The role of behavioural finance in successful financial services SMEs

Jacobus Emile Marais

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Supervisor: Prof. J.P.S. Pretorius

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Abstract

The purpose of this research is to discover some of the main findings the field of behavioural finance can provide for entrepreneurs in the financial services industry. Behavioural finance is a rapidly growing area that deals with the influence of psychology on the behaviour of entrepreneurs in decision-making.

The researcher will focus on six heuristics and biases that entrepreneurs are seemingly prone to exhibit. Firstly, entrepreneurs tend to be overconfident. Secondly, the manner in which a problem is framed will influence the choice that is made. Thirdly, entrepreneurs make decisions on what information is available to them. Fourthly, entrepreneurs exhibit loss aversion. Fifthly, entrepreneurs tend to separate their money into several mental accounts. Finally, entrepreneurs tend to form judgment on stereotypes.

The general objective of the research study has been to understand and evaluate the effect of behavioural heuristics and biases on entrepreneurs in their financial management. The study embraced the following aspects:

- A literature study;
- Empirical research by means of a structured questionnaire.

The findings of the questionnaire were used to understand the concepts of these heuristics and biases in a South Africa environment (a group in the North West Province) in the financial services industry. All the research in the literature was done internationally and the challenge was to see a South Africa perspective on these heuristics and biases. The results have shown that entrepreneurs do manifest these heuristics and biases in their decision-making.

On the strengths of the results, entrepreneurs should be conscious of the use of heuristics and biases in decision-making. The researcher recommends that entrepreneurs must understand these heuristics and biases, and they must be aware of all the heuristics and biases that they are prone to before they make important decisions.

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CHAPTER 1

NATURE AND SCOPE OF THE STUDY

1.1 INTRODUCTION

The result of the latest Global Entrepreneurial Monitor Report (South Africa, 2006), which compares countries' competitiveness in terms of entrepreneurship activity, is yet another wake-up call for South Africa, because entrepreneurs are the basis for building a nation. In the research 48 countries were surveyed including developing countries such as Argentina, India, Uganda, Chili, Thailand, Mexico, and South Africa. It was found that entrepreneurs were an indispensable pre-requisite for success in an increasing globalized and competitive economy. They are the wealth creators; they create jobs and alleviate poverty.

Small and medium-sized enterprises (SMEs) are the mainstay of most economies, particularly in terms of employment and development impacts. We are living in a world in which small businesses play a key role in the economic prosperity of developing countries. A few years ago, large business was the key to economic growth, as companies used size as a strategy to gain economies of scale, but recently due to advancement in technology, small businesses are able to attain the same level of economies of scale.

For every entrepreneur and SME owner decision-making is important. The researcher is of the opinion that decision-making has an important impact on the existence of small businesses. At the basis of decision-making, lies Behavioural Finance. Behavioural finance examines financial phenomena through the dual lenses of financial and cognitive psychology (see chapter 2, p. 10 for definitions). Because psychology systematically explores human judgment, behaviour, and wellbeing, it can teach us important facts about how humans' decision-making differs from traditional economic assumptions. The purpose of this study is to discover what insights on the financial management of small and medium-sized enterprises (SMEs) the rapidly field of behavioural finance can provide.

1.2 PROBLEM STATEMENT

Behavioural finance introduces the possibility that, in their real world decision-making, entrepreneurs as SME owners are less than fully rational in that they employ irrational behaviours called heuristics and biases in their decision-making (McMahon: 2002: 2). If SME financial management is to be considered from a behavioural finance perspective, it is necessary to identify such irrational behaviours that are typically employed by entrepreneurs as SME owners. What makes the problem critical is to recognize decision-making heuristics and cognitive biases found in entrepreneurial decision-making and to assist entrepreneurs in the financial management of their business. The researcher will investigate the role that decision-making heuristics and cognitive biases plays in successful financial services of SMEs.

The reason and purpose of this research is to discover what insights on the financial management of SMEs the emerging field of behavioural finance can provide. The researcher believes that entrepreneurs can benefit from a better understanding of heuristics and biases, and on the effects heuristics and biases will have on the financial wellbeing of their businesses.

1.3 GOALS AND OBJECTIVES OF THE STUDY

1.3.1 Primary objective

The objective of this study is to understand and evaluate the effect of behavioural heuristics and biases on entrepreneurs in their financial management of their business. The study explores what heuristics and cognitive biases appear to impact on financial decision-making and behaviour in SMEs and the entrepreneurial process.

1.3.2 Secondary objectives

In order to achieve the objective stated above, the following secondary objectives will be pursued:

- To determine and recognise the typical cognitive and emotional decision-making traits of a successful SME owner.

- To guide potential entrepreneurs in the financial management of their businesses, avoiding systematic thinking errors.
- To establish the potential financial management risks that may result from the typical cognitive biases shared by SMEs.
- Lastly, to make recommendations to identify irrational behaviours in entrepreneurial decision-making.

1.4 RESEARCH METHODOLOGY

The research consists of both a literature study and an empirical study.

1.4.1 Phase 1: Literature study

The literature study includes a comprehensive literature review regarding the purpose, usefulness and relevance of behavioural finance. The influences that cognitive biases and decision-making heuristics will have on SME financial management will be researched. For this reason it will cover literature reflecting national and international views, articles and research on this topic. An international study is important, as overseas universities, institutes and business schools are conducting most of the research regarding behavioural finance.

1.4.2 Phase 2: Empirical study

Since the bulk of existing research was done abroad it was decided to establish the situation in the South African circumstances. The research can generally be classified as qualitative research. Qualitative research is applicable to the questionnaire that was sent out, as the nature of the research deals with the views and opinions of the respondents and not with quantitative data.

The proposed methodology for the empirical study is discussed below.

Design: The design is in the format of a questionnaire.
Study population: The field of the study involves entrepreneurs who are SME owners in the financial sector. Responses were received from two groups in the financial services industry. The first group consists of successful financial planners

and the second group one of successful financial accounts officers. Thirty questionnaires were completed in each group.

Planned method for data processing: The questionnaires were processed by hand and the data was analysed via a spreadsheet method. The processed data was used to make conclusions and recommendations. Through interpretation, the results of the questionnaire were considered in the context of the literature review.

Geographically: The study is limited to the practices of entrepreneurs and SME owners in areas of the North West Province.

The purpose of the questionnaire was to determine the typical cognitive and emotional decision-making traits that are observed amongst entrepreneurs and SME owners in the financial sector. The researcher wants to draw the attention of SME entrepreneurs/owners to the effect heuristics and biases have – intentionally or unintentionally – on their decision-making. This may improve their decision-making to the benefit of their undertakings.

1.5 LIMITATIONS OF THE STUDY

1.5.1 Overview of the study

A limiting factor of this study was the existence of a vast number of decision-making heuristics and cognitive biases that can influence financial decision-making for entrepreneurs as SME owners. In this study the researcher only concentrated on six prominent heuristics and biases that were studied by researchers in Europe, Australia and the USA. The researcher wanted to study these prominent heuristics and biases and its existence in a South African business environment. The other heuristics and biases not so prominent, according to the literature, may have a significant influence in South Africa, but it will then be a topic for further research.

1.5.2 Qualitative research

The study only focuses on entrepreneurs/SME owners in the North West Province. This is a limitation in the sense that the findings of the study cannot be taken as a general representation of entrepreneurs as SME owners for South Africa as a whole.

1.6 LAYOUT OF THE STUDY

Chapter 1: Introduction

The first chapter provides an introduction of the problem statement, objective of the study and research methodology.

Chapter 2: Literature study

In this chapter the various descriptions of behavioural finance will be considered to identify the scope of the research. There will be an explanation of the cognitive biases and decision-making heuristics that entrepreneurs are likely to employ in financial decision-making. Subsequently, the various biases and heuristics will be briefly explained. The chapter concludes with a brief overview and discussion on SME financial management.

Chapter 3: Empirical study

This chapter is the empirical research, which contains the results and analysis of the qualitative study. The qualitative investigation focuses on the six heuristics and biases of a group of successful financial planners and a group of successful financial accounts officers in the North West Province. It was decided to use the two groups, because apart from being owner/entrepreneurs they are involved through the services to their clients from the planning stage, i.e. before the decision is made (financial planners) right up to the stage where the results of the decisions, i.e. transactions, are recorded (financial account officers). The chapter includes a description of the research methodology, the design of the research questionnaire, the selection of the sample, and an analysis of the results.

The chapter concludes with a discussion of the results obtained from the empirical investigation.

Chapter 4: Conclusions and recommendations

Chapter 4 is a discussion of the conclusions and recommendations based on the results of the literature study and empirical study.

1.7 CONCLUSION

Research in behavioural finance has important applications. The research can assist entrepreneurs in financial decision-making by helping them to understand the kinds of errors that entrepreneurs tend to make in managing their businesses. Much of the research was done internationally and the challenge of this research was to identify what benefits the field of behavioural finance could provide for entrepreneurs in South Africa. In the following chapter, the literature on behavioural finance, cognitive biases and heuristics are presented.

CHAPTER 2

LITERATURE REVIEW OF BEHAVIOURAL FINANCE

2.1 INTRODUCTION

The purpose of this chapter is to provide a literature review as a frame of reference for understanding the field of behavioural finance. It is within the field of behavioural finance that the decision-making of entrepreneurs in the financial services industry will be explained. After identifying the specific emotional and cognitive biases at play in the decision-making of the identified group, the researcher will suggest guidelines to entrepreneurs in the financial management of their business.

Behavioural finance attempts to better understand and explain how emotions and cognitive errors influence investors and the decision-making process (Shiller, 2002: 2). Many researchers believe that the study of psychology and other social sciences can shed considerable light on the efficiency of financial markets as well as explain many stock market anomalies, market bubbles, and crashes. Some of the prominent experts in the field include Daniel Kahneman (Princeton), Meir Statman (Santa Clara), Richard Thaler (University of Chicago), Robert Shiller (Yale), and Amos Tversky (Anon., 1999).

The chapter is structured in such a format that a background review of behavioural finance will first be undertaken. Subsequently, the different decision-making heuristics and cognitive biases will be explored. The importance of this section is that it will form the basis of the questionnaire that will be described in the following chapter. The literature on SMEs follows with a conclusion at the end of the chapter.

2.2 BEHAVIOURAL FINANCE

2.2.1 Background

Psychologists Daniel Kahneman and Amos Tversky are considered the fathers of behavioural economics/finance. Since the 1960s they have published about 200 research papers and articles, most of which relate to psychological concepts with implications for behavioural finance (Anissimov, 2004).

Since the 1960s academics in both fields of finance and economics started to find anomalies and behaviours that could not be explained by theories available at the time. These anomalies encouraged academics to look to psychology to explain human behaviour and the effect on financial decision-making. Another economist who helped to develop the field was Richard Thaler, who worked with Kahneman and Tversky to blend economics and finance with psychology to present concepts like mental accounting (Phung, 2005).

