herewith adding another study to the continuing debate.

Table 12 in the previous chapter shows the correlation of all the measured variables in this study. Looking at the correlation between the two risk propensity variables and risk perception there was no significant correlation was found. The self-rated risk propensity variable had a correlation with risk perception of 0.1340, whereas the independent risk propensity had a correlation of -0.1120.

These results therefore also do not confirm the suggestion made in Palich and Bagby (1995) that risk propensity is of influence of risk perception. It is however acknowledged that this study was not specifically designed to focus on risk propensity or perception, but that understanding these variables within the samples could provide for a better interpretation of the research findings by providing a context.

Nonetheless, the literature is quite clear the risk propensity influence on other variables and this raises slight concern about the results in this research report.

The results of this study however indicate that there in fact is no significant correlation between the risk perception and risk propensity variables and it is therefore suggested to reject the proposition.

6.6 ENTREPRENEURIAL ABILITY AND DIFFICULTY

In line with the aim of this study to touch on the cognitive elements of risk assessment two questions where added to the survey looking at this. The following proposition was proposed in this regard to guide the research:

Proposition 5: Entrepreneurs find it easier to identify the risk in an entrepreneurial situation compared to non-entrepreneurs.

Although it is noted that measuring cognition or cognitive ability is a challenge (Norton and Moore (2006), a variable which aimed to measure the perceived difficulty of the case study exercise was added in the form of a question asking to rate the level of difficulty experienced by participants with the case study exercise. It was argued that in order to justify future exploration of the cognitive elements in the area of risk identification and prioritisation, it was important to establish a difference in this regard between the two samples.

In addition, participants were asked to self-rate their entrepreneurial ability. The intention of this variable was to eliminate entrepreneurial experience as a proxy. Both questions were answered on a scale from 1 to 10.

As per the literature on cognitive behaviour of entrepreneurs, it was expected that entrepreneurs sample would find the case study and the risk identification and prioritisation exercise to be easier compared to the non-entrepreneurship samples, partly because their risk perception was expected to be lower.

The entrepreneurs sample, in line with expectations, scored highest on the entrepreneurial ability variable with a mean of 7.409 compared to a mean of the non-entrepreneurs of 5.766. Both the distribution of the samples was skewed towards lower with similar ranges. The minimum rating for entrepreneurs was 2 and for non-entrepreneurs 0. The highest ratings 10 and 9 respectively. All in all as per expectation with a similar standard deviation of 1.9 for both sample groups.

The results measuring the experienced difficulty of the case study exercise on the other hand were surprising. The entrepreneurs sample rated the case study exercise as more difficult. Although the means of both samples were close, the sample mean of the entrepreneurs was 4.547 and the mean of non-entrepreneurs was 3.391.

Again a similar skewness for both samples is noticed, but the standard deviation and range of the entrepreneurs sample is larger. This may suggest that there were a few outliers in the entrepreneurs sample which may have increased the mean.

There may be two different interpretations to this finding. Firstly, one could argue that the lower variable of risk perception is a result of a difference in cognition and results from the fact that entrepreneurs find it harder to assess risks, in turn engaging less in risk assessment and perceiving situations as less risky. This results in them embarking on the entrepreneurial journey more easily.

Secondly, one could interpret that risk assessment is not as important as has been argued in this research report. This implies that there is no necessity for a change in entrepreneurship education other than ensuring

Thirdly, one could argue that the entrepreneurial ability (or experience) increases the amount of risks that could be identified. This makes the exercise harder as more information requires processing in the brain.

It is argued that the third interpretation has the most merit to be further explored. A question in this regard would then be how one could improve the mental shortcuts as

the experience with entrepreneurship increases. However, it was also confirmed that there was no significant correlation between the variables implying that such an inquiry would need some serious thought and consideration first.

It is however argued that the research proposition should be rejected implying that entrepreneurs despite rating themselves higher in entrepreneurial ability find it more difficult to identify risks in a case study presenting an entrepreneurial opportunity.

6.7 LIMITATIONS

Gartner (1995) suggested in his study that "the differences among entrepreneurs and among their ventures are much greater than one might expect; in fact, the diversity may be larger than the differences between entrepreneurs and non-entrepreneurs and between entrepreneurial firms and non- entrepreneurial firms.

