

Investment decisions in the South African saddle horse industry

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Declaration:

I declare that the dissertation hereby submitted by me for the MSc degree in Agricultural Economics at the North-West University is my own independent work and has not previously been submitted by me at another university/facility.

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J H Dreyer

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Date

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Soli Gloria Deo – None of this would have been possible if not for His grace and guidance.

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Abstract

Keywords: Emotional reward, emotional influence, cognitive influence, conscious and unconscious decisions.

This study originated in the phenomenon that has been observed in the South African Saddle Horse Industry of substantial investments being made over time in the absence of obvious financial or economic reward. A literature study confirmed that, internationally, investment without obvious financial and economic rewards is not unknown and at the same time it was obvious that it is a rarely studied subject. From the literature study it was also evident that this phenomenon occurs where passion and, to a lesser extent, commitment is involved. Economic models on decision making is lacking in perspective on the influence of emotions which were proven to be substantial in an emotionally-laden market, such as the South African Saddle Horse industry.

Consumption theory in marketing describes consumption decisions where the consumer is so influenced by emotions that rational influences barely come into play. It is in this context that the study seeks to qualify the investment decisions in the South African Saddle Horse industry by the adaption of consumption theory to investment theory. Research on the indicated strategic phenomenon fits within the critical realism paradigm and is essentially inductive, theory building research. In this case, the adaption of consumer theory as investment theory. Qualifying the influence of emotions in the investment decision – the “why” and “how” questions about a

contemporary set of events, over which the researcher has no control – indicates case study as the applicable method of research. In this research, the case study theory is built by generalising case data to prior theory seeking replication or theoretical replication. With prior theory embracing the mentioned consumer theory and case selection dictated by the information, a case study can assist to identify the motivators of the investment decision.

Once qualified, the influence of emotions on the investment decision in the mentioned strategic phenomenon can be quantified. Quantifying the influence of emotions on the investment decision leaves two alternatives, the first of which is developing a data set in a statistical survey. However, neuroeconomic findings indicate that opportunity cost comparisons for decisions are supported by our emotional circuitry that is commonly below our conscious awareness. This finding has the direct implication that opportunity cost questions in retrospect do not yield reliable information. The second alternative would be to use dependable historic investment decision data series, such as auction prices. But in the South African Saddle Horse industry, only African Saddle Horse Futurity (ASF) offers any usable investment decision data series, with the AACup being the mother competition in the USA, offering a compatible data series but much more complete and evolved. Therefore, in quantifying the influence of emotions on investment decisions, ASF data and extended AACup auction data is used in an Ordinary Least Squares regression (OLS) analysis and for further calculations.

In the literature study it was evident that emotions will be a major influence in investment decisions in the horse industry. This was confirmed by the multiple case study, proving applicability of consumption theory to the investment decision in the South African Saddle Horse industry. The OLS analysis rendered the magnitude of influence of emotions on the investment decision as both prohibitive and irregular on the theoretical determinants of the investment decisions. In all the research done, emotions were unanimously proven to be the determining influence on the investment decision in the South African Saddle Horse industry.

But in a free market system where price equates demand and supply, the confirmed influence of emotions in the establishment of price hampers the effective distribution of scarce production resources. In this, the influence of emotions results in a cost to the industry. By manipulating the data set used in the dissertation, an indication of the historic cost of the influence of emotions in the investment decision at the ASF and AACup competitions became apparent.

Also, the influence of emotions can be equally crucial in, for example, exploiting economic growth potential. For example, the Saddle Horse industry is a world-wide multimillion dollar industry,

with coincidentally proven and strong connections with good growth potential to South Africa's rural areas. These connections contain sustainable development potential to improve the quality of life for many people living in these rural areas. But in order to successfully exploit this potential, more information on emotions as an economic variable is needed in stimulating the industry.

In accordance with the incidence of emotions as an influence in decision making, evident in literature and this research, this argument for more information is extendable to numerous other emotionally influenced markets. Therefore, in order to improve reliability of predictions on economic investment and also economic growth, emotions as an influence have to be accounted for.

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Chapter 1

Introduction to the dissertation

1.1 Background to dissertation

“No single idea has been more important than, perhaps as important, as the idea of progress in the Western civilization for nearly three thousand years” (Nisbet, 1980). Basic to this progress in Western civilisation was economic development. Investment decisions are a well-studied subject as economic viability is directly linked to continued investment (Keynes, 1936; Fromlet, 2001), with investment defined as *“the act of incurring an immediate cost in the expectation of future rewards”* (Dixit & Pindyck, 1994).

This dissertation originated in a phenomenon witnessed in the South African Saddle Horse industry that, notwithstanding a lack of evidence of financial or economic reward, the industry has succeeded in attracting continued investments, implying a new look at *‘future rewards’*. This is especially so in view of indications, confirmed in literature, that the horse industry is an emotionally-charged industry. The influence of emotions as a motivator in financial decision making becomes important when taking into consideration the remarks of Camerer, Loewenstein, and Prelec (2005) who state that emotional, intuitive decision making is our *‘default mode’* and that our controlled processes only activate in an *‘interrupt mode’*, caused by an encounter with unexpected events, strong visceral sensations or novel problems.

The background to the investment decision to be studied is the South African Saddle Horse industry, with Gordon (2001) defining the horse industry as *“all economic activities directly contributing to the production of horses or to the production of services that utilize horses”*. In the history of civilisation, the horse industry came into being through providing the horse power necessary for survival. But industrial development provided more efficient alternatives and the horse became redundant, which prompted its demotion to recreation. It is important to note that this transformation made owning a horse a conscious (emotional) choice, as opposed to the necessity that it used to be.

In South Africa it was no different. Horses are not indigenous to South Africa and so horses were imported to provide the horsepower necessary for survival. Imports in 1652 from Java to the

Cape settlement initiated the horse industry in South Africa. The history of South African horse industry can be divided into four periods (Lotter, 1974):

- *A starting-off period*, with imports from various sources;
- *A remount period* when the lucrative international remount market was exploited;
- *A devastation period* when African Horse Sickness (AHS) and the subsequent Anglo-Boer War devastated the South African horse population;
- *An organisational period*, when the present organisational structure was founded.

Today, apart from the American Saddle Horse Breeders Society and Thoroughbred Horse Breeder Association, twelve other horse breeder associations, three pony breeder associations and a miniature horse breeder association are registered with the South African Stud book. In general, the horse industry can roughly be divided into four activity categories, namely: racing, showing, including competitive sport riding, recreational and work riding, and breeding (du Toit, 1999). In South Africa, where Thoroughbreds dominate in the numbers of registered pure-bred horses, the American Saddle Horses are the second largest pure-breed of horses, but in total still a relatively small part of the South African horse population. In comparison the South African Saddle Horse industry is but a fraction (20 %) of the South African Racehorse industry in terms of foals registered (S.A. Saddle Horse Breeders Society, 2010). Financially speaking, in terms of turnover, the South African Saddle Horse industry would be even smaller.

Origins of the Saddle Horse as a breed are to be found way back in the eighteenth and nineteenth centuries in the United States of America (USA) (Taylor, 1961). American Saddle Horses were first brought to South Africa during the Anglo-Boer War. After the war, the imports of American Saddle Horses started and an industry was born, mostly owing to their ability to rack (in South Africa it was called “trippel”). The rack was the original reason for the popularity of the American Saddle Horse and the Five-gaited class has to this day retained prominence as the show piece par excellence. From the beginning, Saddle Horses were shown in four basic categories: Three-gaited, Five-gaited, Harness horse, and In-hand classes.

From 1996 onwards, Saddle Seat Equitation competitions, utilising American Saddlebreds, where the focus is on the rider, have developed rapidly. An annual World Cup Saddle Seat Equitation competition, with teams from the USA, South Africa, Great Britain, Canada, Germany, Sweden and Namibia competing, is now customary. However, it is the recognition of the Saddle Horse as

the 'new sport horse' worldwide that has boosted their popularity and proven their adaptability in every strain of equine endeavour, except, paradoxically, flat racing.

From what was written, it is apparent that the horse industry in South Africa was born from a necessity; it provided essential mobility that aided survival in a harsh continent. But industrial development rendered the horse superfluous and it lost out on economic urgency. It is therefore not surprising that although its history and development is well documented, at present very little is known about the financial, economic and emotional reasons for investment decisions in the horse industry today. The thoroughbred industry, however, is an exception as incomes (tax) from betting has prompted several economic studies. The betting side of the thoroughbred industry is a money spinner and very influential when compared with the South African Saddle Horse industry that does not have betting. In the thoroughbred industry betting tend to distort investment decisions. The lucrative betting enterprises are reflected in the enormous amounts of money that are awarded as prize moneys and affect a severe distortion in the investment decisions in the industry, much like a huge jackpot in a lottery (McClure, Laibson, Loewenstein, & Cohen, 2004). The Saddlebred industry, being the second-largest horse breed industry in the country, is an ideal subject for a study into the investment decisions in the horse industry. Mostly since it does not have the long-term distortion betting has had on the investment decisions in the thoroughbred industry.

The following sections formulate the problem statement, motivation for the study, research objectives and goals, approach and finally a concise description of the parts that comprise the complete dissertation.

1.2 Problem statement

The horse is no longer the prerequisite to mobility that it used to be a few decades ago. Today the horse is primarily a means to recreation. This implies a conscious (emotional) investment choice. It is this conscious investment choice that is an intriguing one, especially considering that the horse industry is huge, both in South Africa and abroad. Racing alone contributed R2.71 billion to the South African Gross Domestic Product (GDP) in 2009 (Standish, Boting, & Swing, 2011), while the horse industry in the USA has contributed \$63 billion to the US Gross National Product (GNP) annually (Deloitte & Touche, 2005).

To all indications, this is a financially highly profitable industry for everybody, except one entity, the horse owner. According to Standish *et al.* (2011), “it is the owners of the horses who pay for the sport”. The growth that is witnessed in the South African Saddle Horse industry in the absence of obvious financial or economic rewards, is consistent with the view that the 'owners are paying for the sport'. In both cases, it is the horse owner who bears the cost. In confirmation of this view and in contrast to all 'rational' expectations, literature contain evidence that the number of horse owners continues to increase and individuals within the industry do enlarge their investments over time (S A Saddle Horse Breeders Society, 2010; Deloitte & Touche, 2005; Standish *et al.*, 2011). In terms of investment decisions, this constitutes an anomaly – a financially and economically profitable industry growing on an apparently non-profitable base. This anomaly demands a closer look at the influence of alternative rewards, such as emotional goods. Emotional goods are defined as clusters of positive feelings that developed from deep-rooted emotions, of which we are frequently unaware (Freemantle, 1998). Barlow and Maul (2000) define emotional goods as “the economic worth of feelings”.

In racing, both locally and abroad, there is a definite ebb and flow in owner numbers according to the rise and fall in the size of prize moneys (Deloitte & Touche, 2006; Standish *et al.*, 2011). This reaction appears in spite of the fact that if you calculate returns on investment (ROI), it is obvious that prize moneys cannot guarantee good returns and financially it should not be a motivator. Only one horse can win at a time and even if your horse wins a major race, the prize money will not cover the cost of acquiring, keeping and training of a string of racehorses. In order to earn a steady income from prize moneys, you need to maintain a string of winning racehorses (Gibson, 2011). As mentioned, the Saddle Horse Industry in South Africa does not have significant prize moneys. For example, in the Five Gaited Grand Saddle Horse National Championships the price money is less than R5000 (du Preez, 2013).

The peculiarities of growth on a non-profit base in the local Saddle Horse Industry are sometimes quite predictably inflated owing to short-term growth stimulations. A few years ago, some American buyers discovered the potential of the South African Saddle horses and paid good money for trained horses which were then exported to the USA. Predictably, the influx of American money into the local industry stimulated considerable growth. Unfortunately, the world economic crisis and an outbreak of African Horse Sickness soon brought this to an untimely end.

Notwithstanding these short term influxes, there has been a constant growth in the local Saddle Horse industry over time. Although not officially quantified, the growth is evident from the

increase in the size of the South African National Saddle Horse Championships. When entries for the National Championships exceeded 1 000 horses in 2012, qualification requirements were instituted in order to bring the numbers down. At the moment, notwithstanding qualification requirements, entries have once more increased to more than 900 horses.

Another more recent development in the South African Saddle Horse industry has been the influx of businessmen into the industry. This is in sharp contrast to the origins of the industry, which was situated in the farming community, as in other parts of the world (Deloitte & Touche, 2005; Whiting, Molnar, & McCall, 2006; Rephann, 2011). These businessmen have in the recent past invested, and are still investing, large sums of money, not only in horses (both local and imported) but also in facilities and training. Still, in sharp contrast to the development of these magnificent facilities and studs, is the absence of evidence of financial and even economic reward.

These developments enhance the conclusion that in the absence of direct financial or economic benefits there has to be an alternative abundance or non-marketable rewards that accrue to owners or investors in this industry. It is in this context that this study will strive to first qualify, that is find or adapt theory that describes, the influence of emotional goods in the investment decisions, and then to quantify or to establish an indication of the magnitude of the influence of emotions on the investment decisions in the South African Saddle Horse industry.

1.3 Motivation

Examples of apparently profitable horse industries growing on non-profitable bases abound in literature (Gibs, P., Potter, G., Jones, L., Benefield, M., McNiell, J., Johnson, B., 1998; Deloitte & Touche, 2005; Whiting *et al.*, 2006; Rephann, 2011; Liljenstolpe, 2009) and confirm that the growth in the South African Saddle horse industry, as it is described in this dissertation, reflect a world-wide phenomenon. In this phenomenon, these horse industries over time drew serious investments and managed to grow without obvious financial or economic reward. This implies alternative motivations to financial or economic rewards in the investment decisions of these investors, such as emotional goods.

Investment without financial and economic rewards, although it is a rarely-studied subject, is not unknown or new. The absence of research into this phenomenon is largely attributable to economic models that lack perspective on the influence of emotions in investment decisions. Therefore, research into emotional reward as an influence in investment decisions may provide

the industry with valuable and important information in terms of anticipating or predicting actions or reactions, protecting or stimulating growth, ensuring efficient allocation of resources, etc.

The South Africa horse industry is, in terms of numbers, insignificant compared with the horse industry, worldwide. In the South African context, Thoroughbreds are numerically the largest of the pure-bred breeds, with American Saddle Horses a distant second. Notwithstanding these facts, the South African Saddle Horse industry is selected for this dissertation because:

- The phenomenon of investment without obvious financial or economic reward was originally witnessed in the South African Saddle Horse industry, mostly because of it being more evident in the absence of the opulence which the Thoroughbred industry is known for;
- In terms of investment decisions, the Saddle Horse industry does not have the betting side of the Race Horse industry. Betting has a distorting influence on decisions concerning financial returns and subsequent investment (McClure, S., Laibson, D., Loewenstein, G., & Cohen, J., 2004)
- The prize money in the South African Saddle Horse industry is negligible and does not have the influence in horse ownership decisions it has in the Race Horse industry (or the Saddle Horse industry in the USA) (Knutson & Cooper, 2005; Kuhnen & Knutson 2005; Lerner, Small, & Loewenstein, 2004; Peterson, 2005);
- In quantity, the Saddle Horse breed is one of the larger registered breeds in South Africa. This implies that the sampling requirements for research, such as a case study, in terms of variety and cases worth studying, can be met;
- The industry is well organised with a central registry and a breed office, which means that information (for the industry and individual cases) is obtainable;
- The South African National Saddle Horse Championships has grown into the largest show of its kind in the world (open air) – providing evidence of on-going investments (SA Saddle Horse Breeders Society, 2010).

The quest of this dissertation is to study the investment decisions in the South African Saddle Horse industry and to find or adapt theory that describes the influence of emotional goods. Thereafter, the goal is to find or describe the magnitude of emotional influence on the investment decision.

1.4 Objective

Economic viability is a function of investments made in the past (Monroe, 1979). Deloitte (2006) defines an economically viable operation as “an operation that can sustain itself on the basis of revenues equal to or in excess of expenditures, where revenues and expenditures are accepted to be all the costs and incomes, not just direct financial costs and incomes”. In this dissertation, the above-mentioned factor, “not just direct financial costs and incomes”, implies rewards in a broader sense, such as emotional goods.

Classic economic theory, in dealing with the investment decision, regards the brain as a “black box” and uses the simplified and abstract “reasonable man” concept with the utility measured in terms of a universal measure, namely money (Dickson, Urbany, & Miniard, 1986). Developments in consumption theory deviate largely from the “reasonable man” concept and accept that the consumer in consumption decisions is sometimes “so influenced by emotional forces that rational ones barely come into play” (Barlow & Maul, 2000). It is in this context that the possibilities of adaption of consumption theory to an investment context become important in order to identify the influence of emotions in the investment decision.

The primary objective of this dissertation is to study the phenomenon of investment in the South African Saddle Horse industry without obvious financial or economic reward. To achieve the primary objective, the following secondary objectives need to be achieved:

- To undertake a literature review in order to find relevant theory and develop background knowledge on the subject;
- To identify methodology that will be relevant in achieving the primary objective and to adapt existing theory;
- To qualify the investment decision witnessed and then quantify influences on investment decisions by analysing investment decision data;
- To analyse the data accumulated and interpret the outcomes of the study;
- To draw conclusions and recommendations from the results of the study.

1.5 Approach

The investment decisions in the South African Saddle Horse industry represent a strategic phenomenon, confirmed in literature as being evident worldwide. Accordingly, a desktop

approach in the form of a literature study will first be conducted to review different theories in an attempt to explain investment decision making in the absence of financial or economic rewards.

A case study forms the second part of this dissertation, finding and adapting theory in order to qualify this phenomenon. A case study is chosen because Eisenhart and Graebner (2007) described the parameters for using a case study as a suitable research method in qualifying the described phenomenon and adapting theory to explain it when they wrote: “the justification rests on the phenomenon’s importance and the lack of viable theory and empirical evidence”. Economic models do not accommodate the influence of emotions on decision making. Because emotions are feelings and classic economists in developing models of decision making disregarded feelings, calling them ‘useless intervening constructs’, and measured behaviour (or outcomes) instead. But Wargo, Baglini and Nelson (2010) proved that in reality, humans are focussed on the process in the brain (the dopamine reward system), rather than on the outcome itself, largely nullifying the classical economists’ argument that the process by which the outcome is generated is of no benefit. However, the importance of this phenomenon is somewhat obscured by a lack of knowledge, notwithstanding that all indications are that the emotions do influence investment decisions and in reciprocation economic viability.

Once the phenomenon in the South African Saddle Horse industry has been qualified, an attempt to quantify the magnitude of influence of emotions on an investment decision will be made. The data to be used in the quantification, however, presents a predicament since quantifying the magnitude of emotional influence in investment decisions implies two choices: either produce primary data in a statistical survey, or find existing historical data to analyse. However, respondents’ completing questionnaires in a statistical survey presents complications with regard to the reliability of the data developed. In filling out questionnaires, by necessity, the investment decisions made by respondents have to be recalled and recorded. The usefulness and accuracy of the data thus generated have to be judged, bearing in mind the following:

- Lo and Steenberger (2005) contend that emotional reactions, from the limbic system of the brain, ‘short-circuit’ more complex decision making faculties, from the Orbitofrontal Cortex, which implies that respondents will not be able to recall emotional decisions since;
- Wolford, Miller and Gazzaniga (2000) found that, because automatic processes (such as emotional decisions) are below consciousness level, contemplated descriptions will favour recollection of cognitive rather than affective processes; and at the same time

- Kahneman, D., Tversky, A., (1990) proved that people overvalue items they already own, contrary to items they are set on purchasing, even more so if emotional bonds are formed, which is called the 'endowment effect' (Peterson, 2007) and which implies a bias in the results that are to be recorded in a survey; and
- The Nucleus Accumbens located in the deep mid-brain, excited by the neurotransmitter dopamine, is what causes us to 'want' something. It is violations in expectations in this system that trigger emotional responses. But the 'set point', which determines a violation or not, cannot be determined independently as a 'constant', as it differs continually according to the individual and situation. The implications being that, in a real life situation such as the studied phenomenon in the South African Saddle Horse industry, it would be extremely difficult to trigger and measure emotional responses in a statistically representative survey.

In the South African Saddle Horse industry there exists only one historical data set that represents investment decisions: the annual sire service sale of the African Saddle Horse Futurity (ASF) competition, now in its fourth year of competition, with complete historical data sets for three years available. An exceptional attribute of this data set is that it contains both investments made, as well as an indication of the success of these investments. The ASF is based on the very successful All America's Cup competition (AACup) in the USA, now in operation for its eleventh year. In both competitions, American Saddlebred sires and dams are nominated at a fee, with the foals thus produced participating in a weanling class at nominated shows, winning substantial prize money. The runners-up also win prizes, but the prizes decrease sharply towards the lower placings. The ASF, however, only in its fourth year of operations, shows evidence of volatility in its historical data sets, probably due to the learning curve involved for both participants and organisers. Although the competitions (ASF and AACup) are held in two different continents, they are virtually identical in operation and share the American Saddlebred as objects of competition. Therefore, because of the mentioned volatility in the ASF data set and the fact that the ASF and AACup are identical competitions, it is proposed to analyse both the ASF and AACup historical data sets in quantifying the influence of emotions on the investment decisions made.

1.6 Outline of the study

Chapter 2 describes and unravels theory as it pertains to investment decisions in the South African Saddle Horse industry. The enquiry starts with 'decision making' *per se* and then continues with the investment decision in classic economic theory, post Keynesian theory, under

the Utility Maximisation Hypothesis and in Behavioural economics. Next, Chapter 2 deals with the psychological influences on the investment decision, the *de facto* investment decision in the horse industry both here and abroad, and concludes with applicable theory in terms of quantifying and qualifying the investment decision.

Chapter 3 provides background to the investment decisions in the South African Saddle Horse industry in South Africa. It begins with a concise history of the horse industry in South Africa, the development of the American Saddle Horse, the roots and development of a South African Saddle Horse industry. Chapter 3 then concludes with a description of the industry, typologies and links in South Africa today.

The methods utilised in research are described in Chapter 4, starting with a description of the methodology followed in the multiple case study into the investment decision in the South African Saddle Horse. The prior theory conforming to the identified consumer theory is examined. Chapter 4 concludes with the quantification of the investment decision in the South African Saddle Horse industry by an Ordinary Least Square (OLS) analysis and some manipulation of the data.

Chapter 5 deals with the research results and the interpretation thereof. As in the methodology chapter, results and interpretation start with qualification, that is, the multiple case studies. Results are discussed according to the stratification before the cross case analysis. The chapter is wrapped up with the quantification, first discussing the data presented, then the OLS analysis and ends with a calculation of the cost of emotions in these particular events.

Chapter 6 contains the conclusions and recommendations. The chapter gets under way with a brief overview of findings before discussing the significance and relevance of the results. After that follows a section with implications, first for the economy in general, and then deals specifically with the sector as such. Recommendations for future research for both the economy and sector close the dissertation.

Chapter 2

Literature review

2.1 Introduction to the literature review

Whitehead (1967) wrote of classic scientific research that the philosophical basis is an “inexpugnable belief that every detailed occurrence can be correlated with antecedents in a perfectly define manner, exemplifying general principles”. Aristotle (384 BC) described a world organised according to final causes and Archimedes (287 BC) developed a mathematical analysis of equilibrium in machines, yet both were not considered applicable to the natural world by the then scientists. In contrast, Newton’s (1687) synthesis that expressed a systematic alliance between manipulation and theoretical understanding (Prigogine & Stengers, 1984) was adapted to every scientific thought and in general to the world around us. So much so that Pope (1727) said the following of Isaac Newton:

*“Nature and Nature’s laws lay hid in night:
God said, let Newton be! And all was light!”*

Newton (1687) in his *Mathematical Principles of Natural Philosophy* set forth a system of “laws with equilibrium – a mechanical world governed by mathematics” (Prigogine & Stengers, 1984). Under Newton’s influence a modern science developed, blending a desire to shape the world and the desire to understand it. But in order to facilitate understanding, the physical reality is manipulated to a ‘stage’ so that it conforms as closely as possible to a theoretical description: “the phenomenon studied must be prepared and isolated until it approximates some ideal situation that may be physically unattainable but that conforms to the conceptual scheme adopted” (Prigogine & Stengers, 1984).

The investment decision in the South African Saddle Horse Industry is a very real phenomenon in a real life situation and is to be studied as such. However, in order to understand its origins and composition, this literature overview has to start with existing theories, even if these theories are hardly attainable in real life.

2.2 Decision making

Tversky and Kahneman (1981) observed: “making decisions is like speaking prose – people do it all the time, knowingly or unknowingly”. It is hardly surprising then that decision making is

studied by many disciplines. In this dissertation, decision making is studied as it relates to reality in terms of economic theory and in particular investment, yet as will be evident, psychology and neuroscientific theory on decision making is also relevant.

Economic theory uses abstract models in describing decisions making: “not how a decision maker behaves but how he should behave” (Raiffa, 1968). The rational man concept suggests that, in an economic sense, a man is rational if in his decisions he aims to maximise his utility, where ‘utility’ is the satisfaction to be gained in buying a product (Götze, Northcott, & Schuster, 2008). This principle goes under many different names of which Utility Maximization Hypothesis (UMH) seems to be the most widely used. However, Edwards (1954) already doubted economic theory in decision making and explored the relationship between economic theory and psychology. According to psychology, the decision maker will choose the option better than what the status quo is (Edwards, 1967). Simon (1959) described the contrast between the economic and psychological views on decision making as: “The economic theory on decision making presupposes unlimited cognitive ability, a stable environment, clearly defined goals and perfect information. Whereas psychology theory on decision making acknowledges that decision making happens in a complex unstable environment, with different individuals interpreting the environment differently with different information processing abilities”.

Retief, Morrison-Saunders, Geneletti and Pope (2013) elaborate by arguing that although difficulty in decision-making leads to decision makers adopting absolute positions where understanding the forces in play is neglected (Baron & Spranca, 1997), emotional conflicts will tempt the decision maker to favour the status quo (Anderson, 2003). Important in terms of this study is the fact that an increase in emotional intensity leads to decision-avoidance (Beattie, Baron, Hershey, & Spranca, 1994). The ease or not of a decision making process depends on “the level of uncertainty with people noticing unexpected negative outcomes as more aversive than expected negative outcomes” (Zeelenberg, Van Dijk, Manstead, & Van der Pligt, 2000). In this dissertation it is important to note that the more a decision maker cares about the outcome, the more difficult the decision is; also, a decision is easier to make if a moral conviction is concerned. Equally, the more similar the options are, the less important the choice is. In order of increasing difficulty, decisions between money alternatives are the easiest, followed by decisions between things that can be traded, and the most difficult are decisions between emotions.

Belk (1973) reports on the situational factors that influence buyers' behaviour, whereas Seth, Newman and Gross (1991) investigate the predictive ability of these situational factors. According to Seth *et al.*, (1991), the consumption decision is a function of multiple values that include:

- Functional value – the 'rational man' theory. Functional value is derived from product attributes such as reliability, durability and price;
- Conditional value – is acquired because of a specific set of circumstances facing the decision maker, for example an ambulance or a Christmas card;
- Social value – is acquired when a product is chosen because of the social image evoked, rather than functional performance;
- Emotional value – a product attains emotional value when it is associated with feelings or when owning a product perpetuates those feelings;
- Epistemic value – is acquired when the decision maker chooses the product in order to experience or learn something new. Berlyne (1960) and Berlyne (1970) maintained that individuals are "driven to maintain an optimal or at least an intermediate level of stimulation".

It is apparent from the discussion in the previous paragraphs that decisions do not depend on intention alone (maximising utility) as we unconsciously seek confirmation and ignore disconfirming evidence (Blair, 2010).

2.2.1 The investment decision in classic economic theory

The earliest formal theory as relates to the investment decision is to be found in the classical Theory of Growth and Stagnation (TGS). The TGS combines the work of the classic economists Adam Smith (Smith, 1776), David Ricardo (Ricardo, 1817) and Robert Malthus (Malthus, 1798). According to Adelman (1962), this theory explained the growth process in terms of rates of technological progress and population growth. In the TGS, technological progress (depending on capital accumulation) remains in advance of growth until a fall in the profit rates prevents further accumulation of capital. At this stage the economy falls into a state of stagnation. Adelman (1962) wrote that the main components in this model include:

- The production function. Smith, Ricardo and Malthus postulated that output depends on the stock of capital, the labour force, the level of technology and land (with 'land' as the total supply of known and usable natural resources);

- Technological progress. The classical economists believed the main constraint to technological progress to be capital accumulation. They postulated capital accumulation as a pre-requisite for a steady advance in technology with capital accumulation depending on savings and investment;
- Investment. For the classical economists, profit was the sole motivator for all productive activity, and therefore, they believed that investment activity depended on the profit expectations of the entrepreneurs (influenced by the rate of profit);
- The determinants of profit. The classic economists agreed on the two main factors that determine the level of profits in a system: the supply of a labour force (dependent on the population growth) and technological progress;
- Size of labour force. The classic economists believed in the 'Iron Law of Wages' (the size of the wage fund decide the rate of population growth);
- The wage system. According to the classic economists, the wage fund (the amount of money available for paying wages to the labour) constituted the working capital and was created out of savings. The classical position is that the wage fund depends on the levels of investment and not savings in the economy.

According to Hoselitz, (1960), the TGS includes some serious miscalculations. Hoselitz' view (1960) is based on the fact that the classic economists did not acknowledge the role of entrepreneurs in the production process at the time. They were also wrong in not seeing that capital would become an important factor in production (in agriculture, even substituting land). Capital growth (that includes technical growth) prevented a fall in the rate of profits. Even in the industrial sector, growth caused by increasing returns has prevented profit rates from falling. That is the reason the 'slow down' in investment activity predicted by the classic economists did not occur.

To be found in the TGS is the circularity of economic growth which the classic economists believed in (Higgins, 1966). The TGS incorporated some basic mistakes made in its assumptions, although it is still useful in that it illuminates the fact that there is a strong relationship between agricultural performance and industrial growth (Brenner, 1969). Also, the key variables of economic growth are inter-dependent and the model is correct in describing technical progress as being dependent on savings and investment.

2.2.2 The investment decision in neoclassic economic and post Keynesian theory

Although no comprehensive overview is evident in neoclassical economic theory on investment, there exist two doctrines about investment: the 'Hayekian' and 'Keynesian' perspectives. The Hayekian perspective conceives of investment as the adjustment to equilibrium and thus the optimal amount of investment is effectively a decision on the optimal speed of adjustment (von Hayek, 1941). The Keynesian approach has a 'behavioural' take on the investment decision and suggests that the investment is simply what capitalists 'do' (Keynes, 1936). In economic theory, the 'Keynesian' perspective has prevailed historically over the 'Hayekian' one, mainly because of von Hayek's (1941) allegiance to circulating capital as is derived from the TGS, rather than fixed capital as for Keynes (1936).

In his *The General Theory of Employment Interest and Money*, Keynes (1936) discussed the investment decision at length. He believed that when businesses make investment decisions, they do not have an 'optimal capital stock' in the back of their mind. They are more concerned as to what is the optimal amount of investment for some particular period. Keynes (1936) proposed that firms 'rank' various investment projects depending on their 'internal rate of return' (IRR) or 'marginal efficiency of capital' and thereafter, faced with a given rate of interest, choose those projects whose IRR exceed the rate of interest. Keynes (1936) defined the marginal efficiency of capital as being equal to the rate of discount which would make the present value of the series of annuities, given by the returns expected from the capital asset during its life, just equal its supply price.

Keynes is regarded as one of the great macroeconomists of all time and defined the way in which most macroeconomists currently attempt to describe the world around us. But according to Chambers and Dimson (2013), Keynes' well-renowned successes as an investor, amongst others managing the King's College endowment fund, in due course had him looking at microeconomics instead of macroeconomics. As an investor, Keynes started out by looking at the macroeconomy, attempting to time investments on the basis of the ebb and flow of the economy as a whole, however he only managed to underperform the average return of the stock market considerably. The money he lost forced Keynes to reconsider and he became a 'value investor', looking at what specific companies in specific sectors were managing to achieve. Alternatively, given that stock markets are forward looking, what they were likely to achieve. For duration of the period that was his responsibility (1921–1946), Keynes was very successful in investing the King's College endowment fund as he beat the British Stock Exchange by eight per cent a year, on average.

Chambers and Dimson (2013) claim that it was the gains from the second form of investing that made up for his initial losses. Keynes the macro-economist, made micro-economics important in terms of investment, and today well-known investors, such as Warren Buffett (2013), George Soros (1987, 2011), and David Swensen (2001, 2005), call upon John Maynard Keynes in their investment decisions (Chambers & Dimson, 2013).

Gordon (1992) describes the Neoclassical Theory of Investment (NTI) as investing until the value of an incremental unit of capital (the marginal rate of return) is equal to its cost (interest rate). According to Gordon (1992), prior to Keynes (1936), the NTI was based on the assumption that the future is certain, in which case that interest rate is the risk free rate. Gordon (1992) wrote that Keynes argued that uncertainty and risk aversion severely limit the empirical relevance of the theory. Today the 'orthodox investment theory' of Dixit and Pindyck (1994) defines investment as "the act of incurring an immediate cost in the expectation of future rewards" and uses the net present value (NPV) compared with the standard incremental (marginal approach) as the basis for the investment decision. The orthodox investment procedure is described as follows: firstly, calculate the present value of the expected stream of profits to be generated. Secondly, the present value of the stream of expenditures required for the new investment needs to be calculated. Following the first two steps, it needs to be determined whether the difference between the two, the net present value (NPV) of the investment, is greater than zero, and if it is, invest.

According to Dixit and Pindyck (1994), investment decisions share three characteristics that interact to determine the optimal decisions of investors. First, the investment is partially or completely irreversible. In other words, the initial cost of investment is at least partially sunk. Secondly, there is uncertainty over the future rewards from the investment. The best you can do is to assess the probabilities of the alternative outcomes that can mean greater or smaller profits (or loss) for your venture. Thirdly, you have some leeway about the timing of your investment. You can postpone action to get more information (but never, of course, complete certainty) about the future.

In terms of this dissertation, it is clear that neoclassic economic and post-Keynesian theory has left a legacy of looking at microeconomic facts in making an investment decision. That is the marginal or net present value (NPV) approach.

