

**COGNITIVE BEHAVIOURAL BIASES
IN FINANCIAL DECISION MAKING
MASTERS THESIS**

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ABSTRACT

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Anadolu University, Graduate School of Social Science, January, 2019

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Behavioural finance is a field of study that attempts to address the weakness of traditional finance especially the biases that occur during the financial decision-making process. The positive impact of cognitive behavioural biases on financial decision-making has received less attention in the field of behavioural finance. This study seeks to examine the influence of cognitive behavioural biases in financial decision-making process. Also, ascertain the positive impacts of cognitive behavioural biases on financial decision-making. The study employed a systematic literature review analysis of previous studies on cognitive behavioural biases in arriving at its findings. The researcher relied on solely secondary data for the study. The study found that there are several cognitive behavioural biases that influence financial decision-making. The study argued that positive impact of cognitive behavioural biases is important in the discourse of financial decision-making. Therefore the focus of investors and finance professionals should not be at correcting these biases since it will not lead to the complete understanding of the phenomenon.

Keywords: Behavioural finance; cognitive behavioural biases and financial decision Making

ÖZET

FİNANSAL KARAR VERMEDE BİLİŞSEL DAVRANIŞ ÖNYARGI

Kasim SALIFU

İşletme Bölümü

İşletme Yüksek Lisans

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Danışman: Prof. Dr. Fikret ER

Davranışsal finansman, geleneksel finansmanın, özellikle finansal karar alma sürecinde ortaya çıkan önyargıların zayıflığını gidermeye çalışan bir branştır. Bilişsel davranışsal önyargıların finansal karar verme üzerindeki olumlu etkisi, davranışsal finans alanında daha az dikkat çekmiştir. Bu çalışma, bilişsel davranışsal önyargıların finansal karar alma sürecindeki etkisini incelemeyi amaçlamaktadır. Ayrıca, bilişsel davranışsal önyargıların finansal karar vermedeki olumlu etkilerini tespit edilecektir. Bu çalışma bulgularına ulaşmada bilişsel davranışsal önyargılarla ilgili önceki çalışmaların sistematik bir literatür taraması analizi kullanılmıştır. Araştırmacı, çalışmasında yalnızca ikincil verileri kullanmıştır. Çalışmada, finansal karar vermeyi etkileyen çeşitli bilişsel davranışsal önyargıların olduğu sonucuna varılmıştır. Bu çalışma, bilişsel davranışsal önyargıların olumlu etkisinin finansal karar verme söyleminde önemli olduğunu savunmuştur. Bu nedenle, yatırımcıların ve finans uzmanlarının odağı, bu önyargıları düzeltmek olmamalıdır çünkü bu fenomen tam anlamıyla anlaşılmayacaktır.

Anahtar Sözcükler: Davranışsal finans, bilişsel davranışsal önyargı, finansal karar verme

STATEMENT OF COMPLIANCE WITH ETHICAL PRINCIPLES AND RULE

I hereby truthfully declare that this thesis is an original work prepared by me; that I have behaved in accordance with the scientific ethical principles and rules throughout the stages of preparation, data collection, analysis and presentation of my work; that I have cited the sources of all the data and information that could be obtained within the scope of this study, and included these sources in the references section; and that this study has been scanned for plagiarism with “scientific plagiarism detection program” used by Anadolu University, and that “it does not have any plagiarism” whatsoever. I also declare that, if a case contrary to my declaration is detected in my work at any time, I hereby express my consent to all the ethical and legal consequences that are involved.



Kasim SALIFU

DEDICATION

To my parents, wife and daughter

ACKNOWLEDGEMENT

After every journey there is always a time for reflection to acknowledge and appreciate those who made it come to a successful end.

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CHAPTER ONE

1. INTRODUCTION

1.1 Basic Information on Finance

The word “Finance” originated from an old French in 1350, it was the period where the European market used a lot of money for trade instead of barter trade. The term “Finance” became known as the “managing money” in English in 1770. There are several ways of defining finance in recent times. They include the following; it is “the study of how individuals, institutions, governments, and businesses acquire, spend, and manage money and other financial assets” (Mechicler & Norton, 2016, p.4). Finance is defined as the art and science of managing money. Also, finance is the science that studies the management of funds, and the management of funds includes a system such as the circulation of money, the granting of credit, the making of investment and the provision of banking facilities (Webster’s Ninth New Collegiate Dictionary).