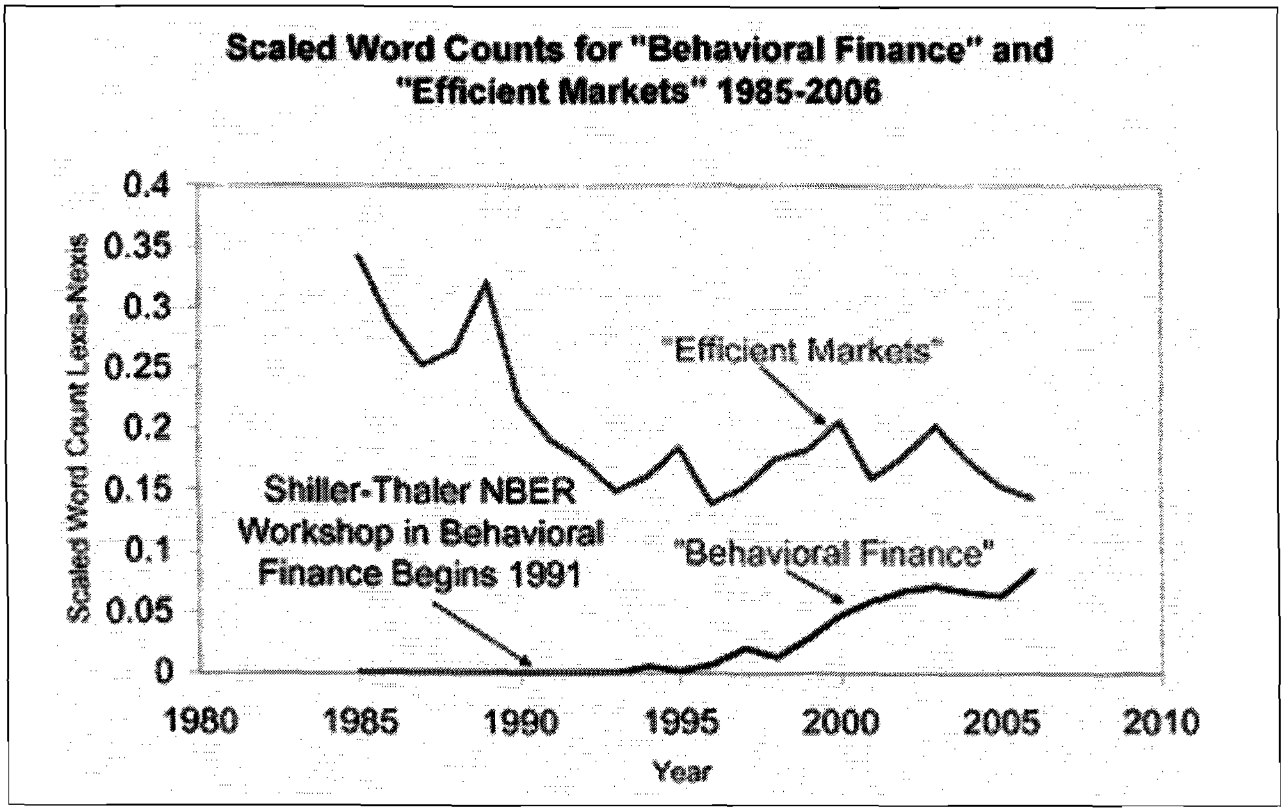
Behavioural finance is no longer as controversial a subject as it once was. The increasing number of articles available on the Internet is evidence that the subject is gaining ground. Thaler (1999: 12-17) argues that the increasing information available on the subject makes financial economists accustomed to thinking about the role that human behaviour plays in driving stock prices.

Researchers in behavioural finance gained recognition for their work. This is shown when Kahneman received the Nobel Memorial Prize in Economic Sciences for his contributions to the study of rationality in economics in 2002 (Anissimov, 2004).

Figure 2-1 proves that the theory of behavioural finance is gaining ground on the efficient market theory. The efficient market theory suggests that markets are efficient for information and that the movement of stock prices cannot be reliably predicted on the basis of past results (Fama, 1991). Behavioural finance closely combines individual behaviour and market phenomena and uses knowledge taken from both in decision-making (Johnsson, Lindblom & Platan, 2002). In the figure the heading of "Scaled word counts for behavioural finance and the efficient market

1985-2006" is evidence that more research in the field of behavioural finance has been done and more articles have been published over the last 21 years. This is an indication that investors are not as rational as traditional theory has assumed, and that there are biases in their decision-making that can have a cumulative effect on their business (Anon.: 2007b). This is in contrast with established theory that markets are efficient (see page 8).

Figure 2.1: Behavioural finance gaining ground



Source: Workshop in behavioural finance (Anon., 2007b).

Figure 2.1 shows that "behavioural finance" has been growing exponentially, while "efficient markets" have been declining. The chart is dramatic evidence that behavioural finance has been gaining ground in the marketplace for ideas. From 1985-1995 there wasn't mush growth, but since 1995 more articles were published and more research has been published about how individuals make investment decisions and, increasingly, the behavioural biases that affect decision-making in corporate finance (Anon., 2002).

2.2.2 Definition of behavioral finance

Statman (1988) holds the view that people trade for both cognitive and emotional reasons. He believes that people trade because trading can bring the joy of pride when decisions turn out well, but it can also bring regret when decisions do not turn out well. For Statman behavioural finance is the behaviour of investors in investment decision-making on information that the investor thinks he has. The behaviour of investors, to avoid the pain of regret by avoiding the realisation of losses and avoiding stocks of companies with low reputations, is a key component of behavioural finance (Statman, 1988).

According to Johnsson *et al.* (2002) behavioural finance is the better understanding of economic decisions that affect market prices that were caused by human and social cognitive and emotional biases. Ritter (2003) sees behavioural finance as psychological factors affecting individuals' decision-making. According to McMahan (2005: 2), behavioural finance is the study of how financial practitioners act and interact on financial information and the subsequent effects on markets.

Behavioural finance plays a critical role in wealth management. According to Pompian (2006) the financial advisors and financial accounts officers, as well as the respective clients they advise, are prone to emotional and cognitive biases in their financial decision-making. He defines that behavioural finance considers the psychological factors affecting how these financial services makes financial decisions. The failure of millions of people to think rationally about their finances is a core issue of behavioural finance.

It can be seen that the above-mentioned terms and descriptions, although different, is that in the decision-making process, economics has a close link with psychology. Psychology systematically explores human judgment and behaviour. It can teach us important facts about how individuals' decision-making differs from traditional economic assumptions. The use of psychology can be traced back to Keynes. John Maynazl Keynes used the psychology of investors in designing empirical tests of economic behaviour. Keynes recognised the uncertainties in the world, and he started to examine the heuristics, or rules of thumb economists developed to guide their behaviour in the face of uncertainty (Fung, 2006). Statman (1988) draws attention to a misconception regarding behavioural finance. He says that some people think that behavioural finance introduced psychology to finance, but psychology was never out of finance. Although models of behaviour differ, all behaviour is based on psychology.

The following example by Caparrelli, D'Arcangelis and Cassuto (2004) illustrates behavioural finance in a very simple way. "One evening Mike and Meg decided to go to Restaurant A, which had been recommended by a very reliable guidebook. When they arrived, they noticed that Restaurant B nearby was very busy, while Restaurant A had only a few customers. So they changed their minds and ate at Restaurant B" (Caparrerelli *et al.,* 2004).

Therefore, in the example Mike and Meg ignored the available information and chose imitation instead and followed the behaviour of the majority without knowing what determined their choices. Psychological research has shown that differences of opinion create anxiety, so people naturally try to reach a consensus. In the process to reach consensus, people own opinions don't count anymore and this leads to a sharing of others opinions (Caparrelli *et al.,* 2004). This was the behaviour demonstrated in the example when Restaurant B was chosen. Similar behaviours can be found in finance as well.

The work of Tversky and Kanheman (1974: 1124) has shown that people do not employ statistical methods in their decision-making, but instead rely on a limited number of heuristic principles in their decision-making. Tversky and Kahneman originally described "Prospect Theory" in 1979, which contends that people value gains and losses differently. They found that people placed different weights on gains and losses. They found that individuals are much more upset by losses than they are happy with gains (Kanheman & Tversky, 1979).

Pompian (2006) argues that psychology plays an important role in financial decision-making. One such factor is fear of making a mistake. He elaborated that fear of making a mistake will probably influence decision-making. This will lead to individuals to go with the flow, with the conviction that a shared error, as compared to an individual error, will be better and not as risky. An example is where investors act against there own interests (Pompian, 2006).

It is the view of the researcher that financial advisers who dismiss behavioural finance as trendy pop psychology, and fail to address the behavioural component of investing with their clients, risk doing them a disservice. The researcher thinks that there may be no better way for advisers to add value for their clients than to be openly addressing the impact of both negative and positive investors' behaviour from the outset. By doing so, customers' relationships will deepen and trust will be the end result. To conclude, we can enrich our understanding of financial markets by adding a human element.

If SME financial management is to be considered from a behavioural finance perspective it is necessary to establish that SME owners/entrepreneurs employ decision-making heuristics and cognitive biases. The next section discusses decision-making heuristics and cognitive biases.

2.3 DECISION-MAKING HEURISTICS AND COGNITIVE BIASES

2.3.1 Background

In the early 1970s Kahneman and Tversky discovered the field of heuristics and biases when they found that people used unanticipated irrational behaviour in problem solving. Their studies have developed into an independent respected field with many devoted followers in academia. This field has gained ground in recent years, especially in economics, where its application translates into profits of billions of dollars.

Dozens of examples of irrational behaviours, such as representativeness (Tversky & Kahneman, 1974), availability (Tversky & Kahneman, 1974), loss aversion (Kahneman & Tversky, 1979), and mental accounting (Thaler, 1985), and repeated errors in judgement have been documented in academic studies internationally.

Tversky and Kanheman (1974: 1124) argued that individuals make use of cognitive heuristics, to help them make financial decisions. In general, heuristics are quite useful, but sometimes they lead to systematic errors. The reliance on heuristics and the prevalence of biases are not restricted to laymen, but experienced researchers are also prone to the same biases when they think intuitively (Tversky & Kanheman, 1974).

The prospects for cognitive exploitation arise from the basic nature of human judgment and choice. To manage complex information, people develop simple shortcuts, or heuristics (Tversky & Kahneman, 1973). There is much debate about exactly how good a job heuristics do. Psychologists such as Daniel Kanheman and Amos Tversky have made it clear that heuristics can play a positive role (Tversky & Kahneman, 1973).

The positive role heuristics and biases play is to elucidate the processes through which people make a variety of important and real world judgements. For Kahneman and Tversky heuristics are proposed as a set of highly efficient mental shortcuts that provide subjectively compelling and often quite serviceable solutions to such judgemental problems (Gilovich, Griffin & Kahneman, 2002).

Economists often argue that errors are independent across individuals and therefore cancel out in equilibrium. Hirshleiper (2001) argues that people share similar biases, biases that worked in the past. He is of the opinion that people should be subject to similar biases. Similar biases that are common to most people and that are predictable have been confirmed by research over the years (Hirshleiper, 2001).

Anissimov (2004) argues that heuristics can be very useful and lead to accurate judgment most of the time. He is also of the opinion that heuristics can save time and effort, but can fail utterly when presented with data outside of their expertise.