2.2.3 The investment decision under the Utility Maximization Hypothesis (UMH)

Von Neuman and Morgenstein (1947) described the Utility Maximization Hypothesis (UMH) or Von Neumann/Morgenstern principle of expected utility maximization. This theory attempts to describe an individual's investment decision making using the 'utility' concept, where utility is defined as "the satisfaction to be gain in buying a product" (Götze *et al.*, 2008). It is also called the 'rational man' principle and is explained as: "not how a decision maker behaves but how he should behave" (Raiffa, 1968).

The neoclassical economic model of demand proposes that consumers spread their disposable income across purchases by equating the marginal utility/price ratio for each category of goods (Monroe, 1979). Götze *et al.*, (2008) describe how the utility concepts function in practice in less technical terms as follows: "in economics, we usually say that an individual is 'rational' if that individual maximises utility in his decisions. Whenever an individual is to choose between groups of options, he is rational if he chooses the option that, all else equal, gives the greatest utility. If, one decision provides the greatest utility, which is equivalent to meaning that it is the most preferred, then we would expect the individual to take that most preferred option". Investment decisions under uncertainty using the UMH can be expressed in mathematical functions aimed at assisting in these decisions (Roberts, 1979). Ang, Chau and Woorward (1983) developed even more complex mathematical functions to be applied in more complex situations of uncertainty.

The utility concept as it is described in the UMH is also basic to micro-economics and from this principle, human behaviour in economic decision making, such as consumer choice behaviour in marketing, is derived (Dickson *et al.*, 1986). In principle, understanding how buyers place utility or value on product/brand alternatives is central to research in marketing. But also in pricing literature, the 'value for money construct' is commonly measured in pricing studies: "Buyers make purchase decisions by selecting the alternative which has the highest perceived value (utility) for the money" (Zelthaml, 1984).

But the utility concept, although useful and important as a concept, is difficult to define and measure objectively in real life situations (Dickson, P., Urbany, J., & Miniard, P. (1986). Therefore, owing to the importance of the UMH principle in marketing and the questions that arose over its validity in real life situations, Dickson *et al.*, (1986) designed a test. The validity in real life situations of the UMH is questioned on the following principles: statements made by Simon (1959), where it is explained that although a simplified reality is necessary to understand basic

human behaviour, this economic theory presupposes unlimited cognitive ability, a stable environment, clearly defined goals and perfect information. Whereas in reality, decision making happens in a complex unstable environment, with different individuals interpreting the environment differently with different information processing abilities. Secondly, although utility can be seen as a measure of the value placed on a particular good, this depends entirely on the preferences of that individual, rather than some external, or universal measure. These values depend only on how they are valued by the decision makers in each case. Accordingly, if money or any universal measure is used as a measure of utility, it means that utility of wealth increases at a fixed rate which is not true because an individual's wealth increases at a declining rate. Extra money means more to a poor person than a rich one. Thirdly, the choice rule research in marketing deals with whether decision makers satisfy or optimise in consumption decisions. However, "a consistent finding from this literature is that consumers, when confronted with a complex decision, initially use a satisfying rule to 'weed out' unwanted alternatives and then use a more thorough rule to evaluate the remaining alternatives" (Lussier & Oshavsky, 1979).

According to Dickson *et al.*, (1986), these questions have not been tested in literature as conventional wisdom in economics seems to be that they cannot be addressed empirically. Even when economists argue about the philosophy of science applied to economics, they agree that the UMH is untestable (Boland, 1981). Dickson *et al.*, (1986) described in an article how an empirical test on the UMH was carried out. The test procedure involved 'a series of investment decisions' made by 48 junior and senior undergraduates at a major university. All had taken a required accounting or finance course. The subjects were told that the study was intended to evaluate the information presentation format of a new investment guide published by Standard and Poor's. The research took place in a personal computer laboratory and required subjects to make 40 investment decisions. Their decisions were preceded by an introduction to the exercise, three practice investment decisions and three 'check-up' problems to make sure they understood the consequence of their decisions. After finishing the investment task, the subjects completed a paper and pencil questionnaire, were compensated for their participation and left the lab. Dickson *et al.*, (1986) found that: "the experimental task the subjects faced was much more straightforward than choice decisions in the real world. Utility and cost were provided in the same units and with no uncertainty. Consequently, it can be expected that subjects will be even less capable of optimizing in the real world".

According to Dickson, *et al.* (1986), the utility principle is not a true measure of satisfaction in the real life situations. Also, Fromlet (2001) accepts that the assumption of UMH elevates the developed criteria out of a real life situation. Barlow and Maul (2000) contend that “measuring satisfaction has no relation to emotions as it is only at the highest levels of satisfaction that people have more positive emotions than negative”. The direct consequence of which is that the usage of the economic ‘utility’ principle in a real life situation, such as finding the ‘why’ in the investment decisions of the South African saddle horse industry, is not an option.

2.2.4 The investment decision in behavioural economics

Camerer and Fehr (2006) wrote that the “two cornerstones of classic economic theory are the assumptions that individuals are rational decision makers and have purely self-regarding preferences”. But “the apparent irrationality of the average economic decision maker has been well studied and documented as contrary to the assumptions of standard economics” (Tversky & Kahneman, 1981). The thrust of economic argument was that individual irrationality does not impact on aggregate human behaviour. However, McGuire (1960) developed a theory to explain more about how attitudes and beliefs change, and empirical research into McGuire’s theory (1960 and 1981) produced evidence of systematic “bounded rationality” and “bounded self-interest” in consumer behaviour (Giovanna, Howard, & Cacioppo, 1990). If individual choice is characterised by bounded reality and bounded self-interest and these deviations are systematic rather than random, aggregate consumer behaviour will benefit from a better understanding of the individual’s decision process (Giovanna *et al.*, 1990).

Behavioural economic theory developed and accounted for the mentioned anomalies to classic economic theory by integrating social, cognitive, and emotional factors into understanding economic decisions. Adding to these theories, experimental economics developed, concentrating on the joint behaviour of participants and the outcome of the institutional rules in question. Neuroeconomics was the last development and added neuroscientific methods in understanding the interplay between economic behaviour and neural mechanisms, striving to offer a more integrated understanding of decision making. According to Glimcher, Camerer, Fehr and Poldrack (2009), “neuroeconomics emerged from within behavioural and experimental economics because behavioural economists often proposed theories that could be thought of as algorithms regarding how information was processed, and the choices that resulted from that information-processing. A natural step in testing these theories was to simultaneously gather information on the details of both information processing and associated choices. If information processing could be

hypothesized in terms of neural activity, then neural measures could be used to test theories as simultaneous restrictions on what information is processed, how that processing works in the brain, and the choices that result”.

2.2.4.1 Behavioural economics

Friedman (1953) wrote: “complete realism is unattainable”, although since then there has developed in economic theory an understanding of the impracticality of oversimplification in economic models. Fromlet (2001) states: “Simplifying assumptions in basic models do not rule out realistic amendments”. These “realistic amendments” to classical economic theory have developed into a new field of study called behavioural economics. “Behavioural economics considers psychological factors as important to financial analysis and decisions, and explains many reactions on financial markets that appear contrary to conventional theory” (Fromlet, 2001). Fromlet (2001) elaborates by explaining that “it is important to note that irrational decisions should not be equated to unpredictable events” and that “unpredictable developments can still be rational”. Greenspan (2001) concurred when he added that “our models have never been particularly successful in capturing a process driven in large by non-rational behaviour”. Fromlet (2001) refers to this as “the primary focus of behavioural finance”.

Behavioural economics departs from the previous economic theories in that it describes investors’ choices biased by individual behavioural biases. The behavioural economist is interested in the nature of preferences and decision making. One concern is that preferences and decisions interact. It is often not clear whether one is studying the former, the latter, or a combination of both. Also, behaviour observed in a lab will not capture the full computations that people are capable of making when augmented by technology and institutions, therefore studies are mostly confined to real life situations. Behavioural economics uses empirical evidence of limits on computation, willpower and greed, to inspire new theories (Mullainathan & Thaler, 2000; Camerer, 2005).

Fromlet (2001) states that “according to behavioural economists, individuals does not function as perfectly as the neo-classical school advocates”. But in truth, Keynes (1936) had already started listing ‘market imperfections’ much earlier, to which Fromlet (2001), Shiller (2000), and Shefrin and Statman (1985) added “some phenomena typical for behavioural finance”. These include:

- Heuristic dealing with information – because of the overwhelming amount of information people tend to “use experience and practical efforts to answer questions or improve performance” rather than dealing with it scientifically;
- Varying availability of information – not all participants obtain all information;
- Preference for certain news – participants tend to believe what they like;
- Difference in interpretation – analysts do not necessarily come to the same conclusions even if the information available is the same;
- The psychology of sending messages – word order in messages have a substantial influence on the interpretation thereof;
- Anchoring – estimated early figures usually get too much importance, compared with final outcomes;
- Representativeness – the tendency to give certain information a higher degree of probability than what it deserves;
- Over confidence and control illusion – “people think they know, more than they do”;
- Disposition effect – “selling of winners too early and riding losers too long”;
- Home bias – investors prefer home markets for no rational reason;
- Following the herd – “it is better for a reputation to fail conventionally than to succeed unconventionally”.

Fromlet (2001) wrote that “the examples and evidence presented demonstrate that psychological and irrational behaviour does matter in financial markets”.

2.2.4.2 Experimental economics

Behavioural economics is based on the presumption that incorporating psychological principles will improve economic analysis, while experimental economics presumes that incorporating psychological methods (highly controlled experiments) will improve the testing of economic theory (Glimcher *et al*, 2009). It is clear that experimental economics is closely related to behavioural economics and only differs in terms of what and how it is studied.

In summary, experimental economics describe institutional and organisational rules and how these rules affect economic behaviour of consumers (McCabe, 2010).

2.2.4.3 Neuroeconomics

The brain controls human behaviour and economics is no exception. Since feelings were meant to predict behaviour but could only be assessed from behaviour, economists realised that, without direct measurement, feelings were useless intervening constructs (Camerer, Loewenstein, & Prelec, 2005). By utilising the concepts of utility and preference, the problematic measuring of feelings was eliminated: The Weak Axiom of Revealed Preference (WARP) equates unobserved preferences with observed choices (Samuelson, 1930). The assumption that people behave consistently makes the theory confirmable and avoids circularity. The use of psychological information was excluded by extensions to the utility theory (Houthakker, 1950) – discounted, expected, and subjective expected utility. These extensions provided ‘as if’ tools in contrast to ‘as is’ tools. But the ‘as if’ approach only made sense as long as the brain were regarded as a ‘black box’. “Around the turn of the century, neoclassical economists made a clear methodological choice, to treat the mind as a black box and ignore its details for the purpose of economic theory. To modern economists the neuroeconomic approach seems to be a sharp turn in economic thought” (Bruni & Sugden, 2005).

Neuroeconomics proved this neoclassical model as incorrect in the sense that “it has become abundantly evident that pristine assumptions of the ‘standard economic model’ that individuals operate as optimal decision makers in maximizing utility are in direct violation of even the most basic facts about human behaviour” (Cohen & Blum, 2002). According to Wargo *et al.*, (2010), “real humans make decisions by internally maximizing dopamine and other hormones that make them feel good, rather than maximizing the outcome. Real humans are focused (either unconsciously or consciously) on the process in the brain, rather than the outcome itself.”

Neuroeconomics, an interdisciplinary field, seeks to describe human decision making in terms of the human ability to process alternatives and make optimal choices. In neuroeconomics, economic behaviour is studied not only to understand how neuroscientific discoveries can constrain and guide models of economic behaviour, but also to enhance our understanding of the brain. In contrast to the previously described theories, neuroeconomics utilises a combination of economics, neuroscience and psychology to describe how individuals make economic decisions (Dedu & Sebastian, 2010). The study of the brain and nervous system is beginning to allow direct measurement of thoughts and feelings. These measurements are, in turn, challenging our understanding of the relation between mind and action, leading to new theoretical constructs in terms of decision making and calling old ones into question. In order to avoid the shortcomings

that arise from a single-perspective approach, neuroeconomics studies decision making by using a combination of tools from neuroscience, experimental and behavioural economics, cognitive/social psychology, and lately new approaches from theoretical biology and computer science and mathematics to accommodate computer research that is now commonplace.

For example, in neuroeconomic theory, a real individual replaces the fictional, utility-maximising individual of economic theory in decision making. The theory of utility maximisation (UMH) is interpreted either as the result of learning based on consumption experiences or careful deliberation which reflects a balancing of the costs and benefits of different options. Although not denying that deliberation is part of human decision making, neuroscience points out two generic inadequacies in its inability to handle the crucial roles of automatic and emotional processing. First, much of the brain implements 'automatic' processes, which are faster than conscious deliberations and which occur with little or no awareness or feeling of effort (Bargh, Chaiken, Raymond & Hymes, 1996; Bargh & Chartrand, 1999; Schneider & Shiffrin, 1977; Shiffrin & Schneider, 1977). Humans have little or no introspective access to these processes, or volitional control over them. These processes probably evolved to solve problems of evolutionary importance rather than logical preferences, and the behaviour these processes generate need not be logical. Second, behaviour is strongly influenced by finely-tuned emotional systems whose basic design is common to humans and many animals (LeDoux, 1996; Panksepp, 1998; Rolls, 1999). These systems are essential for daily functioning. If they are disturbed by injury, stress, imbalances in neurotransmitters, or the 'heat of the moment', the logical-deliberative system (even if intact) does not regulate behaviour as usual.

From the example, it is obvious that normal human behaviour implies a seamless interaction between controlled and automatic processes (the cognitive and affective systems). Wolford *et al.*, (2000) found that much of the behaviour that emerges from this interplay is routinely and falsely interpreted as being the product of cognitive deliberation alone. Implying that results from contemplated descriptions as the basis for decision making will be tainted because automatic processes are below consciousness, contemplated descriptions will favour controlled rather than automatic processes.

Levitt and Dubner (2005) call emotion "the enemy of rational argument". We see only the top of the (automatic) iceberg and therefore tend to exaggerate the importance of control. Avoiding tainting of results would encompass a detailed study of how components of the individual (brain

regions, cognitive control, and neural circuits) interact and communicate to determine individual economic decisions.

The focus of neuroeconomic research up to now has been concentrated on the microeconomic foundations of consumer decision making, namely: valuing risky gambles and strategic thinking. But neuroeconomic theory is also applied to aggregates, as is found in macroeconomic theory.

2.3 Psychological influences on the investment decision

“Though everyone agrees that people have and employ reason to reach their goals, it is just as obvious that there is another concept of human response to their environment. This concept is emotion” and “humans seem to manage the various demands of life not through brute information processing power, but through a decision making mechanism of which emotions are an integral part” (Merkle, 2008). Besides, “it takes too narrow a view to reduce emotions to their application as a decision making tool. Emotions give life a meaning and without them we would have no reason for living” (Merkle, 2008). These mutual functions, apparent in the investment decision, give an indication of the complexity of emotions to be confronted in analysing the investment decision in this dissertation. This also confirms Dawkins’s Law on the Conservation of Difficulty that states that the: “obscurantism in an academic subject expands to fill the vacuum of its intrinsic simplicity” (Dawkins, 2003).

Basic to the application of Dawkins’s law (2003) to the hypothesis of the influence of emotions on the investment decision, is the fact that emotions are in principle relative. To explain this relativity, take as an example the image of the night sky as it is observed by the naked eye. Observed by the naked eye, it represents a stable array, a permanence by which humans in history have gauged time and directed their steps. However, our eyes and their neurological support evolved to see movement. If the subject does not move, the eye does continuously. The image on the retina fades almost immediately if it is not perpetually refreshed. To keep it there, the eye moves, restlessly scanning and rescanning the scene hundreds of times a second. But also, the stars we observe are not stable; the earth is moving around the sun at 30 km/second, the sun moves around the Milky Way at 250 km/second, the Milky Way is moving at 600 km/second towards the Virgo cluster, which is in itself in motion (Taylor, 2001). In short, everything about emotions, as in the ‘observed permanence’ in the example, is relative.

Possession is the direct result of both investment and/or consumption decisions. Possession, according to Frayn (2006), can be expressed in terms of the practical (cognitive) or emotional (affective). The practical expression of ownership can best be described as utilisation of the object of possession in any activity. The emotional expression of ownership is the most relative and much more complicated part. "In practice, the essence of possession is almost always, almost entirely, the sense of possibility, and not the realisation of it. Indeed, one of the possibilities that possession offer us, and very much part of its richness, is precisely the possibility of not realising it" (Frayn, 2006). In emotional motivation for possession, we aspire to own not the object but the experience that it represents; trying to prolong a sudden flare of emotion into an eternal flame. But an experience is unpossessable since it begins, occurs, passes and ceases never to be repeated with exactly the same intensity, not even in memory. In every replay, that emotion that meant so much will pass before we can fully gasp it, just as it did with the last replay, it still elude us once again. In experiencing this eluding emotion our passion to possess consumes us and we become collectors (Frayn, 2006).

It is in this context that Barlow and Maul (2000) define emotional goods as "the economic worth of feelings". But emotions are not easy to work with because they are difficult to name, difficult to define and difficult to measure. Therefore, information on the influence of emotions, until the dawn of neuroeconomics, in motivating the investment decision was not readily forthcoming. However, theory on the influence of emotions as it presents itself in motivating consumer decisions is to be found in marketing management and, more specifically, consumer theory (service delivery).

Ekman (1992), as cited by Barlow and Maul (2000), identified six basic emotions, namely: anger, fear, surprise, disgust, happiness and sadness. They explain that although this list is not universally accepted, Ekman's contribution to theory is cemented by his demonstration that almost all people can read these six emotional states of others in split seconds. Freemantle (1998) explains that the human brain thinks in patterns based on associations. These patterns are founded on deep-rooted feelings (emotions), of which we are frequently unaware. Our feelings derive from past experiences, often forgotten but still deeply embedded in our subconscious memories. While feelings are specific sensations (happiness or anger), emotions are short-term direct responses to feelings. Emotional value then is based on clusters of positive feelings patterns. According to Freemantle (1998), the influence of emotional value as a motivator in consumption decisions is in principle directly linked to the energy involved, as well as the esprit

('esprit' is an expression used to describe that what we stand for in life and is the source of much rational and irrational behaviour). Lastly, the emotion experienced in itself directs our behaviour and expressions. In the absence of emotions we use certain automatic mechanisms which are similar to established thinking patterns and routines.

Barlow and Maul (2000) concur with Freemantle (1998) and argue that although emotions are created in a moment, no two people will experience the same emotions because they are reflections of internal involvement and the brain tends to enhance pleasant emotions. Therefore, something important is happening to decision makers when they display emotion. Positive emotions tend to open up possibilities and "it is difficult to predict exactly what someone will do after experiencing joy, but likely the tendency is more or less to repeat the situation to re-experience joy" (Fredrikson & Levenson, 1998). Barlow and Maul (2000) furthermore suggest that most decision makers aren't finished developing emotionally as it is a lifelong process and will be reflected in their decision making. Decision makers, depending on their emotional state, can be "so influenced by emotional forces that rational ones barely come into play" (Barlow & Maul, 2000; Wolford *et al.*, 2000).

Freemantle (1998) concurs with the Barlow and Maul (2000) conclusion by stating that: "the greater part of consumer choice is based on emotional influence". Freemantle (1998) elaborates by arguing that although rationality is critically important, "without calculating emotions all conclusions on the buying decision is essentially deficient". This approach is confirmed by Kunde (2000) when he states that the "emotional values are replacing physical attributes as the fundamental market influence". Pine and Gilmore (1999) concur by arguing that "today's consumers want and expect to be positively, emotionally and memorably impacted at every level of their commercial existence".

Freemantle (1998) states that developing emotional value starts at "consumers who want to be liked by the people serving them". Carlzon (1987) also focuses on the role of emotions in the consumer experience and confirms Freemantle's argument by putting the role of emotions in decisions into context. The author suggests that "people form judgements when they interact with products, other people, organisations etc. in the form of emotional impressions. These sensory clues provide the basis for their actions in future".

In terms of an investment decision studied in this dissertation, Barlow and Maul (2000) state that in real life situations emotions are always present and are the basic motivators for action. They elaborate by arguing that “there is a strong emotional component to the objects themselves that motivates people to buy”. However, Richins (1997) warns that a variety of emotions is present in any consumption situation and that emotional goods present in a consumption situation will vary with the product consumed and the individual concerned. In marketing, emotional goods are described as non-marketable values that include both the social and emotional values, as was described by Seth *et al.*, (1991). Hugo (2012) is of the opinion that passion should also be included under emotional values.

2.4 The *de facto* investment decision in the horse industry

Fundamental to studying the investment decision in the Saddle Horse industry in South Africa, which is the thrust of this dissertation and therefore also of this chapter, is an editorial comment from the December 2012 issue of the International Show Horse magazine, (Hugo, 2012). Although only this editorial is presented here, it articulates the emotions of many horse owners:

“Someone asked me the other day how the economic down turn has affected the equine industry and whether equine sport will eventually disappear. For many of us that will be a world in which most of us would not want to live in. After some consideration, I concluded that we should not be too worried. Horse people love what they do and they are involved with horses because of that passion. Most of us know the feeling of buying food and supplies for horses before worrying about ourselves and our needs. That commitment and passion are hard to find elsewhere.”

Judging from this unsolicited remark, it is obvious that horse owners’ passion, as Hugo (2012) calls it, for horses has a huge influence on their investment decisions, even to the detriment of their own financial and economic positions. Barlow and Maul (2000) quite appropriately argue that, if emotions – especially passion – are not at the basis of loyalty, then what is? The same loyalty expressed by Hugo (2012) can be found in every report on the horse industry, from every country that has been reviewed in this chapter. From the remarks by Hugo (2012), as well as Barlow and Maul (2000), it is obvious that the motivation for investment in the Saddle Horse industry in South Africa is emotionally on a deeper level than the satisfaction to be gained from an investment. This satisfaction includes utility, as Götze *et al.* (2008) define it, i.e. “the satisfaction

to be gain in buying a product". The Barlow and Maul (2000) remark, "if all we do is measure satisfaction, we won't focus on understanding the emotions behind it", highlights the implication in terms of measurement of the motivation.

Income from betting in flat racing, steeple chasing and trotting races abroad has paid for numerous studies to be done, the reports of which are accessible. Because of the overwhelming attention given to, and the influence of, betting enterprises, these studies have limited application to the present research, however. The influence on the investment decision due to the betting enterprises is mostly attributable to the size of the stake moneys offered in these races (Goudriaan, Oosterlaan, de Beurs & van den Brink, 2006). The size of the stake moneys offered makes the investment decision rather more comparable to a gambling decision than an investment decision. The influence of size of the stake money will be discussed in the last two studies that are reported on in this section. These studies were focused on the racing industry and will be included because in both Britain and South Africa horse racing is the only horse industry with reports available.

Most of the applicable studies abroad that are available were done in the USA. The most notable of these is the study by Deloitte and Touche (2005) which was a follow-up study on a previous attempt in 1996 to measure the economic impact of the horse industry on the USA. The 1996 study was commissioned in order to deliver several key estimates such as: "the number of horses in the USA, the total direct industry contribution to the US GDP and the total number of jobs created/sustained by the horse industry" (Deloitte & Touche, 2005).

However, due to several changes in the industry that substantially altered key characteristics, the 2005 study was commissioned to update previous estimates and to formally document the changes. The changes that was documented included: "different forms of gaming such as video lottery terminals and electronic gaming machines; the proliferation of the internet, both for the advertisement and purchase of goods and services; changes to tax policies as well as changes in veterinary and improved horse breeding practises have improved the life span of horses and the number of live foals to mares bred and lastly, interest in retraining horses for second careers and long term care of retired horses" (Deloitte & Touche, 2005):

However, previous studies, including the 1996 study, were concentrated on racing. This was because of the lack of information and the overwhelming influence of betting (read tax income).

However, in the 2005 study, great care was taken to eliminate the racing centrality of previous reports and to capture other vital elements of the horse industry, such as showing and recreation, in both sampling and analysis, i.e. reflecting the actual distribution of horses by quantity. This approach delivered the following results:

- “With an indirect economic contribution of over a US\$100 billion the shares of the different sectors are 32 % recreation sector, 29 % showing, 26 % racing and 13 % other industries (breeding, training, etc.)”;
- “1.4 million full-time equivalent jobs, directly contributed to the industry”;
- “One of the most remarkable conclusions of the study is that there is no average American horse owner. Horse owners come from all financial and economic backgrounds, own all types of horses for various purposes and live in a variety of places from small towns to large cities. With one common denominator, notwithstanding a multimillion dollar industry, mostly the owners pay for the sport. This principle seem be true in every section of recreation where a horse is utilised including the various showing and racing disciplines”.

Moreover, the result was surprising in view of the fact that previously the two largest sectors were neglected as compared to racing in terms of economic contribution.

The economic contribution of the Horse Industry to the USA discussed above included an analysis of each horse industry in the individual states of the USA. This brought about further studies in several states. The economic contribution of the Horse Industry in Virginia stated its motivation as:

In the past two decades Virginia’s horse industry has grown to play an increasingly more visible role in Virginia’s farm economy. The intensity, scale and scope of these activities have increased rapidly in Virginia. Horse ownership has become more popular and venues offering opportunities for racing, showing and trail riding have spread across the commonwealth. As a result, the horse industry has come to play a more visible role not only in agriculture but tourism and recreation as well. While annual sales of Virginia’s crops and livestock have remained largely stagnant, the sales, inventory and total value of horses in Virginia have grown rapidly. However, it would be a mistake to restrict an economic analysis of horses to an examination of their agricultural roles. They are multifaceted creatures and play various roles in the economy. The roles include amongst other: therapeutic aids, sports competitors and entertainers, as well as police/rescue mounts. Consequently, the horse industry is economically varied as well. It affects not

only the farm sector, but the household, tourism, and recreation sectors. Spending of these sectors, in turn, supports numerous other industries (Rephann, 2011).

Conclusions of the study were divided into three contribution groups, namely: “expenditures on maintenance and support by horse owners in keeping their horses, expenditures on horse shows and competitions and expenditures associated with racing activities licensed by the Virginia Racing Commission” (Rephann, 2011). The economic effects of these expenditures are measured in terms of employment, sales, value-added, labour income and tax revenues. One of the more interesting subdivisions studied in the report was the difference measured between the on-farm and non-farm populations of horses.

In summation, the study found that the Virginia horse industry had increased in size because of expansion in the three components of economic contribution, even though an overwhelming 42 % of the horse population in Virginia was used for recreation rather than competitive or breeding purposes (Rephann, 2011). It was stated that:

The Virginia horse population grew larger mostly because of the growth in the non-farm horse population. The report found it to be twice the size of the on-farm horse population. The effect of which is that more is being spent on maintenance and support in keeping the horses. The Virginia show and competition calendar has expanded both in size of the events and in the number of events all of which add up to higher expenses to horse owners. Despite the significant growth, the racing industry is still the smallest of the three components Rephann, (2011).

Horses are used for numerous activities in Virginia. However the fact that the non-farm horse population grew the fastest, becoming bigger than the on-farm population, confirms the notion that the horse owners make a living elsewhere in order to pay their horses’ keep. That is, horses are not nett earners and keeping them has to be financed from another source. Therefore, the most important findings of the study are that the continued growth and development depends on five factors, namely:

- The availability of affordable undeveloped land;
- Maintenance of an agricultural infrastructure that provides the materials, services and facilities needed for breeding ,training, stabling, feeding and caring for horses;
- A healthy racing industry;

- Quality show and competing facilities and venues;
- An active calendar of shows, competitions and other equestrian events (Rephann 2011).

North Carolina has a rich history with horses. Some of the best horses in horse racing have at some time in their lives lived there, trained there and if not, were most probably born there. The same goes for Quarter horses, American Saddlebreds, and even American Arabs. According to Guillet (2009), the North Carolina Equine Industry Report was aimed at “documenting the precise size and scope of the industry, determining its economic impact and recommending measures for increasing the industry’s contribution to the economy”.

Findings include that, as in the case of Virginia, horses are at the centre of a much larger industry. The segments of the industry exist rather independently of one another. It is described as: stable operators, trainers, veterinarians, feed suppliers, fencing and construction companies, trailer manufacturers and saddle and tack shops. The study found that segregation in the industry, mostly by breed and type of activity (trail riding, showing, jumping or racing), made assessment of the industry difficult and proposed investment risky.

Similar to the study by Deloitte and Touche (2005), results revealed that 43 % of the owners were at the state’s average household income, with only a small portion profiting from their ownership. This is to be expected as 40 % of the state’s horses are kept for recreation and trail riding, 17 % for shows, 10 % for breeding, 7 % for work and a mere 3 % for racing (Guillet, 2009). The horse business in North Carolina comprises family affairs (they tend to own horses for more than 40 years with the current generation involved for 27 years), with four out of five owners reporting their operations as being a private residence with horses for personal use, with on average 5.8 horses per operation (Guillet, 2009). Therefore, it is no surprise that most horses are kept in urban and surrounding suburban counties. This once more implies that the horses do not pay their keep but that the owners support their horses with some other source of income.

A study by Whiting *et al.* (2006) focused on the quantification of the horse industry in Alabama. It concentrated on the expenditures that horse owners make on behalf of their animals for both maintenance and use. In summary, the findings were as follows:

- Horses make a significant contribution to the quality of life in Alabama;
- That showing, recreational riding, and sales are important sources of pleasure and income to many Alabama residents;

- That spending connected to the major equine events represents a notable component of tourism;
- That the consequences of land-use of the horse industry are substantial, for although the overall population is small relative to cattle for instance, their impacts are magnified due to the high value of the animals involved;
- More people are involved with the horse industry than is commonly recognised by institutions that serve agriculture and the recreation industry;
- Mostly training and breeding are located in rural areas, thus many direct economic contribution and attendant multiplier effects flow to communities needing economic stabilisation.

According to The Texas Horse Industry Quality Audit Initiative of 1998, every horse owner in Texas owned on average 3.7 horses. Moreover, the direct employment multiplier of the industry in Texas amounted to 3.3 which, in comparison, was more than the motion picture, the railroads, or the broadcasting industries in Texas (Gibs *et al.*, 1998).

Furthermore, the Texas Horse Industry Quality Audit Initiative report states that one third of respondents indicated absolutely no contribution from horses to their total yearly income. The report summarised its findings as follows: “horses are bought and sold for many reasons other than attempted profit” (Gibs *et al.*, 1998). In line with this, half of all respondents identified quality of life, relaxation and competition, or a combination of these, as the reasons for their horse involvement (Gibs, *et al.*, 1998). This finding also concurs with the view expressed earlier, i.e. “In the absence of obvious direct financial or economic benefits there has to be non-marketable rewards that accrue to owners or investors in this industry.”

In addition to the above, two studies that focused on the horse racing industry will be discussed in the paragraphs to follow. The first focuses on the horse racing industry in Great Britain and is included because horse racing is a huge business and an ingrained part of British culture. The second study focuses on the South African horse racing industry. For clarity purposes, it is necessary to affirm that:

the participants in the racing industry are either horse owners, racecourse owners, trainers, breeders, jockeys, stable staff, racing organisers or racing consumers (i.e. race goers, punters and sponsors). Traditionally, the health of the racing industry was

determined by the number of people attending races, number of horses in training, size of prize money, auction prizes and the number of owners (Deloitte, 2006).

According to Deloitte (2006), approximately 2.5 million individuals go to races at least once a year. This makes it the second biggest sport in terms of revenue and attendance in Great Britain. It is not only big but also a very complex industry in terms of structure, creating £2.86 billion in expenditure. Horseracing, along with football, is a huge direct employer and an important secondary employer, as well as the centre piece of many local and rural economies. It employs more people than any other sport in Great Britain.

From the report, it is clear that racing in Britain is a massive and lucrative industry with numerous and complex ties to the rest of the economy, especially the rural economy. According to the Deloitte (2006) report, growth prospects remain promising, with racing likely to take on an ever more dominant position in the leisure market. For instance Deloitte (2006) notes:

- After football, British horseracing attracts the highest paid attendances of any sport and provides four of the top ten sporting events by attendance in 2005;
- The 59 racecourses aggregate revenue was £85million more than that of the rugby union. It therefore comes as no surprise that capital investment in horse racing is only eclipsed by football;
- In Britain registered full time trainers amounts to 569 with close to 15 000 horses in training between them. They employ 6 500 staff with wages exceeding £80million;
- The number of stud farms amount to 2 200 with 9 000 people employed on these farms. Moreover, 5 500 live foals are produced yearly with the yearling auctions turnover exceeding £200 million in 2005;
- The number of horse owners totalled 9 400, with net expenditure amounting nearly £400 million in 2005. In other words, “owners paid £400 million for the privilege to be called an owner.

In addition to the people that attend races, i.e. who by definition go to the races to spend money and be entertained, the horse owners are the only ones not making any money in the whole industry. It seems unbelievable that this huge, flourishing industry could be built on the losses of one group right at its very foundation and remain stable, yet it has. This report confirms the findings by Gibs *et al.* (1998) who argue that the “horses are bought and sold for many reasons other than attempted profit”.

Owing to a growing concern and in order to investigate changes that face the racing industry, Racing South Africa commissioned the Economics Information Services study (Standish, 2011). According to the report, in 2009 Horse Racing, in the report's narrow definition (not including the multiplier effect), contributed R2.71 billion to South Africa's GDP, with 16 244 jobs and R694 million in the form of direct and indirect taxes (Standish, 2011). The report states that 25 % of the industry is funded by owners, with the remaining 75 % by punters. In terms of the distribution of net income, 12 % is accounted for by the breeders, 23 % by the trainers, 15 % by the bookmakers, and the remaining 50 % by the racing operators for their services. These services include the upkeep and running of race courses, jockey remuneration, governance of the sport and betting operations, as well as taxes (Standish, 2011).

In the present economic situation, it is worthwhile to note that horse racing is a labour-intensive sport (twenty-four times more labour intensive than the casino industry in terms of gross gaming revenue). The breeding segment of the industry, which creates 18.2 jobs for every R1 million spent, is the most intensive, followed by governance (9.8), training (8.8), race course and training facilities (6.9), and jockey remuneration at 6.3 (Standish, 2011).