This limitation is acknowledged in terms of the case study. The diversity of the sample was very wide, whereas the case study was quite specifically focussed on a certain point within the entrepreneurial journey as well as within a sector and geographic situation.

Norton and Moore (2006) noted when suggesting future research that they "foresee challenges in capturing aspirants' cognitive processes as they evaluate venture opportunities".

This limitation is also acknowledged as there were no sufficient resources available to engage in sophisticated methodology designs and measurements to overcome this challenge. The focus of this research report was therefore merely to provide a base for future investigation.

Brockman et al (2006) write that "it is possible that subjective evaluations are more influenced by individual traits of the entrepreneur than evaluations of objective information". This suggests that individual traits within the context of this research report played a larger role than anticipated as opposed to the intended focus on cognitive elements.

This limitation is noted especially since the writing and the context of the case study suggests a subjective evaluation of the entrepreneurial by the protagonist of the case study as opposed to objective information required as per the suggestion of Brockman

et al (2006). It is acknowledged that, in line with the previously mentioned limitation on the challenge of mentioning the cognitive process, no conclusion on this matter can be drawn in this regard resulting from this study.

Chapter 7: Conclusion

7.1 INTRODUCTION

The study in this research report aimed to determine differences in risk assessment abilities between entrepreneurs and non-entrepreneurs, with a specific focus on risk identification and prioritisation. Other variables influencing risk perception, such as risk propensity and perception were also incorporated as well as an element touching on the cognition difference between entrepreneurs and non-entrepreneurs.

7.2 MAIN FINDINGS AND IMPLICATIONS

The main finding of the study related to the element of risk identification. In the case study that was presented as part of the survey, participants in both samples did not identify different key risks. There were minor differences within two specific business disciplines, namely marketing and personal. Differences in risk assessment strategies used between the two samples were not established due to a lack of sufficient data in this regard.

This findings related to risk identification are important nonetheless and may have several implications. Both samples identified the same risk and one could wonder what the influence of the other variables would be on this risk identification process. There was difference in the means of the samples for each variable, suggesting that the risk identification process happened irrespective and independent of these variables.

It was also found that participants in both samples were not able to answer the question on the strategy followed on their risk identification efforts as required in the survey. It is acknowledged that the wording of the question or the context of the study or case study may have influenced this outcome, but it is argued that this should be noted nonetheless. Only a few participants were able to answer the question with some form of risk strategy.

On the one hand one could now argue that risk assessment will not be required to have a more prominent place within the entrepreneurship curriculum as both non-entrepreneurs and entrepreneurs identify the same risks in any case.

However, considering the answers relating to the strategy, participants had no idea on prioritising these risks or knowledge about theories around the likelihood and

magnitude of the risks. It may therefore be very important after all to emphasise risk assessment more in entrepreneurship education, especially of the potential effect that risk perception may have on the success of the venture.

The study also confirmed that entrepreneurs perceived the entrepreneurial opportunity to be more favourable, this was in line with the expectation and formulated proposition.

Even though the literature seemed to agree that risk propensity influences risk perception, this was not established in this study. The correlation between the risk propensity variables and the risk perception variables was so small that one could almost neglect it. Larger samples and different research strategies and methodologies may prove to be better suited to confirm this and it is argued that this was not the priority of this study.

The explanation of this could again lie in the nature of the study or case study. It is argued that the exercise was more objective and without much emotion. The distance between the participant and the protagonist did not arouse any feelings of concern or compassion.

Most probably one of the most surprising findings is that the entrepreneurs sample found the case study exercise more difficult than the non-entrepreneurs. This could imply that the cognitive processes which perform the risk assessment tasks of non-entrepreneurs are more prevalent. This could be offered as an explanation why they do not start their own ventures. Due to the cognitive process, which in a way is a mental shortcut, non-entrepreneurs identify risks in a potential entrepreneurial opportunity more easily. This then increases the perceived risk and withholds them from embarking on the entrepreneurial journey.

The managerial implications in this regard may however not necessarily be to eliminate this cognitive process, but rather understand or improve the process to be able to identify the risks, but not allow the identified risks to deter individuals from endeavouring on the entrepreneurial journey.