2.3.2 Cognitive biases defined

Cognitive biases are distortions in the way humans perceive reality. Charupat and Deaves (2003) describes cognitive biases as a term for all distortions in the human mind that are hard to avoid and that lead to a perception or judgment that deviates systematically from the reality when making decisions. Buchanan and Huczynski (2004) concur that cognitive biases are systematic distortions when people makes a decision.

Some of the most important cognitive biases are *Overconfidence* – the tendency to overestimate one's own abilities, *Loss Aversion* – tendency for people to prefer avoiding losses than acquiring gains and *Mental Accounting* - people group their assets into a number of non-fungible mental accounts (Anissimov, 2004).

Richard McMahon (2002: 5) says in his research that biases cause individuals to overestimate the reliability and validity of information, to draw incorrect conclusions and to give information too much or too little weight and this will affect decision-making.

2.3.3 Decision-making heuristics defined

Ritter (2003) describes heuristics as a method for helping to solve a problem. In psychology, heuristics are simple and efficient rules, which have been proposed to explain how people make decisions, come to judgments, and solve problems. Buchanan and Huczynski (2004) define heuristics as simple rules, shortcuts or strategies that are used to solve problems.

Some of the most important decision-making heuristics are *Availability* – a biased prediction, due to the tendency to focus on the most salient and emotionally charged outcome, *Representativeness* – the tendency to blindly classify objects based on surface similarity, and *Framing* – disparities in estimates when an identical problem is presented in a different way (Anissimov, 2004).

Richard McMahon (2002: 5) describes that the use of heuristics has also been associated with faster learning and innovativeness in the sense of generating new insights into unsolved problems and opportunities.

2.3.4 Identified and defined heuristics and biases

Dozens of heuristics and biases have been studied extensively and experimentally verified, and hundreds or thousands have been hypothesized (Anissimov, 2004). In this research study the researcher will discuss some of the more prominent and well-studied decision-making heuristics and cognitive biases and provide summaries and commentary on each one (refer discussion paragraph 2.3.5, page 18).

Table 2.1 is a list of a few of the decision-making heuristics and cognitive biases found to be observed amongst SME owner-managers. Each has been experimentally confirmed beyond any shadow of a doubt, but there are more to be discovered about precise structure of each bias or heuristic (Anissimov, 2004).

Table 2.1: Heuristics and biases

Biases / heuristics	**Description**
Above-average effect	The widespread tendency to categorise oneself as "above average".
Accountability bias	The tendency to form thoughts based on considerations of accountability to others.
Affect heuristic	Hastily judging objects or people by an immediate feeling of "goodness" or "badness".
Anchoring/adjustment	Failure to adjust sufficiently from initial anchors, even when the anchors are arbitrary.
Anthropomorphism	Tendency to ascribe human motives or characteristics to nonhuman objects.
Availability heuristic	**Salient memories override normative reasoning; most fundamental heuristic of all?**
Base rate neglect	Neglect of background frequencies in favour of salient anecdotal evidence.
Biased evaluation	Double standards in evaluation of evidence, attribution of hostile motives to critics.

Barnum effect	Tendency of people to accept general descriptions as uniquely relevant to them.
Causal schema bias	Pervasive tendency to categorise salient events based on causal relations.
Certainty illusion	An overweighed desire for 100% confidence or certainty.
Contagion/similarity	"Once in contact, always in contact", "stigma", "karma", other magical thinking.
Confirmation bias	The bias to seek out opinions and facts that support our own beliefs and hypotheses.
Conjunction effect	Systematic overestimation of conjunctive probabilities.
Durability bias	Durability bias in affective forecasting.
Endowment effect	"the fact that people often demand much more to give up an object than they would be willing to pay to acquire it".
Escalation of commitment	The phenomenon where people increase their investment in a decision despite new evidence suggesting that the decision was probably wrong.
False consensus effect	Inclination to assuming that your beliefs are more widely held than they actually are.
Fundamental attribution bias	Tendency toward automatic conceptualisation (personalisation) of problems.
Framing effects	**Disparities in estimates when an identical problem is presented in a different way.**
Frequency bias	Weakness with percentages, strength with frequencies.
Gambler's fallacy	Pervasive false beliefs about the nature of random sequences.
Groupthink	The pressure to irrationally agree with others in strong team-based cultures.
Loss aversion Bias	**"the disutility of giving up an object is greater than the utility associated with acquiring it".**
Mental Accounting Bias	**People group their assets into a number of non-fungible mental accounts.**
Overconfidence Bias	**Overconfidence implies over optimism about the individual's ability to succeed in his endeavours.**
Planning fallacy	Consistent over optimism regarding completion times for a given project.
Reflection effect	Risk-aversiveness with respect to potential gains, risk-seeking with respect to losses.

Representativeness Heuristic	**"Like goes with like", the tendency to blindly classify objects based on surface similarity.**
Selective recall	The mostly accidental habit of remembering only facts that reinforce our assumptions.
Sunk cost fallacy	Costs that have already been incurred and which cannot be recovered to any significant degree.

Source (Anissimov, 2004)

2.3.5 Primary behavioural biases and heuristics

After a complete literature review of behavioural finance studies done by Charupat and Deaves from the Michael DeGroote School of Business in Germany (Charupat & Deaves, 2003), Richard McMahon from the Flinders University in South Australia (McMahon, 2002), Jay Ritter from the Florida University in the USA (Ritter, 2003) and James Shanteau from Kansas University in the USA (Shanteau, 1989), the researcher identified six heuristics and biases that were all prominent in their studies. They identified heuristics and biases amongst entrepreneurs as SME owners and the researcher chose the most common heuristics and biases in the literature.

Also very important is the fact that these researchers were from different continents and they studied these behaviours in their countries. The researcher will study these behaviours from a South African perspective.

In personal discussions with the Institute of Behavioural Finance of South Africa these heuristics and biases were also recommended. Three of the biggest contributors to this field - Daniel Kahneman, Amos Tversky, and Richard Thaler also introduced these six heuristics and biases in the 1970s (Phung, 2006).

Table 2.2 is a summery to explain the different studies done by prominent researchers from Europe, Australia and the USA, i.e. the three continents where the bulk of research on this topic has taken and still takes place. Each one concentrated on only a few heuristics and biases in their studies. The researcher will only concentrate and discuss those decision-making heuristics and cognitive biases common to the mentioned studies.

Table 2.2: Studies and research done on the most common heuristics and biases

Charupat and Deaves From the Michael DeGroote School of Business in Germany	How Behavioural Finance can assist Financial Planners **Mental Accounting, Loss Aversion, Overconfidence, Representativeness** and Anchoring
Richard McMahon From the Flinders University in South Australia	Behavioural Finance, Entrepreneurial Cognition and SME Financial Management **Representativeness, Framing**, Counterfactual thinking, **Overconfidence**, Excessive optimism, Illusion of control, Escalation of commitment, Planning and Sunk cost Fallacy, Endowment Effect
Jay Ritter From the University in Florida in the USA	Behavioural Finance **Overconfidence, Mental Accounting, Framing, Representativeness,** Conservation, Disposition Effect
James Shanteau From Kansas University in the USA	Cognitive Heuristics and Biases in Behavioural Auditing **Representativeness, Availability** and Anchoring

The most common heuristics and biases to research in this dissertation are disclosed in bold in Table 2.2. These factors being the most common in the three continents will be tested in the South African business environment to establish its existence in South Africa (SA) as well as to determine its influence on financial decision-making (refer to chapter 3 for SA study).

2.3.5.1 Cognitive biases

1. Overconfidence

Nevins (2004) defines overconfidence as, people who are overconfident in their own abilities. He observes that investors and analysts are particularly overconfident in areas where they have some knowledge. An after effect of overconfidence is overtrading, which leads to poor investment decisions (Nevins, 2004). In their research Cooper *et al.* (in Busenitz and Barney, 1997) found that overconfident entrepreneurs assigned a higher probability of success to their own business compared to competing businesses. This is consistent with what Nevis say of entrepreneurs having a high level of confidence in their own ability.

Ritter (2003) stated that entrepreneurs are very likely overconfident in their decision-making. The view of Phung (2004) is that overconfident individuals overestimate or exaggerate their ability to successfully perform a particular task. In a research study by Odean (1998) he found that overconfident investors generally conduct more trades than their less-confident counterparts.

Barberis and Thaler (2003) are of the opinion that the overconfident bias may in part stem from two other biases, the self-attribution bias and the hindsight bias. They define the self-attribution bias as people who ascribe success to their own talent, while blaming failure on bad luck. By doing this it repeatedly will lead people to think that they are talented and this will increase their overconfidence. An example is where investors might become overconfident after several quarters of inverting success. They define the hindsight bias as the tendency of people to believe, after an event has occurred, that they predicted it before it happened. This will increase the overconfidence of people if they think that they can predict the future better than they actually can (Barberis & Thaler, 2003).

Overconfidence enables an entrepreneur to proceed with an idea before all the steps to that specific venture are fully known. Even though enormous uncertainties exist in this decision-making situation, a higher level of confidence is likely to encourage an entrepreneur to take action before it makes complete sense. If entrepreneurs wait until all the "facts" are in to start convincing others that their venture is indeed legitimate, the opportunity they are seeking to exploit will most likely be gone by the time more complete data becomes available (Busenitz & Barney, 1997).

Overconfidence can also manifest itself through the "better than average effect". In their research Taylor and Brown (in Charupat & Deaves, 2003) asked a room of people if they were better than average at driving, relative to others, in the room and invariably well more than 50% said yes.

Everyone can make mistakes of course, but why are there not as many under confident people as there are overconfident people? Overconfidence implies over optimism about the individual's ability to succeed in his endeavours (Hirshleiper, 2001). David Hirshleiper wrote that overconfidence and over optimism can be found in a number of different settings, for example men tend to be more confident than women, though the size of the difference depends on whether the task is perceived to be masculine or feminine (Hirshleiper, 2001).

2. Mental accounting

According to Hirshleiper (2001), mental accounting is a kind of narrow framing that keeps track of gains and losses related to decisions in separate mental accounts. Mental accounting is a concept developed by Thaler. Thaler (1985) defines mental accounting as the tendency of people to separate their money into several accounts. The money in different accounts is then treated differently.

Mental accounting can cause individuals to make sub-optimal financial decisions. Charupat and Deaves (2003) explain in their article that mental accounting has enormous consequences in everyday life. It affects how people think about spending money and how they save money for the future. It influences how people deal with losses and gains.

People sometimes separate decisions that should be combined. The following example by Ritter (2003) of mental accounting illustrates that people create separate accounts. "John and Megan have a household budget for food and a household budget for entertaining. At home where the food budget is present, they will not eat expensive food. But in a restaurant where the entertainment budget is present, they will order expensive food even though the cost is much higher than the food at home. They could have saved money if they ate the same food in a restaurant than at home" (Ritter, 2003).

According to Ritter (2003), people are more careful with money they earn as with money they get easily. The consequence of this practice is that individuals will tend to be too conservative with certain investments or spending and too reckless with others (Charupat & Deaves, 2003).

Thaler (1985) who first described how mental accounting works, illustrated that entrepreneurs and SME owners treat money for different things differently. In a research study by Tversky and Kahneman (1981) they asked people that if they lose a $10 bill on their way to the theatre for a play they decided to see, will they still go to the play and buy a ticket for $10 they intended to buy for the play? They found that the majority of those who lost the cash were willing to buy a ticket. For them the loss of $10 is not linked to the purchase of the ticket and the effect on the decision is accordingly slight.