South African horse racing has been developed on the British model. British horse racing, where it is called the sport of kings, developed into a peculiar structure of owner funding by evolution, not structural design. Owners receive income from prize money, selling and occasionally from international prize money, while they pay for the services of other breeders, trainers and jockeys. Standish (2011) states that "the less that prize money covers the cost of owning a horse the smaller the industry". Although prize moneys do not cover the long-term expenses of most owners' racing stables, simply because only one horse can win a race at a time and horses who can sustain a winning streak are only a precious few. Yet the sizes of the stake moneys offered have a magnetic effect on horse ownership, much like a huge jackpot in a lottery (Goudriaan *et al.*, 2006). In South Africa more than half of the registered breeders keep their horses on other breeders' stud farms (Standish, 2011). This is not exceptional in international terms. What is peculiar to racehorse breeding in South African is that international trade is relatively small, compared internationally. This is a heavy penalty on profitability in South African racehorse breeding. Diseases, such as AHS, and the subsequent quarantine procedures and requirements are the main reason why international counterparts are reluctant to engage with South Africa in trade (Standish 2011).

According to Standish (2011), “it is the owners of race horses and the punter who pay for the sport” and “there are fewer people prepared to subsidize the sport as owners; there are considerably less breeders; less jockeys; and as a result, less horses. ... This is unfortunate because the South African horse racing is a particular labour intensive industry relative to other forms of gambling. Many of these jobs are in rural areas where the need for employment is particularly desperate. Addressing these challenges would contribute to the greater good of the country”.

From the previous section, it was confirmed in no uncertain terms that in the horse industry, horses are bought and sold for many reasons other than attempted profit. As stated by Gibs *et al.* (1998), horses are owned for, amongst other reasons, “the quality of life, relaxation and competition”. These refer to emotional goods. The book, *Riding High Horses, Humans and History in South Africa* by Swart (2010), is an attempt to chronicle the effects of an inter-species relationship between horses and humans that changed the history of leisure, transportation, trade, warfare and agriculture in South Africa.

Although Swart (2010) examines the horse’s cross over from a basic necessity in history to the present “conscious (emotional) choice”, she does not really deal with what have been called “emotional goods”. In discussing the introduction of the American Saddle Horse to the platteland of the Western Cape and Free State after the Anglo-Boer war, Swart offers her insight into the role of the horses as “status symbols and the socio-economic context of their acquisition and the cultural impetus for their rise in popularity and geographic diffusion”. Although the author’s explanation does not deal explicitly with the “emotional goods” that accrue to horse owners in principle, it certainly deals with what may be part of the “emotional goods”. According to Swart (2010), the American Saddle Horse reflects the development of a new class Afrikaner: confident, internationalist, pro-American elite, embracing modernity with a need to demarcate class boundaries. However, based on previous findings, it should be evident that some of the conclusions made by Swart (2010), although containing pieces of the truth, might be an oversimplification. In the context of this dissertation, the degree to which the author got it right or wrong does not really matter. What is important is the acknowledgement that horse ownership has an “emotional value”, which is referred to as “status” in the particular study.

Swart (2010) described owning American Saddle horses in South Africa as a “status symbol”. A status symbol will fit into the description of a social value, as was mentioned. Therefore, if the description of consumer behaviour is directly linked to the investment decision of the South

African Saddle Horse industry, the description of “emotional goods” will include not only emotional value but also the social value. Functional value would represent the instances where there is obvious financial and economic reward and the utility principle could come into play.

2.5 Studying the investment decision in the horse industry

Since the horse’s replacement in industry by mechanisation, it has lost out on economic importance and become part of the recreation industry. Although the recreation industry is quite substantial, the horse industry, aside from the racing industry, is not a well-studied and documented industry. A contributing factor to the lack of documentation is that passion or the love of horses drove horse owners to invest in the industry, consequently much was written about the beauty of the horses, how much owners love them and how good a feeling owning them is, but not much has been written about how all that joy is paid for. Freemantle (1998) confirms the influence of emotions on investment decisions in the horse industry when he states that “without calculating emotions all conclusions on the buying decision are essentially deficient”. However, emotions and their influence are studied in psychology, whereas investment decisions are part of economics, and it is only fairly recently that this “crossover area” has become the subject of study in neuroeconomics. As a result, not much information, in the specific field, has been accumulated to date.

2.5.1 Qualifying emotional influence on the investment decisions in the horse industry

Judging from the preceding sections, it is highly likely that emotions have a determining influence on the investment decisions in the South African Saddle Horse industry. However, no evidence could be found of any qualification or quantification in terms of the influence of emotion on investment decisions. Therefore, the logical approach will be to firstly confirm whether emotion has an influence on investment decisions, and if so, to quantify the degree of influence. In qualifying the influence of emotions on the investment decision as it pertains to the South African Saddle Horse industry, the question of an appropriate design emerges. Edmondson and McManus (2007) suggest that “theory-building research, using cases, typically answers research questions that address ‘how and why’ in unexplored research areas particularly well.”

But even if it could be proven true that horse owners do invest because their passion or the love of horses drove them to it, it immediately raises the question: what is the significance thereof? Although the investment decision is studied in the South African Saddle Horse industry, as this is

where it was noted, emotions as an influence in investing in the industry is evident worldwide in all horse industries (section 2.4). The horse industry is financially significant (locally and abroad). Knowing and understanding the industry is a prerequisite for protecting, promoting or supporting it. Secondly, if this study succeeds in claiming replication of theory (confirming the hypothesis) as is already evident in consumer theory, the influence of emotion on the investment decision could be generalised to all aspects in the economy where passion and commitment is evident. This is supported by the following statement of Fromlet (2001): “psychological and irrational behaviour does matter in financial markets”. Moreover, the significance of the case study is put into perspective by Freemantle’s (1998), with him arguing that “without calculating emotions all conclusions on the buying decision is essentially deficient”.

Yin (2009) defines case study research as an empirical inquiry that investigates a contemporary phenomenon in depth and within its real-life context, especially when the boundaries between phenomenon and context are not clearly evident. Case study in principle copes with technically distinctive situations in which there will be many more variables of interest than data points, and as a result relies on multiple sources of evidence, with data needing to converge in a triangular fashion (Yin, 2009). Another advantage is that research benefits from the prior development of technical propositions to guide data collection and analysis.” Schramm (1971) argues that “the essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions i.e. why they are taken, how they were implemented, and with what result.” This statement is not only more direct but also a perfect fit and highlights case study research as the method of choice.

Yin (2009) also explains that case study as a method of research has a distinct advantage when ‘how and why’ questions are being asked about a contemporary set of events, over which the investigator has little or no control. This is exactly the context of this study with the focus on answering the ‘how and why’ questions when it comes to the motivation behind investments in the South African Saddle Horse industry. As mentioned, economic theory has very little information on the emotional motivators for the investment decision, although in marketing (consumption theory) there does exist information on emotional motivators for consumption. Therefore, because this study will be about the adaption and expansion of an existing theory to another context and not about counting the frequency of occurrence, the best approach is case study research. This is confirmed by Perry (1998) who argues that case study research fits within the critical realism paradigm and is essentially inductive, theory building research (confirming a

hypothesis). Eisenhart and Graebner (2007) argue that building theory from case studies is a research strategy that involves one or more cases to create theoretical constructs, propositions and/or midrange theory from cases, based on empirical evidence.

“However unlike laboratory experiments, case studies are studied in their real world context, not in isolation and serve as an excellent bridge from qualitative evidence to mainstream deductive research. But in this regard it is necessary to justify why the research question is better addressed by theory-building rather than theory-testing” (Eisenhart & Graebner, 2007). These authors add that “The justification rests on the phenomenon’s importance and the lack of viable theory and empirical evidence” (2007). Emory and Cooper (1991) are of the opinion that “fact and theory (induction and deduction) are each necessary for the other to be of value”. While Perry (1998) describes this relationship in more detail by arguing that although induction theory building in case study research is a priority, deduction theory building does have some role in case study research as “prior theory provides a focus to the data collection phase in the form of research issues”.

According to Yin (2009), “to achieve validity a case study has to adhere to all four principles of social research in its analysis”. These are: attend to all evidence (documents, interviews and direct observations), address all rival interpretations, the analysis must be concentrated on the most significant aspect of the case study, and use your prior expert knowledge. The validity of a case study’s research design is judged in terms of three criteria: construct validity, external validity and reliability (Yin, 2009).

Construct validity is about identifying the best operational measures to use to capture the values. There are a number of them, of which the first is to use multiple sources of evidence. Evidence such as documentation, interviews and direct observation will be applicable. The most important advantage to be gained from the multiple sources of evidence is the development of converging lines of enquiry. In other words, one source confirming the other. Then, to establish a chain of events, the chain of evidence has to run from the information captured from the stated case study question, observations and documentation, through the protocol to the topics as is described in the theory, and captured in the case study database and into the case study report. Lastly, key informants should review the draft case study report. Because of their integral knowledge of the values being investigated, they can easily validate construct validity and the feedback is invaluable information in judging reliability.

External validity refers to statistical accuracy in survey research where generalisation is to a larger universe, which renders sample size critical in order to retain credibility. In case studies analytical generalisation is done by generalising a set of results to some broader theory. In case studies the prior theory is critical in order to retain credibility, not sample size. In analytical generalisation, the broader theories to which the study's findings are generalised have to be defined beforehand and tested by replication. Patton (1990) wrote that: "The validity, meaningfulness and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational/analytical capabilities of the researcher than with sample size".

Reliability refers to the reliability check as is done by an auditor on financial documents. In case study contexts, it means that certain procedures, like data collection for instance, can be repeated, with the same results. The only way this can be achieved is through the documentation of the procedures followed or the case study protocol.

The primary use of a case study protocol is controlling the context in which the case study take place (Yin, 1994). Controlling the context, in addition to careful consideration of theoretical and literal replication, is an important consideration in the design and execution of qualitative research (Emory & Cooper, 1991; McDaniel & Gates, 1991). The interview protocol part of the case study protocol must include general instructions and probe questions for the interview (Perry, 1998). Yin (2009) advises that case studies procedures are documented by establishing a protocol, where the protocol consists of an overview of the case to be studied, a description of the field procedures, data collection procedures, case study questions and a guide for a case study report.

A description of the field procedures – field procedures encompass guidelines to guide the interview. Case studies happen in real time and in the context of real life, and therefore the environment is not controlled and the interview is open ended. Data collection procedures, encompassing data collection sites and contact persons, a data collection plan and procedures for protecting human subjects, are set out. Case study questions guide "the structure of the inquiry and are not intended as literal questions to be asked of any interviewee" (Yin, 2009). Their purpose is to keep the investigator on track as data collection proceeds, as well as to guide the outlay of the case study report. This is only part of the protocol in order to keep data collection on track.

The steps necessary and the issues to be addressed in developing a case study's research design, as conveyed in literature, are as follows:

- Formulate the research question. Yin (2009) describes the research question as having both substance (focus of the study) and form (the 'why' question, whether exploratory or explanatory). According to Yin (2009), focussing on the 'why' question on more than one research unit will indicate a multiple case study.
- Once the research question is established, a research proposition can be formulated. The research proposition directs attention to what should be examined within the scope of the study, i.e. the relevant information and important theoretical issues Yin (2009).
- Then the unit of analysis needs to be identified: "The definition of the unit of analysis (the case) is related to the way you have defined your initial research question" (Yin, 2009), and accordingly the unit of analysis is also the "case" for the study (Yin, 2009). Yin (2009) and Eisenhart and Graebner (2007) warn that the research design has to accommodate the analysis as it links the data to the propositions. Therefore, in order to ensure that the data will be analysable, each unit of analysis and its related questions and propositions will need slight adaptations. Also, data has to be collected and analysed according to the propositions on case level before they can be linked for cross-case synthesis and hypothesis generation.
- The next step would be the sampling of cases for the study. Sampling and analysis in case studies implies a major departure from that of the usual empirical research and statistical analysis. Eisenhart and Graebner (2007) state that the purpose of case study research is to develop theory, not to test it. Therefore, theoretical sampling as in laboratory experiments is applicable, and not random or stratified sampling. Theoretical sampling means that cases are "selected because they are particular suitable for illuminating and extending relationships and logic constructs" (Eisenhart & Graebner, 2007). Yin (2009) expresses the same opinion but also links the sampling procedure to the analysis of the results by arguing that "a fatal flaw in doing case studies is to conceive of statistical generalizations as the method of generalizing the results of the case study. Cases are not 'sampling units' and should not be chosen for this reason. Rather, individual case studies are to be selected as a laboratory investigator selects the topic of a new experiment. Multiple cases, in this sense, resemble multiple experiments. Under these circumstances the mode of generalization is analytical generalization, in which a previously developed theory is used as a template with which to compare the empirical results of the case study. If two or more cases are shown to support the same theory, replication may be claimed. The empirical results may be considered yet more potent if two or more cases support the same theory but do not support an equally

plausible rival theory” and “because of replication logic that is being used in case studies, the usual sampling logic and the typical criteria regarding sample size do not apply”. Perry (1998) developed sampling even further but also deals in more specifics with the number of cases that is required: “In case study methodology, the selection of cases is purposeful and involves the underlying principle that is common to all of these strategies is selecting information rich cases, that is, cases worthy of in-depth study. ... This issue of information richness is fundamental to deciding on the number of cases”. Eisenhardt (1989) suggests that although no ideal number of cases exists, a number between four and ten cases often works well. With fewer than four cases, it is often difficult to generate theory with much complexity, and its empirical grounding is likely to be unconvincing. Patton (1990) argues that “the validity, meaningfulness and insights generated from qualitative inquiry have more to do with the level of information of the cases selected and the analytical capabilities of the researcher than with sample size”.

- As mentioned, developing case study theories consist of a prior and rival theory. Fowler (1988) defined prior theory as a “hypothetical story (a hypothesis) about why acts occur and an essential part of case study design”. In brief, the prior theory is developed from the literature and from pilot studies, to be the first step in the theory-building process of case study research (Perry, 1998). Perry (1998) elaborated by arguing that “the pilot studies done before the major data collection stage are not a pre-test or ‘full dress rehearsal’ of the interview protocol, rather they are an integral part of developing the interview protocol process”. Yin (2009) states that “theory presents the basis for generalization of the case study results. Only with an appropriately developed theory can the research design guide data collection and analysing strategies. This is in contrast to a ‘statistical’ generalization in which an inference about a population is made based on empirical data collected from a sample of that universe.” Yin (2009) further argues that “the logic underlying the criteria for interpreting case study findings is the same as in laboratory experiments. In case study the analyses relies on replication of the theory (literal replication) and non-support or expected and explained support of the rival theory (theoretical replication), as is the accepted practice in all laboratory experiments. Although statistical analysis offers explicit criteria for interpretations, case study analysis does not rely on statistics. In design, the case study theory and rival theories have to be anticipated and expressed so that information about them is included as part of data collection”. Discussing the influence of theory on sample size, Yin (2009) explains that “in replication logic, as in sample logic, a larger number of cases creates a greater degree of certainty, but in a case study the state of the theory and rival theory is also applicable in

calculating certainty. Unlike sample logic three replications is seen as sufficient if the theory is straight forward and the rival theory is not compelling. Six replications are seen as a high degree of certainty, even if the theory is subtle and the rival theory strong". As noted above, theoretical replication is the key to the selection of cases, but it is also the key to the rigorous analysis of case study data (Perry, 1998).

- Although analysing the data and theory building start with the establishment of prior theory, analysis still remains a separate function. Firestone (1993) summed this up concisely by stating that: "to generalise to a theory is to provide some evidence that supports a theory but not necessarily proves it definitively". "Replication logic is central to building theory from case study evidence. The notion being that theory is developed inductively by recognising patterns of relationships and underlying logic within and across cases. Like a series of related laboratory experiments, cases are discrete experiments that serve as replications, contrasts and extensions to emerging theory" (Yin, 2009). Eisenhart and Graebner (2007) suggest that the theory should be developed in sections or by distinct propositions in such a way that each is supported by empirical evidence that provides the logical link between the constructs within the proposition. The prior theory comes back to the forefront in data analysis, with a tight structure used to categorise the interviews into subsections of the data analysis, and quotations from interviews frequently used to justify conclusions about differences between cases in the cross-case analysis. Case analysis should always precede cross-case analysis (Miles & Huberman, 1994; Patton, 1990).

Babbie (2010) gives an overall view of social science research. In terms of analysis, Babbie (2010) acknowledges the role of non-probability sampling, such as judgement sampling as a source of data for cross-case analysis. He also alludes to grounded theory in the development of new theory. However, he remains devoted to statistical sampling as it represents populations which imply testing theory, not developing theory. The reason for his being biased towards case study in comparison to statistical sampling is because his focus is on probability sampling and the analysis of much larger sample populations than that of non-probability sampling.

Babbie (2010) defines qualitative analysis as the "methods for examining social research data without converting them to a numerical format". He states that in qualitative research the purpose is to have research confirming relationships among concepts in order to describe social reality. In essence it is a search for explanatory patterns (Babbie, 2010). Lofland, Snow and Anderson (2006) enumerate the things to look for in order to discover patterns: frequency of

occurrence, magnitudes of the phenomena, structure of the phenomena, processes (what processes occur among the elements of the phenomena), causes and consequences.

Babbie (2010) describes four methods to analyse quantitative data: firstly, cross-case analysis consisting of either variable-oriented (explain a variable) or case-oriented (analysis that explains by looking at a case or cases). Secondly, grounded theory – theories are generated by examination of data (as opposed to deductive procedures). This includes the constant comparative method where observations are compared with one another and in that process evolving inductive theory. Thirdly, semiotics – the study of signs and their meanings, commonly associated with content analysis. Lastly conversation analysis – consists of a meticulous analysis of the details of a conversation, based on a complete transcript that includes pauses, hems and haws. From all of these methods, only cross-case analysis and grounded theory is applicable in this case study. Babbie (2010), in terms of qualitative analysis, suggests three probable methods for finding patterns in qualitative data: coding (categorising individual pieces of data coupled with some sort of retrieval system, of which there are three distinguishable methods, open, axial and selective coding). The second entails ‘memoing’ which refers to the description and defining of concepts that deal with methods and offer prior theory. The third method is based on concept mapping that implies a graphic display of concepts and their interrelations.

Yin (2009), as well as Eisenhart and Graebner (2007), argues that interviews for gathering case study data should not be taped and transcribed owing to the suppressing influence thereof on the information offered by respondents. They argue that interviews, due to ethical issues, should also not be taped secretly as that involves a lack of consent by the respondent.

According to Glaser and Straus (1967), four different analytical techniques are available to analyse case studies. However, only two are applicable in terms of the specific study, i.e. explanation building and cross-case synthesis. The methods described by Babbie (2010), in conjunction with the analytical techniques available in case study analyses, are useful if applied in the chronological list provided by Yin (2009). The list is as follows (Yin, 2009):

- Developing a case study theory – expanding prior and rival theory into a series of propositions;
- Comparing the findings of the pilot case, against the developed propositions;
- Revising the theory and propositions;

- Comparing revisions with other relevant information, i.e. literature, documentation, observations and prior knowledge;
- Comparing the revision to the facts of the rest of the case study;
- Repeating the process as many times as needed until literal and theoretical replication is achieved;
- Formulate case theory.

Yin (2009) prescribes three sources of information in case studies, namely: documentation, interviews and direct observation. These sources are to be utilised according to three principles. The first entails that all possible information sources should be considered. A case study data base forms a chain of events and uses written documentation, such as letters, memoranda, e-mail correspondence, published articles, calendars, notes, agendas, announcements, minutes of meetings, other reports, proposals, progress reports, internal records, formal studies, news clippings, and financial statements, which can be used as background study material (Yin, 2009).

Interviews are the most important sources of information in a case study. It is normally a guided conversation, rather than a structured query as in a survey (Rubin & Rubin, 1995). Although the interviews start with an unstructured part as induction to the interview, the analysis of the data will be deduction about prior theory by the researcher, that is, “the researcher has some prior theoretical issues that were raised in the literature review and which must be discussed in the data analysis chapter” (Perry, 1998). Questioning is on two levels, one satisfying the needs of the line of enquiry and the second, presented by friendly and non-threatening questions, is to stimulate discussion (Yin, 2009). Perry’s advice coincides with Yin’s proposals; the interviews should “start with getting the interviewee to tell the story of their experience of whatever the research is about” (Perry, 1998). But, certain probing questions about the research issues (prior theory) must be prepared in order to get the interviewee to address them, if possible in the unstructured parts of the interview. However, one hopes that the answers to the probe questions are provided before the questions have to be put (Perry, 1998). The probe questions usually start with ‘how? (Perry, 1998). The probe questions are the major part of the prepared interview protocol which is used to provide a reliable framework for cross-case analysis of data” (Yin, 2009).

The understanding and adaption of theory as it relates to the motivation of the investment decision in the South African Saddle Horse industry is the focus of this section of the dissertation. Investment is fundamental to economic development. However, as mentioned (section 2.2.3),

neo-classic economic theory, in dealing with motivating the investment decision, uses the simplified and abstract UMH or 'reasonable man' concept. More recent developments in consumer theory deviate largely from the UMH concept and have accepted that the consumer in consumer decisions is sometimes "so influenced by emotional forces that rational ones barely come into play" (Barlow & Maul, 2000). In view of these developments and because the phenomenon that is being studied is an intermittent and strategic phenomenon, the interviews as the source of data become important. "The challenge of interview data is best mitigated by data collection approaches that limit bias. A key approach is using numerous and highly knowledgeable informants who view the focal phenomenon from diverse perspectives" (Eisenhart & Graebner, 2007). The large number of potentially relevant variables in this study, some of which are rather difficult to capture numerically, promote the choice of a multiple case study as the preferable research method. Another approach that will be used to mitigate bias in collecting interview data is combining retrospective (informants who are no longer in the industry) and real-time cases (informants who are actively investing in the industry) (Leonard-Barton, 1990).

Therefore, the proposal is to do a multiple case study in this dissertation because "while single case studies can richly describe the existence of a phenomenon" (Siggelkov, 2007), "multiple case studies typically provide a stronger base for theory-building" (Yin, 2009). Multiple case studies also enable broader exploration of research questions and theoretical elaboration (Eisenhart & Graebner, 2007). An important theoretical sampling approach to be used in this case study will be "polar types in which a researcher samples extreme cases in order to more easily observe contrasting patterns in the data" (Eisenhart & Graebner, 2007).

2.5.2 Quantifying emotional influence in the investment decisions in the horse industry

Economics is rooted in the study of motivators (incentives): why and how people get something they want, especially when other people want and need the same thing (Levitt & Dubner, 2005). Therefore, there is no need to use a fictional demon, as did Laplace (Laplace, 1951), to demonstrate the need for a statistical description of the influence of emotions on the investment decision, as it is self-evident. Oxford Dictionaries define quantification as 'expressing or measuring the quantity' of something, which in this case is emotional influence. Therefore, in quantifying the emotional influence in the investment decisions in the horse industry, data is needed. In expressing the influence, that is finding the relationship, a data series is needed. There are two ways to go about obtaining the necessary data for measuring emotional influence in the investment decision: firstly, do a statistical survey of an identified population with questionnaires

or secondly, find a historical data set that represents proven, emotionally-influenced investment decisions, and analyse them.

2.5.2.1 Quantifying the emotional influence by using a statistical survey with questionnaires to obtain data

The difficulty in defining and measuring emotions when using conventional methods (aside from neuroeconomic procedures) is addressed by Richins (1997). In consumer behaviour, numerous “studies have found emotions to be an important component of the consumer response, and the importance of emotions in the sphere of consumption behaviour has been firmly established”, but the appropriate way in which to measure these emotions remains unresolved (Richins, 1997). However, developments in terms of the field of neuroeconomics have changed this. Nonetheless, Richins (1997) reviews the measurement of emotion that is currently being used in consumer research, as well as the theories on which they are based. The measurements that Richins (1997) describes, quantifying and characterising (qualifying) emotion and distinguishing it from other states, have to be seen as complementary to the work of Ekman (1992). Similarly, Barlow and Maul (2000), in their exposé of the influence of emotions on the consumer experience, accepted Ekman’s (1992) characterisation of emotions.

But basic to all measurement of emotions is characterisation, in which the following considerations must be accounted for (Richins, 1997):

- All the characterisations ignore some of the emotions that are particularly central to people’s lives, like passion, love and commitment, for instance, and
- The characterisations do not account for the context that the emotions are evident in, which defines intensity. Emotions are likely to be the strongest when a product, or its consumption, is important to a consumer, and vice versa.
- Consumption-related emotions include all directly-experienced emotions that result from the consumption/usage of the product. The term ‘consumption’ is used broadly to include anticipatory consumption and product acquisition, as well as post-purchase possession and use of the product.
- The characterisations mentioned all exclude vicarious and/or aesthetic emotions as they invoke the entire new range of emotions. These emotions would require a very broad ranged measurement that will be unwieldy and inefficient. However, in this dissertation, the challenge is that horses do invoke vicarious and aesthetic emotions.

- Consumption and the associated emotional descriptor can be defined by the type of product consumed. There are varied types of possessions and the most important are sentimental objects, recreational objects and vehicles (horses qualify for two of the three types: sentimental and recreational).
- The intensity of emotions experienced differs for consumers in low (novice) versus high (experienced) product involvement. In this dissertation this might imply differing levels of planned versus impulsive purchases.
- The intrinsic character of individual consumption-related emotions differs, due to prevailing and antecedent states. For example, how does one define 'pride'? What does it mean to feel pride; what conditions create feelings of pride; and what are the effects of these feelings on other variables, such as brand loyalty and word of mouth?

There is little consistency in the characterisations of emotions by different authors. In an attempt to increase the understanding of emotions, authors categorise emotions according to different perspectives. Plutchik (1980) used an evolutionary perspective to identify eight primary emotions, being fear, anger, joy, sadness, acceptance, disgust, expectancy, and surprise. Izard (1977) proposed ten fundamental emotions: interest, enjoyment, surprise, distress, anger, disgust, contempt, fear, shame and guilt. Ortony and Turner (1990) found these theories null and void. The authors elaborated by arguing that "there is no coherent nontrivial notion of basic emotions as the elementary psychological primitives in terms of which other emotions can be explained". Richins (1997) developed the Consumption Emotion Set (CES) with sixteen descriptor clusters which contain 63 emotion descriptors. Richins (1997) described CES as "not a tool intended for definite assessment". CES aims for a "relative broad but not an exhaustive coverage of consumption related emotions and should be considered as a starting point in determining the proper assessment of consumption related emotions".

Prigogine and Stengers (1984) highlight the importance of accurately defining the material and methods to be studied in quantifying the emotional influence on the investment decision when they state that "in hundreds of different ways scientists have expressed their amazement when, on determining the right question, they discover that they can see how the puzzle fits together". Barlow and Maul (2000) describe satisfaction as the emotion by which surveys usually, and economic theory by definition, measure utility. The authors elaborate by suggesting that if only satisfaction is measured, the focus on understanding the emotions behind it will lag behind. This remark confirms the findings of Camerer *et al.*, (2005) who argue that economists regard feelings

as useless intervening constructs, “Since feelings were meant to predict behaviour but could only be assessed from behaviour”. Barlow and Maul (2000) elaborate by suggesting that “it is only through using metaphors that emotional values of people can be begun to be gauged”, hence measuring satisfaction numerically on a sliding scale does not give an indication of emotional value. “Measuring satisfaction has no relation to emotions as it is only at the highest levels of satisfaction that people have more positive emotions than negative” (Barlow & Maul, 2000).

Before the advent and proliferation of neuroeconomics as a field of study, Newsome, Britten and Movshon (1989) proved a psychometric-neurometric match and Kosfeld, Heinrichs and Zak (2005) performed experiments that suggested a neurobiological basis for emotions: a neurologically inducible emotions–actions link. Combining findings from the studies of Sanfey, Rilling, Aronson, Nystrom and Cohen (2003) and Kosfeld *et al.* (2005) with non-invasive methods of brain stimulation, such as transcranial magnetic stimulation (TMS) and transcranial direct current stimulation (TDCS), proved that neural processing associated with choice behaviour can selectively be modified and measured. Kosfeld *et al.* (2005) proved dissociation between judgment and choice in the functioning of the human brain to be inducible and therefore measurable. Choice typically implies that the decision maker must bear costs and benefits, while judgment alone is not yet associated with the bearing of costs and benefits (Kosfeld *et al.*, 2005).

In terms of investment decisions, or choice as was described in the previous paragraph, developments in the field of neuroeconomics that rendered the use of questionnaires for quantifying the influence of emotions on investment decisions by implication obsolete are:

- Lo and Steenberger (2005) argue that emotional reactions, from the limbic system of the brain, ‘short-circuit’ more complex decision making faculties from the Orbitofrontal cortex, which implies that respondents will not be able to recall emotional decisions since.
- Wolford *et al.*, (2000) found that, because automatic processes (such as emotional decisions) are below consciousness level, contemplated descriptions will favour recollection of cognitive rather than affective processes, and at the same time.
- Kahneman *et al.*, (1990) proved that people overvalue items they already own, contrary to items they are set on purchasing, even more so if emotional bonds are formed. This is called the ‘endowment effect’ (Peterson, 2007) which implies that the results to be recorded in a survey will be biased; and
- The Nucleus Accumbens located in the deep mid-brain, excited by the neurotransmitter dopamine, is what causes us to ‘want’ something. It is violations in expectations in this

system that trigger emotional responses. But the 'set point', which determines a violation or not, cannot to be determined independently as a 'constant', as it differs continually according to the individual and situation. The implications being that, in a real life situation such as the studied phenomenon in the South African Saddle Horse industry, it would be extremely difficult to trigger and measure emotional responses in a statistical representative survey.

- The findings by Mellers, Schwartz and Ritor (1999) reveal that the opportunity cost comparisons for decisions are supported by our emotional circuitry that is commonly below our conscious awareness. This implies that in a questionnaire, answers pertaining to cost comparisons by the respondent will be null and void.
- The findings by Thut, *et al.* (1997) and Schultz (2000 and 2002) indicate that, because the human brain acquired its reward reinforcement system for items long before money was discovered as a mechanism for facilitating exchange, our brains adapted to money by treating it like a "commodity" and only indirectly signal utility derived from its use (this interpretation is conditional on the external context).

Following from the discussion above, the only reliable option that remains in terms of a statistical survey using questionnaires to obtain primary data would be to set up a test using neuroeconomic theory and testing procedures, striving to measure the emotional influence on the investment decision in the South African saddle horse industry. Even that might prove rather difficult, as was explained in the previous paragraph, and more cumbersome as axiomatic models against which to measure results are still very controversial. The Reward Prediction Error model (Caplin & Dean, 2008) is the most developed of the dopaminergic function models, but it is still not generally accepted. The reliability questions about the models are based on the fact that the variables are concealed variables, implying that their existence and properties must be inferred from a theory fitted to an experimental data set.

2.5.2.2 Quantifying the emotional influence in the investment decision by analysing existing historic data.

In quantifying emotional influence on the investment decision, using historic data, assessments of the successes of the various decisions can be made. To all indications from the literature studied thus far, the horse market is an emotional market and some of the investment decisions are most probably motivated more by emotions (affective reasons) than logic (cognitive reasons).

Individual investment decisions in the horse market are difficult to obtain since time series data are, for all practical purposes, not available. Records of annual auctions held are the only attainable and reliable source of data. Furthermore, auction prices per se are valuable in quantifying investment decisions as auction prices are not a singular arbitrary estimate by an individual, but represent an evaluation of the investment in question by an interested group of people. In an auction, each bid placed represents an evaluation by the bidder and the eventual selling price is recorded as a matter of fact (and need not be recorded from contemplated memory).

Data to be analysed: At present in the South African Saddle Horse Industry, there is only one regular public sale of American Saddle Horses with a historical data set that represents investment decisions. The statistics referred to reflect the results from the African Saddle Horse Futurity (ASF) annual sire service auction. The ASF competition was initiated in South Africa by Ross Millin during November 2009 (Millin, 2009). The ASF is for all practical purposes identical in operation to the very successful All American Cup (AACup) competition, developed by Jim Aikman in the American Saddle Horse industry in the USA. The only difference between the two competitions has to do with scale and currency. The American Saddle Horse foals registered in South Africa is a fraction (16 %) of the foals registered in the USA (SA Saddlebred, 2010). This difference in herd sizes resulted in ASF encompassing approximately twenty sires per competition cycle (with three competition cycles completed), whereas the AACup represents approximately 150 sires per competition cycle (with 10 competition cycles completed).

In both the ASF and AACup, American Saddlebred sires and dams are nominated at a fee, with the progeny produced from these matings to participate in a weanling class and three year old performance classes at nominated shows. Eligible progeny are shown and placed (eight in the ASF and sixteen in AACup) with the winner winning substantial prize money. The runners-up (seven in ASF and fifteen in AACup) also win prizes, in both competitions the prizes decrease sharply towards the lower placings. Because the owners of the sires, whose one service is auctioned once a year, get to enter another one of the sire's foals into the competition, a sire usually has two foals entered in the competition. It is noteworthy that these competition brochures present the only references to be found, anywhere in all horse related literature studied, to financial rewards due to breeders.

The competition brochures thus describe the motivation for entrance into the competition, being a way to achieve a better return on investment (Millin, 2005). But interest in the ASF and AACup competitions, as far as this dissertation is concerned, is in the **Annual sire service auction** (in terms of investments made) where one services of a sire is auctioned, as well as **the show earnings of the resultant progeny** (being an indication of the success of the investment made). The historical Annual sire service auction data represent the cognitive/affective decisions in a real life situation over time and the results of the progeny showed and prizes won represent the results of cognitive/affective decisions in a real life situation over time for both the ASF (3 years of competition) and AACup (10 years of competition), which information is available, although not published. Even though the AACup is in the USA and the ASF in South Africa, both the AACup and ASF data will be analysed because of the similarity between these competitions. The AACup competition uses a much larger and more elaborate data set in terms of numbers competing, places allocated, prizes won and years in existence. This is especially necessary since in the historical ASF data set, some volatility appears in both prizes paid and prices awarded, most probably attributable to the learning curve involved in the organisation and utilisation of the competition locally.