Confidence levels of entrepreneurs were as expected. They rated their entrepreneurial ability higher than non-entrepreneurs. It is argued that this is not necessarily the truth, but being on the journey. It will remain a challenge to measure entrepreneurial ability of someone who is not an entrepreneur.

Alternative measures other than financial success are not readily available and at this stage can certainly not be used to simulate true entrepreneur challenges or the

entrepreneurial journey. However, research – including this report – is slowly but surely moving towards the right direction to be able to grow entrepreneurial activity and measure the probability of individual entrepreneurial success.

7.3 FUTURE RESEARCH

The risk assessment topic on an individual and cognitive level has most certainly significant potential to be studied in future. The literature seemed to confirm the necessity for a better understanding of the cognitive elements of entrepreneurship in general and specifically related to risk as well.

Based on this research report and the results of the study a few specific research suggestions can be made that could build further on the propositions.

- The influence of the risk assessment variables, such as risk propensity and perception, the profitability and survival of the venture could be studied.
- A larger sample would allow foe the collecting even more accurate data which in turn could be inferred upon the population.
- Understanding and eliminating some of the qualitative elements of risk, other than the more traditional quantitative focus, may prove useful to the future of entrepreneurship.
- Another suggestion relates to the nature of the case study, which presented the entrepreneurial opportunity of a friend. It is argued that results may vary should participants be asked to assess the risk of an opportunity which may affect them personally. It should be noted that this will be difficult to achieve in a similar study as the situation will remain a simulated one rather than an actual real-life situation.
- Similar research could be targeted more specifically on age groups.
- Similar research could be targeted at a specific sector
- Similar research could be targeted as specific educational backgrounds.
- Other limitations mentioned in this research report may be overcome.

Reference List

Arenius, P., & Minniti, M. (2005). Perceptual variables and nascent entrepreneurship. *Small Business Economics, 24*(3), 233-247.

Baldegger, R. J., & Schueffel, P.E. (2011). Entrepreneurial Risk Recognition.

Ball, D. J., & Golob, L. (1999). Diverse conceptions of risk prioritization. Journal of Risk Research, 2(3), 243-261.

Baron, R. A. (1998). Cognitive mechanisms in entrepreneurship: Why and when enterpreneurs think differently than other people. Journal of Business Venturing, 13(4), 275-294.

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

Baron, R. A., & Ensley, M. D. (2006). Opportunity recognition as the detection of meaningful patterns: Evidence from comparisons of novice and experienced entrepreneurs. *Management Science, 52*(9), 1331-1344.

Bhide, A. (1994). How entrepreneurs craft strategies that work. Harvard Business Review, 72(2), 150-161.

Brockhaus, S.,Robert H. (1980). Risk taking propensity of entrepreneurs. Academy of Management Journal, 23(3), 509-520.

Brockman, B. K., Becherer, R. C., & Finch, J. H. (2006). Influences on an entrepreneur's perceived risk: The role of magnitude, likelihood, and risk propensity'. *Academy of Entrepreneurship Journal, 12*(2), 103-121.

Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? Qualitative Research, 6(1), 97-113.

Busenitz, L. W. (1999). Entrepreneurial risk and strategic decision making It'sa matter of perspective. *The Journal of Applied Behavioral Science, 35*(3), 325-340.

Caliendo, M., Fossen, F., & Kritikos, A. (2010). The impact of risk attitudes on entrepreneurial survival. Journal of Economic Behavior & Organization, 76(1), 45-63.

Cramer, J. S., Hartog, J., Jonker, N., & Van Praag, C. M. (2002). Low risk aversion encourages the choice for entrepreneurship: An empirical test of a truism. *Journal of Economic Behavior & Organization, 48*(1), 29-36.

Cressy, R. (2006). Why do most firms die young? *Small Business Economics, 26*(2), 103-116.

Derr, C. B. (1982). Living on adrenalin: The adventurer-entrepreneur. Human Resource Management, 21(2-3), 6-12.

Dul, J., & Hak, T. (2012). *Case study methodology in business research* Routledge.

Fairlie, R. W., & Holleran, W. (2012). Entrepreneurship training, risk aversion and other personality traits: Evidence from a random experiment. *Journal of Economic Psychology, 33*(2), 366-378.