The standard finance or traditional finance is also known as the modern portfolio theory, was built on four key foundations; (1) rational investors; (2) Efficient market; (3) investors should design their portfolios according to the rules of mean-variance portfolio theory and, in reality, do so; and (4) expected returns are a function of risk and risk alone. The modern portfolio theory started in the late 1950s and early 1960 so it is considered as outdated in this current discourse on finance.

Various scholars described these four foundational blocks of traditional finance in different terms and period; for instance,

“Merton Miller and Franco Modigliani described investors as rational in 1961. Eugene Fama described markets as efficient in 1965. Also, Harry Markowitz prescribed mean-variance portfolio theory in its early form in 1952 and in its full form in 1959. William Sharpe adopted mean-variance portfolio theory as a description of investor behavior and in 1964 introduced the capital asset pricing theory (CAPM)” (Statman, 2008).

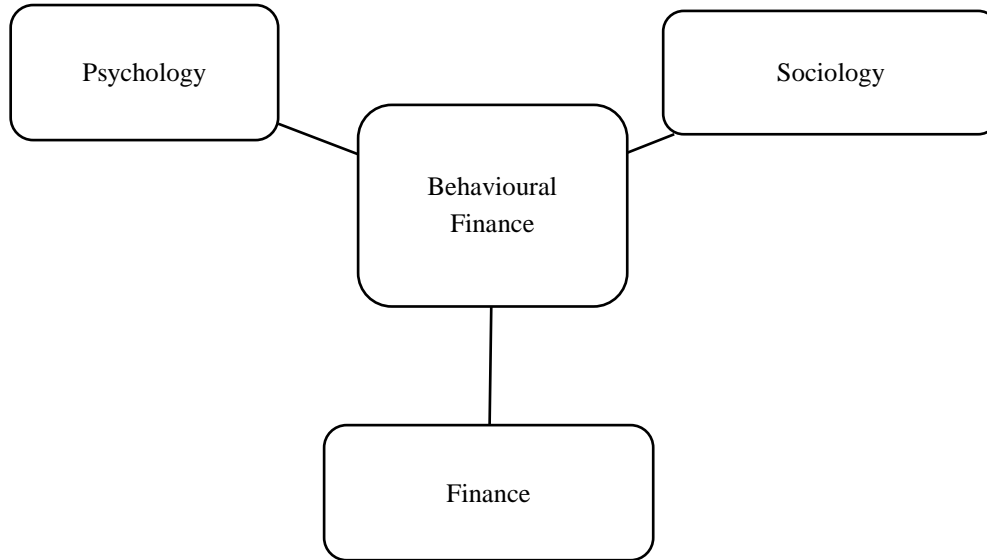
The traditional finance used various theories such as the expected utility theory, the Markowitz portfolio model, the capital asset pricing model and the efficient market hypothesis in explanation of the financial phenomenon. Over the years, these theories have been considered as the major pillars in finance and most financial researches have used them in their various studies. These theories are based on some basic assumptions, such as the rationality of individuals and market efficiency. However, as time passes by the application of these theories to explain real-life situation became insufficient and questionable since they were not able to provide a cogent explanation for the anomalies in the market such as overreaction or under reaction, speculative bubbles, momentum and reversals and other more. These happenings draw the attention of the researchers in the field of finance to look for a better alternative to help explain the situation and this led to the birth a discipline known the behavioural finance. The next section will discuss behavioural finance.

1.2 Behavioural Finance

Behavioural finance emerged in the early 1980s in an attempt to respond to the failure of traditional finance to explain the anomalies in the financial markets (Baker 2010). It is the combination of psychological and behavioural aspects in economic and making financial

decisions. Behavioural finance further challenges the efficient market theory and help in the understanding of how investors behave in investing in assets and other investment opportunities. The field of behavioural finance is built on the limit to arbitrage and psychology. Behavioural finance studies the psychology of financial decision-making. Thus, behavioural finance takes the insights of psychological research and applies them to financial decision making. In the last thirty years, behavioural finance has been witnessing tremendous growth due to the fact that investors are not behaving in consonance with the traditional financial and economic theories. The Behavioural finance researchers are of the view that finance theory should take account of observed human behaviour in their financial decisions. It is an approach which based its explanation of behaviour through the biases of belief information and non-standard preferences to make an argument for irrational behavior among agents that can explain persistent mispricing of assets and other anomalies.