The genetic requirements: In principle, an indication of the difference in cognitive/affective investment decisions made is attainable from the ASF and AACup data available. But in order to clearly identify affective decisions, all cognitive factors have to be considered. Genetics dictate that in order to breed winning progeny, horse breeders have to find and use the best genes available. Leicester (1957) argues that “it is not the breeding techniques that matter but rather the quality of the gene pool available”. In the quest for finding the ‘best gene pool’, the successes of a sire’s progeny, an indication of his genotype, are the foremost and most viable indications of his breeding potential (Hewitt, 1982). Progeny show earnings in the competition are an excellent (numerical) indication of a sire’s breeding potential. Adding to this, a sire’s own conformation and prowess is another indicator, an indication of his phenotype, albeit a comparatively much less reliable indicator and a much more emotional one, of a winning gene pool (Leicester, 1957). It is in this quest that the AACup sire’s official lifetime show earnings (the phenotype spans his lifetime) will be computed individually to bring the phenotype of the sire into the equation (such data does not exist for the South African sires). As is the case with the progeny earnings, a ‘no-result’ renders such an auction bid ‘a free particle’ in terms of the Hamiltonian function (Atkins, 1974) and therefore not useable in doing a linear regression on this data series.

Analysis: Analysis of an emotionally-influenced data set could be divided into either calculating the difference between the results of mainly 'cognitive' and 'affective' influenced decisions, giving an indication of the effect that emotions have on decision making in that particular instance. Or, if possible, finding the mathematical relationship between emotions and their dependant variables. Such a mathematical equation would make predictions in similar circumstances, involving other data sets, possible.

Regression analysis is a statistical process for estimating the relationships among variables and is the most popular analysis used for finding such a mathematical relationship. It includes many techniques for modelling and analysing several variables, when the focus is on the relationship between a dependent variable and one or more independent variables. There is a bewildering array of regression models of which the ordinary least squares (OLS) or linear least squares seems to be the most appropriate.

The OLS analysis seems to be appropriate because: as a method it is consistent when the 'dependent' and 'independent' variables have external origins. Also, the OLS analysis is optimal for establishing the relationship between variables where the deviations of the value of a parameter and the observed value are the same for all the data and normally distributed. In operation, the OLS method minimises the sum of squared vertical distances between the observed responses in the dataset and the responses predicted by the linear approximation – establishing an estimation of the relevance between the dependent and independent variables (Hayashi, 2000).

2.6 Conclusion

The literature study first confirmed that investment without financial or economic reward is a worldwide phenomenon, and not unique to the South African Saddle Horse industry. From economic literature, it was found that economic theory has only recently begun to deal with the influence of emotions on investment decisions (neuroeconomics). But the only applicable theory on the influence of emotions in the consumption decision was to be found in service delivery in marketing.

Literature confirms that qualifying the investment decision suggests the use of a multiple case study, as it is essentially theory building research (Eisenhart & Graebner, 2007; Babbie, 2010; Yin, 2009) – adapting consumption theory to the investment context. The quantification of the

emotional influence on the investment decision implies a linear regression analysis. Studying the Saddle Horse industry in South Africa with a view to understanding the intricacies involved, the choices made, and in the process finding applicable data, is the focus of the next chapter.

Chapter 3

Background to the Saddle Horse Industry

3.1 Introduction

Humans domesticated the horse as an aid to survival and unintentionally it equipped them with previously undreamt of mobility. In war the horse changed the fortunes of the people involved for the better but technical developments rendered the horse superfluous in the course of history. Equally unintended, horses ended up in the recreation sector, a niche where they have since weathered our stormy history. This relationship is still growing as it embodies a fundamental change in attitude by the human, from a necessity to a conscious, emotional choice. If it was not for the uncanny ability of horses to attach themselves to the emotional core of humans, they would have been largely decimated, and in South Africa it has been no different (Epstein, 1955).

Initially, economic importance dictated that the horse industry would be well documented, but eventually its losing out in economic importance had a detrimental effect on the documentation of the industry. Accordingly, although the historical development is well recorded, today little information is available on the horse industry. Especially important to this study is the lack of information on the motivations for investment in the industry. Yet, as was illustrated in Chapter 2, the horse industry worldwide, now part of the recreation industry, is still a financially significant industry, despite a lack of obvious evidence of financial and/or economic reward. The horse industry, and as far as this dissertation is concerned, the Saddle Horse industry in South Africa, survived demotion to recreation and although it lacks documentation, it is to all indications still growing.

Worldwide, the Thoroughbred industry is an exception in the horse industry, in terms of data available and studies commissioned. The income from betting on races has perpetuated a flourishing industry with substantial prize moneys and has in due course of time paid for financial/economic studies to be commissioned over time. The South African Thoroughbred industry is no exception to the rule. However, horseracing shares a common finding with all studies done on the horse industry: “it is the owners who pay for the sport” (Deloitte & Touche, 2005; Standish, 2011).

The Saddle Horse industry, in opposition to the Thoroughbred industry in South Africa, was chosen for this dissertation because it does not have betting or the huge prize moneys that betting generates and which tend to distort investment decisions (Goudriaan *et al.*, 2006). Without the additional distortion of betting and huge prize moneys, the South African Saddle Horse industry promised to be an ideal subject for a study into prevailing investment decisions. Also, it is in the South African Saddle Horse industry's apparent growth in the absence of obvious direct financial or economic benefits that the motivation for this dissertation is to be found. Therefore, this study will attempt to analyse the motivators for the apparent continued support in terms of investment which the Saddle Horse industry draws from the South African public. The premise is that, in the absence or lack of obvious direct financial and economic rewards, there has to be non-marketable rewards, such as emotional value, which investors in the industry receive.

3.2 Concise history of the horse industry in South Africa

As horses are not indigenous to South Africa, initially they had to be imported as a source of mobility and traction – simultaneously instigating a horse industry here. The first horses were imported in the very first year of establishment of the Cape colony (1652), such was the need. Lotter (1970) divided the development of the local horse industry into four historic periods (see Table 3.1 below).

As mentioned in Chapter 1, in terms of organisation, apart from the American Saddle Horse Breeders Society and Thoroughbred Horse Breeder Association, twelve other horse breeder associations, three pony breeder associations and a miniature horse breeder association are registered at the South African Stud book. Today, the horse industry in South Africa can roughly be divided into four activity categories, namely: racing, showing, including competitive sport riding, recreational, work riding and breeding (Du Toit, 1999).

Table 3.1: Concise history of the development of the South African horse industry

| |
|--|
| 1652 – 1819 The starting off period |
| During this period horses were imported in an attempt to provide horse power for the production of fresh produce and as transport. The imported horses were mostly from Arab/Persian descent, their origin and year of import are: Persia 1689, South America 1778, North America 1782, England 1782, Spain 1807 and England 1810. |
| 1820 – 1899 Remount period |

| |
|---|
| In South Africa horses were already sought after as a means of production and mobility but breeding intensity increased considerably owing to the lucrative remount market that developed. Exports from South Africa to furnish the Indian and Crimean Wars when remounts established our horses as excellent mounts. Horses imported during this period were mostly Thoroughbreds from England. This very profitable and flourishing period ended with the outbreak of African Horse Sickness (AHS) which has bedevilled the local horse industry ever since (between 1845 and 1893 AHS accounted for a staggering 235 000 officially reported horse fatalities in South Africa (Smith, 1919). The opening of the Suez Canal (November 1869) meant shorter travelling times for remounts from Australia and the Far East which benefitted at South Africa's expense. |
| 1900 – 1941 Destruction period |
| During this period the South African horse population was devastated. First by AHS and then the Anglo-Boer War of 1899 to 1902. In reviving a once flourishing industry, various governments, as well as private, projects were initiated, with imports from a great variety of origins. |
| 1942– Present The organisational period |
| The formation of the “Ryperdtelersvereniging van Suid-Afrika en Rhodesië” (23 November 1942). This step established a controlled and planned rebuilding of the South African horse industry, which has been sustained till this day (Lotter, 1970). From this sole organisation developed the structure of the South African horse industry as it is today. |

Source: Lotter (1970).

3.3 Development of the American Saddle Horse

Humans originally domesticated the horse in preference to other animals as an aid to survival – that is, the provision of meat and milk, as a horse can graze all year round, even through snow. But it was the mobility that the horse provided, especially in war, which proved to be a huge asset and improved the fortunes of the people involved. Initially the horses were small with a stocky trot and so horse-drawn transport dominated. However, as horses were bred to be bigger, riding a horse became the popular choice. This happened mainly because roads necessary to make locomotion at a progressive pace feasible with wagons or chariots were then non-existent.

Horses are indigenous to the British Isles (Dent, 1977; Hendricks, 2007) and humans domesticated various horse and pony breeds in the British Isles as they conquered the islands. Chaucer (1475) called them ‘palfreys’ but they were usually named according to origin. The most prominent of which were the Hobbies from Ireland and the Galloways from Scotland. It is important for this

study to note that in ridden form these horses exhibited a comfortable lateral gait called the rack. This pure rack is still evident in the Icelandic pony where it is called the “tolt” (these ponies were brought to Iceland by the Vikings from 874 to 930 A.D.). It was around the ability to perform the rack that the American Saddle Horse evolved (The American Saddle Horse Breeders Association, 1901; Taylor, 1961).

Settlers brought Hobbies and Galloways to North America in numbers (The American Saddle Horse Breeders Association, 1901). This was prompted by the need for horse power in the ‘new world’ but also by the British who turned to drawn transport as their road system developed, implying a need for heavier, non-gaited horses. At the same time, the British royalty became obsessed with horse racing. In this pursuit they imported ‘Oriental blood’ or ‘Eastern horses’ (both terms signifying a collective name for Persian, Turkish and Arabian horses) in numbers. However, it was soon found that progeny from Hobby and Galloway dams bred to Eastern sires produced the best athletes (The American Saddle Horse Breeders Association, 1901). It should be noted that the wide usage of ‘Eastern horses’ was dictated by the needs of the regions they were brought into. But the remarkable beauty, stamina, agility, speed and temperament of these ‘Eastern horses’ raised them above local stock and were the determining factor for their wide usage. In the end it was their prepotency for quality that modified and gave distinction to the indigenous horse breeds. The progeny of Galloway and Hobby dams crossed with Eastern sires were athletically dominant and became the norm which established the Thoroughbred as the premier horse breed of the British Isles in a very short time.

North America suited the Hobby and Galloway horses well. By improved nutrition and selective breeding, Rhode Island and Virginia breeders developed the Narragansett pacer, a superior, easy (lateral) gaited riding horse named after its origin (The American Saddle Horse Breeders Association, 1901). From this developed the ‘American Horse’ as a type of horse, recognisable as such in 1776 when an American diplomat in a Congressional letter asked for an ‘American horse’ to be presented as a gift to the queen of France, Marie Antoinette (Taylor, 1961). That was well before the American Revolution. The ‘American horse’ was the result of selective crossing of the Narragansett and Canadian pacers and occasional imports of Thoroughbred and eastern types, as early as 1706 (Taylor, 1961; Kemper, 2007).

The Thoroughbred Stud Book only started in 1803 and its influence became formative and pronounced from then onwards (Millin, 2009). Contrary to the British, North American breeders

took great care to preserve the easy (lateral) gaits. These horses were work horses, used for riding (welfare and warfare), ploughing, drawing a carriage, or any type of work. But it was the easy gait that was the overriding criterion for development of the breed. Later on, a stringent criterion for registration was the horse's ability to perform the easy gait, or as it was then called, the 'saddle gaits' (Phillips, 1964).

After the American Revolution, American horses carried their masters to the Carolinas, Kentucky and further west. The American horse developed more as the nation expanded and demands for high-quality riding horses soared. Kentucky breeders continued to add Thoroughbred blood from Britain to their easy-gaited horses, developing a larger, prettier, all-purpose animal and cementing the American horse as a breed. These horses became known as the Kentucky Saddlers. Over time, some Morgan, Standardbred and Hackney blood was also added (The American Saddle Horse Breeders Association, 1901; Taylor, 1961; Kemper, 2007). The Hobby and Galloway ancestors of the Thoroughbred made it genetically possible to retain the easy gaits, notwithstanding the extremely heavy inbreeding to the Thoroughbred. The Kentucky Saddler attained the size and beauty of the Thoroughbred, but at the same time retained the ability to learn the easy riding gaits.

During the Civil War, Saddlebreds were the most popular riding animals in America and proved their superiority on the march and on the battlefield. They were extensively used by both sides. General Robert E Lee was mounted on *Traveller*, Grant on *Cincinnati*, Sherman on *Lexington*, and Stonewall Jackson on *Little Sorrell*, and although their mounts were not as well known, both generals John Hunt Morgan and Nathan Bedford Forrest exclusively rode Saddle-Thoroughbred crosses (Taylor, 1961). At the cessation of hostilities, General Grant allowed the war veterans to keep the horses they owned. These horses went with soldiers returning home to every corner of the country. Today, Saddlebreds can be found in every state in the USA and almost all over the world (Millin, 2009; Kemper, 2007; Taylor, 1961).

3.4 Background to the American Saddle Horse in South Africa

The Second Anglo-Boer war devastated the South African horse population. The British side lost on average a staggering 336 horses daily, 326 000 in total (Smith, 1919). On both sides a total of 450 000 horses died during this war (Du Toit, 1999). To alleviate the consequences of this carnage, the British War Office imported approximately 520 000 horses, 352 353 from overseas sources, which included 6 000 horses per month from the USA by the end of the war, to South

Africa (Wasserman, 2004). An indication of the effect of the war is to be found in a report towards the end of the war (October 1901) by the High Commissioner for Horse Racing in South Africa, who estimated that less than 10 000 mares and foals remained alive in the Free State and less than 5 000 in the former Transvaal (at that time the British imported more horses than that per month). After the war the Repatriation Department sold 120 000 of the horses they had on their books to locals. This was approximately 800 % more horses than which were alive in the Free State and Transvaal together by the end of the war.

It was in this “new” horse population that the American Saddle Horse developed a foothold in South Africa. To extract to any logical reason for this development, one has to start at the beginning and follow the easy (lateral) gait link. The first Mongolian/Persian horses imported into South Africa most probably were not easy-gaited. However, four of the first six imports after that would in all probability have been easy-gaited horses or horses that were able to learn these easy gaits (Lotter, 1974). History confirms that the South Africans were well versed in easy-gaited horses and had a firm fascination with the easy gaits (Steyn, 1978; Venter, 1979), Swart (2010) confirmed this when she wrote “The Boers favoured a triple”.

Saddlebreds were by far the most popular horse in the USA at the time of the Anglo–Boer war and Saddlebreds therefore made up the bulk of imports, although the Boers’ only remounts during the second Anglo–Boer war were captured English horses. Unwittingly, the shiploads of American horses imported by the British as remounts made South Africans aware of the racking potential in American horses. The importation of *Myers Kentucky Star*, a five-gaited American Saddler, in 1916 by Claude Orpen, a Hantam horse breeder, confirms the point. Kaplan wrote that Claude Orpen established his stud from the so called Hantamers (Kaplan, 1974). The Hantamers were the result of two sons of *Hedgeford* (also the sire of *Denmark* – the Foundation sire of the American Saddlebred), *Schippo* and *Humphrey* that were imported to South Africa by Lord Charles Somerset and used on local mares (Lotter, 1974). It is therefore highly probable that the Hantamers had the genetic ability to rack.

3.5 The current situation in the South African Saddle Horse industry

Technical developments made the horse superfluous but the emotional relationship between humans and horses prevented their decimation and the horse ended up in the recreation industry. This embodied a fundamental change in attitude for the human, from a necessity, to a

conscious, emotional choice. This change in attitude is to this day still evolving. The South African fascination with five-gaited horses is a case in point that is contrary to logic that would have it declining in an industrialising society, whereas it has flourished. This fascination translated into five-gaited horses showing off their paces at nearly every agricultural show in the country. In terms of five gaiters, none could be compared to the American Saddle Horse. Horses were shown in order for the breeders to become known, thus the widespread showing of five-gaited horses indicates a widespread breeding brought about by an equally widespread demand for five gaiters.

Today, the American Saddle Horse Breeders Society of South Africa has 420 members with 4 000 horses, 500 registered foals and 650 annual transfers on record. In addition to the administration of the breed and breed registration, the Society organises the South African National Saddle Horse Championships. The South African National Saddle Horse Championships encompass more than 900 horses, competing in 94 classes over four days. In order to be permitted to compete in the National Championships, horses have to qualify at regional shows. The five regional Sub Unions host approximately four shows per Sub Union throughout the year all over South Africa (SA Saddle Horse Breeders' Society, 2012).

Yet, the present size of it all is misleading. In evaluating the South African Saddle Horse industry it is necessary to acknowledge that in Southern Africa, owing to prevalent diseases, horse breeding has always been hazardous. Since the time of the founding of South Africa as a Dominion in 1910, there have been occurrences of numerous fatal diseases affecting horses, (African Horse Sickness is but one) that made owning and breeding horses risky business. The diseases that came with the imported horses during the Anglo–Boer War amplified this threat. After the war, as a result of the British war presence, every single horse disease found anywhere in the world can also be found in South Africa (Swart, 2010).

Outside the affluence of the racehorse industry, organisational development of the horse industry in South Africa has historically been hampered by a shortage of money. In the past, public support for the Saddle Horse industry was good and agricultural shows were eager to host Championships. Unfortunately, although it still exists, enthusiasm has waned (Richardson 2010). However, it is necessary to immediately add that the South Africa Saddle Horse industry never nearly achieved American popularity levels and accordingly also not the sorts of prize moneys available in the USA. For example, the present American World Grand Champion Five-Gaited stake is US\$100 000. Much smaller numbers of enthusiasts in South Africa have resulted in

smaller sponsorships, if available at all, and this has resulted in a lack of funds which has hampered the development, planning and organisation of the industry. The same can be said, if the Saddle Horse Industry is compared with the South African Race Horse Industry. However, it is not really comparable as the Race Horse Industry enjoys the betting aspect, which is a money spinner.

Notwithstanding the lack of a betting element or the huge following, the South African Saddle Horse industry has still developed the largest open-air Saddle Horse show in the world, i.e. The South African National Saddle Horse Championships. In terms of the number of horses competing, The South African National Saddle Horse Championships is also the second largest of all Saddle Horse shows in the world, with Saddle Horses being the most popular of non-racing, pure-bred breeds in South Africa (SA Saddle Horse Breeders' Society, 2012). What makes this achievement more remarkable is the fact that the South African Saddle Horse industry is but a fraction (20 %) of the South African Racehorse industry, and only 16 % of the American Saddle Horse industry, as measured in terms of foals registered (SA Saddle Horse Breeders' Society, 2010). Financially speaking, that is in terms of investment, the South African Saddle Horse industry would be even smaller compared to their counterparts in America. What has been achieved is remarkable and holds much promise for growth, if the enthusiasm of the past can be retained and augmented by scientific study and adept promotion.

The growth in the South African National Saddle Horse Championships is always mentioned as a growth indicator in the industry, mainly because the growth in the industry as such has yet to be quantified. The South African National Championships grew to such an extent (more than a 1 000 horses) that qualification in order to compete had to be instituted. This brought the number of horses being entered down to more manageable levels. Yet in 2013, two years after qualification requirements were instituted, the number of horses enrolled was again over 900. In spite of obstacles such as the decline in the number of agricultural shows, the local Saddle Horse industry has grown over time, with the regional shows being well attended.

As mentioned, one of the more recent developments, unfortunately not quantified in South Africa in any study to my knowledge, has been the shift in horse ownership from country folk to city dwellers that coincides with the influx of well-to-do businessmen into the industry. This is a worldwide trend (Deloitte & Touche, 2005; Whiting *et al.*, 2006; Guillet, 2009; Rephann, 2011). Working with and enjoying horses tends to be a longstanding family tradition, mostly associated

with country living, according to the literature (Gibs, *et al.*, 1998) (Guillet, 2009) (Rephann, 2011). In consequence, country folk tend to be far more emotional over investments in horses than city dwellers. However, in the recent past city dwellers and businessmen have invested large sums of money, not only in horses both locally and imported, but also in facilities and training in the absence of obvious evidence of financial and even economic reward. This only serves to strengthen the notion that in the absence of obvious direct financial or economic benefits, there have to be non-marketable rewards that accrue to owners or investors in this industry.

As is the case in any other industry, the growth curve in the South African Saddle Horse industry is sometimes quite predictably inflated owing to short-term growth stimulations. This, however, has very little influence on the long-term apparent non-profit base growth, which is the motivation of this dissertation. This was the case a few years ago when some American buyers discovered the potential of South African Saddle Horses and paid good money for trained horses which were then exported to the USA. It was quite predictable that the influx of American money into the local industry would stimulate considerable growth. Unfortunately, the world economic crisis and an African Horse Sickness outbreak soon brought this to an end.

The horse business is huge, both in South Africa and abroad. In South Africa, racing alone contributed R2.71 bn to the South African GDP in 2009, whereas the horse industry in the USA contributes \$63 bn to the US GNP annually (Standish, 2011; Deloitte & Touche, 2005). To all indications, the horse business is financially highly profitable for everybody, except one entity, the horse owner. As stated by Standish (2011), "it is the owners who pay for the sport". However, notwithstanding these facts, the number of horse owners continues to increase and individuals within the industry do enlarge their investments over time (S A Saddle Horse Breeders' Society, 2012; Standish, 2011; Deloitte & Touche, 2005). This is in line with the views of Freemantle (1998) who argues that the consumption decision under certain circumstances is based on emotional value, rather than rational decision.

3.6 Typologies in the sector

As mentioned, the availability of data on the horse industry, and more specifically the South African Horse industry, is a major obstacle. According to SA Studbook, there are 14 different breeds of horses registered, excluding miniature horses. It is obvious from the available information that the different breeds are not comparable. The definitions of what constitutes a

registered horse differ considerably between breeds. Therefore, comparisons across breeds in terms of numbers of registered horses are not possible.

According to the website of the South Africa Saddle Horse Breeders Society, Thoroughbreds dominate in numbers of registered horses in South Africa, with Saddlers numerically the second-largest breed. Compared to the total horse numbers in South Africa, American Saddle horses are a relatively small group, but an integral part of the South African horse population (SA Saddle Horse Breeders' Society, 2010). The South African Saddle Horses are utilised by their owners and admirers for competitions (all the usual horse riding competitions, such as jumping, dressage, endurance and eventing, as well as more dedicated events, such as Saddle Seat equitation), for showing, to add valuable experience and aid in the development of life skills in children, for breeding (raising foals), as a buying/selling business, to improve the quality of life of their owners, serving as a method to relax and or decrease stress, as a means to physical fitness, and to train for profit (full- or part-time).

These functions, if you can call them that, of the South African Saddle Horse industry are seldom exercised alone or clearly demarked in the South African context. Neither are all of them implied in the investment decision. In the South African context, the horse owners, from whom substantial investments are forthcoming, can be divided into three identifiable groups. For the sake of ease of reference, they will be named according to their principle endeavour, although they might participate in any or all of them. The first group comprises the **breeders**, who principally own horses and breed them with the aim of selling the foals as a main source of income. Most of them also train horses, mostly some of their own foals, in order to participate in shows as an advertisement for their breeding practices. There are some who also speculate with horses. Some also do training or stabling for other owners. The second group constitutes the **owners** who principally own horses but do not run their own stables and accordingly board them at somebody else's stables. Some also breed horses in the same context. The last group comprises the **trainers** who principally train, both horses and riders. However, some of them also own horses, speculate with horses and/or breed horses.

The case study in this research, discussed in Chapter 2, will attempt to qualify the motivations for the investment decisions made by these three groups in the South African Saddle Horse industry. As mentioned, the focus will be on the reasons why investments are made by horse owners in the absence of evidence of financial or economic reward. The research will focus on their investment

decision as owners of horses, and not as entrepreneurs for their chosen enterprise. It is believed that the investment decision for entrepreneurs is financial and economic gain, which is quite different in motivation from the investment decision in horses, which accentuates the phenomenon being studied.

In (see section 2.5.2.2) 2009, Ross Millin (a South African breeder) proposed and launched a new competition for the South African Saddle Horse industry. His proposal was based on the very successful All American Cup (AACup) competition by Jim Aikman (Melissa Moore's Blue Grass Futurity competition is the same, but younger), with adjustments to accommodate the local Saddle Horse industry – an African Saddle Horse Futurity (ASF). The stated objective was “to boost and inspire the Saddle Horse breeding industry in South Africa. The basic concept is to establish a nominated breeding class with a level playing field for both the small and large breeder and where the foal owner, breeder and the owner of the stallion will have a better opportunity to get a return on investment” (Millin, 2009). In the competition, foals are not nominated, instead sires and dams are nominated with their progeny to compete. Therefore, only progeny from the nominated dams qualify to participate in ASF and AACup classes at nominated shows. To that end, one sire service from nominated sires is auctioned off to all participants, once a year at the annual ASF sire service auction (Millin, 2013). In this dissertation, interest is concentrated on the ASF (and AACup) annual sire service auctions with the accompanying show classes.

The Saddle Seat Equitation group is another steadily growing group from whom investment in the Saddle Horse industry is forthcoming. The sport of Saddle Seat equitation originated and developed from the usual 'rider' classes in horse shows, but with a prescribed riding pattern as in dressage and lately expanded to include Saddle Seat Performance Riding. Although only 3-gaits were used initially, soon the competition expanded to include all 5-gaits and in a relatively short time developed into a popular sport. The horse breeds utilised for horse shows were the natural choices for the sport. Owing to affiliation to the South African National Equestrian Schools Association (SANESA), Saddleseat Equitation and Performance Riding is acknowledged at school level and National colours are awarded to those who compete in a Word Cup event. This event is organised every second year by ISSEA (International Saddleseat Equestrian Association) (Oosthuizen, 2010).

The Saddle Seat equitation group owns and invests in horses, but is left out of the research group because it is believed that the group's motivations for investment will differ substantially from

that of owners who do not have children. For example, an investment in a horse by a parent whose child is competing in Saddle Seat equitation could be compared to buying a tennis racket in order to play tennis. Because the research is structured to adapt or confirm theory, it is expected that the motivations of the Saddle Seat equitation group in their investment decision will complicate the analysis and dilute findings of the majority investors in the Saddle Horse industry. Also, the quantification of the investment decision in the South African Saddle Horse industry will be done by analysing historical data from the ASF and AACup data. The ASF data is concentrated on the breeders in the industry defined in broad terms, which will include trainers and owners as they are categorised in this dissertation, but will not include the Saddle Seat equitation group.

3.7 Linkages with other sectors in the economy

The horse industry, and therefore the Saddle Horse industry, also has definite and positive linkages to many of the usual agricultural businesses. However, the lack of reliable information to highlight the influence and quantify the perspective of the linkages between the Saddle Horse industry and other economic sectors is once again pertinent. However, from the few studies available it is clear that the primary beneficiaries from the growth in the Saddle Horse industry are the feed companies, veterinary services, the transport sector, the agricultural mechanisation sector, tourism, tack shops, and businesses producing horse tack, such as saddles, bridles and harnesses. (Whiting *et al.*, 2006; Guillet, 2009; Rephann, 2011). The saddle horse industry in South Africa is also privileged to be the spring board for pristine urban development projects, such as the Afri-dome in Parys and Image-world in Clarens, and a few semi-rural developments, such as Cavali Estates near Somerset-West.

However, the Saddle Horse industry in South Africa was always essentially a rural thing, being based on farms and shows in the rather remote rural areas. That has changed with horse numbers increasing drastically in semi-rural areas surrounding urban areas, especially Bloemfontein and Cape Town. However, the magnitude of this shift from rural to semi-rural is not yet quantified. Nevertheless, the industry has not lost out on its rural connections altogether and by understanding the motivators for investment in the industry, the possibly still exists that renewed investment could be channelled towards the rural areas, where it is surely needed by the rural population.

3.8 Conclusion

The emotional bond that exists between humans and horses is clearly visible from the discussion in this Chapter. This bond implies a conscious and emotional choice as prerequisite for getting involved in the South African Saddle Horse industry. This emotional prerequisite is obvious in every endeavour of the industry.

Moreover, the theory of successful horse breeding is a well-studied subject. Therefore the *de facto* breeding choices relative to the theoretical (logical) choices made in the industry could present an opportunity to quantify the influence of emotions on the investment decision. The AACup and ASF data present an excellent proxy for the investment decisions in the industry as a whole. The following chapter will provide detail on the methodology to be used in qualifying the emotional influence on the investment decision.

Chapter 4

Description of methodology used

4.1 Background to methodology used

The research question stems from the continued investment and growth in the Saddle Horse industry, without the accrual of any obvious financial or economic rewards. Literature confirms that this phenomenon is not unique to the South African Saddle Horse industry, but is evident in other horse industries across the globe. This is in line with the findings of Gibs *et al*, (1998) who argue that “horses are bought and sold for many reasons other than attempted profit”.

The methodology discussion starts with qualifying the phenomenon described, that is, confirming or adapting theory to validate the hypothesis. It is only sequential to that, that an attempt was made to quantify the influence of emotions on the investment decision.

4.2 Qualifying the investment decision in the South African Saddle Horse Industry

From Chapter 2, it is evident that classical economic theory, and even the recently developed behavioural economic theory, does not offer an explanation for the observed phenomenon in the South African Saddle Horse industry. The only theory to offer a plausible explanation for the phenomenon was consumption theory as found in marketing, which embraces the psychology of consumer behaviour. Similar to consumption theory, the developing discipline of behavioural economics also “considers psychological factors as important to financial analysis and decisions”. Moreover, Fromlet (2001) notes that at present theory in behavioural economics are more concentrated on anomalies in the financial markets.

According to Webster (2003), consumption is based on utilising economic goods in the satisfaction of wants, while Leimer and Richardson (1992) state that the consumption decision is determined by current and prospective income flows. Webster (2003) defines investment as the outlay of money (capital) usually for income or profit. The “Markowitz portfolio theory attempts to pin down investment decision-making in terms of risk and return” (Sharma & Gupta, 2011). Therefore, in order to be appropriate for describing the motivation in the investment decision, consumption theory has to be proven relevant and, if necessary, be adapted to embrace the

investment decision as it is evident in the horse industry. Only once consumption theory is confirmed as being relevant to the investment decision and adapted as investment theory, can testing be considered. This section of the dissertation is directed at the methodology used in the confirmation of consumption theory and its adaption to the investment context.

Emory and Cooper (1991) argue that “case study research fits within the critical realism paradigm and is essentially inductive, theory building research. Nevertheless, it also acknowledges that fact and theory (induction and deduction) are each necessary for the other to be of value”. Eisenhart and Graebner (2007) suggest that “the justification of case study research rests on the phenomenon’s importance and the lack of viable theory and empirical evidence” which was amply provided.

4.2.1 Research design of the case study

As background to the research design, the real time and real life context of case studies have to be noted, this necessitated using a multiple case study design as was articulated and argued in section 2.5.1. The real time, real life context of this multiple case study implied that the environment was not controlled and the interview was to be open ended. As a result, it is persuasive to document the field procedures to guide interviews. The following sub-sections will elaborate on this.

4.2.2 Research question for the case study

As mentioned, the case study developed out of the phenomenon that, notwithstanding an absence of obvious economic or financial reward, the South African Saddle Horse industry has succeeded in growing in size, as well as attracting investment over time (SA Saddle Horse Breeders’ Society, 2012). This notion was confirmed in the literature review. Although theory on behavioural economics confirmed the influence of psychology on the investment decision (Fromlet, 2001), the only possible explanations concerning the motivations for investment were found in consumption theory in marketing. Freemantle (1998), like Barlow and Maul (2000), claims that “the greater part of consumer choice is based on emotional influence”. In view of this background, the underlying question that needs to be answered is: what are the motivations and the magnitude of emotional influence that prompted horse owners to invest in the South African saddle horse industry, even though all evidence points to them being cost bearers? The purpose of this question was to keep the investigation on track as data collection proceeded.

Because the case study utilised open ended unstructured interviews, the actual questions asked of each interviewee differed from case to case. But the subjects the interviewee were questioned about were the same (mostly starting with 'what?'). Firstly, what were the procedures that were followed in the past and were being followed at present for making an investment decision. Secondly, what were the factors that were considered in making an investment decision as it pertains to either economic, financial viability or emotional goods.

Questions concerning the motivations for the investment decision formed the substance of the interviews. This line of questioning was, however, supplemented by two secondary lines of questioning in order to be able to draw converging lines with the rival or prior theory. Questions were asked leading to "endorsing observations" or "refuting observations" on the following issues: the level of activity in the industry (shows attended, number of horses shown, etc.), participation in projects and programmes of the Breeders' Society (which were recorded and prompts given to provide quantitative data, such as financial and economic rewards that had accrued to owners from investments in the past, if available), horses bought and sold (processes used and noteworthy experiences), services sold, and prices won.

This information was analysed by generalisation to replicate prior theory (confirming the hypothesis) in order to establish case theory.

4.2.3 Research propositions for the case study

This study is a multiple case study with the stated objective being to confirm or adapt theory in order to identify the motivators in the investment decision in the South African Saddle Horse industry in the absence of obvious economic or financial rewards. Therefore, in order to mitigate retrospective sense-making and impression management, data collection in each case was focused separately on past, present and possible future investments for each individual case.

During the interview, the researcher strived to locate the reasons and motivations for investments for each period (past, present and future) separately. Only once that was accomplished could the results of past investments and the planning of present and expectations of future investments, in terms of economic, financial and emotional rewards be gathered to be analysed.

According to Sharma and Gupta (2011), a transaction is an investment transaction if it is executed with the intention to gain calculated rewards. In this dissertation the aim was to locate the

motivations that prompted horse owners to invest in the South African Saddle Horse industry, even though all evidence points to them being cost bearers. Hence this study (and also case selection) was aimed at finding and studying cases where respondents had frequently invested over time as a result of the rewards they had received. In terms of rewards received, it was expected that the response would in principle be on three different levels. First, the owners who had actually received direct financial or economic rewards from their investment, and 'the beneficiaries' to whom emotional goods are an added extra. Second are owners who, although not acquiring any financial or economic rewards at present, are driven by present emotional goods and hope to have the enterprise become profitable in future. This group can also be referred to as 'the believers'. Third are the owners who might not know or want to know that they do not receive direct financial or economic rewards from their investments, but are nevertheless happy to invest because of the emotional goods they receive. This group represent the 'lucky ones'.

4.2.4 Unit of analysis

Yin (2009) stated that "the definition of the unit of analysis (the case) is related to the way you have defined your initial research question". With the research question in mind, the focus will be on the individual owner in terms of the case being studied, and the individual owner will also be the unit of analysis.