They also asked the people if they should lose a $10 ticket that was given to them would they buy a new ticket for the play. In this instance they found that the majority of people chose not to replace the lost ticket. For them the expense required to see the play is $20 a cost which may be too expensive for people.

Entrepreneurs can avoid the mental accounting bias. It is the view of Phung (2005) that in avoiding the mental accounting bias it is key to realise that money is fungible, regardless of its origins or intended use, all money is the same. He believes that entrepreneurs must be aware of the mental accounting bias because it will influence the way they treat money.

3. Loss aversion

Closely related to the concept of mental accounting is the idea of loss aversion (Charupat & Deaves, 2003). Kahneman and Tversky first proposed loss aversion. They argued that the impact of a loss on people's happiness was much stronger than the impact of a gain of the same magnitude (Kahneman & Tversky, 1979). For Kahneman and Tversky loss aversion refers to the tendency for people to prefer avoiding losses than acquiring gains. They were of the opinion that loss aversions can cause individuals to make unsound financial decisions (Kahneman & Tversky, 1979).

The following examples by Kahneman and Tversky posed in their research illustrate the loss aversion bias. Consider you face a choice between a) a sure gain or b) 25% chance to gain and 75% chance to gain nothing. Faced with this problem, Kahneman and Tversky expects most people to choose a) a sure gain, because they found most people are risk-averse.

To further illustrate the loss aversion bias people must now choose between losses, i.e., choose between a) taking a sure loss and b) taking a chance where there is a 75% chance to lose or a 25% chance to lose nothing. In this case, Kahneman and Tversky found most people to choose b) taking a chance where there is a 75% chance to lose or a 25% chance to lose nothing, because they found that most people would rather take a chance if they could avoid losses (Kahneman & Tversky, 1979).

Loss aversion can cause individuals to make unsound financial decisions that will affect the financial management of their business. In a research study, Odean (in Charupat & Deaves, 2003) looked at the trading patterns of approximately 160 000 customers of a U.S. discount broker. Odean reported that investors realised gains 1,68 times more frequently then they realised losses. Loss aversion can cause investors to be too conservative in their investment strategy.

2.3.5.2 Decision-making heuristics

1. Availability

Tversky and Kahneman (1974) define the availability heuristic as the ease with which a given instance or scenario comes to mind. When asked what one thinks of a given social group, one may give an opinion on the basis of what information is most available to one about that group. Vivid scenarios such as terrorist attacks are more available than objectively more dangerous problems such as colon cancer, and our probability estimates are skewed accordingly.

In the availability heuristic, items that are easier to recall, are judged to be more common (Tversky & Kahneman, 1974). This generally makes sense, since things that are more common are noticed or reported more often, making them easier to remember.

Barberis and Thaler (2003) illustrate this judgement heuristic in their research study. They explain that the likelihood of getting mugged in Chicago, people search their memories for relevant information. More recent events or more salient events, for example the mugging of a friend will weigh more heavily and distort the estimate.

The conclusion that can be reached is that people tend to heavily weigh their decisions toward more recent information, making their new opinion biased toward that latest news. According to Phung (2005), avoiding the availability heuristic, entrepreneurs mustn't get caught up in the latest news; they must do their research first before they make investments.

2. Representativeness

As observed by Busenitz and Barney (1997) representativeness was first described by Tversky and Kanheman and is one of the most common of all decision-making heuristics. According to McMahon (2002), decision-makers employ the representativeness heuristic when they generalise about a person or an event based on only non-representative attributes of that person or only a few observations of similar events.

Kahneman, Slovic and Tversky (1982: 92) use the following example to illustrate the representativeness heuristic. Consider an individual who has been described by a former neighbour as follows. "Bill is 34 years old. He is intelligent, but unimaginative, compulsive and generally lifeless. In school, he was strong in mathematics but weak in social studies and humanities. Is Bill an accountant or does he play jazz for a hobby?" Kahneman *et al.* found that more participants chose an accountant, because an accountant is more representative of Bill's description (Kahneman *et al.,* 1982).

Jay Ritter (2003) comments on the representativeness heuristic in his research study on behavioural finance that people under weigh long-term averages and that people tend to put too much weight on recent experiences. Ritter (2003) is of the view that when equity returns have been high for many years, many people begin to believe that high equity returns are normal. The result of the representativeness heuristic is bad decision-making based on non-representative information.

3. Framing

McMahon (2002) describes the framing heuristic as the attention given to the way a problem is presented to a decision-maker and/or on how the decision-maker chooses to think about the problem. For Tversky and Kahneman (1981) framing is how individuals perceive and evaluate information to make decisions. Is the glass half empty or half full?

Experimental studies have found that framing of a decision can have an effect on the ultimate choice that is made (McMahon, 2002). Decision framing research indicates that slight differences in the way that questions are posed lead to a very different answer about people's preferences (Nevins, 2004).

Daniel Nevins (2004) provides the following example in his article to illustrate the framing heuristic. Consider research in which one group of people is informed that there is a 50% chance of success in a particular venture and another group is told that this same venture has a 50% chance of failure. Logically, the same proportion of people in each group should be willing to take the risk. Yet this was not the case.

When the risk was described or framed in terms of the probability of success, more people were willing to take it than when this same risk was described in terms of the chances of failure.

Tversky and Kahneman (1981) illustrated the impact of presentation on framing by showing that simple wording changes, e.g. from describing outcomes in terms of lives saved to describing them in terms of lives lost – can lead to different preferences. They found that choices involving gains/lives saved are often risk averse and choices involving losses/lives lost are often risk taking. They found people to be risk averse, i.e. the prospect of certainly saving lives whereas they found people to be risk taking, i.e. the certain death of people is less acceptable than half a chance that only half will die.

Framing is influenced by how the decision problem is presented and by the norms, habits and expectations of the decision maker (Payne, Bettman & Johnson, 1992). The reason why the framing biases is so important is that individuals and entrepreneurs frequently find it difficult to make judgment on decisions that will have an effect on their financial management of their business when the decision to be taken/made, described in words and/or format are different than what they are used to.

2.4 CRITICISMS OF BEHAVIOURAL FINANCE

Although the study of behavioural finance has been gaining support in recent years, it is not without its critics. Some supporters of the efficient market hypothesis, for example, are vocal critics of behavioural finance.

Vermaak and Du Toit (2005) are of the view that behavioral finance is pure descriptive psychology. They argue that if one study the literature on biases and heuristics one can spot them when they influence one's thinking.

Fama (1991) has been the field's loudest and most enduring critic. Fama argues that behavioural finance appears to be a collection of anomalies that can be explained by market efficiency.

MacKinlay (in Anon., 2001) says that the major problem with behavioural finance is that the predictions with biases and heuristics are not specific enough that you can easily refute the theory.

According to Gilovich, Griffin and Kahneman (2002), the most common critique of behavioural finance and the research of heuristics and biases is that it offers an overly pessimistic assessment of the average person's ability to make sound and effective decisions (Gilovich *et al.,* 2002).

Gervais (in Anon., 2001) is of the view that behavioural finance is an accepted field with more people working at it. He says that more research has been done about how individuals make investment decisions and about the behavioural biases that affect decision-making in corporate finance.

To conclude, behavioural finance has its critics but the internalisation of this criticism could be a sign of the field's gradual maturity. As a field of study that offers a conceptual framework for examining how people think and act in the financial markets, behavioural finance clearly has its place in the market.

2.5 SMALL AND MEDIUM-SIZED ENTERPRISES

From an individual street hawker to a complex multinational enterprise, every business entity has its stakeholders and its impact on society, both positive and negative. The SME and micro-enterprise sector encompasses very broad range types of businesses; from traditional family businesses employing over a hundred people to "survivalist" self employed people working in informal micro-enterprises. SMEs are the lifeblood of most economies. On average, they represent over 90% of enterprises and account for 50–60 % of employment at a national level (Anon., 2005).

Luetkenhorst (in Anon., 2005) argues that SMEs are particularly important in supporting economic growth and livelihoods in developing countries, because firstly SMEs tend to use more labour-intensive production processes than large enterprises that help employment; secondly, SMEs provide livelihood opportunities through simple, value adding processing activities in agriculturally-based economies, and thirdly, SMEs mature entrepreneurship.

The financial management of a small business is concerned with understanding factors that determine the value of a business's uncertain cash flow over time and by managing these factors by financial planning and sound financial decision-making. Behavioural finance introduces the possibility that SME owners and entrepreneurs can be faced with heuristics and cognitive biases in the management of their business. The following section explains how these anomalies can affect financial management.

2.5.1 Financial management

In a review article on behavioural finance, Thaler (in McMahon, 2002) wrote that little behavioural finance research has been done in the field of Financial Management, which inspired McMahon to devote this energy to overcome this shortcoming in Business Science. Financial management for SME owners is a very important aspect of their business. It is common knowledge that anyone who owns or manages a small business needs to be armed with the financial know-how to keep his business running smoothly.

Finance is the cornerstone of the free enterprise system. Good financial management is therefore important to the economic health of SME businesses in a country (Brigham & Ehrhardt, 2005). Because financial management is so important, it should be understood however the changes in the economic conditions might be.

The SME financial objective becomes complex when viewed from a behavioural finance perspective, which introduces the possibility that the risk-return relationship at the heart of normative financial management is distorted by the influence of decision-making heuristics and cognitive biases.

McMahon (2002) is of the opinion that owner-managers' perception of both business risk and financial risk may be diminishing by sample size neglect, excessive optimism and illusion of control, not to mention ignorance of all possible decision outcomes. The above-mentioned are all part of the overconfidence bias. It is also McMahon's

(2002) view that the framing heuristic and biases such as mental accounting and loss aversion may come into play if SME owner-managers are likely to make a financial management decision requiring abandonment of a course of action previously chosen which has ultimately proven to be financially detrimental to the business.

2.6 CONCLUSION

Behavioural finance is a relatively new field of research and is based on the promise that individuals do not always act in a fully rational manner. Research in behavioural finance, though still in its infancy, has already begun to shed considerable light on certain puzzling behaviours that market participants seem prone to.

The dynamics of the investment process, culture, and the relationship between investors and their advisors can also significantly impact the decision-making process and resulting investment performance. Full service brokers and advisors are often hired despite the likelihood that they will under perform in market.

Many researchers theorize that the tendency to gamble and assume unnecessary risks is a basic human trait. Entertainment and ego appear to be some of the motivations for people's tendency to speculate. People also tend to remember successes, but not their failures, thereby unjustifiably increasing their confidence.

The behavioural finance literature reviewed in this paper makes a plausible case of what the decision-making options of SME owners of their own businesses may be, as well as in the advice they give to their clients.

CHAPTER 3

EMPIRICAL RESEARCH

3.1 INTRODUCTION

In the foregoing chapter the insights in the emerging field of behavioural finance was discussed. Secondly, chapter 2 discussed the six different types of decision-making heuristics and cognitive biases observed amongst SME owners. Past research by McMahon (2002) has shown that entrepreneurs as SME owners are likely to employ heuristics and biases in the financial management of their own businesses.