Figure 1.1 The Interdisciplinary relationship of Behavioural finance



Schindler (2007) stated that there are three main foundations in which behavioural finance research depends on. They include; (i) Limits to arbitrage- it means that *“it can be difficult for rational traders to undo the dislocations caused by less rational traders”* (Barberis and Thaler, 2003). The limit of arbitrage influences the investor rationality and makes them more irrational to the extent of having the impact on prices. To explain investor irrationality and their decision-making process, behavioral finance draws on the experimental evidence of the cognitive psychology and the biases that arise when people form beliefs, preferences and the way in which they make decisions, given their beliefs and preferences (Barberis and Thaler, 2003) this lead us to the meaning of the second foundation of behavioural finance (ii) Psychology – this is the study of human behaviour and that individuals show some certain biases when defining their beliefs and preference which affects their decision-making process. The last foundation of behavior finance (iii) Sociology this foundation focuses on social interaction and how it influences financial decision-making processes.

This aspect of sociology in behavior finance challenges the assertion that individual reach their financial decisions without any external factors.

There are some studies that have been undertaken in the field of Behavioural Finance since its emergence. Daniel Kahneman and Amos Tversky are recognized as the fathers or founders of Behavioural Finance. They have contributed significantly to the field of Behavioural Finance with their thought-provoking scientific researches. In the early 1960s, Kahneman and Tversky focused their researches on different areas and finally came together to create what is seen as the benchmark in the field of behavioural finance in 1970. They initially thought that their research should adapt psychological experiments in decision theory that can be applied in real-world situations. Also, they gathered through their experiment the differentiation of normative solutions to a problem from real-life subjective answers. They used mathematical work on the normative theory and psychophysical emphasis on the difference between objective stimulus and subjective sensation' blended perfectly to serve the purpose by Tversky and Kahneman' respectively (Heukelom, 2007). Some of the works by Tversky and Kahneman include the following;

- In 1971, they publish their first authored paper together, "Belief in the Law of Small Numbers", in which they stated that *"People have erroneous intuitions about the laws of chance. In particular, they regard a sample randomly drawn from a population as highly representative"* (Kahneman and Tversky, 1971).
- Also, in their 1972 publication titled "Subjective probability: A judgment of Representativeness", they study the Representativeness bias and followed it up with a 1973 publication titled "On the psychology of prediction" which says that

Representativeness play a key role in intuitive predictions made by individuals (Kahneman and Tversky, 1972, 1973).

- Also, in 1974 Kahneman and Tversky published one of their prominent works title; “Judgment under Uncertainty: Heuristics and Biases”, in this work they described three types of heuristics which include availability; anchoring, and representative. They said that “*a better understanding of these heuristics and of the biases to which they lead could improve judgment and decisions in situations of uncertainty*”.
- In 1979 their most important work titled “Prospect Theory: An analysis of decision under risk” appeared in *Econometrica*, which was ‘a critique of expected utility theory as a descriptive model of decision making under risk’ and the alternative model developed was called Prospect Theory. Kahneman was awarded the Nobel Prize in Economics in 2002, for his work in Prospect Theory.
- In another important paper, Tversky and Kahneman (1981) introduced the effect famous as Framing. They indicated psychological principles that guide the perceptions of decisions making on problem and evaluation as well the probabilities and outcomes produced of predicted shifts preferences when the same problem is framed in a different way.

Moreover, Behavioural finance has over the years witnessed several developments in the field of finance in general. Behavioural finance studies how psychology affects or influence financial decision-making process and financial markets (Shefrin, 2001). The study of psychology explores human behavior and judgement as well as the welfare of human

beings. It is different from the traditional finance and economic assumptions based on the facts and information it provides on human actions (Bikas et al., 2014).

1.3 Aims and Objectives of the Study

The main aim of this study is to establish how Cognitive Behavioural Biases influence financial decision making. In an attempt to achieve this objective of the study, the researcher systematically reviewed the last six years (2012-2018) studies on Behavioural Finance focusing on cognitive Behavioural biases and financial decisions.