Case study sampling theory indicated that the success of a case study is closely related to the selection of information-rich cases, or the so-called 'worth of study', "because they are particular suitable for illuminating and extending relationships and logic constructs" (Eisenhart & Graebner, 2007). In order to select cases that would extend and illuminate logic constructs, the South African Saddle Horse industry was divided into three identifiable groups (see section 3.6).

The sizes of the 'breeders' and 'owners' categories, as designated in the dissertation, were difficult to ascertain. The closest approximation of the 'breeders' category is represented by the South African Amateur Sub Union (SAASU) membership (180 members), which is a show-related association. Only SAASU members are eligible to compete in amateur classes. Although SAASU members cannot be members of the professional trainers association, many of the participants designated 'breeders and owners' in the dissertation are not SAASU members. An estimate put

the 'owners' category at around 20 members. The 'trainers' category in the dissertation roughly coincides with the professional trainers association, numbering approximately 32 members.

Nine cases were selected, with the intention being to select highly-knowledgeable informants who view the focal phenomena from diverse perspectives. Therefore, three from each of the three identifiable groups were selected, taking care to select an equal amount of retrospective cases (owners who had been in the industry for a long time), as well as real time cases (new comers) (Leonard-Barton, 1990). Sequentially to that, both "polar types" cases (very high and very low performing/profile) (Eisenhart & Graebner, 2007) were selected. Lastly, the expected three levels of response described in the previous section (the beneficiaries, the believers and the lucky ones) were taken into account in the selection process. Sampling according to these principles lead to "clear pattern recognition of the central constructs, relationships, and logic of the focal phenomenon" (Eisenhart & Graebner, 2007).

Nine cases were selected, of which three (one from each group) were used in a pilot study to develop the prior theory. "Prior theory is developed from the literature and from pilot studies, to be the first step in the theory-building process of case study research" (Perry, 1998).

4.2.5 Linking data to propositions

In case studies the data collected in the field is connected through the analytical technique of generalisation to the propositions stated in the research design. "The theory is emergent in the sense that it is situated in and developed by recognizing patterns of relationships among constructs within and across cases and their underlying logical arguments" (Eisenhart & Graebner, 2007).

This study made use of multiple cases; however, the mode of generalisation was analytical generalisation. Analysis was holistic as individual owners were the primary units of analysis, and each case was analysed in isolation. However, the conclusions and generalisations to theory were made on the overall nature of investment decisions in the industry. In a multiple case study such as this one, "prior theory is used as a template with which to compare the empirical results of the case study. If two or more cases are shown to support the same theory, replication may be claimed" (Yin, 2009).

4.2.6 Criteria for interpreting the case study's findings

According to Yin (2009), “an appropriate developed theory is the level at which the generalization of the case study results occur” - that imply theory to be the criteria for interpreting the case study data. As mentioned, Fowler (1988) defines theory as “hypothetical story about why acts occur”. Yin (2009) dealt with theory in more detail and proposed the prior theory and rival theory to be specified in order to guide both data collection and analysis strategies. The underlying logic in this design is the analytic generalisation utilised in multiple case studies. Analytical generalisation, the accepted practice in laboratory experiments, is described as the replication of the theory (literal replication) if data of the case equals the prior theory and in the cases where contrasting results occur, but for anticipated reasons, theoretical replication. Theoretical replications also occur in cases of support of the rival theory.

Developing prior theory and rival theory started at the research question (Yin, 2009). According to the case study propositions, it was expected that the investors in the South African Saddle Horse industry could be divided into three identifiable groups, namely the ‘beneficiaries’, ‘believers’ and ‘lucky ones’ (see section 4.2.4 for detailed descriptions of each group).

From the findings in Chapter 2, coupled with the view of Fromlet’s (2001) who argues that “psychological and irrational behaviour does matter in financial markets”, it is clear that Freemantle (1988) and Barlow and Maul (2000) were most likely correct in claiming: “the greater part of consumer choice is based on emotional influence”. The question that needs to be answered, and by so doing set the focus of the case study, is to determine whether they were also correct in terms of the motivation for the investment decision in the South African Saddle Horse industry. In this study, before the pilot studies were executed, prior theory suggested that ‘horse owners in their investment decisions, due to their commitment to these animals, are motivated more by their passion for these animals than by the direct financial and or economic reward to be gained’. Rival theory states that ‘horse owners in their investment decisions are motivated by direct financial and or economic reward to be gained and emotional goods are but an added extra’.

4.2.7 Criteria for judging the research design

Perry (1998) defines case study research as “a research methodology based on interviews that are used in a postgraduate thesis involving a body of knowledge”. But “the implicit assumption is

that theory building from cases is less precise, objective, and rigorous than large-scale hypothesis testing” (Eisenhart & Graebner, 2007). The question that arises from this is “why is this regarded as an inductive study” (Eisenhart & Graebner, 2007). Case study research, as the preferred method of research, is justified by Yin (2009) in the following manner: “the methodology usually investigates a contemporary phenomenon within its real-life context when the boundaries between phenomenon and context are not clearly evident”. Because of this controversy, criteria for judging the research design became that more important.

The proposed theory building (inductive) case study research design was judged on three levels, namely: social research, justifying theory building research, and validity for inductive case study research.

On the level of social research *per se*, case study research was judged according to four principles. Firstly, the analysis is to be concentrated on the most significant aspect of the case study, namely the research question. Secondly, the use of prior knowledge. Thirdly, all rival interpretations as were expressed in the rival theory, and fourthly, all evidence should be attended to (Yin 2009). Please refer to section 2.5.1, as well as section 4.2.2, for a more detailed discussion on the importance of interviews as the main source of information in a multiple case study, as well as guidelines in terms of the line of questioning which could confirm visual observations.

On the level of justifying theory building research, justification depends on the ‘phenomenon’ or nature of the research question as well as the inductive theory (Eisenhart & Graebner, 2007). Refer to Section 2.5.1 for a more detailed discussion on the latter. However, due the differences between consumption and investment that indicates the need to adapt consumption theory to investment context was addressed. The significance of emotions as an influence on the investment decision as indicated, because the horse industry is significant but the motivators in the investment decision is not known or understood. And the horse industry is not the only part of the economy where emotional value maybe an influence in the investment decision. It is therefore a contention in this study that as in consumption theory (Freemantle,1998), when someone experience joy and express his passion for an object, emotions takes over as influence/motivator in the investment decision in spite of a possible lack of financial and/or economic reward. The entities and the object of purchase involved, will determine the influence emotions (Richins, 1997). Freemantle, (1998) argue that although rationality is critically

important, “without calculating emotions all conclusions on the buying decision is essentially deficient”.

Lastly on the level of validity for inductive case study research, Yin (2009) specifies three criteria: construct validity, external validity and reliability.

Construct validity involved identifying the most efficient measures to capture the data needed because social research principles prescribed that more than one source of information was to be used with the intention of one source confirming the other (Yin, 2009). However, Eisenhart and Graebner (2007) argue that a multiple case study that is focused on a strategic phenomenon (decision making) favours interviews as the main source of information. Therefore, in order to identify and utilise converging lines of evidence, a secondary line of questioning was used. These questions confirmed, and in some cases contradicted, visual observations on location. Furthermore, multiple and knowledgeable informants from diverse perspectives, as well as retrospective and real time cases, were utilised to enhance the convergence of evidence. This approach is in line with the recommendation of Leonard-Barton (1990).

The second requisite for construct validity is the establishment of a chain of events. The research question was derived from the identified strategic phenomenon. The research proposition was based on the developed research question. The phenomenon described, the research question and the research proposition were used to develop prior theory, which through analytical generalisation was used to develop the theory proposed in the case study report from the information accumulated in the interviews.

The third requisite is to have key informants review the draft case study report. A review of the draft case study report by key informants was implemented, and because of their integral knowledge of the values being investigated, they could validate construct validity and judge reliability.

The second criterion, external validity, refers to statistical accuracy. In case studies, generalisation is to some broader theory and not to a larger universe, as in survey research. Therefore, prior theory, and not sample size, is critical in order to retain credibility. Patton (1990) wrote that “the validity, meaningfulness and insights generated from qualitative inquiry have more to do with the information-richness of the cases selected and the observational/analytical capabilities of the researcher than with sample size”.

With this in mind, data was collected and analysed by generalising to prior theory (the hypothesis) and replication. Replication can be literal replication to prior theory or theoretical replication to rival theory.

The third criterion refers to reliability in terms of research design in a way that it can be repeated. In order to ensure repeatability of the case study, a case study protocol is necessary. Please see Addendum A for detail on the protocol that was followed in terms of the case studies included/analysed in this study.

4.2.8 Collecting case study evidence

Eisenhart and Graebner (2007) state that “the central notion is to use cases as the basis, from which, to develop theory inductively”. Collecting case study evidence started at defining the case study question and propositions which defined the cases or units of analysis. (See section 4.2.2 – 4.2.4). The procedures for collecting case study evidence were as follows:

- Because analysing the data collected was achieved through generalisation to prior theory, cases were selected on the basis of information richness. Information richness was the determining factor in the success of the study and not the amount of cases selected. In selecting cases that would extend and illuminate logic constructs in the investment decision, the South African Saddle Horse industry was divided into three identifiable groups in terms of their operations (section 4.2.4). Selection was done in order to study cases according to characteristics and expected responses from each of the groups.
- Actual selection in order to implement the criteria, as set out in section 4.2.4: The Participant List compiled by the S.A. Studbook and Animal Improvement Association of the South African Saddle Horse Breeders’ Society served as data bases for selection of possible cases. ‘Not active’ listings according to the Breeders’ Society (du Preez, 2010) were eliminated as a first step. The remainder was divided into the three identifiable groups. i.e. breeders, owners and trainers. Each group of the ‘breeders’, ‘owners’ and ‘trainers’ was divided into three groups according to the duration of their membership (more than 20 years, less than 5 years and those in between). From personal knowledge and in consultation with Mr Richardson (personal communications, 2013), nine highly-knowledgeable cases were selected. Selecting nine cases allowed for an equal distribution between the numbers of high and low profile cases. Once completed, the case selection was augmented to equally reflect the three levels of reaction anticipated (‘beneficiaries’, ‘believers’ and ‘lucky ones’ (section 4.2.6). Three cases were identified for a pilot study, i.e. one from each of the identifiable activity groups that

included both retro- and real-time representatives. The data was gathered and analysed in the following manner:

- Contact procedures: Identified cases were contacted by e-mail and once willingness to participate was established a time was set for an interview. All of the identified cases were willing and eager to cooperate.
- Confidentiality: Anonymity enhances the data gathering process. Therefore, the respondent identities were not be revealed in the analysis and the case study report. Only the cross-case syntheses are presented in the report as they represent the individual cases, linked by the generalisation analysis. According to section 2.5.1, the draft report of the case study was reviewed by participants and their feedback used in drafting the case study report.
- Data collection: data was captured by writing notes, as the interviews were not recorded because the data that was captured constituted emotional goods and 'recording an interview has a suppressing influence on information offered especially if emotions are involved' (Yin, 2009; Eisenhart & Graebner, 2007). The more emotional the subject matter, the more it is suppressed. Furthermore, recording secretly would have involved a lack of consent by the respondent.
- Data collection sites and contact persons: "Prior theory is developed from the literature and from pilot studies, to be the first step in the theory-building process of case study research" (Perry, 1998). The selection of respondents (9) and pilot cases (3) are illustrated in Figure 4.1 below and indicated in Table 4.1 below.

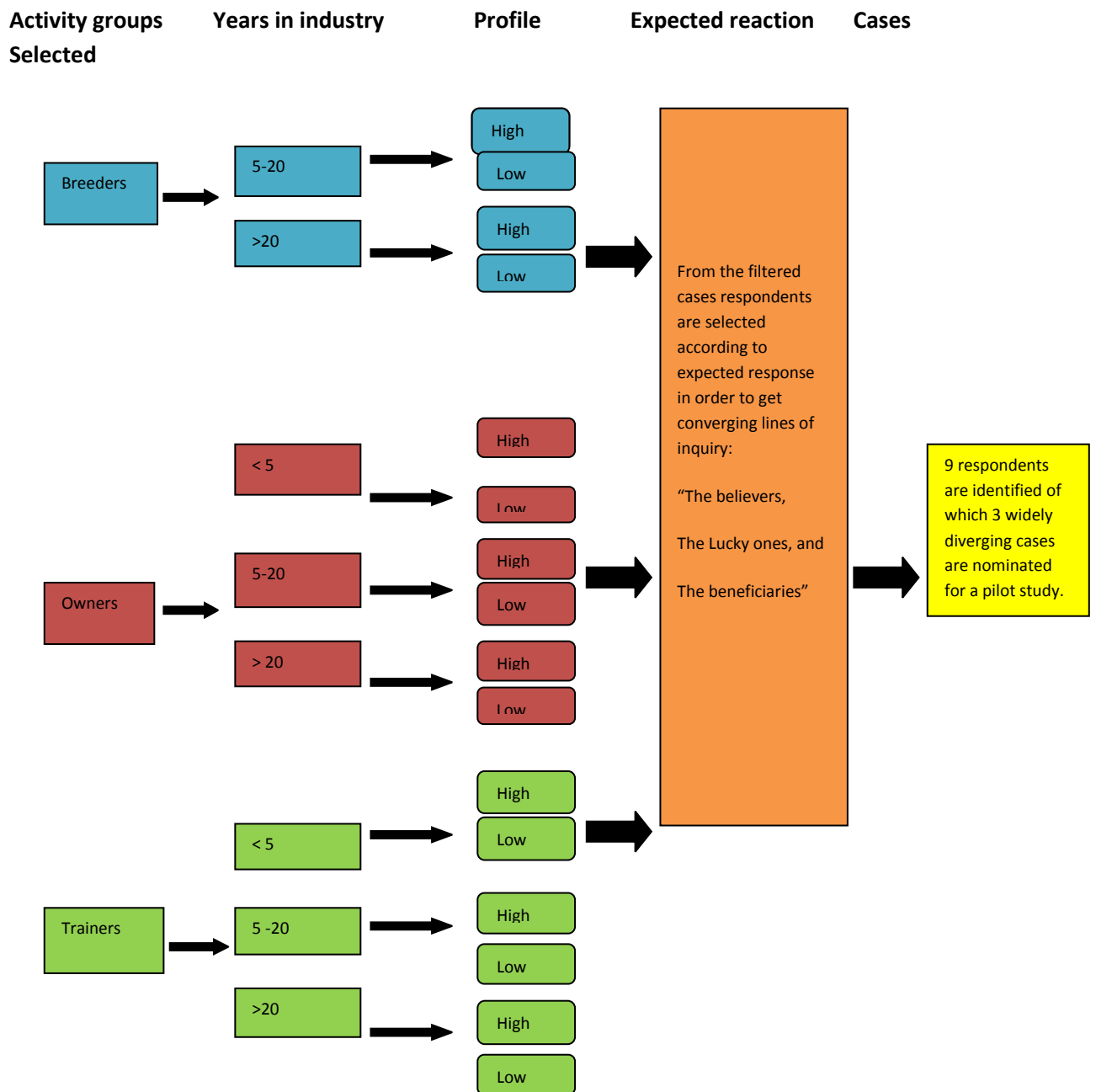


Figure 4.1: Schematic representation of case selection for case study research

Source: Case Study data

Table 4.1: Respondents identified for the case study

| Stud | Contact Person | Activity group | Involvement in Industry | Profile |
|--------------------|-----------------------|-----------------------|--------------------------------|----------------|
| Pilot study | | | | |
| 1 | Case 1 | Trainer | long term | high |
| 2 | Case2 | Breeder | medium term | low |
| 3 | Case 3 | Owner | medium term | high |
| Case Study | | | | |
| 4 | Case 4 | Breeder | long term | low |
| 5 | Case 5 | Trainer | medium term | high |
| 6 | Case 6 | Owner | short term | low |
| 7 | Case 7 | Owner | long term | high |
| 8 | Case 8 | Breeder | short term | low |
| 9 | Case 9 | Trainer | long term | high |

4.2.9 Testing case study evidence

In doing the pilot and case study interviews, the data recorded was almost too good to be true as the prior theory was explicitly confirmed in all cases, without exception. Therefore, a test for the interview data was conceived. There were approximately 300 registered breeders that were defined by the South African Saddle Horse Breeders Association as active. From the 300, only 244 had e-mail addresses, and questionnaires were sent to all 244. Out of the 244 e-mails, 46 were not delivered because of faulty addresses.

The questionnaire consisted of a line of questions endeavouring to find the reasons and motivations for investments in the past, the present and the future. This included the planning of present investments and expectations for future investments in terms of economic, financial and emotional rewards. This was followed by questions on past results (financial and economic and emotional rewards) that had accrued to owners.

The second line of questioning consisted of questions designed to enable the researcher to categorise respondents, i.e. according to the level of activity in the industry (shows attended, number of horses shown, etc., participation in projects and programmes of the Breeders' Society etc.) The questionnaire is attached as **Addendum B**.

4.2.10 Analysing case study evidence

Babbie (2010) defines qualitative analysis as “methods for examining social research data without converting them to a numerical format”. The author elaborates by arguing that in qualitative research, the purpose is to have research confirm relationships among concepts in order to describe social reality. In essence it is a search for explanatory patterns (Babbie, 2010). Yin (2009) is much more concise, stating that to ‘explain’ a phenomenon is to stipulate a presumed set of casual links about it, or ‘how’ and ‘why’ things happen the way they do. According to Glaser and Straus (1967), the technique used in ‘explaining a phenomenon’ (Yin, 2009) should be cross-case analysis and grounded theory (theory building).

Therefore, in the task of achieving literal and theoretical replication, only cross-case analysis and grounded theory was used in this dissertation. In analytic generalisation, the data gathered was generalised to the prior theory, i.e. ‘horse owners in their investment decisions, due to their commitment to these animals, are motivated more by their passion for these animals than by the direct financial and or economic reward to be gained’. The task set out in this case study was to achieve literal replication for theory, in other words confirmation of the hypothesis.

Although the three methods (coding, memoing, concept mapping) for finding patterns in qualitative data was developed for dealing with much larger samples (Babbie, 2010), it was still usefully applied in conjunction with the chronological list provided by Yin (2009). A case study theory was developed and expanded into propositions (section 4.2.3). The findings of the pilot case was compared against the developed propositions and tested against the theory and propositions. Following this, other details from literature, documentation, observations, prior knowledge and facts from the case study were compared. When literal replication was achieved, consumer theory could be adapted to the investment context.

4.2.11 Reporting the case study

A theory-building structure was used in describing the case study and each part of the theory or proposition was demonstrated by evidence from some of the cases. The underlying theoretical arguments that provide the logical link between the constructs within a proposition were indicated. This meant that the various facets of the arguments, as the theory unfolded, could be examined.

In the multiple case study, all the relationships are replicated across all of the cases, therefore all were retained. Theory from multiple case studies is often prudent and accordingly more robust in generalisation since there are typically fewer relationships replicated across all cases than what might be formulated in single case studies.

4.3 Quantifying the investment decision in the South African Saddle Horse Industry

Levitt and Dubner (2005) proclaimed that “emotion is the enemy of rational argument”. In other words, under the influence of emotions, people do things that later, when scrutinised under different circumstances, seems to be irrational. Fromlet (2001), however, qualified the statement by arguing that “it is important to note that irrational decisions should not be equated to unpredictable events”. These remarks by Levitt and Dubner (2005) and Fromlet (2001) are supported by the findings of Mellers *et al.*, (1999) who state that “the opportunity cost comparisons for decision are supported by our emotional circuitry that is commonly below our conscious awareness”. This implies that an investor, who did a cost comparison in an investment decision, as is described by economic theory, is not really able to recall these calculations. This is once more qualified and explained by the findings of LeDoux (1996), Panksepp (1998) and Rolls (1999) in that “normal human behaviour imply a seamless interaction between controlled and automatic processes (the cognitive and affective systems) with these systems essential for daily functioning. If they are disturbed by injury, stress, imbalances in neurotransmitters, or the heat of the moment, the logical-deliberative system (even if intact) does not regulate behaviour as usual”.

From the aforementioned, it can in principle be expected that prices obtained at auctions (such as ASF and AACup sire service auctions) will reflect an emotional influence which goes above and beyond the owner’s and breeder’s love and passion for their horses, in that the mechanics of a public auction in itself will yield considerable social stress. These mechanics are represented by the fact that in an auction context there is both peer pressure (increasing emotional influence)

and a short time frame for decision making. This time frame renders a “slow, deliberate and conscious thought processes” improbable (Locke & Latham, 2002). Moreover, the “emotional aspects of a stimulus might be processed more automatically than the stimulus of a non-emotional aspect and have greater impact on decisions than originally thought” (Blair, 2010). This indicates that both the time frame and peer pressure favour the unconscious processes. “Unconscious processes are much faster than conscious deliberations and occur with little or no awareness” (Bargh, 1977). Rational investment decisions are not only influenced by peer pressure and the time constraint in making decisions which is inherent to all auctions, but also by neurotranquillisers such as alcohol served at the venue.

4.3.1 Contextual framework of the data

In quantifying emotional decisions, the two data series of sire service auction prices (ASF and AACup - competitions), compared with the show earnings of the progeny, were the basis of calculations. However, in meeting genetic considerations and acknowledging the influence those phenotypes might have on the choices made, a data series of the ‘lifetime show earnings’ of the sires concerned were added. This information was unfortunately only available for AACup sires.

The ASF and AACup competition brochures both describe the same motivation for entrance into the competition namely: “to allow a breeder a better return on investment” (Millin, 2009). It is in pursuit of this “better return on investments” that exceptional dams are nominated and the services of exceptional sires are auctioned, eventually to have the progeny compete against each other in a designated show classes, winning substantial prize moneys.

In order to breed progeny that can win the competition classes, breeders select sires and dams with exceptional prepotency with the ability to produce progeny as good as or better than themselves (Leicester, 1957). But it is not that simple, since breeding animals to exceed a set standard is not an exact science and variations in the possible outcomes are huge owing to the numerous genetic combinations available. Besides, horses compete on an individual basis which implies that a good average is not enough. Therefore, breeding has to start at aiming to breed a better horse than the best today (Hewitt, 1982). In order to win, horse breeders not only have to find horses with exceptional prepotency but they also have to use the best genes available. In the quest of identifying the ‘best gene pool’ there are three options to be used (Leicester, 1957): the foremost and most viable indication of a sire’s breeding potential is the successes of a sire’s

progeny (as reflected in AACup progeny winnings) (Hewitt, 1982). Lacking that (as in young sires), a sire's own conformation and prowess are another possible indicator (albeit more unreliable owing to environmental influence) of a winning gene pool (Leicester, 1957). Lastly, the individual's ancestry could be an indication of a winning gene pool, but it will be inadequate if not reflected in the conformation and prowess of the individual concerned. Both of the last two selection points, as well as the phenotype of the sire (an emotional influence), are brought into the equation using the AACup sire's official lifetime show earnings (unfortunately such data does not exist for South African ASF sires).

In terms of the data used, it is true that there are differentiating facts that need to be considered in both the data series. Moreover, it should be noted that these time series figures are not "willingness to pay" figures but that actual payments that were made at auctions. The differentiating facts, when the breeders make a bid for the service of a sire' are as follows:

- The ages of the sires. The ages differ considerably between the AACup and ASF competitions. Because the younger sires will not have had a full run of the competition, it means that the breeding information that is available regarding prepotency will favour older sires.
- The reasons for a dam's nomination or not (which allocates over 50 % of genetic potential to the progeny) are not assessable. However, it must be noted that at the time of the auction the breeder already knows which dam he or she will be using in the mating. The breeder is in fact buying a sire's service to suite the nominated dam. Therefore, although the quality of dams available to sires in the competition is not equal, it will be reflected in the bids offered by a breeder.
- Fashions in sires are as much a reality as fashions in clothing in everyday life. In this competition, stud services are sold at a public auction with the direct consequence that fashionable sires will attract more attention and subsequently demand higher prices. Higher prices imply that the fashionable sire will attain better quality dams ('a better gene pool' comes at a price) than less fashionable sires and hence produce better progeny, resulting in a better analysis. It is a kind of self-fulfilling prophecy where the fashionable sires are not necessarily the more genetically gifted sires, but their popularity could make them successful. Therefore, there might be a slight bias in the progeny results of fashionable sires but this will also be attributable to emotional influences.

In the three years since the inception of the ASF, eight horses have received ribbons every year in the weanling division, which makes for a total of 24 ribbons winners. In the AACup, 160 ribbons

were awarded over the 10 years of competition, i.e. an average of 16 ribbons per year. To put these figures into perspective, it should be noted that owing to conception ‘problems’ or natural causes, not every service results in a foal, and because breeding is not an exact science, not every foal born to these auctioned services is shown in the designated classes (every sire’s owner gets to enter another one of the sire’s foals into the competition). Table 4.2 below, detailing the services sold against foals shown for both competitions, will provide some contextual background.

Table 4.2: Services sold and foals shown at designated shows

| ASF | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Services sold | | | | | | | | 36 | 34 | 37 |
| Foals eligible | | | | | | | | 39 | 39 | 39 |
| Foals shown | | | | | | | | 12 | 16 | 18 |
| AACup | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
| Services sold | 128 | 165 | 173 | 168 | 166 | 164 | 180 | 147 | 157 | 144 |
| Foals eligible | 145 | 187 | 197 | 191 | 189 | 186 | 204 | 162 | 176 | 171 |
| Foals shown | 42 | 54 | 56 | 55 | 54 | 53 | 66 | 41 | 47 | 50 |

Source: Millin, (2014); Hale, (2014)

4.3.2 Data Analyses

4.3.2.1 The payouts to winners in the AACup and ASF competitions

From the data series obtained from the designated weanling shows of the two competitions, two lists of payouts made to the owners of the winning progeny were obtained (See Tables 4.3 and 4.4 below). Unfortunately, no three year old performance class data are available for the ASF competition as yet, therefore only weanling earnings are compared.

The ASF summary (Table 4.3 below) indicates that the first four places receive the bulk of the purse, even though the prize money increased dramatically in 2013. In the current dispensation in the ASF, the first placing is worth double the second placing (before 2013 it used to be more than three times the second placing). The total purse for the weanling classes in the ASF competition for the three years was R203 800. The top four positions in the weanling classes received R166 000, being 82 % of the total purse.

Table 4.3: ASF weanling classes' pay-out

| Places | 2011 | 2012 | 2013 |
|--------|----------|----------|----------|
| 1 | R 25,000 | R 25,000 | R 40,000 |
| 2 | R 7,000 | R 7,000 | R 20,000 |
| 3 | R 4,000 | R 4,000 | R 17,000 |
| 4 | R 3,000 | R 3,000 | R 11,000 |
| 5 | R 2,000 | R 2,000 | R 9,000 |
| 6 | R 1,800 | R 1,800 | R 7,000 |
| 7 | R 1,600 | R 1,600 | R 5,000 |
| 8 | R 1,500 | R 1,500 | R 3,000 |

Source: Millin, (2013)

The AACup summary (Table 4.4 below) displays the same pattern of distribution with the top four placings in the ASF which received the bulk of the purse. But in the AACup, the skewed pattern of distribution is not that pronounced, owing to the size of the competition. The AACup competition has double the number of money earning placings if you compare it to ASF competition. The total purse for the weanling classes in the AACup competition for the four year was \$448 472. The top four positions in the weanling classes received \$321 587, being 72 % of the total purse. If the three year olds are included the top four positions; the number increases to 74 % of the purse.

Table 4.4: AACup weanling and 3 year old classes' pay-out

| No: | 2010 | | 2011 | | 2012 | | 2013 | |
|-----|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| | weanling | 3 year old | weanling | 3 year old | weanling | 3 year old | Weanling | 3 year old |
| 1 | \$ 37 041 | \$ 47 780 | \$ 29 118 | \$ 33 987 | \$ 33 476 | \$ 36 705 | \$ 28 365 | \$ 36 516 |
| 2 | \$ 26 580 | \$ 34 128 | \$ 20 799 | \$ 24 277 | \$ 23 911 | \$ 26 218 | \$ 20 261 | \$ 26 083 |
| 3 | \$ 16 693 | \$ 21 842 | \$ 13 311 | \$ 15 537 | \$ 15 303 | \$ 16 779 | \$ 12 967 | \$ 16 693 |
| 4 | \$ 12 700 | \$ 16 381 | \$ 9 983 | \$ 11 653 | \$ 11 477 | \$ 12 584 | \$ 9 725 | \$ 12 520 |
| 5 | \$ 7 408 | \$ 9 556 | \$ 5 824 | \$ 6 797 | \$ 6 695 | \$ 7 341 | \$ 5 673 | \$ 7 303 |
| 6 | \$ 5 292 | \$ 5 826 | \$ 4 160 | \$ 4 855 | \$ 478 | \$ 5 244 | \$ 4 052 | \$ 5 217 |
| 7 | \$ 3 000 | \$ 3 000 | \$ 3 000 | \$ 3 000 | \$ 3 000 | \$ 3 000 | \$ 3 000 | \$ 3 000 |
| 8 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 500 | \$ 2 500 | \$ 2 500 | \$ 2 500 |
| 9 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 |
| 10 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 |
| 11 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 |
| 12 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 |
| 13 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 |
| 14 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 |
| 15 | \$ 1 500 | \$ 1 500 | \$ 1 500 | \$ 1 500 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 |
| 16 | \$ 1 500 | \$ 1 500 | \$ 1 500 | \$ 1 500 | \$ 2 000 | \$ 2 000 | \$ 2 000 | \$ 2 000 |

Source: Hale (2014)

4.3.2.2 AACup and ASF sire services auction prices

In studying the data it is necessary to recognise that breeding is not an exact science and there are numerous variables which can diffuse the investment decisions that were believed to be sound at the time of decision. But these variables are very close to being the same for everyone in the competition. Therefore, comparing investment decisions made on these sire auctions, with the successes or not of the resultant progeny, in hindsight, should be an acceptable measure of rationality in terms of investment decisions.

But these are not 'end of the line' type of competitions and it is not the one and only chance the horses will have in their lives. The figures utilised in this dissertation merely represent the shortest cause-link effect, but in truth the chain is much longer. For example, in addition to the weanling competition, there is the three year old performance horse competition in both the ASF

and AACup competitions, as well as the whole galaxy of other opportunities available in the American Saddle Horse industry, which can be utilised with the same horse.

The American Saddle Horse, especially in the South African context, has survived for a very long time without the financial reward these competitions offer. Clearly, financial rewards are not the only rewards these breeders earn. From literature it is obvious that the emotional rewards will differ for each individual, but at the sire auction it will be part of the motivation and therefore incorporated in each bid. Accordingly, the sire auction data will be used to quantify the influence of emotions on the sire prices recorded at the auction.

Both the ASF and AACup competitions include both weanling and three year old performance classes in the competition line-up. However, weanling competitions give a better indication in terms of the superiority of the gene pools concerned than performance classes – a clearer cause-effect link. This is attributable to the time delay and the extent of training involved in showing weanlings, as opposed to three year old performance horses. The statistics of the weanling ribbons winners is the fastest link from cause to effect (already a two year time span is involved).

From the data series obtained from the auctions of sire services of the AACup and ASF competitions, two lists of payments made for sire services sold, were procured (See Tables 4.5 and 4.6 below). From the ASF Summary (Table 4.5 below), it is clear that the bulk of stud services are sold for less than R5 000. Although the average of the highest four prices, since the inception of the competition three years ago, is five times that amount, at R23 958.

Table 4.5: Categorized summary of sire services sold on ASF auctions form 2011 to 2013

| ASF | 2010 | 2011 | 2012 | 2013 |
|-----------------|-------------|-------------|-------------|-------------|
| Services sold | | 36 | 34 | 37 |
| 0 -R2000 | | 22 | 11 | 17 |
| R2001-R3000 | | 2 | 5 | 2 |
| R3001-R4000 | | 3 | 3 | 2 |
| R4001-R5000 | | 2 | 5 | 3 |
| R5001-R6000 | | 1 | 3 | 2 |
| R6001-R7000 | | 0 | 1 | 1 |
| R7000-R9000 | | 2 | 1 | 1 |
| R9001- R11000 | | 0 | 2 | 2 |
| Average | | R 2 516 | R 3 483 | R 3 326 |
| Highest 4 | | R 11 000 | R 15 000 | R 13 000 |
| | | R 11 000 | R 22 000 | R 13 000 |
| | | R 18 000 | R 41 000 | R 18 000 |
| | | R 18 000 | R 82 500 | R 25 000 |
| Av. Highest 4 | | R 14 500 | R 40 125 | R 17 250 |
| Average overall | | R 3 847 | R 7 794 | R 4 831 |

Source: Millin (2013)

From the AACup Summary (Table 4.6 below), a similar pattern to that of the ASF summary is evident, although less pronounced, owing to the larger size of the sample. The bulk of stud services is sold for less than \$3 000, with the average of the highest four prices for the four years amounting to \$8 769. That is close to three times more.

Table 4.6: Categorized summary of sire services sold for 2010 to 2013 on AACup auctions

| AACup | 2010 | 2011 | 2012 | 2013 |
|-----------------|-------------|-------------|-------------|-------------|
| Services sold | 180 | 147 | 157 | 144 |
| \$500 -\$1000 | 103 | 96 | 92 | 96 |
| \$1001- \$2000 | 23 | 33 | 28 | 17 |
| \$2001-\$3000 | 10 | 14 | 18 | 45 |
| \$3001- \$4000 | 5 | 7 | 5 | 7 |
| \$4001-\$5000 | 1 | 3 | 0 | 4 |
| Average | \$ 1 019 | \$ 1 146 | \$ 1 105 | \$ 1 111 |
| Highest 4 | \$ 5 100 | \$ 6 000 | \$ 4 500 | \$ 7 200 |
| | \$ 8 000 | \$ 6 500 | \$ 5 000 | \$ 7 500 |
| | \$ 11 500 | \$ 9 000 | \$ 7 500 | \$ 7 500 |
| | \$ 15 500 | \$ 11 000 | \$ 11 500 | \$ 17 000 |
| Av. Highest 4 | \$ 10 025 | \$ 8 125 | \$ 7 125 | \$ 9 800 |
| Average overall | \$ 1 264 | \$ 1 327 | \$ 1 273 | \$ 1 370 |

Source: Hale (2014)

In the three years of operations of the ASF sire service auctions, 36 services on average were sold each year of the competition (Table 4.5 above). The bulk of services (17) were bought for less than R1 500 and 26 were bought for R5 000 or less. On average, the highest four annual prices for the three year period equals an astounding R23 958 – that is nearly 5 times more than the price at which 72 % of the services (26) had been sold. The average for the highest prices in the three year period was R41 833 (Figure 4.2 below).