In this chapter the method of investigation will be discussed, describing the scientific procedures followed according to the research design proposed for this project (see chapter 1, paragraph 1.4, p 3). A questionnaire (Appendix A) that tested the typical cognitive and emotional decision-making traits that are observed amongst entrepreneurs/SME owners will be completed by two groups of the financial sector. The results of the empirical study are reported and discussed in this chapter

The investigation in chapter 3 will determine the influence these six heuristics and biases will have on a group of (from the North West Province in SA) entrepreneurs/SME owners in the management of their finance as well as their experience gained in their professional contact with their clients. These heuristics and biases will be identified and this will assist entrepreneurs in their financial management.

3.2 OBJECTIVES OF EMPIRICAL INVESTIGATION

The specific objectives of the empirical study, that address the primary research objective of this study as discussed in Chapter 1, paragraph 1.3.1, p 2 is as follows:

--- To identify a convenience sample of successful financial services SME's.

--- To design a measurement instrument that will reflect the status of the six primary behavioural biases in the sample.

--- To apply the measurement instrument on the identified sample of financial services SMEs in order to gather primary data.

--- To interpret the primary data in terms of the sample.

--- To evaluate the typical cognitive and emotional decision-making traits of a successful SME owner.

--- To make recommendations with regard to the role of behavioural heuristics and biases within the context of financial services SMEs.

3.3 METHOD OF INVESTIGATION

3.3.1 Research design

One type of research instrument was designed and used for this study. The tool was designed for the purpose of collecting qualitative data. The tool was a survey questionnaire. The nature of the empirical objectives (see paragraph 3.2) is:

--The understanding of cognitive biases and decision-making heuristics;

-- The recognition of these heuristics and biases;

-- The potential financial management risks that may result from the cognitive biases and decision-making heuristics shared by SME owners.

It was decided to use qualitative research.

3.3.2 Study sample design

As this dissertation refers to entrepreneurs as SME owners in the financial services industry, the focus was on a group of successful financial planners and a group of successful financial accounts officers in the North West Province. Upon identification of the population of entrepreneurs as SME owners in the financial services industry, it was decided to obtain information from two separate groups representing a broad spectrum of financial services in the SME group of businesses. The motivation for this was that the nature of business and activity of the financial planner and the financial accounts officers was different. The financial planner gives advice on financial decision-making, whereas the financial accounts officers are dealing with the results of client's decision-making.

--Financial planners

A financial planner is a professional who assists people in dealing with various personal financial issues through proper planning. Tasks that a financial planner undertakes include retirement planning, tax planning, investment planning, risk management and insurance planning (Wikipedia, 2007a). He also consults clients in the planning phase, i.e. before the financial decision is taken. This stage would involve the influences of cognitive biases and heuristics. Apart from the above, they were also SME owner/entrepreneur of their own business. The financial planners completed 30 questionnaires.

--Financial accounts officers

A financial accounts officer is responsible for the recording of all financial transactions for a business client and drafting of financial statements. An accounting system collects and processes financial information about an organisation and reports that information to decision-makers (Libby, Libby & Short, 2004). The financial accounts officers were thus involved in recording the transactions following the execution of the financial decision. This stage would reflect the positive or negative outcomes of decisions, i.e. the results of the influences of cognitive biases and heuristics during the decision-making phase, leaving the accountant with the experience of how heuristics and biases could influence decision-making. The financial accounts officers completed 30 Questionnaires.

Due to practical problems to obtain a sample of entrepreneurs as SME owners in the financial services industry, the researcher, for convenience sake, decided to get a convenience sample at a congress of financial services. The two groups in the sample represent a broad spectrum of the financial decision-making of SMEs.

Seeing that the sample is not representative of the financial services industry, the conclusions made should not be used as a norm.

3.3.3 Research techniques for data collection

The development of the measuring instrument was driven by an extensive literature study (Chapter 2). The empirical research instrument used for this study was a structured questionnaire. The questionnaire was designed for the purpose of collecting qualitative data.

--The structure of the survey questionnaire

The questionnaire was developed to fulfil the research objectives in paragraph 3.2. The contents of the qualitative research questionnaire were chosen to highlight the decision-making heuristics and cognitive biases observed amongst entrepreneurs who are SME owners. The typical decision-making heuristics and cognitive biases that were investigated were the overconfidence biases, the framing heuristic, the availability heuristic, the loss aversion biases, the mental accounting biases and the representativeness heuristic. The questions used were also applied in similar studies abroad (see Table 2.2, page 18). This gave the researcher a South African perspective. The content of the questionnaire was developed based on the literature review explained in paragraph 2.3.5 (page 17). The qualitative research questionnaire is attached to this study as attachment A.

The issues that the questionnaire addressed can be grouped together under six components. Each component consists of 2-4 questions:

- The first component dealt with the overconfidence bias (questions 1-3).
- The second component dealt with the framing heuristic (questions4-5).
- The third component dealt with the availability heuristic (question 6).
- The fourth component dealt with the loss aversion bias (questions 7-8).
- The fifth component dealt with the mental accounting bias (questions 9-12).
- The sixth component dealt with the representitiveness heuristic (questions 13-14).

--Reliability and validity of questionnaire

The opinion of experts (academics) in the literature study regarding the construct and items were obtained in order to ensure the face and content validity of the questionnaire. The experts from the Institute of Behavioural Finance of South Africa (Nell, 2007) inspected a copy of the questionnaire and expressed their satisfaction. The items in the questionnaire were based on the literature study in Chapter 2, thereby enhancing the content and construct validity of the items. Seeing that the questions in the questionnaire were already used in previous studies, the researcher did not deem it necessary to statistically prove the reliability and validity of the questions.

--Analysis of the questionnaire results

The questionnaires were processed by hand and the data was analysed via a spreadsheet method. The processed data is used to make conclusions and recommendations. Through interpretation, the results of the questionnaire will be considered in the context of the literature review.

3.3.4 Sample limitations

Being a convenience sample it is not representative of any population of SME owners/entrepreneurs. The results apply only to the group of respondents and will serve only the purpose of a pilot test as a basis for future research.

3.4 RESEARCH FINDINGS

This chapter contains the findings of the empirical research based on the responses obtained from the questionnaires sent to the two groups of entrepreneurs in the financial sector. It must be kept in mind that owing to the size of the sample of respondents, their views are not conclusive of the SA situation. At most, it is a reflection of existing perceptions of entrepreneurs as SME owners in the financial service industry in the North West Province.

The results of the quantitative research are grouped and summarized under the following headings.

--- The overconfidence bias

--- The framing heuristic

--- The availability heuristic

--- The loss aversion bias

--- The mental accounting bias

--- The representativeness heuristic

3.4.1 Questionnaire results

The responses on the questionnaire will now be summarised. Overall, 60 respondents of the financial services industry completed the questionnaire.

1. The overconfidence bias

Purpose: Questions 1-3 of the questionnaire (Appendix A) aimed to determine the overconfidence found at financial planners and financial accounts officers.

Question 1 Driving your car is something you do every day. Do you regard yourself as a poor, average or above average driver relative to the rest of the driving population? Indicate where you score yourself on a scale of 1 – 100.

Table 3.1: Response of financial planners and financial accountants to Question 1

Response	Planners		Accounts Officers		Planners and Accounts officers	
	N	%	N	%	N	%
60% = average	1	3.3	5	16.7	6	10
80% = above average	18	60	22	73.3	40	66.7
100% = excellent	11	36.7	3	10	14	23.3
Total = n	30	100	30	100	60	100

Discussion: Table 3.1 represents a summary of the overconfidence bias found with entrepreneurs' driving abilities relative to the driving population. The respondents' perception of their driving ability was higher than their perception of the driving ability of an average person. This "better-than-average" effect is in accordance to the recent research (see chapter 2, paragraph 2.3.5.1, subparagraph 1, p. 19), a manifestation of overconfidence.

Question 2 You are an entrepreneur having your own business. Being a successful entrepreneur is an achievement in an environment where many businesses fail. How good do you think is the chance of your business to stay successful in the next 5 years? Give a percentage from 1 -100 %.

Table 3.2: Response of financial planners and financial accountants to Question 2

Response	Planners		Accounts Officers		Planners and Accounts officers	
	N	%	N	%	N	%
60%	6	20	9	31	15	25.4
80%	13	43.3	15	51.7	28	48.5
100%	11	36.7	5	17.2	16	27.1
Total=n	30	100	29	100	59	100

Discussion: Table 3.2 represents a summary of the overconfidence bias found with +/- 75% of the entrepreneurs thinking that their business had an 80% or more chance to stay successful in the next 5 years. The participants have a high perception of their own business to stay successful. Overconfidence is defined as people who are overconfident in their own abilities particularly in areas where they believe they possess expert knowledge (see chapter 2, paragraph 2.3.5.1, subparagraph 1, p. 19). The above is a manifestation of overconfidence.

Question 3 Rating two businesses currently being your closest competitors, how good do you think their chances of success will be in the next 5 years? Give a percentage from 1-100%.

Table 3.3: Response of financial planners and financial Accountants to Question 3

Response	Planners		Accounts Officers		Planners and Accounts officers	
	N	%	N	%	N	%
20%	1	3.4	0	0	1	1.7
40%	4	13.8	2	6.9	6	10.3
60%	8	27.6	16	55.2	24	41.4
80%	12	41.7	8	27.6	20	34.5
100%	4	13.8	3	10.3	7	12.1
Total=n	29	100	29	100	58	100

Discussion: Table 3.3 represents a summary of the overconfidence bias found with entrepreneurs thinking that their closest competitors will have success in the next 5 years. The literature study shows (see chapter 2, paragraph 2.3.5.1, subparagraph 1, p. 19) that overconfident entrepreneurs (sample group) assigned a higher probability of success to their own business compared with competing businesses. The empirical results show that the participants assigned a weighted average of 80% to their own business to stay successful in the next 5 years, to a weighted average of 69% to their closest competitors to stay successful in the next 5 years. The above is a manifestation of overconfidence.

Discussion of Question 1-3

The results from the empirical research are in line with what the literature study says about overconfidence (see chapter 2, paragraph 2.3.5.1, subparagraph 1, p. 19). Thus to conclude, the test results show positive proof of the sample group members (respondents) being overconfident in their decision-making.

2. Decision framing heuristic

Purpose: Questions 4-5 of the questionnaire (Appendix A) aimed to determine the decision framing found at financial planners and financial accounts officers.

Questions 4 You are told that it is likely that there will be an outbreak of the Bird's Flu disease in the North West Province and it is expected to kill 600 people. The Dept. of Health in the province proposes the following programmes to deal with the outbreak. Programme A will allow 200 people to be saved; programme B will have a 1/3 probability that 600 people will be saved and 2/3 probability that none of the 600 will be saved. Which programme will be your choice?

Table 3.4: Response of financial planners and financial accountants to Question 4

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
A	18	62.1	19	67.9	37	64.9
B	11	37.9	9	32.1	20	35.1
Total = n	29	100	28	100	57	100

Discussion: Table 3.4 represents a summary of the decision framing heuristic present with entrepreneurs as SME owners. The majority choice of the participants was program A. Past research indicates that people would rather save lives than a risky prospect of equal expected outcome. Choices involving gains/lives saved are often risk averse (see chapter 2, paragraph 2.3.5.2, subparagraph 3, p. 24). The results are consistent with the literature.