1.4 Methodology of the Study

The method of research of this study is systematic literature review. A systematic literature review is the gathering all empirical evidence that meets the eligibility criteria in an attempt to answer a specific research question. This involves the collections and assessments of previous studies on Behavioural finance biases and investment decisions as well as financial decision making. The study used scientific journal and peer review journals in the field of Behavioural finance in the last six years period (2012-2018). In the last six years, there are various studies that have been undertaken in the field of behavioural finance to explore the emerging issues on behavioural biases and financial decisions among the financial professionals, practitioners and individual investors. Therefore this study seeks to systematically review these studies to ascertain the influence of cognitive behavioural biases on financial decisions.

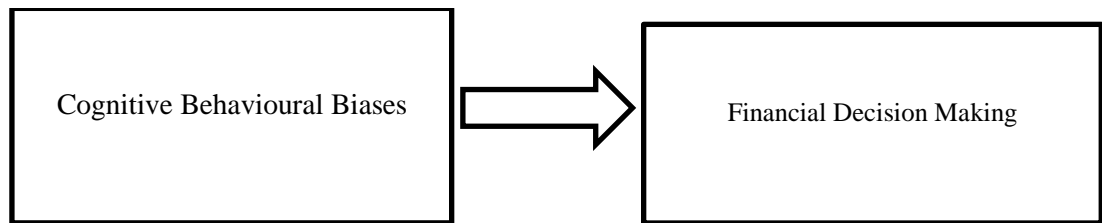
This study employed content analysis in analyzing the various findings of journals and studies used for this thesis. Content analysis can be defined as “a research technique for the objective, systematic, and quantitative description of manifest content of communications”

(Berelson, 1952). The content analysis provides systematic information on empirical findings of the previous studies.

1.5 Conceptual Framework

The following illustrates the conceptual framework of the study which shows the influence of cognitive behavioural biases on financial decision making. This conceptual framework seeks to explain the influence of cognitive behavioural biases on financial decision making. The decisions of financial professionals, investment advisors and individual investors are influenced by different types of cognitive behavioural biases.

Figure 2.2 conceptual framework



1.6 Organization of the Study Chapters

This study is made up of four chapters. The chapter one provides information on fundamental or basics of finance, behavioural finance, aims and objectives of the study and methodology of the study. Also, the conceptual framework and as well as the organization of the study are explained. Cognitive Behavioural biases and types of cognitive behavioural biases are discussed in chapter two. Furthermore, chapter three explains decision making and its process, and the financial decisions-making and types of financial decision making process. Finally, the discussions, conclusion and recommendations of the study are presented in chapter four.

CHAPTER TWO

2. COGNITIVE BEHAVIOURAL BIASES

2.1 Introduction

This chapter discusses the cognitive Behavioural biases and types of cognitive behavioural biases that usually occur during the financial decision-making process.

2.2 Cognitive Behavioural Biases

Cognitive Behavioural biases can be defined as the patterns of deviations from rational behavior in judgement that occurs during specific situations. In a context where those specific situations occur, behavioral biases are therefore predictable and that's why, according to behavioral finance, human beings may be considered as predictably irrational decision makers. Pompian (2012) state that in the field of finance and economics, behavioural biases are defined as the tendency of decision making that can lead to an irrational financial decision caused by faulty cognitive reasoning and /or reasoning influenced by emotions.

In 1973, Wolman defined bias as “a tendency towards a certain disposition or conclusion” (pp.44). Psychological Biases can be defined in different ways in Behavioural finance literature such as Beliefs, judgements or preferences (Tversky & Kahneman, 1974; Pompian, 2006; Szyszka, 2013); Heuristics (rules of thumb) (Tversky & Kahneman, 1974;

Shefrin, 2000; Baker & Nofsinger, 2002; Prast, 2004); and as Systematic Errors in Judgment (Kahneman & Riepe, 1998; Szyszka, 2013)

Moreover, Haselton and Nettle (2006), assert that “one of the curiosities of human cognition seems to be riddled with biases and that could be the functional feature of its mechanisms for making judgements and decisions” (p.47). In 2005 Haselton, Nettle & Andrews state that, biases reveal the intricacy of the mind’s design” and “because they depart from standards of logic and accuracy; they appear to be design flaws instead of examples of good engineering” (p.725). Again they stated that cognitive biases can arise on account of three reasons: heuristics, error management biases and artefact. Cognitive biases are major mediators and moderators for financial decision making.