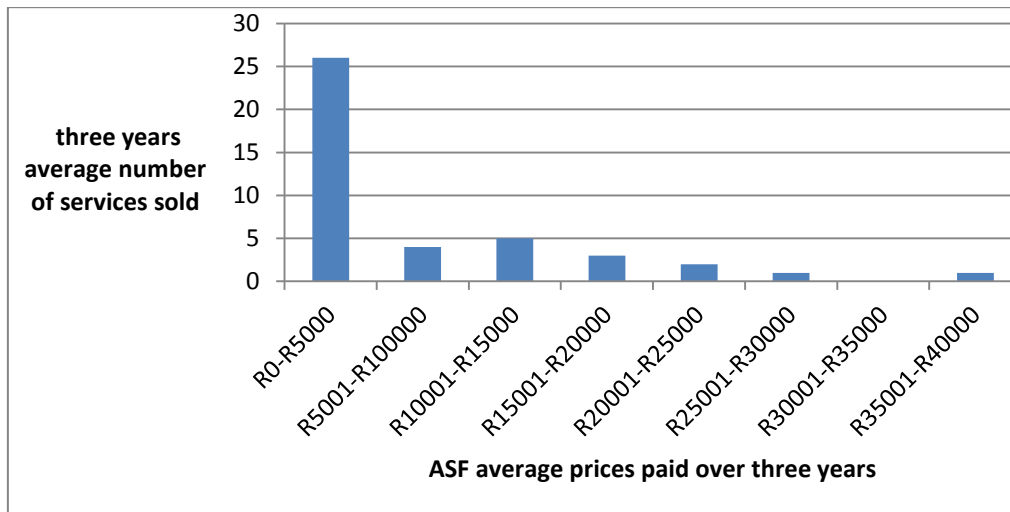


Figure 4.2: Three years of ASF auctions: Number of services sold vs. average prices paid

Source: Hale (2014)

During the last four years of the AACup, an average of 156 services per year were sold on Sire auctions (Figure 4.3 below). The bulk of services (140) were bought for less than \$5 000. The highest four prices annually for the four year period amount, on average, to \$8 769. That is 175 % above the price at which 90 % of the services offered were sold. The average of the highest prices, for the four year period, was \$13 750. In Table 4.7 below, the investments made at the ASF sire service auctions and the resulting purse moneys won by the weanlings are presented. Table 4.7 indicates that from the total of 24 placed weanlings, the over R5 000 sire services weanlings managed to procure 10 places which reflects a success ratio of 42 %. From the top four sire service prices paid annually over the three years, four placed weanlings were produced, that is a success ratio of 25 %.

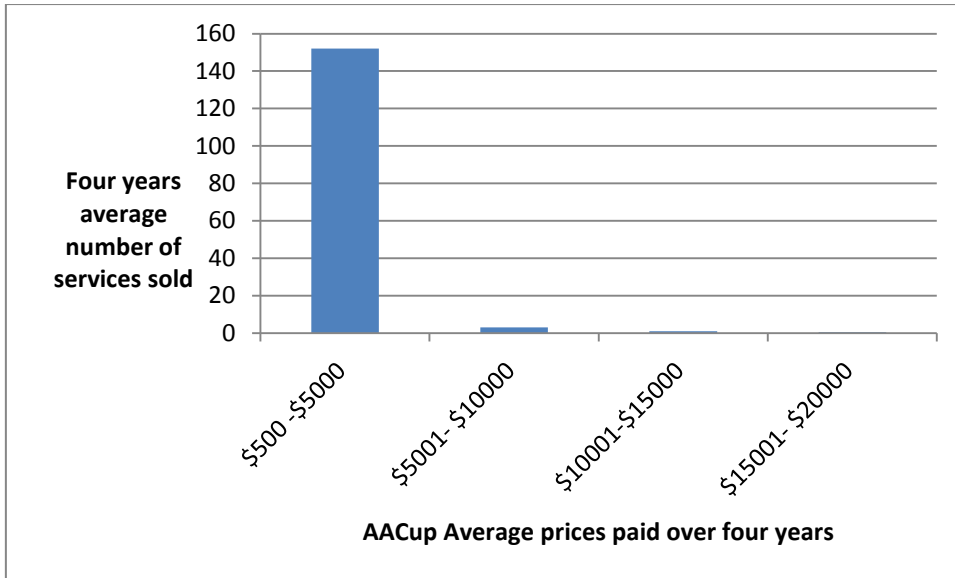


Figure 4.3: Four years of AACup auctions: Number of services sold vs. average prices paid

Source: Millin (2013)

Table 4.7: ASF, Weanling price moneys won as a result of the investment at sire auctions

| Place | 2011 | | 2012 | | 2013 | |
|-------|---------------|-----------------|---------------|-----------------|---------------|-----------------|
| | Price money R | Service price R | Price money R | Service price R | Price money R | Service price R |
| 1 | 25000 | 4500 | 25000 | 22000 | 40000 | 13000 |
| 2 | 7000 | 1000 | 7000 | 5000 | 20000 | 6000 |
| 3 | 4000 | 8000 | 4000 | 1000 | 17000 | 5000 |
| 4 | 3000 | 2000 | 3000 | 1000 | 11000 | 4500 |
| 5 | 2000 | 18000 | 2000 | 4000 | 9000 | 18000 |
| 6 | 1800 | 1000 | 1800 | 5500 | 7000 | 1000 |
| 7 | 1600 | 1000 | 1600 | 9000 | 5000 | 1000 |
| 8 | 1500 | 1000 | 1500 | 2000 | 3000 | 4500 |

Source: Millin (2013)

Table 4.8 below represents the purse moneys won by the weanlings and the investments that were made on the AACup sire service auctions in order to produce the weanlings. Only weanlings are shown, so as to be comparable with the ASF figures in Table 4.7. Table 4.8 below indicates that in the AACup competition only four of the over \$5 000 sire services managed to produce a top-four placed weanling in the four years of competition. This reflects a mere 25 % success ratio. The over \$5 000 sire services produced only nine placed weanlings out of a possible 64 places, which reflects a 14 % success ratio in the four years of competition. From the top four prices paid annually, six placed weanlings were produced, that is a success ratio of 9 %.

The literature study indicated that in the horse industry there are more considerations than simply financial considerations that matter. From statistics alone, the reasons for a sire’s popularity might not be clear, but from an auction seat, however, the perspective might differ considerably. Therefore, the perspective of using the most popular sire and having a weanling in the top four of these competitions have to be considered. On average in the ASF competition, the price money that was received by the top four weanlings produced from the top four sire services accounts for 25 % of the price moneys paid for the four top placings in the analysis. On average for the last four years in the AACup competition, the weanlings produced from the top four sire service prices, produced 5 % of the top four placings in the analysis. In both competitions, the top four sire service prices are considerably higher than the average sire service prices.

Table 4.8: Weanling price moneys won in the AACup

| Place | 2010 | | 2011 | | 2012 | | 2013 | |
|-------|----------------|------------------|----------------|------------------|----------------|------------------|----------------|------------------|
| | Price money \$ | Service price \$ | Price money \$ | Service price \$ | Price money \$ | Service price \$ | Price money \$ | Service price \$ |
| 1 | 37041 | 1400 | 29118 | 600 | 33476 | 600 | 28365 | 7200 |
| 2 | 26458 | 500 | 20799 | 11500 | 23911 | 2000 | 20261 | 500 |
| 3 | 16693 | 3700 | 13311 | 1200 | 15303 | 2300 | 12967 | 17000 |
| 4 | 12700 | 2200 | 9983 | 5000 | 11477 | 600 | 9725 | 2500 |
| 5 | 7408 | 2100 | 5824 | 1200 | 6695 | 500 | 5673 | 2400 |
| 6 | 5292 | 500 | 4160 | 1100 | 4782 | 500 | 4052 | 500 |
| 7 | 3000 | 600 | 3000 | 2000 | 3000 | 500 | 3000 | 2000 |
| 8 | 2000 | 15500 | 2000 | 500 | 2500 | 500 | 2500 | 4000 |
| 9 | 2000 | 2500 | 2000 | 600 | 2000 | 1500 | 2000 | 500 |
| 10 | 2000 | 1200 | 2000 | 500 | 2000 | 4500 | 2000 | 500 |
| 11 | 2000 | 800 | 2000 | 600 | 2000 | 1400 | 2000 | 700 |
| 12 | 2000 | 500 | 2000 | 500 | 2000 | 1000 | 2000 | 2000 |
| 13 | 2000 | 8000 | 2000 | 600 | 2000 | 500 | 2000 | 500 |
| 14 | 2000 | 500 | 2000 | 1500 | 2000 | 3000 | 2000 | 2700 |
| 15 | 1500 | 1700 | 1500 | 900 | 2000 | 500 | 2000 | 4500 |
| 16 | 1500 | 500 | 1500 | 2500 | 2000 | 4000 | 2000 | 600 |

Source: Hale (2014)

4.3.2.3 Sire service auction prices, progeny earnings and sire lifetime show earnings

Unlike the AACup, in the ASF competition both three year old performance class earnings and the sire’s lifetime show earnings are not available. But accommodating selection requirements in terms of a sire’s breeding potential implies using both these data sets, as well as the weanling earnings data set. Therefore, in the following analysis only AACup data will be used. Addendum C indicates the complete AACup sire data. There were more sires with data available, although the data were not complete; those in addendum 3 are the only complete ones. In the dataset, a ‘no

result' is eliminated as such value would render 'a free particle' decision in terms of the Hamiltonian function (Atkins, 1974) and is not useable in, for instance, a regression analysis.

Accumulated AACup sire service auction prices, progeny earnings and sire show earnings are attached as **Addendum C**. Figure 4.4 below shows the plotted data (Addendum C) with trend lines added.

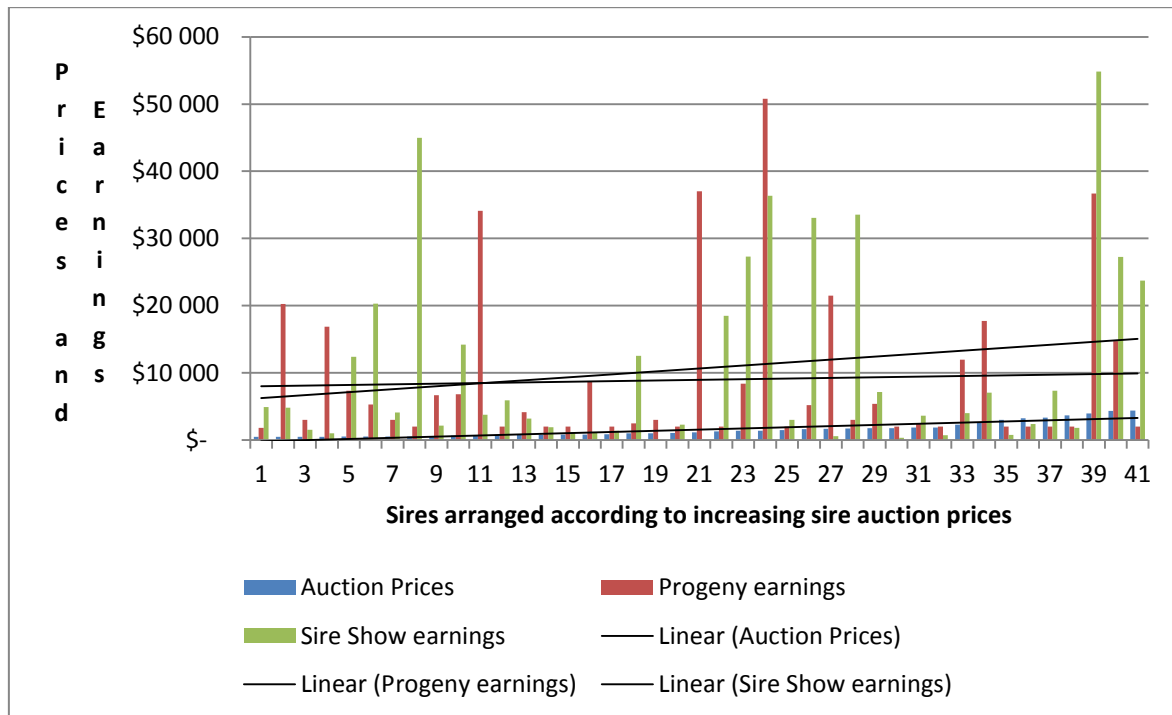


Figure 4.4: Accumulated -AACup sire service auction prices, -AACup progeny earnings and sire show earnings.

Source: Hale (2014)

In Figure 4.4 above, the sire service auction prices trend line and the progeny earnings trend line behave in accordance with breeding selection theory. That is, the progeny earnings trend line slope (increasing progeny earnings) coincides with an increasing sire service auction prices trend line slope. Progeny earnings are statistically the best indicator of a 'best gene pool'. The sire show earnings also behave in symmetry with sire auction prices, although not to the same extent as the progeny earnings. This is also in accordance with breeding selection theory, with sire show earnings being a lesser indicator of a 'best gene pool'. Although both the progeny earning trend line and the sire show earning trend line behave in accordance with breeding selection theory, the variance between individual prices in both the data sets is extremely high.

4.3.3 Analysing emotional decisions

4.3.3.1 Ordinary Least Squares regression (OLS) analysis

An OLS linear regression analysis is a multivariate statistical technique applied to examine linear correlations between, in this case, two independent variables (Progeny earnings 'PCE' and Sire show earnings 'SSE') and a single dependent variable (Auction prices 'SAP'). But a linear regression analysis is only a useful exercise if the independent variables in your dataset have some correlation with your dependent variable (Wonnacott & Wonnacott, 1971).

In view of the coinciding trajectories and slopes of the trend lines which are evident from Figure 4.4 above, an OLS analysis seems to be an appropriate approach to determine the relationship between the dependant and independent variables. This expectation of a linear relationship is also confirmed in theory that describes the selection of breeding stock devoid of the influence of emotions: Hewitt (1982) wrote that a sire's progeny are the foremost and most viable indication of a sire's breeding potential. A sire's own conformation and ability is, according to Hewitt (1982), only the second most important indication, with a sire's ancestry as the last and most unreliable indicator of breeding potential. In view of these facts, the extended AACup competition data and the sire's show earnings containing the indications of all three factors are the basis for a linear regression analysis. AACup sire service prices can be regarded as a monetary index, evaluated by the bidders and established by the buyers, of the relative quality of the gene pool each sire represents. The AACup progeny earnings can also be regarded as a monetary index of the quality of progeny which a sire can produce. Therefore, theoretically there should be a statistically significant relationship between the cost of the 'best gene pool' (AACup sire service prices) and show earnings from resultant progeny (AACup progeny competition earnings). In cases where resultant progeny is not available to confirm a 'best gene pool', a sire's own conformation and prowess are a possible indicator (albeit more unreliable owing to environmental influences) of a winning gene pool (Leicester, 1957). Therefore, AACup sire service prices and a sire's lifetime show earnings (being an indication of a sires conformation and prowess) theoretically also have a statistically significant relationship (in effect facilitating the influence of the phenotype into the equation). As a sire's lifetime show earnings is a monetary index of the desirability of a sire's own conformation and prowess. Lastly, the individual's ancestry could also be an indication of a winning gene pool. But such an indicator will be useless if a sire's inherited 'best gene pool' does not reflect in his own conformation and prowess. An individual's conformation and prowess will

be reflected in his life time show earnings (unfortunately such data does not exist for South African ASF sires).

An OLS regression analysis was done on the data set out in Addendum C, in search of a statistically significant relationship between the AACup sire service auction prices (SAP) as a dependant variable and the AACup progeny earnings (PCE), as well as the AACup sires lifetime show earnings (SSE), as independent variables. Table 4.9 below contains the detail of variables used in the OLS analysis. In the OLS regression analysis, the Null hypothesis (H_0) is as follows: the dependent variable is not influenced by the independent variables. The Alternative hypothesis (H_1) is that the dependent variable is caused by the two independent variables.

Table 4.9: Detail of OLS regression variables

| Name | Symbol | Measurement | Source |
|-----------------------------------|--------|---|------------|
| Dependent Variable | | | |
| AACup sire service auction prices | SAP | 4 year average of recorded auction prices/sire | AACup data |
| Independent variables | | | |
| AACup progeny earnings | PCE | Accumulated 4 year average earnings of weanling and 3 year old performance classes/sire | AACup data |
| Sires show earnings | SSE | Accumulated life time show earnings/sire | ASHA data |

Source: Hale (2014)

The regression equation was calculated as:

$$SAP = c + b_1PCE + b_2SSE + e \quad (1)$$

With:

- SAP = observed score of dependent variable; and
- PCE and SSE = observed scores of independent variables;
- b = coefficient
- e = error or residual
- c = the constant term.

In an OLS analysis, if the coefficients on the independent variables are higher than 0, it indicates that the independent variables PCE and SSE are having a genuine effect on the dependent

variable SAP (Robert, Pindyck, & Rubinfeld, 1998). The null hypothesis (H_0) is always that each independent variable is having absolutely no effect (has a coefficient of 0) and in the analysis reasons are sought to reject this theory.

To indicate how strong each independent variable (PCE, SSE) is associated with the dependent variable (SAP), individually and in the regression equation, the following measures are used (Cohen, Cohen, West, & Aiken, 2003): the t statistic is the coefficient divided by its standard error. The ' t ' statistic on a variable is compared with values in the ' t ' distribution to determine the P value. The P value (the observed significance level), is the smallest fixed level at which the null hypothesis can be rejected. Or 'the probability', that statistically exists, to get the same a result in a collection of random data in which the variable had no effect. A P value of 5 % or less is the generally accepted point at which to reject the null hypothesis. Note that the size of the P value for a coefficient says nothing about the size of the effect that variable is having on your dependent variable – it is possible to have a highly significant result (very small P -value) for a miniscule effect. The P value tells you how confident you can be that each individual variable has some correlation with the dependent variable, which is the important thing in this analysis. The P value for the regression as a whole differs from individual P values.

Because independent variables may be correlated, the coefficients on individual variables may be insignificant when the regression as a whole is significant. The size of the coefficient for each independent variable gives you the size of the effect that variable is having on your dependent variable, and the sign on the coefficient (positive or negative) gives you the direction of the effect. In regression with multiple independent variables, the coefficient tells you how much the dependent variable is expected to increase when that independent variable increases by one, holding all the other independent variables constant.

The 'standard error' is an estimate of the standard deviation of the coefficient; the amount it varies across cases. It can be thought of as a measure of the precision with which the regression coefficient is measured.

The R-squared is a statistical measure of how close the data are to the fitted regression line or the fraction of the variation in your dependent variable that is accounted for (or predicted by) your independent variables. The R-squared is generally of secondary importance, unless your main concern is using the regression equation to make accurate predictions. The adjusted R-squared is the R-squared adjusted for the number of predictors in the model. The adjusted R-

squared increases/decreases only if the new term improves the model more/less respectively than would be expected by chance. It is always lower than the R-squared.

4.3.3.2 Calculating the cost of emotions in investment decisions

In calculating the cost of emotions in the investment decision, it was necessary to at first state the peculiarities of the data used. In the calculations, only the sire auction prices were used but in the total scheme of things sire services prices are only a small, albeit emotional, part of successfully producing and competing with progeny in a show class. Actually, it is only the ears of the hippo. In both competitions, the 'top four' prices as a rule turned out to be paid only by four breeders, whereas the 'bottom four' prices were shared by many breeders. This is, however, accounted for by including, in the analysis, the probability for success. As mentioned (section 4.3.2.1), the first four placed weanlings earned 82 % of the purse in the ASF completion and 72 % in the AACup. The direct influence on the averages, as are used in the calculations, is that the comparative size of the earnings of the first four places tends to present a somewhat distorted figure of visible trends. In other words, trends may have been stronger if the distribution of earnings were less lopsided.

The ASF competition has only been run for the past three years, therefore data is also only available for three years and no three year old performance data is available. The AACup has had a ten year run, although only data for the last four years was analysed (a complete set of data was only available for four years), three year old performance data was available.

Logically at the auctions, the services of sires with the better chance of producing winning weanlings should fetch the higher prices. But the breeding potential of a sire, whose service is on sale, is not written in stone. Judging a sire's breeding potential against the auction prices is the cost comparison that breeders, making bids, have to make. Breeders in attendance have the advantage of a visual inspection of the sire (with the due consequence of a dopamine reaction) and breeding records, if available.

The brochures of competitions which have been very successful, judging from the actual size of the competitions, advertise that the breeders and the owners of the stallions will have "a better opportunity to get a return on investment" Millin (2009). Therefore, the reason for breeders to

enter into these competitions would be to get access to the competitions and their notably large price moneys.

It is not necessarily true that the most successful choice in hindsight was the rational one at the time of making the choice. This is especially true in selecting breeding stock as it is not an exact science. But by equating the successes of the progeny in the competitions (extent of price moneys won) with the rationality of investment decisions made in the sire services auctions, the results of the investment decisions made in hindsight can be compared in terms of rationality. Comparing the financially most successful choices made, in hindsight, with the financially most unsuccessful choices made, will at the very least give an indication of the cost of emotions in decision making. Therefore in the calculations, the emotional influence will be calculated as ‘excesses paid relative to the most successful investment decisions made on these sire service auctions’, where the success is measured in terms of the success of the resultant progeny, that is earnings per weanling.

Such a calculation would require identifying the most successful choices, as well as the most unsuccessful choices made, in terms of the stated objective (“increasing return on investment”), and then calculating the difference. As three year old data is not available in the ASF competition, this analysis on progeny earnings relative to sire service prices is only done on AACup data. From the AACup data set, the return on the investment made at the AACup sire service auction is indicated in Table 4.10 below.

Table 4.10: Return by progeny earnings on sire service investment in AACup

| Group | Category in \$ | Quantity in group | Winners in group | Average Cost | Return |
|-------|----------------|-------------------|------------------|--------------|--------|
| 1 | 500-1000 | 155 | 30 | \$ 627 | 45% |
| 2 | 1000-2000 | 63 | 20 | \$ 1 350 | 61% |
| 3 | 2000-3000 | 12 | 2 | \$ 2 260 | 18% |
| 4 | 3000-4000 | 15 | 6 | \$ 3 349 | 41% |
| 5 | 4000-5000 | 3 | 2 | \$ 4 425 | 84% |
| 6 | 5000-12000 | 5 | 2 | \$ 7 318 | 16% |

Source: Hale (2014)

4.4 Conclusion

Research into the qualification of the investment decision was done by using a multiple case study (nine cases), with cases chosen for their diversity and richness of information. Prior theory embraced consumption theory as is found in marketing, so as to be able to confirm applicability of consumption theory to the investment context, should literal or theoretical replication be achieved. The results of this research form the first part of the next chapter.

An OLS analysis of extended ASF data was attempted in search of quantifying the emotional influence on the investment decision. 'Attempted' because a graph with trend lines in this chapter show the theoretical expected symmetry in movement, but with extreme volatility. The results of the OLS analysis and other manipulations of the data represent the second part of the next chapter.

Chapter 5

Research Results

5.1 Introduction to research results

In the literature study (Chapter 2) it was noted that emotions can and do influence investment decisions. But the extent of their influence on the Saddle Horse industry still needs to be qualified and quantified. It was only in consumption theory that any theory of emotions as an influence was located in the literature. For this reason, in researching the investment decision in the South African Saddle Horse industry, attention was directed so as to first qualify the influence of emotions by adapting consumer theory before attempting to quantify it.

5.2 Qualification of the investment decision in the South African Saddle Horse Industry using a multiple case study

Babbie (2010) wrote that the purpose in qualitative research is to confirm relationships among concepts in order to describe social reality or to search for explanatory patterns. As discussed in section 4.2, the research into the investment decisions in the South African Saddle Horse industry followed a multiple case study design, based on replication logic. This study was designed as a multiple case study to research the strategic phenomenon evident in the South African Saddle Horse industry whereby owners are investing in something that, to all indications, yields no economic or financial returns. From literature it was confirmed that this phenomenon is not confined to a horse industry in a specific country but is rather a global trend. Classic economic theory offered no answer in explaining this investment behaviour. Behavioural finance, although acknowledging emotional influences in decision making, also did not offer a plausible explanation. However, newer insights in consumption theory in marketing, or more precisely in service delivery, offered a plausible explanation. Freemantle (1998), echoed by Barlow and Maul (2000), claims that: “the greater part of consumer choice is based on emotional influence”. This study was therefore designed to seek confirmation that the consumption theory was indeed applicable in an investment context and that it could be adapted to investment theory. In order to adapt consumption theory to investment theory, literal replication of prior theory had to be achieved in the multiple case studies. In the task of achieving literal (and theoretical) replication from the gathered data, only cross-case analysis and grounded theory was used, generalised to prior theory (there were no exceptions).

This chapter presents a review of the nine case studies. In planning the case studies, it was thought that there would be differences in the motivation of the investment decision in the different interest groups. Accordingly, the nine cases studies were divided into the three interest groups, i.e. owners, trainers and breeders. Please refer to sections 4.2.5 and 5.2.1.1 to 5.2.1.3 for a detailed discussion on each of these groups. To ensure consistency, results from the case study of each group will be discussed in the following manner; firstly an overview of the outcome of the case study will be provided, followed by a description of the investment decisions made, the rewards received, and finally, some concluding remarks.

5.2.1 The multiple cases studies

5.2.1.1 The owners

Three case studies were done in the owner category. All three owners are still active in the industry, but with totally different views and histories within the industry. In this category, showing the horses received above-average prominence in comparison to the other two categories. It was compared to entering golf or tennis tournaments, with the added advantage that the whole family is involved and shares the experience. The emotional goods gathered in a family joining together was expressed by a respondent as “keeping my children and family together, down to earth and respectful of God’s creations, especially in a beautiful, powerful animal that is able to be disciplined, provided it is loved correctly. I see this as a vital life skill”.

From the results, it was evident that a deficiency in the ability or willingness to continually commit substantial funds in order to support ownership of horses can result in some of the enterprises being suspended or contracted to meet affordable levels of expenditure. One of the case studies stated explicitly (translated from Afrikaans): “I would have retired but I can’t do that as my horses cost too much to maintain, therefore I just keep on working as I can’t stand to get rid of them”. But it is also evident that some owners that have the necessary knowledge and good people skills (for marketing and selecting partners) to enable them to sustain this form of ownership over time. This is mainly attributable to the incomes that are derived from horses being sold and stud services rendered. This finding supports the remarks by Richins (1997) that a variety of emotions is present in any consumption situation and that emotional goods present in a consumption situation will vary with the product consumed and the individual concerned.

Moreover, no reliable evidence was found that suggests cross-financing or subsidising of horse-related activities.

The one outstanding remark that is to be found amongst all responses in this category is that respondents are involved with horses because of their love for these creatures. The group represent a literal replication of the prior theory. In other words, the investment decision of horse owners is motivated by their passion and/or commitment to the animals, and not by direct financial and/or economic gain. In all the cases studied, the horse owners, without exception, claim “to be motivated in their investment decisions by their passion for these animals”. Although the motivation to invest was an emotional one, these decisions were rationalised in hindsight either by increased support from other sources (“I can’t retire”), or by contracting the enterprise to manageable levels. This also concurs with Richins (1997) who argues that “the term consumption is used broadly to include anticipatory consumption, product acquisition as well as post purchase possession and use of the product”.

5.2.1.2 The trainers

Every respondent in the research data who listed ‘training’ as being a main interest in the South African Saddle Horse industry, started in a training career and is still practising this profession because of the love of horses. They justify their continued involvement as trainers by arguing that they “live a lifestyle most other people can only dream of”, underscoring their passion for working with horses. Three respondents in the ‘trainers’ group were interviewed. In analysing the responses of the ‘trainers’ as a group, they seem to be less emotional and more rational and calculating than any of the other groups. This is once more sustained by Richins’ (1997) remarks with regard to various levels of intensity of emotional goods as it is experienced by respondents. Although training horses is a fulltime occupation for most, in almost all cases it also provides the funds necessary to sustain their own horses. In two of the cases studied, the horses the trainers own are kept to a minimum, in order to sustain viability of their respective enterprises. This indicates that the trainer’s own horses are not paying their keep, and are being sustained by income from training activities. The third respondent trained more of her own horses but was more successful in her breeding enterprises, compared to the other two.

The one outstanding theme that is to be found amongst all responses is that the respondents are involved with horses because of their love for these creatures. Even though ‘trainers’, as a group,

seem to be more calculated and less emotional, their motivation to invest remains the emotional appeal. In the cases studied, the motivation to invest does not reflect any financial or economic calculations or rewards, which suggests that the investment decision is motivated only by emotions. Investments made in equipment seem to be better calculated than those made in horses. Trainers, in terms of equipment, in principle make do with what they have and apparently are able to afford the extras from commissions. All trainers state that the financial influence in their enterprises, of the lucrative income from commissions stemming from selling horses on behalf of other owners, is most important.

All the trainers claim that their passion for horses is the motivation behind their investment decisions. Prior theory, being that “horse owners in their investment decisions, due to their commitment to these animals, are motivated more by their passion for these animals than by the direct financial and or economic reward to be gained”, was literally replicated in the cases studied without an exception, and accordingly rival theory was not replicated. The emotional decision to buy was rationalised in hindsight by containing the number of own horses in training, in cases where other enterprises of the investor faltered in contributing sufficiently to ensure financial survival.

5.2.1.3 The breeders

This category represents the bulk of owners in the industry. Most of the breeders have their own stables, but are not primarily interested in training. The category was designed as an alternative for the other two categories and yielded interesting information. As the name indicates, breeding horses was high on the priority list of every respondent interviewed. Although the diversity, owing to the size of the universe from which the samples were drawn, yielded many different views, there was one constant, namely: everyone invested in the ‘best blood’ that he or she could find. Considerable differences, however, existed in what respondents believed to be the ‘best blood’. From the data collected in the interviews, there is a sharp contrast between the love of horses professed by every respondent and the new ‘breeders’, who were led to rationalise their emotional decisions with a ‘best blood’ cliché. The best blood cliché implies that breeding can be seen as an emergency escape should these new breeders run into financial difficulties. Nothing could be further from the truth, with the history of the South African Saddle Horse industry suggesting that the breeding of excellence is a formidable challenge, as is selling a mediocre horse (Kaplan, 1974).

The breeders group consisted of three different cases. Every one of them described selecting “the best blood that I could find” as the procedure followed preceding their investment in a horse/horses. Not one mentioned financial viability, which would have included the marketability of the ‘best blood’ purchased. Also, everyone purchased ‘the best blood’ with no cognisance of the fact that ‘blood’ does not guarantee performance and that some horses sell easier than others, notwithstanding ‘blood’. All things considered, the investment decision of owners in this group was also an emotional decision, rationalised by ‘the best blood’ cliché. This implies that the horse could be used for breeding, should he fail to perform sufficiently to otherwise merit selling the horse to some other investor at a profit. The option to use the horse for breeding, rather than selling it, was predominant in the respondents researched.

In the cases studied, the ‘breeders’, without exception, made emotional investment decisions and implemented a twofold strategy in rationalising their emotional decision. The twofold strategy consists of either selling foals or stud services, the success of which depends on (in order of importance) the insight into the market and marketing of the horse by the owner, the marketability of the blood purchased, and knowledge of horses and horsemanship. Some of the respondents in this group were successful in securing all of their yearly expenses for keeping and breeding the horses by selling horses and stud services, but for others, it spelled financial disaster. Having said this, according to the research data, the difference between success and disaster appears to be knowledge and the application thereof, and not the financial sources available (although a threshold value is applicable). The breeders who succeeded in securing significant income from their investment were not those with apparently unlimited financial resources.

As stated, in every case studied in this group, investment was an emotional decision. Therefore, a literal replication of the prior theory was achieved without an exception, and because there was no exception, rival theory was not replicated. In all cases studied, the horse owners in the breeders category claim “to be involved with horses because of their love for horses”.

5.2.2 Cross-case analysis

The methodology of theory building by cross-case analysis was described by Yin (2009) as follows: “the notion being that theory is developed inductively by recognising patterns of relationships

and underlying logic within and across cases. Like a series of related laboratory experiments, cases are discrete experiments that serve as replications, contrasts and extensions to emerging theory". Babbie (2010) amended the methodology by describing 3 methods for finding the mentioned patterns of relationships and underlying logic in qualitative data: coding, memoing, and concept mapping.

In the previous section, analysis was done according to the interest groups. In analysing across the cases, patterns of relationships between cases and the underlying logic will be highlighted.

5.2.2.1 Comparative case study results

According to the data accumulated in the research, Hugo (2012) was correct in his assessment when arguing that "horse people love what they do and they are involved with horses because of that passion". From Table 5.1 below, it is evident that analysing the accumulated response data across cases and the different interest groups presented no difficulty, as all of the respondents confirmed their investment decisions to be emotional decisions. The overwhelming emotional influence claimed by respondents is remarkable in view of the Welford *et al* (2000) findings. The authors argue that because automatic processes (such as emotional decisions) are below consciousness level, contemplated descriptions will favour recollection of cognitive rather than affective processes.

In designing the study to identify the motivations of the investment decisions in the South African Saddle Horse industry, the responses were expected on three levels, described in the propositions (section 4.2.3). The responses that were expected were characterised and grouped together in three identifiable units ('the beneficiaries', 'the believers' and 'the lucky ones'). In view of the over-whelming influence of emotions as was reported in the previous paragraph, this was not to be (Table 5.1 below). Responses according to the research data unanimously confirmed the 'investment decision' as an emotional decision, taken impulsively and 'rationalised' in hindsight. Rationalisation in hindsight in some cases only appeared when financial demand outstripped financial supply.