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

Gartner, W. B. (2001). Is there an elephant in entrepreneurship? blind assumptions in theory development. *Concepts, Theory and Perspective,* 229.

Gelderen, M. W., & Thurik, A.AR en N. bosma (2005), success and risk factors in the pre startup phase. *Small Business Economics, 24*(4), 365-380.

Gilbert, C. G., & Eyring, M. J. (2010). Beating the odds when you launch a new venture. Harvard Business Review, 88(5), 92-98.

Global Entrepreneurship Monitor. (2010). *GEM Report: South Africa*. Retrieved from http://www.gemconsortium.org/docs/605/gem-south-africa-2010-report.

Jackson, D. N., Hourany, L., & Vidmar, N. J. (1972). A four-dimensional interpretation of risk taking1. *Journal of Personality, 40*(3), 483-501.

Janney, J. J., & Dess, G. G. (2006). The risk concept for entrepreneurs reconsidered: New challenges to the conventional wisdom. *Journal of Business Venturing, 21*(3), 385-400.

Kahneman, D., & Lovallo, D. (1993). Timid choices and bold forecasts: A cognitive perspective on risk taking. *Management Science, 39*(1), 17-31.

Keh, H. T., Foo, M. D., & Lim, B. C. (2003). Opportunity evaluation under risky conditions: The cognitive processes of entrepreneurs. *Entrepreneurship Theory and Practice, 27*(2), 125-148.

Kickul, J., Gundry, L. K., Barbosa, S. D., & Whitcanack, L. (2009). Intuition versus analysis? testing differential models of cognitive style on entrepreneurial Self-Efficacy and the new venture creation process. Entrepreneurship Theory and Practice, 33(2), 439-453.

Knight, F. H. (1921). Risk, uncertainty and profit. *New York: Hart, Schaffner and Marx,*

MacCallum, R. C., Widaman, K. F., Zhang, S., & Hong, S. (1999). Sample size in factor analysis. *Psychological Methods, 4*(1), 84.

MacCrimmon, K. R., & Wehrung, D. A. (1990). Characteristics of risk taking executives. Management Science, 422-435.

MacMillan, I. C., Siegel, R., & Narasimha, P. (1986). Criteria used by venture capitalists to evaluate new venture proposals. *Journal of Business Venturing, 1*(1), 119-128.

Macko, A., & Tyszka, T. (2009). Entrepreneurship and risk taking. Applied Psychology: An International Review, 58(3), 469-487.

Malhotra, N. K. (2010). Marketing research: An applied orientation. New Jersey, USA: Pearson Education.

McGrath, R. G., MacMillan, I. C., & Scheinberg, S. (1992). Elitists, risk-takers, and rugged individualists? an exploratory analysis of cultural differences between entrepreneurs and non-entrepreneurs. *Journal of Business Venturing, 7*(2), 115-135.

Meier, R., & Masters, R. (1988). Sex differences and risk-taking propensity of entrepreneurs. Journal of Small Business Management, 26(1), 31-35.

Mitchell, R. K., Busenitz, L., Lant, T., McDougall, P. P., Morse, E. A., & Smith, J. B. (2002). Toward a theory of entrepreneurial cognition: Rethinking the people side of entrepreneurship research. *Entrepreneurship Theory and Practice, 27*(2), 93-104.

Mullins, J. W., & Forlani, D. (2005). Missing the boat or sinking the boat: A study of new venture decision making. *Journal of Business Venturing, 20*(1), 47-69.

Palich, L. E., & Ray Bagby, D. (1995). Using cognitive theory to explain entrepreneurial risk-taking: Challenging conventional wisdom. Journal of Business Venturing, 10(6), 425-438.

Pennings, J. M. E., & Smidts, A. (2000). Assessing the construct validity of risk attitude. *Management Science, 46*(10), 1337-1348.

Rakow, T. (2010). Risk, uncertainty and prophet: The psychological insights of frank H. knight. *Judgment and Decision Making, 5*(6), 458-466.

Rauch, A., & Frese, M. (2000). Psychological approaches to entrepreneurial success: A general model and an overview of findings. *International Review of Industrial and Organizational Psychology, 15*, 101-142.

Roth, J., & Espersen, D. (2002). Internal Auditor's role in corporate governance.