2.3 Types of Cognitive Behavioural Biases

There are several types of cognitive Behavioural biases that arise during financial decision making. These cognitive Behavioural biases have been categorized in different ways by various researchers in the field of Behavioural Finance. However, the most commonly used categorization of cognitive Behavioural biases that cut across various studies in Behavioural finance is discussed as follows. Kumar and Goyal (2015) studies on the systematic review of Behavioural biases in investment decision making identified the following Behavioural biases as the most commonly Behavioural biases that usually occurred when making investment decisions; overconfidence, disposition effect, herding bias and home bias/familiarity bias. Also, Baker, et al (2017) discusses the various Behavioural biases that affect financial professionals such as (Financial Planners and Advisors, Financial Analysts and Portfolio Managers and Institutional Investors) in their

decision making process. The Behavioural biases include heuristics, anchoring, familiarity bias, trust and control, worry for financial planners and Advisors; overconfidence, herding behaviour, loss aversion and the disposition effect, gender differences, confirmation bias, over-optimism for Financial Analysts and Portfolio Managers; and herding behaviour, under-diversification due to overconfidence and familiarity Bias for institutional investors. There are other studies on Behavioural biases that focused on similar or the same Behavioural biases. For instance studies on Behavioural biases that affect institutional investors' decision-making process by Selim *et al*, (2016) identified Behavioural biases such as they are home bias, disposition effect and herding behaviour.

Shefrin (2000) broadly categorized behavioural biases under two main groups; heuristic driven biases and frame-dependent biases. Heuristic driven biases are the usually consider a rule of thumb that financial practitioners rely upon in making their decisions. For example, investors or finance professionals believe that future performance in an investment can be predicted by the past performance of the investment. The behavioural biases that fall under the heuristic driven biases category are anchoring and adjustment, excessive optimism and pessimism, overconfidence, and reinforcement learning. The frame dependent biases are the factors that influence the finance professional decision-making process based on the way they frame their options. The behavioural biases classified as frame dependent biases include disposition effect, mental accounting, and narrow framing.

Furthermore, Pompian (2011) categorized behavioural biases into cognitive and emotional biases. Anchoring and adjustment, availability, cognitive dissonance, framing,

overconfidence and mental accounting are classified as the cognitive biases. The emotional biases include endowment bias, loss aversion, optimism and status quo.

This study focused on the categorization of Behavioural biases that affect finance professionals in their financial decision making process. The discussions of these behavioural biases are based on Shefrin (2000) categorization of behavioural biases.

2.3.1 Heuristic Driven Biases

Heuristics are introduced by Tversky and Kahneman in 1974. The heuristics as explained above, these are the rules of thumb or mental shortcuts that help people in reaching decisions quickly and easily. These rules of thumb, although helpful, can lead to erroneous decisions. Tversky and Kahneman (1974) stated that there are three heuristics which occurs when making a decision under uncertainty includes representativeness, availability, and anchoring and adjustment.

2.3.1.1 Representativeness bias

Representativeness bias is the tendency of evaluating the likelihood of an event while making a reference to how close it resembles the other event without relying on probabilities (Tversky & Kahneman, 1974; Montier, 2002). According to Taffler (2010), representativeness is the way people make subjective probability judgments based on similarity to stereotypes. It is also judgement based on stereotypes (Brabazon, 2000; Baker & Nofsinger, 2002). Representative bias can lead people to underestimate long-term averages and rather focus on a recent event or experiences (Ritter, 2003). It is sometimes referred to as “law of small numbers” (Brabazon, 2000). There are various empirical studies conducted to show how representative biases occur. For instance, Dhar and Kumar

(2001) examine the stock price trend for stocks bought by more than 62,000 households at a discount brokerage during a 5-year period. The findings of the study reveal that investors tend to buy stocks with recent positive abnormal returns. This is consistent with the heuristic that the past price trend is representative of the future price trend. In another study by Kaestner (2005) who uses the data on current and past earnings for the U.S. listed companies for the period of 1983-1999 and suggest that investor overreaction to earnings announcement could be attributed to representativeness bias. Their findings reveal that investors initially extrapolate the recent earnings surprise and hence overreact to subsequent earnings surprise. The representative bias could be sometimes be seen as positive in the sense that, it helps in arriving at financial decisions faster and quickly. Because financial professionals and investors cannot process the quantum of all the information and data available during the time they are making their decisions due to the limitation of the human mind to process all these information at a shorter time frame. Therefore, this type of bias will enable them to make quick and prompt decisions without any delay.