Table 5.1: Comparative results of the individual case studies

| Groups | Cases | Rewards expected to be calculated | Actual rewards calculated | Declared Actual and Prospective income flows | Rationalisation of decisions |
|---------------|--------------|--|----------------------------------|---|--|
| Breeders | 2 | Financial, Economic, Emotional | Emotional | Optimistic | Outside sources |
| | 4 | Financial, Economic, Emotion | Emotional | Realistic | Horse sales |
| | 8 | Financial, Economic, Emotion | Emotional | Good | Other horse enterprises |
| Owners | 3 | Financial, Economic, Emotion | Emotional | Contracted | Outside sources |
| | 6 | Financial, Economic, Emotion | Emotional | Contracted | Outside sources |
| | 7 | Financial, Economic, Emotion | Emotional | Good | Horse sales, stud services |
| Trainers | 1 | Financial, Economic, Emotion | Emotional | Good | Training and commissions |
| | 5 | Financial, Economic, Emotion | Emotional | Realistic | Training and commissions |
| | 9 | Financial, Economic, Emotion | Emotional | Good | Training , Commissions, Horse sales, Stud services |

As mentioned, according to research data, there were no differences in motivation to invest between the interest groups or the individual respondents. All the respondents were motivated by emotions, with negligible regard for financial or economic consequences. As illustrated, there was more than one respondent who stated (translated from Afrikaans): if I want a horse and cannot afford it, I have at times borrowed money or bought the horse on credit should the owner consent. The method in which rationalisation of emotional decisions in hindsight occurred, differed, however, as is evident in Table 5.1 above. None of the respondents (this represents all three of the interest groups) who reported financial losses attributable to buying and keeping horses, accepted the losses as irrefutable costs. They believe there are solutions that could make payable propositions out of their investments. These remarks confirm the “endowment effect” described by Peterson (2007). From Figure 5.1 below, it is evident that under favourable

circumstances, with enough knowledge, there might be some truth hidden in their beliefs. Moreover, several respondents are in fact making money out of their investments, even though financial or economic gain was not the motivating factor behind their decisions to invest. These owners have payable propositions, but the extent to which they are profitable could only be quantified in a few of the cases. Nevertheless, these propositions are profitable enough to pay the bills, and sustain the operation.

In all the cases studied, the respondents believed that they bought the ‘best blood’ according to each respondent’s definition of ‘best blood’. Yet from the results, it was obvious that some of the respondents bought ‘better blood’ than others (see Figure 5.1 below). The difference is more obvious in the owners group for the reason that the industry is more accessible to newcomers in this category. In this scenario, the term ‘newcomers’ does not necessarily refer to the actual time a respondent has been involved in the industry, as much as the experience and knowledge he has accumulated in that period.

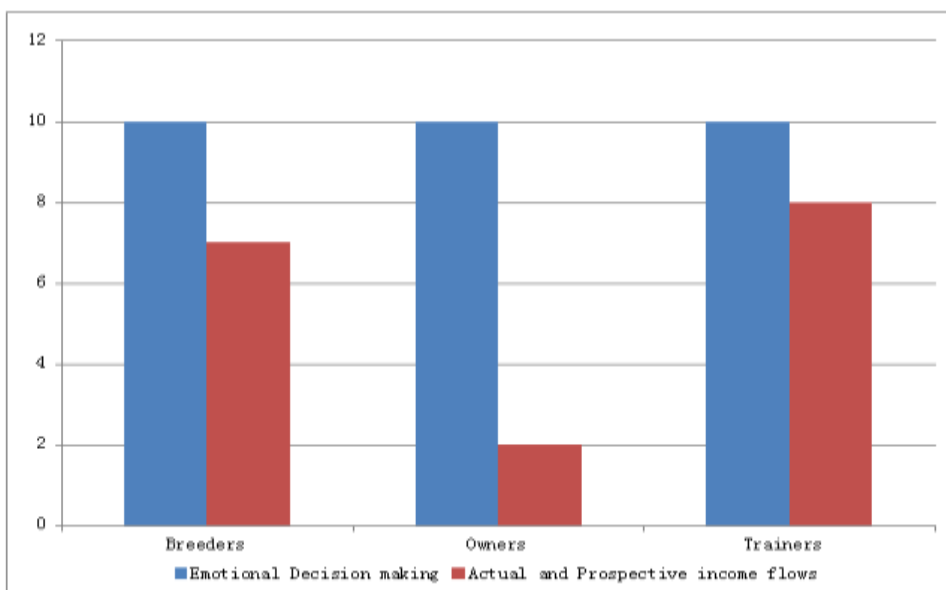


Figure 5.1: Diagram of an index of income flows relative to decision making of the different interest groups

From the findings, it is apparent that Richins (1997) was correct in assigning an emotional ‘weight’ to subjects, and in due course also to industries. The horse industry is an ‘emotionally laden’ market, with every respondent being involved for the “love of horses”. The direct consequence of the ease of entrance into the industry is that emotionally vulnerable newcomers are more easily convinced to invest with the ‘good blood’ argument, than those who are more experienced. This confirms Lo and Steenberger’s (2005) conclusions that emotional reactions, from the Limbic

system of the brain, 'short-circuit' more complex decision making faculties, from the Orbitofrontal Cortex. Stark evidence of the influence of experience and emotions in investment decisions is seen in the successes of one 'owner', far above average in his knowledge and experience of the industry, which are divergent from the failures of other 'owners' in the group. It is obvious, then, even in emotional decisions (behavioural economics calling them 'irrational'), that experience and knowledge of the industry have a sobering influence, although in some cases it was reduced to the ability to successfully rationalise an emotional decision in hindsight.

Richins (1997), as did every other researcher, avoided the emotions of *love* and *passion*, because of the complexities involved. However, these are the driving emotions behind investment decisions in the horse industry. But no measures were taken to adapt the research to the fact that the horse market is an 'emotionally laden' market. In fact, the extent of the 'emotional charge' inherent in each market and the influence it has on the investment decision only became evident with the implementation of the pilot studies, and in due course became a result of the research.

The results of the research overwhelmingly confirmed emotions to be the motivating factor in investment decisions, with no exception. This was unexpected, therefore a test for the research results was designed (section 4.2.9). Although the response to the questionnaires was meagre, with less than 20 % of the distributed questionnaires being returned, it nevertheless unequivocally confirmed that the case study data was correct in its assessment: "Horse people love what they do and they are involved with horses because of that passion" (Hugo, 2012).

Levitt and Dubner (2006) wrote that "the gulf between the information we publicly proclaim and information we know to be true is often vast". This is a good description of how marketing works and would also describe rationalising an emotional decision. As said, the results indicate that, circumspect, more calculated and not necessary better financed decisions resulted in financially and economically better investments. An emotional decision, by definition, implies psychological reasons over-riding economic reasoning. It follows logically that the obstacle in rationalising this decision is emotion – because you love the horse you bought, you will not see the flaws that it has. The perfect horse is yet to be born, so every horse will have flaws, irrespective of how much you love it. Recognising the flaws is basic to the ability to present the horse, as Levitt and Dubner (2006) have described, i.e. for purchase of either the horse or his progeny, for selling stud services, for showing, etc. In summary, it does not matter how your emotional decisions are rationalised, in order to make your investment a paying proposition, you have to present your

horse as the one and only flawless horse. That is, flawless in terms of what the market wants. The closer the horse actually is to flawless, the easier the owner's job is, and considering this before buying will vastly lightened the owners load!

5.2.2.2 Conclusion of cross case analysis

Sharma and Gupta (2011) defined an investment transaction as: "a transaction as an investment transaction if it is executed with the intention to gain calculated rewards". In the cases studied, there was little evidence that any of the investments decisions was in fact preceded by calculation as described. The investment decision in the South African Saddle Horse industry is, according to the findings, in reality better described by the Freemantle (1998) argument (with Barlow and Maul, 2000 concurring) that "the greater part of consumer choice is based on emotional influence". This confirms the Lo and Steenberger (2005) finding that emotional reactions, from the Limbic system of the brain, 'short-circuit' more complex decision making faculties, from the Orbitofrontal Cortex. The motivator of the investment decision, as is evident from the findings, is not calculated reward but an emotional reaction. This corresponded with The Texas Horse Industry Quality Audit Initiative findings which suggest that "horses are bought and sold for many reasons other than attempted profit" (Gibs *et al.*, 1998). The present research confirms the findings of Freemantle (1998) who argues that "without calculating emotions all conclusions on the buying decision are essentially deficient".

However, the consumption, as defined by Leimer and Richardson (1992), is also reflected in the investment decisions studied. However, according to the findings, the investment decision is not determined by current and prospective income flows, but by the "rationalising emotional decisions" (Freemantle, 1998) that were taken. This finding is in line with the remark made by Richins (1997) that consumption-related emotions include directly experienced emotions that result from the consumption/usage of the product. It is in this "rationalisation of emotional decisions", and not in the motivation of the investment decision, where the difference in the cases studied is to be found. This is especially evident as it relates to the primary interest of the respondents (owners, trainers and breeders) (see Figure 5.1 above).

Although the results of the study confirmed applicability by literal replication of prior theory, it was not because of the adaption of consumption theory to the investment context. It was because of the fact that, according to research data, investors in an emotional decision act like consumers (Freemantle 1998; Barlow and Maul 2000), and not like investors as described in the Sharma and Gupta (2011) definition in their investment decisions.

5.3 Quantification of the investment decision in the South African Saddle Horse Industry

Cohen and Blum (2002) argue that “in economics, it has become abundantly evident that pristine assumptions of the ‘standard economic model’ (UMH) which suggest that individuals operate as optimal decision makers in maximizing utility are in direct violation of even the most basic facts about human behaviour”, and for all practical purposes this terminated the usage of the principle of expected utility maximisation in economic theory. This is much like Newtonian physics, which has been displaced, yet still remains the natural reference point in present day physics (Prigogine & Stengers, 1984). The principle of expected utility maximisation has to remain a reference point as to what is called emotional (irrational) and what is called logical (rational) in decision making. In following the UMH logic as a reference point, rational (cognitive) behaviour is an investment decision to maximise utility in terms of financial and economic reward, and irrational (affective) emotional behaviour is investment without obvious financial or economic reward.

In the previous section the investment decision in the South African Saddle Horse industry was unequivocally confirmed as a decision under emotional influence. In this, the respondents conformed to consumption theory in that “the greater part of consumer choice is based on emotional influence (Freemantle, 1998; Barlow & Maul 2000). In accordance with these results, LeDoux, (1996), Panksepp, (1998) and Rolls, (1999) found that normal behaviour is the result of seamless interaction between the cognitive and affective systems (logical and emotional systems). In addition, Mellers *et al.* (1999) found that the opportunity cost comparisons for decisions, as is argued in economic theory (UMH), are supported by an individual’s emotional (affective) circuitry that is commonly below the individual’s conscious awareness. These findings confirm the ‘emotional influence’ findings of the multiple case studies. In the multiple case studies it was obvious that although “the respondents only report emotional influence”, “some bought better blood than others” leaving leeway for subconscious opportunity cost comparisons. In quantification of the influence of emotions, the implication of these findings are that it is important to acknowledge that the prices paid on these sire service auctions, most probably, are never all emotionally or all logically motivated, but are the result of a “seamless interaction”, even though emotions might be the greater part, as in the Freemantle (1998) and Barlow and Maul (2000) findings.

Wolford *et al.* (2000) found that much of the behaviour that emerges from the cognitive–affective interplay is routinely and falsely interpreted as being the product of cognitive

deliberation alone because affective systems are below our consciousness levels. Yet in contrast, the multiple case study indicated emotions (the affective system) as the foremost cause of the investment decisions made. In this result, the respondents confirmed neuroeconomic theory where it is described that for an emotion to occur, an assessment of the relevance of the emotion-causing event is made in the human brain (Phelps, 2009). This assessment is made in terms of evaluation and appraisal, terms often used interchangeably in this context. Phelps (2009) stated that “although the emotional evaluation of an event (subject) can occur rapidly and without awareness, it is more often the case that we are aware of the **emotional significance** of an event (subject)”. Therefore, in quantifying the historical data from an emotional investment decision in this research, the effort was directed at attempting to establish the respective magnitude and influence of the emotional (affective) influence (irrational – in economic theory), contrary to the logical (cognitive) influence (rational – in economic theory), in the investment decision in the South African Saddle Horse industry.

5.3.1 Results of data analyses in quantification

5.3.1.1 Ordinary Least Squares (OLS) regression analyses

Breeding theory on selection (see section 4.3.2.3) suggests that a definite relationship should exist between the gene pool that each sire represents as dependent variable (AACup sire service auction prices – SAP) and both the breeding results of that gene pool (AACup progeny earnings – PCE) and the sire’s own conformation and prowess (lifetime sire show earnings – SSE) as independent variables. This relationship is evident in Figure 4.4 above, and although both the progeny earning trend line and the sire show earning trend line behave in accordance with breeding selection theory, the variances between individual prices in both the data sets are extremely high.

The weanling calculations (section 4.3.2.1), however, indicate highly irregular investment patterns that cannot be construed as a logical relationship. These deviations from the logical relationship expected can only be attributed to the influence of emotions, as argued and confirmed in the sections. The OLS analysis attempted to model the relationship between the different variables by fitting a linear equation to the data accumulated. Because of the rationality of present breeding theory available (section 4.3.1) and the fact that part of emotional influence that can be attributed to the phenotype of the sire, was brought into the equation with the sire lifetime show earnings.

The variables with their abbreviations in this OLS regression analysis are described in section 4.3.3.1. The results of the OLS analysis are represented in Table 5.2 below. The results of the OLS analysis indicate that as the P value of the independent variables (PCE and SSE) equals 93 % and 44 % respectively, the Null hypothesis cannot be rejected. The P value for the regression, as a whole, equals 74 %, also confirming that the Null hypothesis cannot be rejected (the 't' statistics are used to determine the P value, therefore it is not discussed individually). The *coefficient* for each independent variable (PCE=.01 and SSE=.05) indicates that the size of the effect that the specific variable is having on the dependent variable (SAP) is negligible. The standard error is used together with the coefficient to calculate the 't' statistic therefore not discussed individually. The *R-squared* of the regression is very small indicating that the fraction of the variation in the dependent variable that is predicted by the independent variables (PCE and SSE) is negligible. The adjusted R-squared is also very small (actually negative), indicating that the variation in the dependent variable adjusted for the number of variables which is predicted by the independent variables is negligible.

Table 5.2: The full results of OLS analysis

Dependent Variable: SAP

Method: Least Squares

Date: 05/15/14 Time: 21:45

Sample: 1 41

Included observations: 41

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|------------------------|-------------|-------------------------|-------------|--------|
| C | 6.781660 | 1.028465 | 6.593962 | 0.0000 |
| PCE | -0.009604 | 0.106845 | -0.089892 | 0.9288 |
| SSE | 0.051063 | 0.065638 | 0.777949 | 0.4414 |
| R-squared | 0.015700 | Mean dependent variable | 7.123461 | |
| Adjusted R-squared | -0.036105 | S.D. dependent variable | 0.683992 | |
| S.E. of regression | 0.696231 | Akaike info criterion | 2.184084 | |
| Sum squared residual | 18.42002 | Schwarz criterion | 2.309468 | |
| Log likelihood | -41.77373 | Hannan-Quinn criterion | 2.229742 | |
| F-statistic | 0.303065 | Durbin-Watson stat | 1.814619 | |
| Probable (F-statistic) | 0.740320 | | | |

Source: Hale (2014)

Table 5.3 below contains the statistical measures that were calculated and indicates the independent variables (PCE and SSE) and the dependent variable's (SAP) association in the OLS. The OLS analysis indicates that no statistically meaningful relationship exists between the AACup sire service auction prices (dependable variant) and the AACup competition progeny earnings and the sire's own show earnings (the independent variables). All of the statistical measures show that the Null hypothesis prevails, implying that the dependent variable AACup sire service auction prices (SAP) are not statistically meaningfully influenced by the two independent variables, AACup competition progeny earnings (PCE) and the sire's own show earnings (SSE). In other words, the magnitude of influence of emotions on the investment decision (that is, AACup sire service auction prices) is both prohibitive and irregular and therefore renders predictability by the AACup competition progeny earnings and the sires own show earnings in the present data set as null and void.

Table 5.3: Statistical measures indicating the variables association in the OLS

| 41 observations | | | | |
|---------------------|-------------|------------|-------------|----------|
| Variables | Coefficient | Std. Error | t-Statistic | P value. |
| Constant | 6.781660 | 1.028465 | 6.593962 | 0.0000 |
| PCE | -0.009604 | 0.106845 | -0.089892 | 0.9288 |
| SSE | 0.051063 | 0.065638 | 0.777949 | 0.4414 |
| Regression equation | Values | | | |
| R-squared | 0.015700 | | | |
| Adjusted R-squared | -0.036105 | | | |
| P value | 0.740320 | | | |

Source: Hale (2014)

5.3.1.2 Results of calculating the cost of emotions

As argued in section 4.3.3.2, logically the services of sires with the better chance of producing winning progeny will fetch the higher prices. Identifying the sire with a 'better chance to produce winning progeny' is the core of the challenge in breeding. Therefore, bids at an auction represent an evaluation of a sire's breeding potential expressed in monetary terms. However, according to the results, this is not factual, with bids at an auction representing an overwhelmingly illogical emotional influence, and only a small part of honest evaluation of a sire's breeding potential. This is clearly evident from Figure 4.4 above and is supported by the OLS analysis.

Although being rational is not necessarily successful, the motivation as given by the organisers for entering this competition implies that 'rational' is equal to successful. Therefore, emotional influence will be calculated as 'excesses paid relative to the most successful investment decisions made on these sire service auctions', where the success is measured in terms of the success of the resultant progeny, that is earnings/progeny.

Calculations in terms of weanling classes

In the ASF competition, only weanling data is available. Therefore, calculations will at first be concentrated on emotional influence in terms of the weanling classes of both ASF and AACup competitions before the further progeny calculations are made for the AACup alone.

On average, for the three years of competition, a sire service in the ASF competition bought for R1 500 or less would have produced a weanling earning R576 in the competition. The weanling

with earnings in the competition will repay 39 % of the investment made at the sire service auction. After raising the price of sire services from R1 500 to R5 000 on the ASF auction, the weanling produced from the specific services would have earned R3 586. The weanling with earnings in the competition will repay 71 % of the investment made at the sire service auction. Paying the average of the top 4 prices for a sire service, nearly R24 000, the weanling produced would have earned R6 333 in the competition. That is 30 % of the investment made at the sire service auction.

Table 5.4: ASF Average expected rate of return by earnings of weanlings

| years | Top 4 prices | Winnings | return % | | Bottom 4 prices | winnings | return % |
|----------------|--------------|----------|----------|--|-----------------|----------|----------|
| 2011 | R 14 500 | R 500 | 3 | | R 1 620 | R 596 | 37 |
| 2012 | R 40 125 | R 6 250 | 16 | | R 1 453 | R 531 | 37 |
| 2013 | R 17 250 | R 12 250 | 71 | | R 1 350 | R 600 | 44 |
| Average | R 23 958 | R 6 333 | 30 | | R 1 474 | R 576 | 39 |

Source: Millin (2009)

In the AACup, from the 156 services that were available on average in a particular year, 140 were bought for less than \$5 000 (see Figure 4.3 above). On average, in the four years of competition, buyers that were not prepared to pay more than \$500 for a sire service would have produced a weanling earning \$462. That is, the weanling in the competition will earn 82 % of the investment made at the sire service auction. A sire service bought in the past four years at the AACup auction for \$4 000 or less would have produced a weanling earning \$1 290. That is, the weanling will repay in competition earnings 34 % of the investment made at the sire service auction. Paying the average of the top 4 prices of \$8 800 for a sire service, the weanling would have earned \$4 258. That is, the weanling will repay in competition earnings 46 % of the investment made at the sire service auction.

Table 5.5: AACup Average expected rate of return by earnings of weanlings

| AACup year | Top 4 prices | winnings | return % | | Bottom 4 prices | winnings | return % |
|----------------|--------------|-----------|----------|--|-----------------|----------|----------|
| 2010 | \$ 10 025 | \$ 1 000 | 10 | | \$ 591 | \$ 455 | 77 |
| 2011 | \$ 8 250 | \$ 5 198 | 63 | | \$ 543 | \$ 501 | 92 |
| 2012 | \$ 7 125 | \$ 500 | 7 | | \$ 575 | \$ 386 | 67 |
| 2013 | \$ 9 800 | \$ 10 333 | 105 | | \$ 555 | \$ 504 | 91 |
| Average | \$ 8 800 | \$ 4 258 | 46 | | \$ 566 | \$ 462 | 82 |

Source: Hale (2014)

A summary of emotional decisions as calculated in the weanling classes indicates that in the ASF competition, with all its volatility, the most profitable and in retrospect the logical choice would have been a sire service for less than R5 000, being the choice likely to yield a return of 71 % of the investment made in the sire service. In buying one of the top four fashionable sire services, that emotional decision would have cost R19 000 more and returned 40 % less. In the AACup competition, with its much larger sample size and much lesser volatility, the most logical or rational decision would have been a sire service for \$500 returning 82 % of the investment made in the sire service. The emotional decision made in buying one of the four fashionable sire services would have cost \$8 300 more and returned 36 % less.

Calculations of the emotional cost in the investment decisions in terms of progeny earnings (AACup competition)

Six hundred and twenty-eight sire services were sold on the AACup auctions in the four years under scrutiny, with 192 of them, at a cost of \$1 084 on average, producing no winning progeny. These were by far the least successful sire services sold at AACup auctions. However, they were not used in the dataset as a ‘no result’ value would render a “a free particle” decision in terms of the Hamiltonian function (Atkins, 1974) – not useable in analysis.

From Table 4.10 above it is obvious that the most successful investment decisions were in the \$4 000–\$5 000 group, with an 84 % return (\$5 582) of the invested sire service prices by progeny earnings. The least successful investment decisions were, as could be expected attributable to emotional influence, in the highest sire services prices \$5 000–\$12 000 group,

with a 16 % return (\$2 954) of the invested sire service prices by progeny earnings. That is, the emotional influence cost 68 % in terms of lesser return on investment in sire services.

5.4 Conclusions

The multiple case studies conclusively confirmed the investment decision to be not cognitive, but an emotionally influenced one. This overwhelming influence of emotions was further confirmed by the fact that the OLS analysis failed to find any statistically meaningful linear relationship between the investments studied and the logical determinants of such an investment. Yet already in the quantification, it was clear that the investment decisions were not all emotionally influenced and that the cognitive played a part as “some investors bought better blood than others”. This notion confirmed the literature study that “decisions seem to be a seamless interaction”. In summary, from the results it was evident that the cognitive (logic, knowledge and calculations) played a part in the investment decision studied, albeit subordinate when compared to the emotional influence.

In research, the OLS analysis found emotions to be not compatible with a linear relationship with price. However, although not addressed in this research as it is sequential to the OLS analysis, the price/emotions relationship in structure and functioning seems to be compatible with nonlinear differential equations describing ‘reaction loops’. Reaction loops are found in both metabolic functions in molecular biology (Roberts, Raff, Alberts, Walter, Lewis, & Johnson, 2002), and in deductions from the Guldberg and Waage’s law in thermodynamics (Levere, 1971). These nonlinear differential equations describe ‘reaction loops’, where the rate of variation of the concentration is proportional to the square of its concentration. A practical example of ‘reaction loops’, which indicates a strong resemblance to the perceived role of emotions in the investment decision studied, are catalysts. More specifically, autocatalysts in which the presence of a product is required for its own synthesis. That is, in order to produce molecules ‘X’, the system has to already contain X. In biology, the molecule X activates an enzyme and by attaching itself to the enzyme it stabilises that particular configuration and opens up a production site (Kauffman, 1995). The possible implications and relationships of emotions in the investment decisions that are still to be researched, form part of the next chapter.

Chapter 6

Conclusions and recommendations

6.1 Overview of findings

Magee (1997) attributed the following quote to Arthur Schopenhauer: “Thus, the task is not so much to see what no one yet has seen, but to think what nobody yet has thought about that which everybody sees”. This quote is in effect a description of the research in this dissertation.

In the second paragraph of Chapter 1, it was stated pertinently “this dissertation originated in a phenomenon witnessed in the South African Saddle Horse industry that, notwithstanding a lack of evidence of financial or economic reward this industry has succeeded in attracting continued investment.” Therefore, it was necessary for the literature study to start out by studying the investment decision as a first priority. The Kahneman and Tversky (1981) remark, “Making decisions is like speaking prose – people do it all the time, knowingly or unknowingly”, as well as the Zeelenberg *et al.*, (2000) remark, “the most difficult decisions are those between emotions”, augured well for some interesting research.

The research gained momentum when numerous examples of apparently profitable horse industries, growing on a non-profitable base, were found in international literature (Gibs *et al.*, 1998; Deloitte & Touche, 2005; Whiting *et al.*, 2006; Rephann, 2011). These examples provided proof that the South African Saddle Horse industry is not unique in this respect but is merely reflecting a worldwide phenomenon. At the same time, these examples also bear proof that virtually no theoretical work has been done in explaining this very intriguing phenomenon. Neither Economics nor Behavioural finance offered any appropriate explanation. It was only in service delivery in marketing that some apparently applicable theory was found (consumption theory). The Barlow and Maul (2000) conclusion that “the greater part of consumer choice is based on emotional influence”, as found in consumption theory, indicated emotional reward as a possible motivator in investment decisions.

Concurrently in the research process into the background to the Saddle Horse industry (chapter 3), a very strong emotional influence was confirmed to be prevalent. Concerning the horse industry in general, and the South African Saddle Horse industry in particular, it became obvious

during the study of the background of the Saddle Horse industry in South Africa that an emotional bond exists between humans and horses. This bond implies a conscious and emotional choice as a prerequisite for getting involved in the South African Saddle Horse industry.

Consumption theory had already confirmed the emotional influence in the consumption decision, but not in the investment decision. Qualifying the emotional influence on the investment decision implied adapting consumer theory to the investment situation, which constituted theory building research. Emory and Cooper (1991), amongst others, provided the answer, with them arguing that “case study research fits within the critical realism paradigm and is essentially inductive, theory building research”. In cross-case analysing the multiple case study data, from nine meticulously selected cases, a 100 % replication to prior theory, that embraced consumer theory, was found. This unequivocally confirmed that, ‘the motivator of the investment decision in the South African Saddle Horse industry is not calculated reward but an emotional reaction’. The Freemantle (1998) claim, supported by Barlow and Maul (2000), was validated in every investment decision in the cases studied and tested in this research.

Once the influence of emotions was qualified, quantification was attempted. In quantifying the emotional influence on the investment decision in the Saddle Horse industry, data from public ASF and AACup sire service auctions and dedicated progeny classes (augmented by a sire lifetime show earning dataset) was used, owing to a lack of alternative sources. The ASF and AACup data was used because it is believed to be a good proxy for the Saddle Horse industry in South Africa in terms of its investment decisions and the data was available. The trend lines of the AACup progeny earnings and the sire lifetime auction earnings behave in symmetry with sire service auction prices, as breeding selection theory would have it. However, because of the overwhelming influence of emotions, an OLS analysis could find no statistically meaningful linear relationship between prices and the logical denominators. Proven not to be compatible with a linear relationship, the influence of emotions on the investment decision seems to be more compatible with non-linear differential equations that describe ‘reaction loops’.

Investment decisions in the American Saddle Horse industry in South Africa were confirmed in the multiple case study and the OLS analysis to be irrevocably emotional decisions. In this, the research findings concur with Bargh (1977): “much of people’s behaviour seems to be based on unconscious control” because “these unconscious processes are much faster than conscious deliberations and occur with little or no awareness”.

6.2 Significance and relevance of results

“Economic systems provide solutions to four questions: what goods and services will be produced, how they will be produced, for whom they will be produced and how they will be allocated between consumption (for present use) and investment (for future use)” (Heathfield, 1971). But Tversky and Kahneman (1981) found that “the apparent irrationality of the average economic decision maker has been well studied and documented as contrary to the assumptions of standard economics”. This makes the Prigogine and Stengers (1984) question relevant, “are we ourselves merely the result of our ignorance, of the fact that we only observe macroscopic states?”, as it could be applied to Classic and Neoclassic economic theory. The thrust of these theories were that individual irrationality does not impact on aggregate human behaviour. By utilising the concepts of utility and preference, the problematic measuring of feelings in Classic and Neoclassic economic models was eliminated. The Weak Axiom of Revealed Preference (WARP) equates unobserved preferences with observed choices (Samuelson, 1930).

But the brain controls human behaviour and economics is no exception (Bruni & Sugden, 2005). This is supported by findings, such as those by Blair (2010), who argues that “people make decisions based more often on what we unconsciously feel than what we unconsciously think and both occur more often than what we consciously feel and think”, and by Zajonc (1998), who states that “our emotions often motivate us to behave in certain ways at an unconscious level”. More specifically, Mellers *et al.* (1999) proved that the opportunity cost comparisons for decision making, as is argued in economic theory (UMH), are supported by an individual’s emotional (affective) circuitry that is commonly below the individual’s conscious awareness. Moreover, Blair (2000) stated that “emotional aspects of a stimulus might be processed more automatically than the stimulus of a non-emotional aspect and have greater impact on decisions than originally thought”. All these attest, not only to the importance of recognising emotion as an influence in the investment decision, but also to emotion’s hitherto unacknowledged pervasive presence. The results of the research in this dissertation not only confirm neuroeconomic research, but more specifically identify an unexpected and overwhelming influence of emotions on the investment decision in the South African Saddle Horse industry.

Decisions are part of every action of every participant in any and all economic activities, and because our unconscious capacity to process information is at least 200 000 times more than our

conscious capacity (Nørretranders, 1998), using unconscious, automatic process is not only useful but vital in making decisions and determining our actions (Blair, 2010) in real life. In all automatic processes in the brain, emotions are prevalent. Emotions, as an influence in decision making as is the case in the South African Saddle Horse industry, are vastly underrated and have a much larger influence than was previously thought. In view of the importance placed on investment decisions from the outset of economic theory, the first economic model (the TGS) already recognised investment as important: “the model is correct in describing technical progress as being dependent on savings and investment” (Brenner, 1969). This importance of investment for growth was also confirmed and elaborated upon by Keynes (1936). Taking cognisance of these findings, it is perplexing to find that emotions, as an influence now proven basic and overwhelmingly important to the understanding of investment (in the South African Saddle Horse industry) with its many nuances and peculiarities, is largely neglected by economic theory.

In view of the findings in this research, including the confirmation found in quantification of emotional influences, it is obvious that emotional influences should no longer be neglected in describing economic decision making. Furthermore, it should be obvious that neuroeconomic developments offer considerable possibilities for progress in terms of understanding basic economic functions, such as investment decisions, and in consequence economic growth. An understanding of the origins and compilation of emotional influences in investment decisions will increase the efficiency and accuracy of predicting investment decisions and eventually in promoting economic growth.

6.3 Implications for the sector and economy

6.3.1 Implications for the Economy

Feelings predict behaviour and from literature it was evident that consumer theory and neuroeconomic research had already established emotions as an ever-present influence on decision making, thus also on behaviour. In this research, qualification as well as quantification not only confirmed consumer theory and neuroeconomic research, it also established emotions as being an overwhelming influence on the investment decisions in the South African Saddle Horse industry. This provides ample evidence of lacking information in the models of economic behaviour used hitherto, while at the same time giving substance to the Tversky and Kahneman (1981) construct of ‘apparent irrationality of the average economic decision maker’.

A major implication for economic thought is the now confirmed influence of emotions on the establishment of prices in a market, especially in terms of the role of prices in bringing about a movement towards equilibrium in a market. The influence on a market by individuals reacting to emotions could be compared to the Boltzmann order principle (applicable to all microstates), derived from the Second Law of thermodynamics. The implication is that, should the Boltzmann order principle apply, equilibrium in this instance can be explained in terms of probabilities, with disorder (entropy) increasing towards the future (Jaynes, 1965).

An additional and complicating factor proven by neuroeconomics, and confirmed by the present research, is that emotional influences are never all emotionally or all logically motivated, but an ever-varying mixture. Complications arise because behaviour under emotional influence (affective side), and behaviour on the logic (cognitive side), differ substantially. This property of emotional influence is a complicating factor and makes it an unknown quantity in any prediction. The practical problem being that, although emotional influence as a term is widely used (and also in this dissertation), its origins, what the emotions are composed off, and why and how it changes (as was quantified in the research) are largely an unknown.

In striving for a better understanding of investment decisions, and therefore also of growth, emotions can no longer be regarded as “useless constructs” to be measured by implication from behaviour. In general, the implications for the sector and the economy exist in calculating and accommodating emotions as an influence in economic decision making.

6.3.2 Implications for the sector

In the research, it was evident, and in the theoretical discussion it once again rose to prominence that the volatility associated with emotions as an influence in the determination of price implied that balance or near balance is never achieved in the market. In practice this meant that if you wanted to buy, the price would be too high and the choice meagre, and if you wanted to sell, the price usually was too low and the candidates plentiful. In summary, prices as a consequence or source of volatility, have never had a meaningful influence on demand or supply, except at the extremities (very high or very low). Even in extreme cases, the influence of price can at best only be described as a possibility, not a rule (Boltzmann’s order principle?). These facts were confirmed by every one of the nine cases studied to be a close approximation of the market for American Saddle Horses in South Africa.

Furthermore, Richins (1997) assigned an emotional weight to objects and in consequence also to industries. The findings in Chapter 3 coincided with this researcher's remarks about an 'emotional choice as a prerequisite for getting involved in the South African Saddle Horse industry'. These remarks were confirmed by every respondent in the case study, claiming to be involved for the 'love of horses', thus signifying an 'emotionally laden' market. Therefore, it is not surprising that this research found that all the respondents were motivated by emotions in their investment decisions, with negligible regard for financial or economic consequences. But it was evident in the research that even with emotional decisions (behavioural economics call them 'irrational'), experience and knowledge of the industry have sobering influences, albeit only in the ability to successfully rationalise an emotional decision in hindsight.

Findings indicate that most respondents who reported financial losses due to buying and keeping horses do not accept the losses as an irrefutable cost. In this they apparently still have not shrugged off emotional influences. But what is not generally accepted is that although, according to the findings, there are those who are in fact making money out of their emotional investments, there are prerequisites for this to happen. The findings indicate that, with circumspection being taken before an investment, even with an emotional decision, the more calculated but not necessarily bigger investments resulted in better financial and economic results.