Questions 5 You are told that it is likely that there will be an outbreak of the Birds Flu disease in the North West Province and it is expected to kill 600 people. The Dept. of Health in the province proposes the following programmes to deal with the outbreak. You are told that programme A will lead to 400 people dying, whereas programme B carry a 1/3 probability that nobody will die and a 2/3 probability that all 600 would die. Which programme will now be your choice?

Table 3.5: Response of financial planners and financial accountants to Question 5

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
A	11	37.9	20	71.4	31	54.4
B	18	62.1	8	28.6	26	45.6
Total=n	29	100	28	100	57	100

Discussion: Table 3.5 represents a summary of the absence of the decision framing heuristic present with entrepreneurs as SME owners. The majority of participants choose program A. This is in contrast with past research that indicated that people would rather accept a chance to save lives than to save nobody. Choices involving losses/lives lost are often risk taking (see chapter 2, paragraph 2.3.5.2, subparagraph 3, p. 24).

Discussion of Question 4-5

It is easy to see that the two problems are identical. The only difference between them is that the outcomes are described in lives saved and lives lost. The chance is from being risk averse to risk taking. The responses to question 4 and 5 arise from the conjunction of a framing effect with contradictory attitudes toward risks involving gains and losses (see chapter 2, paragraph 2.3.5.2, subparagraph 3, p. 24). Considering the total group there is some evidence of the manifestation of the framing effect according to the results of question 4 whilst the results of question 5 indicated the opposite of what was expected according to the results of past research. If the framing heuristic influence were truly present the exact opposite result would have been shown from the two questions. This happened with the results of the planners, i.e. the framing heuristic in full application. With the accounts officers, only a slight framing influence took place when the response showed almost no movement at all (1 respondent on 3.5% points).

3. Availability heuristic

Purpose: Question 6 of the questionnaire (Appendix A) aimed to determine the availability heuristic present in the decision-making process of financial planners and financial accounts officers.

Questions 6.1 Which, to your mind, is the higher cause of death in the Republic of South Africa - murder or pneumonia?

Table 3.6: Response of financial planners and financial accountants to Question 6.1

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
Murder	18	66.7	23	88.5	41	77.4
Pneumonia	9	33.3	3	11.5	12	22.6
Total = n	27	100	26	100	53	100

Questions 6.2 Which, to your mind, is the higher cause of death in the Republic of South Africa - lung cancer or motor vehicle accidents?

Table 3.7: Response of financial planners and financial accountants to Question 6.2

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
Lung cancer	2	7.7	6	26.1	8	16.3
Motor accidents	24	92.3	17	73.9	41	83.7
Total = n	26	100	23	100	49	100

Questions 6.3 Which, to your mind, is the higher cause of death in the Republic of South Africa - assault or diabetes?

Table 3.8: Response of financial planners and financial accountants to Question 6.3

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
Assault	18	78.3	18	85.7	36	81.8
Diabetes	5	21.7	3	14.3	8	18.2
Total = n	23	100	21	100	44	100

Questions 6.4 Which, to your mind, is the higher cause of death in the Republic of South Africa - tuberculosis or fire and flame deaths?

Table 3.9: Response of financial planners and financial accountants to Question 6.4

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
Tuberculosis	21	84	21	100	42	91.3
Fire deaths	4	16	0	0	4	8.7
Total = n	25	100	21	100	46	100

Discussion of Questions 6.1- 6.4

From the results it can be deduced that the availability heuristic can be present with entrepreneurs as SME owners. The respondents were liable to the availability heuristic, because they gave an opinion on the basis of what information was most available to them (see chapter 2. paragraph 2.3.5.2, subparagraph 1, page 23). SA Media (2007) confirmed that these causes of death (murder, motor accidents, assault and tuberculosis) are some of the most published in newspapers. The results are in line with what the literature says. In all 4 questions the respondents chose the cause of death because of recent events or information that was easier to recall on what the researcher believes, is the common knowledge perception of the man-in-the-street, on these incidents. Concluding, there is evidence of the manifestation of the availability heuristic in the sample group.

4. Loss aversion bias

Purpose: Questions 7-8 of the questionnaire (appendix A) aimed to determine the loss aversion found at financial planners and financial accounts officers.

Questions 7 If you are asked to choose between a) taking a sure loss of R7500.00 or b) taking a chance where there is a 75% chance to lose R10000.00 and a 25% chance to lose nothing. What will be your answer?

Table 3.10: Response of financial planners and financial accountants to Question 7

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%		%
A	10	33.3	13	44.8	23	39
B	20	66.7	16	55.2	36	61
Total = n	30	100	29	100	59	100

Discussion: Table 3.10 represents a summary of the loss aversion bias present with entrepreneurs as SME owners. The majority of participants chose option B where there is a 25% chance to lose nothing. Past research found that most people would rather take a chance if they could avoid losses (see chapter 2, paragraph 2.3.5.1, subparagraph 3, p. 22). This is an indication of the loss aversion bias.

Questions 8 If you are asked to choose between a) a sure gain of R2500.00 and b) a 25% chance to gain R10000.00 and a 75% chance to gain nothing. What will be your answer?

Table 3.11: Response of financial planners and financial accountants to Question 8

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
A	13	44.8	14	48.3	27	46.6
B	16	55.2	15	51.7	31	53.4
Total = n	29	100	29	100	58	100

Discussion: Table 3.11 represents a summary of the loss aversion bias present with entrepreneurs as SME owners. The majority of participants chose option B where there is a chance to gain nothing. These results contrasts with past research, where it was found that most people are risk-averse, and that they would rather take a sure gain than a chance to gain nothing (see chapter 2, paragraph 2.3.5.1, subparagraph 3, p. 22).

Discussion of Question 7- 8

From the results there is evidence that the impact of a loss on entrepreneurs is greater than the impact of a gain of the same magnitude. The results from question 7 are in line with the literature that states that people are risk averse, i.e. a riskless prospect is preferred to a risky prospect. The results from question 8 are in contrast with what the literature portraits. To conclude, there is evidence, however small, of the manifestation of the loss aversion bias in the sample group.

5. The mental accounting bias

Purpose: Questions 9-12 of the questionnaire (appendix A) aimed to determine the mental accounting found at financial planners and financial accounts officers.

Questions 9: You lose a R200.00 ticket that was given to you on the way to a show at Aardklop. Will you still go to the show and buy another ticket at the entrance or will you call it a night and go home?

Table 3.12: Response of financial planners and financial accountants to Question 9

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
Go home	12	40	8	27.6	20	33.9
Buy ticket	18	60	21	72.4	39	66.1
Total = n	30	100	29	100	59	100

Discussion: Table 3.12 represents a summary of the mental accounting bias present with entrepreneurs as SME owners. From the results more participants chose to buy a ticket. Past research found that the majority of those who lost the ticket were still willing to buy a ticket (see chapter 2, paragraph 2.3.5.1, subparagraph 2, p. 20).

Questions 10 If you lose a R200.00 note on your way to a show at Aardklop, will you still go to the show and buy the ticket for R200.00 you intended to buy for the show, or will you decide to go home?

Table 3.13: Response of financial planners and financial accountants to Question 10

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
Go home	12	40	3	10.3	15	25.4
Buy ticket	18	60	26	89.7	44	74.6
Total = n	30	100	29	100	59	100

Discussion: Table 3.13 represents a summary of the mental accounting bias present with entrepreneurs as SME owners. The majority of the participants would still buy a ticket. This is in line with past research that found that the majority of people chose to replace the lost ticket (see chapter 2, paragraph 2.3.5.1, subparagraph 2, p. 20).

Question 11: You want to buy a new CD player. In shop A where you look at the CD player you would like to buy, it is priced at R1 000.00. A person standing next to you remark that the same CD player costs R970.00 in a shop B six blocks from where you currently are. What will you do, buy at shop A or B?

Table 3.14: Response of financial planners and financial accountants to Question 11

Response	Planners		Accounts Officers		Planners and Accounts Officers	
	N	%	N	%	N	%
Buy at A	15	50	16	55.2	31	52.4
Buy at B	15	50	13	44.8	28	47.6
Total = n	30	100	29	100	59	100

Questions 12 You are with a travel agency A in a shopping centre wanting to book a weekend in Cape Town. The whole package will cost you R 3000.00. Another client at the agency remarks that you can obtain the same package for R2970.00 at an agency B in a shopping centre three blocks down the road. What will you do, book at agency A or B?

Table 3.15: Response of financial planners and financial accountants to Question 12

Response	Planners		Accounts Officers		Planners and Account officers	
	N	%	N	%	N	%
Buy at A	18	60	22	75.9	40	67.8
Buy at B	12	40	7	24.1	19	32.2
Total = n	30	100	29	100	59	100

Discussion: Table 3.14 and Table 3.15 represent a summary of the mental accounting bias present with entrepreneurs as SME owners. The majority of the participants chose not to save money. The mental accounting bias illustrates that people create separate accounts, i.e. a household budget for food and an entertainment budget (see chapter 2, paragraph 2.3.5.1, subparagraph 2, p. 20). The money in different accounts is treated differently. The money for entertainment, in this case a new CD player or a holiday, is used for entertainment, as seen in both questions.

Discussion of Question 9- 12

Although the result on question 9 was not in line with the past research results, the fact that the results on questions 10, 11 and 12 confirm the presence of the mental accounting bias in the sample, although the presence of the mental accounting bias is smaller taking into account the opposite than expected outcome on question 9.

6. The representativeness heuristics

Purpose: Questions 13-14 of the questionnaire (appendix A) aimed to determine the representativeness heuristics found at financial planners and financial accounts officers.

Question 13: Susan is 31 years' old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice and also participated in anti-nuclear demonstrations. Is Susan a typical bank teller, a feminist or a feminist bank teller? Choose the most probable answer.

Table 3.16: Response of financial planners and financial accountants to Question 13

Response	Planners		Accounts Officers		Planners and Account officers	
	N	%	N	%	N	%
Bank Teller	3	10.4	10	34.5	13	22.4
Feminist	19	65.5	14	48.3	33	56.9
Feminist teller	7	24.1	5	17.2	12	20.7
Total = n	29	100	29	100	58	100

Discussion: Table 3.16 represents a summary of the representativeness heuristic present with entrepreneurs as SME owners. Past research found more participants to choose a feminist because the descriptions of Susan sounds like the description of a feminist, and the description is also representative of that of a feminist (see chapter 2, paragraph 2.3.5.2, subparagraph 2, p.23). The results are in line with the literature.

Questions 14 Every investment portfolio must hold gold shares. Gold will always rise in times of political turmoil and have protected many clever investors through the years. Do you agree with the above statement?

Table 3.17: Response of financial planners and financial accountants to Question 14

Response	Planners		Accounts Officers		Planners and Accounts officers	
	N	%	N	%	N	%
Yes	20	66.7	15	53.6	35	60.3
No	10	33.3	13	46.4	23	39.7
Total = n	30	100	28	100	58	100

Discussion: Table 3.17 represents a summary of the representativeness heuristic present with entrepreneurs as SME owners. The majority of the participants chose YES. This again shows that the perception of gold being part of an investor's investment portfolio is representative of such a factor as implied by the question that gold will "always" have a positive return on investment as experienced over "years". This is in line with past research of Ritter (2003) (see chapter 2, paragraph 2.3.5.2, subparagraph 2, p. 23).