2.3.1.2 Availability bias

This is where people based their outcome of an event or situation on the evaluation of the probability of its familiarity. People prone to availability bias give higher likelihood to the events which they can easily recall as compared to the ones that difficult to remember or comprehend. Kliger and Kudryavtsev (2010) studies identify this bias in investors' reaction to analysts' recommendation revisions. They use daily market returns as a proxy for information on outcome availability. They find that stock price reaction to recommendation

revisions (up or down) is stronger when accompanied by index returns in the same direction.

2.3.1.3 Anchoring and Adjustment bias

Anchoring and Adjustment is the situation where individual investors and finance professional hold on to a particular belief and apply them to their future decisions. This bias arises when individuals have to estimate the value of the unknown. Here people start their estimation by guessing some initial value or an “anchor”. This anchor is then adjusted and refined to arrive at the final estimate. Campbell and Sharpe (2009) investigate the presence of anchoring bias in analysts’ forecasts of monthly economic releases for a period from 1991 to 2006. They find that forecasts of any given release were anchored towards the recent months’ realized values of that release, thereby giving rise to predictable surprises. This effect is consistent for each of the key releases.

2.3.1.4 Optimism

Optimism in financial terms refers to a situation whereby investors or finance professional s overestimate their expected returns of the risky asset. There are various studies on the impact of this bias on the stock market and the factors that influence them. For instance, in 2004, Toshino and Suto studied optimism bias in Japanese institutional investors. They use survey-based data and find that the optimistic investors are more sensitive towards positive market news. They selectively incorporate only good news in their decision-making process. Moreover, investors become more optimistic towards domestic market than foreign market due to their optimism bias which makes them undervalue the risk associated with familiar investments. The excessive optimism can lead to speculative bubbles in the financial market by increasing the prices of securities above their intrinsic values (Shefrin

and Statman, 2011). They further state that if bubbles last long enough, some pessimists might become convinced that they are wrong and can convert into optimists and in the process, they are likely to intensify this phenomenon. The drivers of investors' optimism and fear (pessimism) are as a result of their return tolerance, risk perception and return expectation (Hoffman and Post 2011). They use a data set of brokerage records as well as monthly survey measurements to analyze the impact of the past return and past risk on the drivers of optimism (pessimism). They discover that past returns positively impact return expectations, return tolerance and negatively impact risk perceptions. Investors are easily preyed to hot hands fallacy, thus past returns will continue into the future. This makes them more optimistic in return expectations if their past returns are positive. However, past risk has no effect on these parameters. Optimism (pessimism) is a very influential bias. It is responsible for setting the mood of the financial markets. This bias is driven by past returns that have an impact on return expectations, return tolerance and risk perception of investors. This bias is so potent that it can create stock market bubbles and can convert even pessimists to optimists. These researches affirm that heuristic driven biases have a fair share of influence on the investors' choices and actions.

2.3.1.5 Overconfidence Biases

Overconfidence bias is one of the major types of cognitive behavioural biases which relates to the unwarranted faith or confidence a person has about his own cognitive abilities, judgements and intuitive reasoning. It can be defined as the investors' tendency to overestimate the precision of their knowledge about the value of a security (Odean, 1998a). This behavioural bias is well-established that usually occurs when the finance professionals have believed and confidence about their skills and knowledge pertaining to investment to