In the case selection, the South African Saddle Horse industry was divided into three interest groups:

The **Owners** – they own horses but do not run their own stables. This pure form of horse ownership (read investment), not maintained by other incomes, always did and still serves as the springboard for well-known studs, owing to the ease of entrance. Unfortunately, the owner category is also the slaughter ground for many an unsuspecting new enthusiast. Research indicated that in this category, showing horses received above-average prominence, stressing the remark of a pure form of investment in the Saddle Horse industry, since American Saddle Horses are in principle show horses. Implications for the owner category from this research are: You can never know too much about the industry, and most likely will not know enough when you buy your first horse. Therefore, be acutely aware of the fact that as a newcomer, although you are highly motivated, you are inexperienced, which makes you very vulnerable, financially speaking, which will be the last thing you will be thinking about.

The **Trainers** – those who mainly train either horses or riders, or both horses and riders. Most trainers train professionally, investing both time and money in the industry. As a rule, they got to know the industry before investing and differ in terms of motivation (intensity?) from the average owner. Unfortunately, research information also puts them high on the list of plunderers of unsuspecting newcomers, which is very short-sighted, as with more than any other category, a trainer's livelihood is tied to the wellbeing of the industry. Implications of the research information is that although trainers as a group comprise a minority shareholding in the financial investment in the industry, they facilitate the major part of showing the American Saddle Horse – a key function in the larger Saddle Horse industry (their admitted prowess in selling horses is a covert but clear indication of the position they occupy in the industry). Implied in this is the fact that the trainer's behaviour and conduct are prerequisites for the wellbeing of the Saddle Horse industry in general and should therefore be regulated and controlled, as it is done in the racing industry by the stipendiary stewards.

The **Breeders** category was designed as an alternative to the other categories and is the largest. Breeders are, financially speaking, the major investors in the South African Saddle Horse industry, owning and breeding the majority of horses in the industry. According to research information, the 'best blood' cliché runs rampant. Notwithstanding this, the research results indicated that investment success depended on the marketability of the purchased blood, market insight, knowledge of horses and the level of horsemanship of the owner, and contrary to popular belief, not on the financial resources available. Implications of the research information are that marketing and marketability is the key to success, and not the owners' opinion of the 'best' horse (as this is biased in principle). Marketing and marketability depends on knowledge of the horse and the market. As a breeder in an emotional market, it is vital to recognise that the horse which fulfils the buyer's desires is the horse that will sell and sustain your enterprise. The practical implication for selling a horse in such an emotionally laden market is to determine the buyer's desires, as accurately as possible, then select a horse that fits the desires of the buyer as closely as possible, and show him as good as you can in that context.

The implications of the findings of this research for the long-term stability and growth of the South African Saddle Horse industry are that it would be beneficial to design an industry system identifying, educating and protecting new and 'could be' investors. Such a system will provide a much needed reality check and reduce wastage of scarce investment funds along the way.

6.4 Recommendations and future research

6.4.1 Recommendations and future research for the economy

From the findings it should be clear that economic models on decision making are lacking in perspective on the influence of emotions which are proven to be substantial in an emotionally-laden market such as the South African Saddle Horse industry. The influence of emotions can be crucial in, for example, exploiting economic growth potential. The Saddle Horse industry is a worldwide a multimillion dollar industry, with coincidentally proven and strong connections with good growth potential for South Africa's rural areas. These connections contain sustainable development potential for improving the quality of life for many people living in these rural areas. But, in order to successfully exploit this potential, more information on emotion as an economic variable is needed in stimulating the industry. In accordance with the occurrence of emotions as an influence in decision making, evident in literature and this research, this argument for more information is extendable to numerous other emotionally influenced markets. Therefore, in order to improve the reliability of predictions on economic investment and also economic growth, emotions as an influence have to be accounted for. The term 'emotional influence' is widely used in literature and also in this dissertation. But what emotional reward and influence are composed of, and 'why and how' it changes as an influence, should be researched.

The present research has clearly confirmed the influence of emotions on investment decisions in the South African Saddle Horse industry. Emotions as an influence were found to be a highly disruptive in the determination of price. Therefore, future research should also examine the influence of a price, determined by emotions, on the equilibrium in a market for two reasons: the first of which is the fact that emotions may be disruptive to the usual and accepted demand/supply mechanism as it is expressed in terms of price. The question is how, if the Boltzmann order principle is taken into consideration, would equilibrium be acquired in a market under emotional influence, and if so, would disorder (entropy) increase toward the future. Secondly, quantification failed to prove a linear relationship due to the emotional influence between logical determinants and sire service prices. This left the distinct possibility (compatibility in terms of form and function) of using non-linear differential equations, such as 'catalytic loops', to describe the influence of emotions on price. This is actually more than a mere 'distinct possibility' since Goldbetter and Nicolis (1976), in a molecular biology paper proved autocatalysis to be the norm in living systems. The question is whether an autocatalytic

relationship of emotions to price could be related to markets. The 'catalytic loop' relationship becomes important once it is noted that, even in a stable system, the only reaction processes that have the potential to jeopardise stability and push a system far away from equilibrium stages are precisely these 'catalytic loops' (Prigogine & Stengers, 1984). Therefore, future research should include the aim to understand the mechanism of maintaining equilibrium in an emotionally-laden market, taking cognisance of both the probability of evolving instability in a market, and the way permanent chaos is in fact avoided in social systems such as markets. For instance, Goldbetter and Caplan (1976) determined that the competition between stabilisation through communication and instability through fluctuations, determines the threshold of stability. Should the 'catalytic loop' relationship be confirmed, this finding could explain the higher volatility witnessed in the ASF, as the gaps in their statistics (compared with the AACup) impair effective communication.

6.4.2 Recommendations and future research for the sector

Arising from the now-confirmed influence of emotions on the investment decision in the South African Saddle Horse industry, is the knowledge that in an emotional decision, logic plays a secondary role to emotions. The consequence of this knowledge is that the industry and players should recognise that positive emotions are a very precious thing in terms of survival and progress (witnessed by the amounts of advertising money that change hands in order to create just that). Therefore, positive emotions that concern an industry should be protected, preserved and promoted at all costs, as feelings precede action and this is the lifeline of any industry.

But just as one swallow does not make a summer, a small band of loyal, and very passionate, followers does not make a flourishing industry. However, it might give a very good start to a flourishing industry if the industry succeeds in promoting these desirable horses. The key to turning an existing industry into a flourishing one is in marketing these horses as desirable and making the industry accessible. Therefore, research in the sector should be aimed at preserving and building positive emotions, while identifying and eliminating possible sources of negative emotion.

Following on from that, and even more importantly, both at individual and industry level, is the point that negative incidences should be avoided at all costs. All negative publicity should be avoided and potential sources of negative publicity removed. Instances of negative emotions identified in the research were identified in the not insubstantial number of beginning investors

who did not survive their introduction to the industry and in those who found their introduction to be a detrimental. This does not bode well for the industry – neither for its survival nor its development. To avoid such damaging incidences, the industry should carry out research and then design and implement a system of protecting and nurturing investors, especially newcomers. From this research, it is evident that such a programme should include: helping newcomers and participants to identify goals, firstly by education in terms of the possibilities and the requisites necessary, and secondly by warning them of the pitfalls lurking.

For the **owner** and **breeder** categories, research should identify a programme which, more than helping to define goals, also lends support and prompts investors to learn as much as they can about what they want to achieve, and then follow up with help in designing a plan to achieve the goals set. A variety of experts should be identified to discuss the plan in detail with every participant, lending much-needed experience to the effort. Lastly, but also most important, a budget should be drawn up and discussed in detail with both successful and lesser prominent participants in the industry. Although totally neglected in the industry, financial planning is important for survival, as was evident in research.

In section 6.3.2, the disproportionate influence of **trainers**, in view of their lesser investment, was discussed. The discussion ended in the remark that in order to preserve and promote the Saddle Horse industry, stipendiary stewards, as are used in horse racing, should be appointed. Therefore, it follows logically that the feasibility of such a system, the points of control, and powers allocated, as well as the cost and who is to pay for it, should be investigated.

Research determines unmistakably that the investment decision in the South African Saddle Horse industry is not a calculated one, but an emotional reaction. A very direct consequence for individual owners is that the price determination in the market is compromised, resulting in a defective equilibrium. This means either an oversupply or a shortage of suitable horses (section 6.3.2) and a price not determinable in advance. It also means that lower prices will be of little use in clearing a glut in the market.

Utilising the research findings implies that when selling a horse is contemplated, the seller has to do the research (the most probable method of which is to actually listen to the buyer and make mental notes) and so determine the desires of the buyer as accurately as possible. If that is not forthcoming, it is not uncommon to utilise advertising to develop a desire in the buyer, and if you

know the buyer's interest, not that complicated to amplify either. In principle, you have to get the buyer to want the horse. Only then can a seller proceed by presenting the horse to be sold in the predetermined context, because the buyer will make an emotional decision whether to buy or not. The more perfect the fit, the easier and more successful the process should be. Basic to a successful breeding/showing operation will be to present the horse as something the buyers desire.

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Addendum: A

**Protocol for the Case Study into the Investment Decision of the South
African Saddle Horse Industry**

1. Overview

The horse is not any more the basic necessity as a means to mobility that it used to be a few decades ago. Today the horse is primarily utilized in recreation - this is a conscious choice. It is this conscious choice that is an intriguing one: Horse business is huge both in South Africa (racing alone contributed R2.71bn to the South African Gross Domestic Product (GDP) in 2009 (Standish, 2011)) and abroad (The horse industry in the USA contributed \$63bn to the USA Gross National Product (GNP) annually (Deloitte and Touche, 2005)), and to all indications financially highly profitable for everybody except one entity - the horse owner: "it is the owners of race horses and the punter who pay for the sport" (Standish, 2011). However notwithstanding these facts, the number of horse owners continues to increase and individuals within the industry do enlarge their investments over time (S A Saddle Horse Breeders Society, 2010; Deloitte & Touche, 2005; Standish, 2011). This constitutes an anomaly - a profitable industry growing on an apparently non-profitable base.

In racing both here and abroad there is a definite ebb and flow in owner numbers according to the rise and fall in prize moneys (Deloitte, 2006; Standish, 2011). But if you calculate returns on investment it is obvious that prize moneys cannot guarantee good returns and financially it cannot be a motivator: Only one horse can win at a time and even if your horse wins a major race, the prize money will not cover the cost of acquiring, keeping and training of a string of racehorses. In order to earn a steady income from prize moneys you need to maintain string of winning racehorses. The Saddle Horse Industry in South Africa does not have significant prize moneys – in the Five Gaited Grand Saddle Horse National Championships the stakes is insignificant.

Notwithstanding short term influxes, there was a constant growth in the local industry over time but growth has not been quantified as yet. The growth in the National Championships is a well-

known and evident phenomenon of the growth in the industry. When entries for the National Championships exceeded 1000 horses, qualification requirements were instated in order to bring the numbers down. That was two years ago: at present not withstanding qualification requirements entries have once more increased to more than 900 horses competing in the National Championships. One of the more recent developments in the South African Saddle Horse industry, which is unfortunately also not quantified, has been the influx of well to do businessmen into the industry in sharp contrast to the origins of the industry which was situated in the farming community. These businessmen had in the recent past and are still investing large sums of money, not only in horses (both local and imported) but also in facilities and training. Still in sharp contrast to the development of these magnificent facilities and studs is the absence of evidence of financial and even economic reward.

Numerically the horse industry in South Africa is insignificant compared to horse industry world-wide. As was stated in South Africa the Thoroughbreds are numerically the largest of the purebred breeds, Saddlers are a distant second, a small part of the total South African horse population. According to literature, horse industries world-wide abound with examples of apparently profitable industries growing on a non-profitable base (Gibs *et al.*, 1998). This same phenomenon was described in the South African Saddle Horse industry. The South African Saddle Horse industry is selected for this dissertation because: Numerically it is one of the larger breeds in South Africa which imply that satisfying requirements of sampling a case study in terms of variety and cases worth studying can be met. In terms of investment decisions, it does not have the betting side of the Race Horse industry which tends to have a major influence in the investment decisions. Neither do prize moneys in the South African Saddle Horse industry have the significance in horse ownership decisions it has in the Race Horse industry or the American Saddle Horse industry. It is evident that the industry did show growth over time (S A Saddle Horse breeders Society, 2010), is well organised, which means that background information (the industry and individual cases) is attainable.

Investment is fundamental to economic viability. Economic viability is defined as (Deloitte, 2006): “an operation that can sustain itself on the basis of revenues equal to or in excess of expenditures, where revenues and expenditures are accepted to be all the costs and incomes, not just direct financial costs and incomes”. In this study the mentioned “not just direct financial

costs and incomes" imply benefits in a broader sense: non marketable rewards such as emotional goods.

However classic economic theory, in dealing with the investment decision uses the simplified and abstract "reasonable man" (Dickson, Urbany & Miniard, 1986) concept with the utility measured in terms of a universal measure - money. Yet more recent developments in consumption theory deviate largely from the "reasonable man" concept and accepted that the consumer in consumption decisions is sometimes "so influenced by emotional forces that rational ones barely come into play" (Barlow & Maul, 2000), something that is not measurable in terms of money. It is in this context that the adaption of consumption theory to investment theory in order to identify the motivators in the investment decision becomes important.

The investment decisions in the South African Saddle Horse industry represent a strategic phenomenon: "The Saddle Horse industry over time drew serious investments and managed to grow to its present size without obvious financial or economic rewards". A phenomenon that literature confirmed as not exclusive to the South African Saddle Horse industry since the Texas horse industry report already stated in 1998 that: "horses are bought and sold for many reasons other than attempted profit"(Gibs *et al.*, 1998). But neither classical economic theory nor behavioural finance offer a plausible explanation for the motivation of investment. However in consumption theory in marketing a possible explanation for the mentioned phenomenon is to be found. In order to be applicable in this case study into the investment decision of the South African Saddle Horse industry, the consumption theory in marketing have to be proven relevant and then adapted to an investment decision. Only once the consumption theory is confirmed as being relevant to the investment decision and adapted to investment theory can testing be considered. In this dissertation however effort is directed at confirming relevancy of the consumption theory and adapting it to investment theory, this implies theory building. The method of research is justified by Emory and Cooper (1991): "case study research fits within the critical realism paradigm and is essentially inductive, theory building research" and confirmed by Schramm (1971): "The essence of a case study, the central tendency among all types of case study, is that it tries to illuminate a decision or set of decisions: why they are taken, how they were implemented, and with what result."

Eisenhart and Graebner (2007) described the parameters for using a case study as research method in studying the described phenomenon and developing theory to explain it when they

wrote: “the justification rests on the phenomenon’s importance and the lack of viable theory and empirical evidence”. This section started out describing the lack of theory to explain this phenomenon in the investment decision of the South African Saddle Horse industry, while the quoted literature confirmed evidence thereof. Importance of the phenomenon is due to the influence of investment on economic viability. The reasons for investment have to be understood to make economic viability a reality.

Financial and economic motivators in the investment decision are well studied subjects as economic viability in an industry is directly linked to continued investment. However it is a contention in this study that as in consumption theory, when someone experiences joy and expresses his passion for an object emotional value takes over as the motivating factor in the investment decision largely without calculating financial or economic reward. Economic theory on the functioning of non-market rewards, such as emotional value, in motivating investment is lacking.

To the contrary in consumption theory in marketing there is a growing awareness that the greater part of the consumer choice is not based on rational decision but on the emotional value (Barlow & Maul, 2000). Freemantle (1998) wrote that: “rational decision making comes into play to justify and control our emotional drives. We frequently delude ourselves that we are being rational when in fact what we are doing is rationalising our emotions”. Economic and financial motivators in the investment decision are measurable in terms of money, but non-market rewards, such as emotional value, is not. For this reason no theory and little information on the investment decision with emotional value as a motivation exist. By doing a case study on the investment decision in the South African Saddle Horse industry, this study will strive to expand and generalise theory in order to better understand the investment decisions as it relate to the non-market motivators such as emotional value.

2. Field procedures:

This study will be a multiple case study with the stated objective to develop theory (adapt consumer theory) that will identify the motivators in the investment decision in the South African Saddle Horse industry in the absence of obvious economic or financial rewards. Therefore in order to mitigate retrospective sense-making and impression management data collection in each

case will focus separately on past, present and possible future investments for each individual case.

The underlying question that needs to be answered in the interviews of the case study but “are not intended as literal questions to be asked of any interviewee” (Yin, 2009) would be: What are the motivations and the degree of influence that prompted horse owners to invest in the South African saddle horse industry even though all evidence point to them being cost bearers? The purpose of this question is to keep the investigation on track as data collection proceeds.

According to Sharma and Gupta (2011) a transaction is an investment transaction if it is executed with the intention to gain calculated rewards. This dissertation aim to find the motivations that prompted horse owners to invest in the South African Saddle Horse industry even though all evidence point to them being cost bearers. Hence this study (and also case selection) is aimed at finding and studying cases that have frequently invested over time as a result of the rewards they received. In terms of rewards received - that include direct financial and economic rewards and emotional goods - it is expected that the response will in principle be on three different levels: The owners who actually receive direct financial or economic rewards from their investment, and to whom emotional goods are an added extra – “the beneficiaries”. Owners who although not acquiring any financial or economic rewards at present are driven by present emotional goods and hope to have the enterprise profitable in future – “the believers”. Then the owners might not know or want to know that they do not receive direct financial or economic rewards accruing from their investments but are happy to investing never the less due to the emotional goods they receive – “the lucky ones”.

The individual owner is the case being studied and also the unit of analysis. Case study sampling theory indicated that the success of a case study is closely related to the selection of information rich cases - “worthy of study” - “because they are particular suitable for illuminating and extending relationships and logic constructs” (Eisenhart & Graebner, 2007). In order to select cases that will extend and illuminate logic constructs the South African Saddle Horse industry where divided into three identifiable groups. The Breeders - those who in principle own horses and breed them, selling the foals as a main source of income. Most of them also train horses, mostly some of their own foals, in order to participate in shows as an advertisement for their breeding practices. There are some of them who also speculate with horses that is a buy/sell

business. Some of them will sometimes also train or stable horses for other owners. The owners - those who in principle own horses but do not run their own stables and accordingly board them at somebody else's stables. Some also breed horses in the same context. The Trainers - those who in principle train horses but some of them also own horses speculate with horses and/or breed horses.

This case study will be a multiple case study however the mode of generalisation will still be analytical generalization. Analysis will be holistic as an individual owner will be the primary unit of analysis (the case) therefore each case will be analysed in isolation. But the conclusions and generalizations to theory will be on the overall nature of investment decisions in the industry. In a multiple case study such as this one "prior theory is used as a template with which to compare the empirical results of the case study. If two or more cases are shown to support the same theory, replication may be claimed" (Yin, 2009).

Taking cognisance of the phenomenon that is the focus of this study: "...the Saddle Horse industry over time drew serious investments and managed to grow to its present size without obvious financial or economic rewards" and all that has been said in the literature study such as:

- "Horses are bought and sold for many reasons other than attempted profit" (Gibs *et al*, 1998).
- "Horse people love what they do and they are involved with horses because of that passion... That commitment and passion are hard to find elsewhere" (Hugo, 2012).

From these abstractions and in view of Fromlet's (2001) admission that - "psychological and irrational behaviour does matter in financial markets"- it is likely that Freemantle (1988); (Barlow & Maul (2000)) is correct in claiming: "the greater part of consumer choice is based on emotional influence". The case study will determine whether they are also being correct in terms of the motivation for the investment decision in the South African Saddle Horse industry. In this case study then, before the pilot studies that still have to be executed and might affect changes in theory, prior theory can be described as - 'horse owners in their investment decisions, due to their commitment to these animals, are motivated more by their passion for these animals than by the direct financial and or economic reward to be gained'.

Rival theory would be - 'horse owners in their investment decisions are motivated by direct financial and or economic reward to be gained and empathy is but an added extra'.

The Data collection plan is as follows: Nine cases will be selected, with the intention to select highly knowledgeable informants who view the focal phenomena from diverse perspectives. Therefore three from each of the three identifiable groups will be selected taking care to select an equal amount of: Retrospective (owners who had been in the industry a long time) as well as real time (new comers) cases (Leonard-Barton, 1990) and both “polar types,” (very high and very low performing /profile) (Eisenhart & Graebner, 2007) cases. Lastly in accordance with the expected three levels of response described in the previous section the nine cases will be chosen so as to represent them (the beneficiaries, the believers and the lucky ones).

Sampling to these principles should lead to “clear pattern recognition of the central constructs, relationships, and logic of the focal phenomenon” (Eisenhart & Graebner, 2007).

Nine cases will be selected, of which three (one from each group) will be used in a pilot study to develop the prior theory from its initiation in the Literature review (chapter 2). “Prior theory is developed from the literature and from pilot studies, to be the first step in the theory-building process of case study research” (Perry, 1998).

In actual selection in order to implement the criteria as was set out The Participant List compiled by the S.A. Studbook and Animal Improvement Association of the South African Saddle Horse Breeders’ Society served as data bases for selection of possible cases. “Not active” listings (du Preez, D, 2010) according to the Breeders’ Society were eliminated as a first step. The remainder was divided into the three identifiable groups: Breeders, owners and trainers. Each group of the Breeders, Owners and Trainers was divided into three groups according to the duration of their membership: more than 20 years, less than 5 years and those in between. From personal knowledge assisted by A Richardson (the previous general secretary of the South African Saddle Horse Breeders Association) from the nine groups nine highly knowledgeable cases were selected taking care to select equal numbers of high profile and low profile cases. Once that was completed the case selection were augmented to equally reflect the three levels of reaction anticipated (beneficiaries, believers and lucky ones). Three cases from the selected group of nine cases were identified for a pilot study: One from each of the identifiable activity groups (breeders, trainers and owners) taking care to have both retro and real-time representatives and one from each of the expected reaction groups.

Data collection sites and contact persons

| Stud | Contact Person | Activity group | Involvement in Industry | Profile |
|--------------------|----------------|----------------|-------------------------|---------|
| Pilot study | | | | |
| 1 | C1 | trainer | long term | High |
| 2 | C2 | breeder | medium term | Low |
| 3 | C3 | Owner | medium term | High |
| Case Study | | | | |
| 4 | C4 | breeder | long term | Low |
| 5 | C5 | breeder | medium term | High |
| 6 | C6 | Owner | short term | Low |
| 7 | C7 | Owner | long term | High |
| 8 | C8 | Trainer | short term | Low |
| 9 | C9 | Trainer | long term | High |

Source: Case study data.

The procedures for protecting these human subjects are:

Confidentiality:

Anonymity enhances the data gathering process. Therefore the respondent identities will not be revealed in analysis and the case study report. Only the cross case syntheses will be presented in the report as it represent the individual cases linked by the generalization analysis. Accordingly participants will review the draft report of the case study in order to get their feedback in drafting the case study report.

Data collection:

Data will be captured by writing notes and not recorded. Because data to be captured will be emotional goods. Recording an interview has a suppressing influence on information offered especially if emotions are involved (Yin, 2009); (Eisenhart & Graebner, 2007) - the more

emotional the more it is suppressed. Recording secretly implies a lack of consent by the respondent.

3. Case study questions.

In this case study interviews are the prime sources of information gathering. Interviews are carried out in the format of a guided conversation rather than a structured query as in a survey (Rubin & Rubin, 1995). The interviews start with an unstructured part as induction to the interview. In this section the researcher strives to have the interviewee's reveal information about the circumstances (emotional, financial and economic) of his or her involvement in the industry. Perry's (1998) advice is "start with getting the interviewee to tell the story of their experience of whatever the research is about". This is followed by the questioning part of the interview which is on two levels. The first level is about satisfying the needs of the line of enquiry while the second level consists of friendly and non-threatening questions to stimulate discussion (Yin, 2009).

The first level of questions concerning the motivations for the investment decision is the brunt of the interviews. During this first level of questioning the underlying question that needs to be answered in the interviews of the case study but "are not intended as literal questions to be asked of any interviewee" (Yin, 2009) would be: 'What are the motivations and the degree of influence that prompted horse owners to invest in the South African saddle horse industry even though all evidence point to them being cost bearers?' Therefore during the interview the researcher strive to find the reasons and motivations for investments in the past, the present and the future separately in the case being studied. That includes the planning of present investments and expectations for future investments in terms of economic, financial and emotional rewards to be gathered. Only once that is accomplished will the **results** of past investments such as financial and economic benefits and emotional rewards that did accrue to owners be established.

In order to have interviewee's revealing the relevant information probing questions are prepared, usually starting with "How?" (Perry, 1998). Questions such as:

- How did you come about making the investment decision, you did?
- What procedures were (and are) followed in making investment decisions?
- Which factors were considered in making an investment decision - economic and or financial viability or was it emotions?

- If financial gain is indicated participants is prompted to provide quantitative data on the financial or economic rewards that did accrue to owners due to investments in the past if available.

The second line of questioning consists of lines of questioning designed to draw converging lines with the rival or case study theory. Questions leading to “endorsing observations” or “refuting observations” on the following issues: the level of activity in the industry (shows attended, number of horses shown, etc.), participation in projects and programs of the Breeders’ Society etc.

4. A guide for the case study report.

Case theory is formulated based on the case study theory and rival theories and expanded it into proposition by:

- Comparing the findings of the initial case or pilot case, against the developed propositions.
- Revising the theory and propositions.
- Comparing other details (literature, documentation, observations and prior knowledge) of the case study against the revisions.
- Comparing the revision to the facts of the rest of the case study.
- Repeating the process as many times as needed until literal and theoretical replication is achieved.

In writing the report a theory building structure is used in describing the case study: Each part of the theory or proposition is demonstrated by evidence from some of the cases. In multiple case studies only the relationships that are replicated across most or all of the cases are retained. The underlying theoretical arguments that provide the logical link between the constructs within a proposition are indicated. Therefore the theory unfolds as facets of the arguments are examined.

Addendum B:

Questionnaire for testing case study results to the broader South African Saddle Horse Breeders Association membership.

The horse is not anymore the basic necessity as a means to mobility that it used to be a few decades ago. Today the horse is primarily kept for recreation, this is a conscious choice. It is this conscious choice that is an intriguing one: Horse business is huge both in South Africa and abroad. Racing alone contributed R2.71bn to the South African Gross Domestic Product (GDP) in 2009 (Standish, 2011) while the horse industry in the USA contributed \$63bn to the USA Gross National Product (GNP) annually (Deloitte and Touche, 2005). To all indications it is a financially highly profitable business for everybody except one entity - the horse owner: "it is the owners of race horses and the punter who pay for the sport" (Standish, 2011). However notwithstanding these facts, the number of horse owners continues to increase and individuals within the industry do enlarge their investments over time (S A Saddle Horse Breeders Society, 2010; Deloitte & Touche, 2005; Standish, 2011).

Therefore it comes as no surprise that in terms of the investment decisions, the South African Saddle Horse industry also represents a strategic phenomenon: The Saddle Horse industry over time drew investments and managed to grow to its present size without obvious financial or economic rewards. A phenomenon that literature confirmed as not exclusive to the South African Saddle Horse industry since the Texas horse industry report already stated in 1998 that: "horses are bought and sold for many reasons other than attempted profit" (Gibs *et al.*, 1998).

In racing both here and abroad there is a definite ebb and flow in owner numbers according to the rise and fall in prize moneys (Deloitte, 2006; Standish, 2011). But if you calculate returns on investment it is obvious that prize moneys cannot guarantee good returns and financially it cannot be a motivator: Only one horse can win at a time and even if your horse wins a major race, the prize money will not cover the cost of acquiring, keeping and training of a string of racehorses. In order to earn a steady income from prize moneys you need to maintain a string of winning racehorses. The Saddle Horse Industry in South Africa does not even have significant

prize moneys – in the Five Gaited Grand Saddle Horse National Championships the stakes are insignificant.

However notwithstanding short term influxes, there was growth in the local Saddle Horse industry over time although not quantified as yet. The growth in the National Championships is a well-known and evident measure of the growth in the industry. One of the more recent developments in the South African Saddle Horse industry, also not quantified but also evident internationally, has been the influx of business persons into the industry in sharp contrast to the origins of the industry which was situated in the farming community. These business persons had and are still investing large sums of money, not only in horses but also in facilities and training. Still in sharp contrast to the development of these facilities and studs is the absence of evidence of obvious financial and even economic reward. This constitutes an anomaly - a profitable industry growing on an apparently non-profitable base. Neither classical economic theory nor behavioural finance offers a plausible explanation for the motivation of such investment.

Investment is fundamental to economic viability. Economic viability is defined as (Deloitte, 2006): “an operation that can sustain itself on the basis of revenues equal to or in excess of expenditures, where revenues and expenditures are accepted to be all the costs and incomes, not just direct financial costs and incomes”. In this study the mentioned “not just direct financial costs and incomes” imply benefits in a broader sense: non marketable rewards such as emotional goods.

Classic economic theory, in dealing with the investment decision uses the simplified and abstract “reasonable man” (Dickson, Urbany & Miniard, 1986) concept with the utility measured in terms of a universal measure - money. Economic and financial motivators in the investment decision are measurable in terms of money, but non-market rewards, such as emotional value, is not. It is in this context that the adaption of consumption theory to investment theory in order to identify the motivators in the investment decision becomes important. Since more recent developments in consumption theory deviate largely from the “reasonable man” concept and accepted that the consumer in consumption decisions is sometimes “so influenced by emotional forces that rational ones barely come into play” (Barlow & Maul, 2000), something that is not measurable in terms of money.

In consumption theory in marketing there is a growing awareness that the greater part of the consumer choice is not based on rational decision but on the emotional value (Barlow & Maul, 2000). Freemantle (1998) wrote that: “rational decision making comes into play to justify and control our emotional drives. We frequently delude ourselves that we are being rational when in fact what we are doing is rationalising our emotions”. The aim is to expand and generalise theory in order to better understand the investment decisions as it relates to the non-market motivators such as emotional value.

Your opinion of the reasons and motivations for investments in the Saddle Horse Industry:

1) Planning of present and future investments

- a. How did you come about making the investments that you did in the past?
- b. Which procedures do or did you follow in making investments?
- c. Describe the factors you considered in making an investment
(Please, along with describing also rate the three groups of factors - financial, economic and emotional - according to the importance they have for you)
 - Financial (How much money or an increase in wealth is to be made out of the investment):
 - Economic (How much benefits will result from the investment: to you, to our family and to the community):
 - Emotional (I love horses and do what I do because of that passion):

2) What kind of reward do you expect form future investments

- Financial (increased income and/or growth in wealth):
- Economic (Benefits to you, your family and community for example: business opportunities, health, educational advantages for my children and to the community - development opportunities, jobs, better living conditions):
- Emotional (Joy, love, companionship, camaraderie, quality of life, relaxation, competition, status and social acceptance)

3) What was the result of past investments

(Please, provide quantitative data on the financial or economic rewards if available)

- Financial (money earned and wealth increased):

- Economic (Benefits to you, your family and community for example: business opportunities, health, educational advantages for my children and to the community - development opportunities, jobs, better living conditions):
- Emotional (Joy, love, companionship, camaraderie, quality of life, relaxation and competition, status, social acceptance)

4) Activity level:

- a. Do you still own horses?:
- b. How long have you been involved in the industry (years)?:
- c. What would you describe as your main interest, breeding, showing or training:
- d. Number of shows attended on average for the past three years per year:
- e. The number of horses shown per show:
- f. Participation in projects and programs of the Breeders' Society (yes/no)
 - The Annual General meeting:
 - The Futurity program:

Remarks:

Addendum C

**Accumulated AACup sire service auction prices AACup progeny earnings
and sire show earnings**

| AACup sire service auction prices Average/4yrs | AACup Progeny Earnings Average/4yrs | Sire's own Show earnings |
|---|--|--------------------------|
| | | Total/ life time |
| \$ 500 | \$ 20 261 | \$ 4 822 |
| \$ 500 | \$ 16 880 | \$ 1 008 |
| \$ 500 | \$ 1 833 | \$ 4 938 |
| \$ 500 | \$ 3 000 | \$ 1 535 |
| \$ 525 | \$ 7 341 | \$ 12 427 |
| \$ 533 | \$ 5 285 | \$ 20 292 |
| \$ 550 | \$ 3 000 | \$ 4 129 |
| \$ 567 | \$ 2 000 | \$ 44 972 |
| \$ 600 | \$ 6 695 | \$ 2 185 |
| \$ 700 | \$ 6 826 | \$ 14 195 |
| \$ 733 | \$ 34 128 | \$ 3 760 |
| \$ 767 | \$ 2 000 | \$ 5 925 |
| \$ 775 | \$ 4 160 | \$ 3 211 |
| \$ 800 | \$ 2 000 | \$ 1 905 |
| \$ 825 | \$ 8 780 | \$ 1 130 |
| \$ 825 | \$ 2 000 | \$ 1 197 |
| \$ 900 | \$ 2 000 | \$ 1 413 |
| \$ 1 000 | \$ 3 000 | \$ 45 |
| \$ 1 000 | \$ 2 500 | \$ 12 568 |
| \$ 1 050 | \$ 2 000 | \$ 2 330 |
| \$ 1 150 | \$ 37 041 | \$ 40 |
| \$ 1 300 | \$ 2 000 | \$ 18 513 |
| \$ 1 400 | \$ 8 402 | \$ 27 316 |
| \$ 1 425 | \$ 50 780 | \$ 36 354 |
| \$ 1 475 | \$ 2 000 | \$ 3 037 |
| \$ 1 625 | \$ 5 217 | \$ 33 054 |
| \$ 1 700 | \$ 21 522 | \$ 598 |
| \$ 1 733 | \$ 3 000 | \$ 33 554 |
| \$ 1 775 | \$ 5 400 | \$ 7 172 |
| \$ 1 800 | \$ 2 000 | \$ 347 |
| \$ 1 900 | \$ 2 000 | \$ 750 |
| \$ 1 900 | \$ 2 500 | \$ 3 638 |
| \$ 2 325 | \$ 11 997 | \$ 4 010 |
| \$ 2 600 | \$ 17 738 | \$ 7 061 |
| \$ 3 000 | \$ 2 000 | \$ 770 |
| \$ 3 250 | \$ 2 000 | \$ 2 400 |
| \$ 3 367 | \$ 2 000 | \$ 7 341 |

| | | |
|----------|-----------|-----------|
| \$ 3 667 | \$ 2 000 | \$ 1 839 |
| \$ 3 967 | \$ 36 705 | \$ 54 827 |
| \$ 4 350 | \$ 14 747 | \$ 27 261 |
| \$ 4 425 | \$ 2 000 | \$ 23 748 |

Source: Hale, J (2014)