Discussion of Question 13 – 14

From the results it can be deduced that the representativeness heuristic was present with entrepreneurs as SME owners. There was a strong indication that the representativeness heuristics was present with the respondents. This indicates that entrepreneurs are liable to what they see occurring around them, especially in the recent past, is assigned an inordinately high probability of occurring in the future.

3.5 SUMMARY OF EMPIRICAL FINDINGS

In summary, there is an indication that the heuristics and biases tested can be present with entrepreneurs as SME owners. The heuristics and biases tested are presented in table 3-18.

Table 3.18: Summary of heuristics and biases tested

Questions	Heuristics and Biases	Results
Questions 1& 2	Overconfidence	85% of the financial planners have overconfidence in their own abilities. 78% of the financial account officers have overconfidence in their own abilities. 82% of participants have overconfidence in their own abilities.
Questions 4 & 5	Framing	62% of the financial planners were risk averse. 68% of the financial account officers were risk averse. 65% of participants were risk averse
Questions 6.1 - 6.4	Availability	80% of the financial planners manifest the availability heuristic. 87% of the financial accounts officers manifest the availability heuristic. 84% of participants manifest the availability heuristic.
Questions 7 & 8	Loss Aversion	55% of the financial planners were risk takers. 52% of the financial accounts officers were risk takers. 54% of participants were risk takers.
Questions 9 - 12	Mental Accounting	There is evidence that the mental accounting bias can be present with financial planners and financial account officers. The results of three of the questions prove that both groups were liable to the mental accounting bias.
Questions 13 & 14	Representativeness	66% of the financial planners manifest the representativeness heuristic. 51% of the financial account officers manifest the representativeness heuristic. 59% of participants manifest the representativeness heuristic.

Table 3.18 is a summary of the empirical results obtained (chapter 3, paragraph 3.4). Although the percentage may have differed between the two groups, the tendency indicated was in the same direction. The results of the empirical study showed that both groups manifest heuristics and biases and that it is consistent with the research done in Europe, Australia and USA (see chapter 2, paragraph 2.3.5).

It was considered not useful to further comparisons of results and interpretation thereof, between the financial planners and financial account officers. It was originally envisaged that the two identified groups would give different results due to the differences in their functioning, which would warrant function investigation. The result differences found were not material enough according to the judgement of the researcher, to warrant further research for a research study on this level.

3.6 CONCLUSION

In this chapter the objectives were empirically investigated among the entrepreneurs in the financial services industry. The study sample was not representative of all the South African entrepreneurs in the financial services industry, but to the entrepreneurs in the financial services industry in the North West Province. Seeing that the sample is not representative of the financial services industry, the conclusions made should not be used as a norm.

Past research internationally had evidence of the typical heuristics and biases. The researcher wanted a South African perspective on these heuristics and biases, as this is a new and unknown field in South Africa. The challenge for the researcher was to identify prominent heuristics and biases from past research and to construct a suitable questionnaire from the literature study in chapter 2.

From the empirical results, four of the heuristics and biases were more distinct. For the researcher the overconfident bias, the mental accounting bias, the availability heuristic and the representativeness heuristic were clearly visible whereas the framing heuristic and the loss aversion bias were present in a smaller way.

On the whole however, a workable picture of the present perception of heuristics and biases in South Africa came to the fore, and that there is still a lot to know and learn from what influences and effects heuristics and biases have on entrepreneurial decision-making.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

The study of behavioural finance made the researcher realise that South Africa had so much to learn from the influences human psychology can have on decision-making. The field of behavioural finance is a well-studied field in Europe, Australia and the USA and the researcher is of the opinion that South African entrepreneurs can gain much of what is already proved in the field to assist them in the important task of financial management in their business.

This section contains the conclusions and recommendations of the study, based on the findings of the literature study and empirical study contained herein. The final research specific objective (Chapter 1, paragraph 1.3.2) was to formulate recommendations regarding the identifications of irrational behaviour in entrepreneurial decision-making.

In this concluding chapter, the findings of the research will be discussed briefly. Furthermore, the limitations are highlighted and recommendations are made. Finally, further research topics will be suggested.

4.2 CONCLUSIONS

4.2.1 Conclusions regarding the secondary theoretical and empirical objectives

The typical cognitive and emotional decision-making traits of entrepreneurs (objective 1, paragraph 1.3.2) were researched in chapter 2 and 3. In the literature study in chapter 2, the researcher identified the six most prominent heuristics and biases previously researched. To understand the concepts of these heuristics and biases the researcher prepared summaries and commentary on each one of the six identified. The literature study covered research on the influences of the six prominent cognitive biases and heuristics of decisions by entrepreneurs in Europe, Australia and the USA. To test the influence on SA entrepreneurs and more specifically SME owners/entrepreneurs, the empirical study focused on the situation with a group of 30 financial planners and 30 financial accounts officers as SME owners/entrepreneurs in the financial industry.

Since the sample is not representative of any population, conclusions made are applicable to the sample mentioned. The following conclusions, as based on the detail in chapter 2 and 3, were made.

4.2.1.1 To determine and recognize the typical cognitive and emotional decision making traits of a successful SME owner

1. The overconfidence bias

This bias refers to the failure to know the limits of one's abilities or knowledge. Based on the literature (see chapter 2, paragraph 2.3.5.1, subparagraph 1, p. 19), entrepreneurs are especially likely to be overconfident. From the results of the empirical study there was evidence that the participants were overconfident in their own abilities. This was evidenced by the "better-than-average" effect established. It was also found that the participants assigned a higher percentage of success to their own business compared with competing businesses. This is consistent with the literature that entrepreneurs have a high level of confidence in their own decision-making ability on aspects, i.e. entrepreneurship, of which they regard themselves as experts. To conclude, the researcher is of the opinion that entrepreneurs/owners of SMEs are significantly influenced by the overconfidence bias in their decision-making.

2. The framing heuristic

The framing heuristic is a term describing how people perceive and evaluate risky decisions. The literature study (see chapter 2, paragraph 2.3.5.2, subparagraph 3, p. 24) proves that the manner in which a problem is framed will have an effect on the choice that is made. The way the problems were framed had an influence on the results of the questions. The results of the empirical study proved that people are risk averse, i.e. the prospect of certainly saving lives. To conclude, the researcher is of the opinion that entrepreneurs/SME owners are influenced by the framing heuristic in their financial decision-making, although limited.

3. The availability heuristic

In the availability heuristic items that are easier to recall and things that are reported more often are judged to be more common. Based on the literature (see chapter 2, paragraph 2.3.5.2, subparagraph 1, p. 23), entrepreneurs will give an opinion on a problem based on what information is available to them. The results of the empirical study are conclusive evidence that the availability heuristic exists with the participants. This is mainly because entrepreneurs haven't got the resources and time to engage in the collecting of data to make sound decisions, most probably because of the speed required in present day business to make a decision. The evidence from the empirical study is in line with the literature study in that the respondents made their choices on information that was easier to recall. To conclude, the researcher is of the opinion that entrepreneurs/SME owners are influenced by the availability heuristic in their decision-making.

4. The loss aversion bias

The loss aversion bias refers to the tendency of people to prefer avoiding losses than acquiring gains. The literature study (see chapter 2, paragraph 2.3.5.1, subparagraph 3, p. 22) on loss aversion revealed that people are risk-averse and that most people would rather take a chance if they could avoid losses. Loss aversion can cause individuals to make unsound financial decisions. The results of the empirical study are evidence that the participants would rather take a sure gain than a chance to loose money. There is also evidence that the participants would rather take a chance to avoid a sure loss. The results are in line with the literature study. A plausible mechanism in the opinion of the researcher to produce the loss aversion bias may be emotional attachment. This implies that people impute greater value to a given item when they give it up than when they acquire it. To conclude, the researcher is of the opinion that entrepreneurs do manifest the loss aversion bias in their decision-making.

5. The mental accounting bias

Mental accounting is the tendency of people to separate their money into several accounts. Based on the literature (see chapter 2, paragraph 2.3.5.1, subparagraph 2, p. 20), people divide their money into separate mental accounts based on the criteria of the source and intent for the money. The value entrepreneurs' assign to R1 in one mental account can differ from that of R1 in other mental accounts. The consequence of this practice is that entrepreneurs will tend to be too conservative with certain spending and too reckless with others. The results of the empirical study confirm, to a large extent, what the literature say. To conclude, the researcher is of the opinion that the mental accounting bias is present in entrepreneurial decision-making by SME owners/entrepreneurs.

6. The representativeness heuristic

Decision-makers employ the representativeness heuristic when they generalize about a person or an event based on only a non-representative attribute of that person or only a few observations of similar events. According to the literature study (see chapter 2, paragraph 2.3.5.2, subparagraph 2, p. 23), this heuristic is one of the most common heuristics of all decision-making heuristics. From the empirical study there was evidence that the participants employ the representativeness heuristic. The majority of the participants made their choice on what was representative of Susan's description. However, there is reason to believe that the representativeness heuristic is a decision-making shortcut that is common in entrepreneurial settings. In such settings important key information on customer demand and production cost are rarely available and entrepreneurs have to rely on personal experiences with customers to guide them with decision-making. To conclude, the researcher is of the opinion that entrepreneurs/SME owners are influenced by the representativeness heuristic in their decision-making.

4.2.1.2 To guide potential entrepreneurs in the financial management of their business avoiding systematic thinking errors

The literature study (Chapter 2) attempted to identify heuristics and biases that could influence entrepreneurial decision-making. The results of the empirical study showed that entrepreneurs are all prone to heuristics and biases in their decision-making. The question to be asked is can these heuristics and biases be avoided?

At the most basic level, just being aware of how the thinking processes work and the kind of pitfalls to which entrepreneurs/owners are prone too, should improve their decision-making (Bradley, 2005). From the results of the empirical study all the heuristics and biases proved to be present in SME owners/entrepreneurs' decision-making. Some more than others, probably depending on the person and circumstances, however, each one spells a possibility of risk for the business of the SME. For this reason procedures to avoid such negative influences or, even soften the effect, would be beneficial to the business of the SME. It is suggested that the following guidelines will assist the SME owners/entrepreneurs in this regard:

1. To avoid the overconfidence bias, it is important to know that just about every overconfident investor is only a trade away from a very humbling wake-up call (Phung, 2004). Also, entrepreneurs mustn't overestimate their own ability. It is important to know thyself. Entrepreneurs must also allow for a margin of safety to avoid losses. Finally, entrepreneurs must seek feedback from others and learn from past mistakes to minimize the risk of being overconfident (Rappaport & Mauboussin, 2001).

2. To avoid the framing heuristic, it is important to remember decisions are affected by how a problem, or set of circumstances, is presented. Entrepreneurs must try to reframe the problem in different ways. Finally, entrepreneurs must welcome diverse opinions to solve problems (Rappaport & Mauboussin, 2001).