Sarasvathy, D., Simon, H. A., & Lave, L. (1998). Perceiving and managing business risks: Differences between entrepreneurs and bankers. Journal of Economic Behavior & Organization, 33(2), 207-225.

Saunders, M., Lewis, P., & Thornhill, A. (2009). Research methods for business students Prentice Hall.

Shaver, K. G., & Scott, L. R. (2002). Person, process, choice. *Entrepreneurship: Critical Perspectives on Business and Management, 2*(2), 334.

Simon, M., Houghton, S. M., & Aquino, K. (2000). Cognitive biases, risk perception, and venture formation: How individuals decide to start companies. Journal of Business Venturing, 15(2), 113-134.

Sitkin, S. B., & Pablo, A. L. (1992). Reconceptualizing the determinants of risk behavior. *Academy of Management Review,* 9-38.

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

South African Audience Research Foundation. (2011). *AMPS Individual Survey.* Retrieved from http://www.eigty20.co.za

Stel, A., Carree, M., & Thurik, R. (2005). The effect of entrepreneurial activity on national economic growth. *Small Business Economics, 24*(3), 311-321.

Stone, R. N., & Grønhaug, K. (1993). Perceived risk: Further considerations for the marketing discipline. *European Journal of Marketing, 27*(3), 39-50.

Tashakkori, A., & Teddlie, C. (2003). Handbook of mixed methods in social & behavioral research Sage Publications, Inc.

Thomas, A. S., & Mueller, S. L. (2000). A case for comparative entrepreneurship: Assessing the relevance of culture. *Journal of International Business Studies, 31*(2), pp. 287-301.

Thompson, J. L. (1999). A strategic perspective of entrepreneurship. International Journal of Entrepreneurial Behaviour & Research, 5(6), 279-296.

Van Praag, C. M., & Versloot, P. H. (2007). What is the value of entrepreneurship? A review of recent research. *Small Business Economics, 29*(4), 351-382.

Vereshchagina, G., & Hopenhayn, H. A. (2009). Risk taking by entrepreneurs. The American Economic Review, 99(5), 1808-1830.

Weijers, M.W. (2008). Introductory Business Statistics. South Western Cengage Learning.

Willebrands, D., Lammers, J., & Hartog, J. (2012). A successful businessman is not a gambler. risk attitude and business performance among small enterprises in nigeria. *Journal of Economic Psychology, 33*(2), 342-354.

William I. Norton Jr., & Moore, W. T. (2006). The influence of entrepreneurial risk assessment on venture launch or growth decisions. Small Business Economics, 26(3), pp. 215-226.

Wordsworth, R., & Antonites, A. J. (2009). Risk tolerance: A perspective on entrepreneurship education.

Xu, H., & Ruef, M. (2004). The myth of the risk-tolerant entrepreneur. *Strategic Organization, 2*(4), 331-355.

Yin, R. K. (2008). *Case study research: Design and methods* Sage Publications, Incorporated.

APPENDIX 1 – CONSISTENCY MATRIX

Title: Differences in risk assessment ability between entrepreneurs and non-entrepreneurs

Research Propositions	Literature Review	Data Collection Tool	Analysis
Entrepreneurs and non-entrepreneurs identify and prioritise different key risks in an entrepreneurial situation.	Baldegger and Schueffel (2011) Ball and Golob (1999)	Survey Questions 4, 5, 6	Analysis of qualitative data to establish trends and similarities.
Entrepreneurs use different strategies for risk identification and prioritisation compared to non-entrepreneurs	Gilbert and Eyring (2010)	Survey Questions 7	Analysis of qualitative data to establish trends and similarities.
Entrepreneurs perceive entrepreneurial opportunities more favourably compared to non-entrepreneurs	Palich & Bagby (1992)	Survey Questions 3	Comparison of the means between the samples of populations.
There is a negative correlation between risk-taking propensity and perceived risk within an entrepreneurial setting.	Caliendo et al (1999) Palich & Bagby (1992)	Survey Questions 7, 8, 11	Comparison of the means between the samples of populations and the control variables to establish any correlations.
Entrepreneurs find it easier to identify the risk in an entrepreneurial situation compared to non-entrepreneurs.	Kickul et al (2009)	Survey Questions 8, 9	Comparison of the means between the samples of populations.

APPENDIX 2 - SURVEY

Informed Consent

This questionnaire is part of a research dissertation required for the attainment of an MBA degree at the Gordon Institute of Business Science (GIBS). The research dissertation aims to explore the difference in risk assessment abilities between entrepreneurs and non-entrepreneurs by means of a questionnaire measuring different variables in risk assessment, such as risk identification, categorisation and prioritisation. This questionnaire should not take more than fifteen to twenty minutes of your time.

Your participation is voluntary and you can withdraw at any time without penalty. By completing the survey, you indicate that you voluntarily participate in this research.

I confirm that your anonymity will be maintained throughout this research and the publication of the dissertation and any articles that may follow thereafter. Your anonymity will be guaranteed by not recording your name or any identifiers on this questionnaire.

If you have any concerns, please contact me or my supervisor. Our details are provided below.

Researcher Name: Pieter Ernst
Email: contact@pieterernst.com
Phone: 082 373 4727

Research Supervisor Name: Judi Sandrock
Email: js@medo.co.za
Phone: 010 500 5000

Basic Information

Age: _____

Gender: ☐ Male - ☐ Female

1. What category would best describe you?

☐ Aspiring Entrepreneur
You have the credible intention to start a business, but don't have any entrepreneurial experience.

☐ Non - Entrepreneur
You have no intention of becoming an entrepreneur in the near future.

☐ Entrepreneur
You have started your own business.

Years of Entrepreneurial Experience: _____
Entrepreneurial Experience in this context means having started and owned/operated your own business.

Is your business making a profit? ☐ Yes - ☐ No

2. How would you best qualify your level of (entrepreneurial) education?

☐ None ☐ Degree ☐ Post-Graduate Degree
☐ Some Courses ☐ Certificate / Diploma ☐ Other

Case Study Questions

Please read the attached case study and answer the following questions:

3. How risky do you perceive this business to be on a scale from 1 to 10?

_____

(1 meaning not risky at all - 10 meaning very high risk)

4. Please list the key risks that you think the entrepreneur in the case study is faced with below?

RISKS	CATEGORY
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

5. Please categorise the risks as you wish? You may simply use the letters A, B, C, D, E etc. to categorise the different risks – Each letter being a category. The aim is to ascertain whether you believe that some of the risks are of a similar nature in any way.

6. Please rank/prioritise the categories that you have created in order of importance starting with placing the most important category on 1. In other words, which category of risks would you start mitigating first?

_____	_____	_____	_____	_____	_____	_____	_____
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**

Case Study

A friend of yours has approached you for your advice. He wants to borrow R 450 000 as he wishes to start a take-away restaurant in a new mall that is currently being built on a prime location in Mamelodi. The mall will be smaller than most and the anchor tenant is a Spar with a Spar Tops. Unfortunately there will be no evening trade as the mall will shut down at 6pm. Your friend wants to build his own brand "Ken's" and has therefore not chosen one of the usual franchise take-away brands.

He is still considering whether the menu should comprise of beef and/or chicken dishes, and he will stock cold-drinks and sweets. He has calculated that his fixed costs will be R65 000 per month and on average each dish will cost R9 to prepare. It will have to be a cash business for over a year for him to build a record with the bank before they will give him a card machine.

Your friend has recently married and has never run his own business before. He also holds a degree in engineering, but has always had a passion for cooking and loves to socialise.

SEE NEXT PAGE

Follow Up / Background

7. Can you briefly describe your strategy in categorising the risks and putting the categories in the order that you did?

_____

_____

_____

_____

_____

_____

_____

_____

8. How would you rate your own tendency to take risks? _____
(On a scale from 1 to 10, 1 being very risk averse, 10 being very risk seeking)

9. How would you rate your own entrepreneurial ability? _____
(On a scale from 1 to 10, 1 not being entrepreneurial, 10 being a very good entrepreneur)

10. How difficult did you find the above case study exercise? _____
(On a scale from 1 to 10, 1 being very easy, 10 being very difficult)

11. If you win R 100.000 in the lottery, how much of this money would you invest in a short-term investment that would either double your money or where you'll lose it all with the odds being equal?

R _____ (Min 0, Max 100.000)

Thank you very much for your time and effort. It is very much appreciated.