3. To avoid the availability heuristic, the most important lesson to be learned is to retain a sense of perspective. Entrepreneurs mustn't get caught up in the latest news. Short-term approaches don't usually yield the best investment results (Ciccone, 2002). If entrepreneurs do a thorough job of researching their investments, they'll better understand the true significance of recent news and they will be able to act accordingly. Entrepreneurs must remember to focus on the long-term picture in their investment decisions (Klein, 2005).

4. To avoid the loss aversion bias, entrepreneurs must forget past experiences that ended up in heavy losses. It is important to focus on the future and on the benefits that future investments may hold (Klein, 2005).

5. To avoid the mental accounting bias, it is important for entrepreneurs to establish long-term financial goals. Entrepreneurs must acknowledge the fact that the fluctuation of their investments does not determine their ultimate success or failure. It is the safe arrival at their destination that is most important (Ciccone, 2002).

6. To avoid the representativeness heuristic, the key for entrepreneurs is to be aware not only of the likelihood of a particular event, but also how likely the

event is in the absence of that information. It is important to avoid giving too much weight to one piece of information (Klein, 2005).

To conclude it is important for entrepreneurs to know that the uses of heuristics and biases are an effective way of making decisions in conditions of uncertainty. But the problem for entrepreneurs is that heuristics and biases are deeply ingrained in their psyche. Reducing such heuristics and biases may be difficult and, indeed, some experts in the field are sceptical about whether such heuristics and biases can be avoided at all (Bradley, 2005).

4.2.1.3 To establish the potential financial management risks that may result from the typical cognitive biases shared by SMEs

The literature study (Chapter 2) on financial management revealed the importance of SME owners to have financial know-how to keep their business running smoothly. To understand the importance of the behavioural finance concept, six heuristics and biases were identified and discussed in the literature study (Chapter 2). The results of the empirical study (Chapter 3) showed that entrepreneurs are prone to these heuristics and biases. The financial management of a business could be influenced by these heuristics and biases. Here are a few risks that may result from heuristics and biases:

1. The overconfidence bias (see chapter 2, paragraph 2.3.5.1, subparagraph 1, p.19) will play a role in entrepreneurs' perceptions in business risk and financial risk. Lower risk perception may lead to a lower expected return, whereas overconfidence and optimism may directly cause expected returns to be unrealistically high (McMahon, 2002: 17). An overconfident entrepreneur might not see the need for financial planning and control techniques such as financial reporting and budgeting. This will cause rational decision-making to be replaced by the use of heuristics and biases in financial decision-making based on limited information.

2. The framing heuristic (see chapter 2, paragraph 2.3.5.2, subparagraph 3, p. 24) will come into play the way problems are framed. Again, a lack of sufficient information and knowledge will make entrepreneurs very open to this heuristic. The framing heuristic will cause entrepreneurs to interpret problems the wrong way and unsound financial decisions will be the cause.

3. Based on the literature (see chapter 2, paragraph 2.3.5.2, subparagraph 1, p. 23), entrepreneurs will give an opinion on a problem based on what information is available to them. The availability heuristic will come into play if entrepreneurs make financial decisions based on limited information available. The lack of planning and resources is mainly responsible for the availability heuristic.

4. A problem for entrepreneurs is to make a financial decision on events where they experienced past losses because of unexpected economic situations. The loss aversion bias (see chapter 2, paragraph 2.3.5.1, subparagraph 3, p. 22) can lead to a total rejection of a decision that should have been made for future investments. In the event entrepreneurs lose out on future growth.

5. The mental accounting bias (see chapter 2, paragraph 2.3.5.1, subparagraph 2, p. 20) affects how entrepreneurs think about and treat money. The bias will also influence how entrepreneurs think about losses and gains. With all this in mind, the mental accounting bias can have huge effects on the financial decision-making of a business.

6. Finally, the representativeness heuristic (see chapter 2, paragraph 2.3.5.2, subparagraph 2, p. 23) makes entrepreneurs focus only on the recent past, making them not future orientated. This heuristic also plays a role when entrepreneurs make financial decisions on one piece of information, not considering different opinions and facts, causing the wrong decision with financial consequences.

In closing, it is important for entrepreneurs to recognise the impact heuristics and biases can have on the financial management of their business.

4.2.1.4 To make recommendations to identify irrational behaviours in entrepreneurial decision-making

The following recommendations are developed based on findings in the literature and empirical research.

1. Understand heuristics and biases

Behavioural finance is a relatively new and unknown field in South Africa. This research study informs entrepreneurs of the role heuristics and biases can play on the financial management of their businesses. Entrepreneurs and future entrepreneurs must be able to understand and evaluate the role of heuristics and biases on financial decision-making. Before making important decisions, always consider the other, and probably the more "disguised" side of the alternatives at hand.

2. Know yourself and your clients

Financial planners and financial accounts officers must be aware of all the heuristics and biases they are prone to, before they advise their clients. The financial planners must also show their clients of heuristics and biases they think their clients are prone to. The financial accounts officers are probably more aware of the results of a decision influenced by heuristics and biases. Both these groups should, in their own business, and as advice to their clients, come into the habit of evaluating the results of their decisions and what was taken into account when deciding, in order to learn when to trust their own judgement and what should be avoided.

3. Future research opportunities

Taking into consideration the fact that behavioural finance is a relatively new field in South Africa, there is a need for more research. As discussed in chapter 2, more decision-making heuristics and cognitive biases are to be observed amongst SME owner-managers. This research study is a basis to assist in further research in a representative sample of entrepreneurs/SME owners in the financial industry. This creates an opportunity for future research.

4.2.2 Primary objective

The main objective (chapter 1, paragraph 1.3.1, p. 2) of this study was to understand and evaluate the effect of behavioural heuristics and biases on entrepreneurs in their financial management.

The literature review has successfully highlighted the field of behavioral finance and the importance of heuristics and biases on decision-making. The literature study also identified and recognized the most prominent and well-studied heuristics and biases used by entrepreneurs/SME owners in Europe, Australia and the USA. The results of the empirical study prove that entrepreneurs/SME owners in a South African business environment (a group in the North West Province) also employ these prominent heuristics and biases. Although this group was not representative of the entrepreneurs/SME owners in the North West Province, the results were acceptable and had added value to the study.

In the literature study the prominent heuristics and biases were all highlighted and studied to understand the effect it can have on financial decision-making. Before entrepreneurs/SME owners can exploit and avoid these behaviours they must understand and educate themselves to know the heuristics and biases they are prone to, i.e. have themselves evaluated. The researcher gave guidelines how these heuristics and biases can be avoided.

The literature study indicated that the financial management of a business could be influenced by these heuristics and biases. The empirical study also proved that a group of entrepreneurs/SME owners are prone to decision-making heuristics and cognitive biases. Again, it is important for entrepreneurs to understand the effects these heuristics and biases can have on their financial management.

The researcher also gave recommendations how to identify these irrational behaviours in financial decision-making.

The discussion above has shown that the objectives of the study have been met.

4.5 CONCLUSION

Research in behavioural finance has begun to shed considerable light on certain puzzling behaviours that entrepreneurs are prone to. This study confirms that entrepreneurs as SME owners are prone to heuristics and biases that affect financial decision-making. Behavioural finance will always have its critics; however, it has gained ground over the last 10 years and it is there to help and guide entrepreneurs to make better decisions.

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Appendix A

Qualitative research questionnaire

I am an MBA student at the North-West University in Potchefstroom. I am doing research in the field of Behavioural Finance. The purpose of this research is to assist the financial sector to recognize the typical cognitive and emotional decision-making traits of successful SMEs and enabling the financial sector to guide potential entrepreneurs in the financial management of their businesses, avoiding systematic thinking errors.

Your participation in the survey is highly appreciated. Please answer the following questions by indicating the first answer that comes to mind.

1. Driving your car is something you do every day. Do you regard yourself as poor, average or above average driver relative to the rest of the driving population? Indicate where you score yourself on a scale of 1 – 100.

<10%	20%	40%	60%	80%	100%
Can't drive	Very poor	Poor	Average	Above average	Excellent

2. You are an entrepreneur having your own business. Being a successful entrepreneur is an achievement in an environment where many businesses fail. How good do you think is the chance of your business to stay successful in the next 5 years? Give a percentage from 1 -100 %.

<10%	20%	40%	60%	80%	100%

3. Rating two businesses currently being your closest competitors, how good do you think their chances of success will be in the next 5 years? Give a percentage from 1-100%.

<10%	20%	40%	60%	80%	100%

4. You are told that it is likely that there will be an outbreak of the Bird's Flu disease in the North West Province and it is expected to kill 600 people. The Dept. of Health in the province proposes the following programmes to deal with the outbreak. Programme A will allow 200 people to be saved; programme B will have a 1/3 probability that 600 people will be saved and 2/3 probability that that none of the 600 will be saved. Which programme will be your choice?

A	B

5. You are told that it is likely that there will be an outbreak of the Bird's Flu disease in the North West Province and it is expected to kill 600 people. The Dept. of Health in the province proposes the following programmes to deal with the outbreak.
You are told that programme A will lead to 400 people dying, whereas programme B carry a 1/3 probability that nobody will die and a 2/3 probability that all 600 would die. Which programme will now be your choice?

A	B

6. Which to your mind is the higher cause of death in the Republic of South Africa? Choose one of each pair:

Murder	Pneumonia

Lung cancer	Motor vehicle accidents

Assault	Diabetes

Tuberculosis	Fire and flame deaths

7. If you are asked to choose between:

a) Taking a sure loss of R7500.00

b) Or taking a chance where there is a 75% chance to lose R10 000.00 or a 25% chance to lose nothing. What will be your answer?

A	
B	

8. If you are asked to choose between:

a) A sure gain of R2500.00

b) Or a 25% chance to gain R10000.00 and a 75% chance to gain nothing. What will be your answer?

A	
B	

9. If you lose a R200.00 ticket that was given to you on the way to a show at Aardklop will you still go to the show and buy another ticket at the entrance or will you call it a night and go home.

Go home	
Buy another ticket	

10. If you lose a R200.00 note on your way to a show at Aardklop, will you still go to the show and buy the ticket for R200.00 you intended to buy for the show, or will you decide to go home?

Go home
Buy the ticket

11. You want to buy a new CD player. In shop A where you are looking at the CD player you want it is marked for R1 000.00. A person standing next to you remarks that the same CD player costs R970.00 in a shop B six blocks from where you currently are. What will do, buy at shop A or B?

Buy at A	Buy at B

12. You are at a travel agency A in a shopping centre wanting to book a weekend in Cape Town. The whole package will cost you R 3000.00. A client in the agency remarks that you can obtain the same package for R2970.00 at an agency B in a shopping centre three blocks down the road. What will you do, book at agency A or B?

Book at A	Book at B

13. Susan is 31 years old, single, outspoken and very bright. She majored in philosophy. As a student, she was deeply concerned with issues of discrimination and social justice and also participated in anti-nuclear demonstrations.

Is Susan a typical bank teller, a feminist or a feminist bank teller? Choose the most probable answer.

Bank Teller	Feminist	Feminist bank teller

14. Every investment portfolio must hold gold shares. Gold will always rise in times of political turmoil and have protected many clever investors through the years.

Do you agree with above statement?

Yes	No