the extent of ignoring the risk associated with these investments. Overconfidence bias can manifest itself in both prediction overconfidence and certainty overconfidence. Prediction overconfidence occurs when professionals assign too narrow a confidence interval around their investment forecasts; while certainty overconfidence occurs when professionals assign too high a probability to their prediction and have too much confidence in the accuracy of their judgments. These biases have been shown to lead to overly-concentrated portfolios, as these individuals may assume that their perceived superior skills warrant including fewer assets for consideration (Baker *et al.*, 2017). Most studies in cognitive behavioural bias have discussed how overconfidence bias influences financial decision making. For example, Odean (1999) explained that investors with discount brokerage accounts become overconfident and engage in excess trading. He, however, proposed that because of excess trading, the realised gains are not sufficient to cover the transaction cost. Similarly, in 2000, Barber and Odean studies in the USA analysed the data set of 78,000 households at a large discount brokerage house firm and found that excessive trading realised fewer returns. Furthermore, there are several empirical studies that have been conducted in this field, for example, Daniel *et al.* (1998), Barber and Odean (2001), Statman *et al.* (2006), and Weber and Camerer (1998). Overconfidence is one of the most highly researched biases with abundant empirical findings. Daniel *et al.* (1998) develop a model based on overconfidence of investors who overestimate the precision of their private signals and show that overconfidence leads to negative serial correlation in prices (price reversals). Gervais and Odean (2001) formulate a multi-period market model to estimate overconfidence. They propose that overconfidence is enhanced in those investors who have experienced high returns; as a result, they trade more frequently. Therefore overconfidence leads to an

increase in trading volume. On the other hand, a loss in the market reduces overconfidence level and subsequently the transaction volume. They assign a positive relationship between the volumes of transaction and lagging the performance of the market. Odean (1999) and Barber and Odean, (2000; 2001) empirically test the theory of overconfidence. They provide evidence that overconfidence leads to greater trading volume in financial markets. Using the data from individual investor accounts held with a large U.S. brokerage firm, they propose that higher trading, in turn, leads to lower expected utility or poor portfolio performance. Most of these researches reveal that overconfidence is an illusion of superior knowledge in investors, which is strengthened by their past successes. This tendency makes them trade more as they become sure of the positive outcome.

2.3.1.6 Home Bias

Home bias is one of the cognitive behavioural biases that usually occur when finance professionals are making financial decisions. It is also known as familiarity bias or equity home bias. This behavioural bias refers to the situation whereby individuals or institution have the preference to invest in domestic securities rather than investing into a foreign asset. Thus, finance professional often preferred to invest into assets that they are familiar with than those that they are not. There are some studies conducted about home bias. It includes French and Poterba (1991) and Tesar and Werner (1995) studies on home bias where they established the possible reasons that may result in the occurrence of home bias. These reasons are investment barriers, transaction costs, information asymmetry, inflation, hedging and non-tradable assets. There are other studies that could not state any conclusive cause of home bias. Home bias has become a puzzle among market participants. It is also known as the equity home bias puzzle because returns realized through domestic equity

portfolio implies that more potential benefits are derived from the international diversification of portfolio (Goyal, 2015).

2.3.2 Frame-Dependent Biases

The frame-dependence bias dates back to the earliest studies of Kahneman and Tversky in 1979. This work is taken forward by Shefrin (2000) who mentions several frame - dependent biases, the prominent ones amongst those biases are being discussed here. These are loss aversion, narrow framing, mental accounting and the disposition effect.

2.3.2.1 Loss Aversion

Kahneman and Tversky (1979) introduced loss aversion and refer to it as the tendency of individuals to strongly avoid losses as compared obtaining gains. This is because loss brings regret and impact is much greater than that of gains. Several researchers have studied the impact of loss aversion in financial markets. Joshua D. Coval and Tyler Shumway (2005) analyze the effect of loss aversion bias in terms of risk-taking in market makers. They show that in intra-day trading, a loss in the morning leads to higher risk-taking behavior in the afternoon. In 2008, Berkelaar and Kouwenberg assess the impact of heterogeneous loss averse investors on asset prices using annual U.S. consumption data from the period of 1889 to 1985. The study found that when investors are in a good state they become loss averse and they progressively become less risk averse as their wealth increases above their point of reference then further to equity price. On the other hand, when wealth drops below the reference point the investors become risk seeking and demand for stock increases drastically. This eventually leads to forced sell-off and subsequently stock market busts. Hwang and Satchell (2010) investigate loss aversion in the financial market using the typical asset allocation model for annual data of U.K.

pension funds from 1963 to 2003. Their results reveal that financial markets are more loss averse than assumed in the literature. Further, the pain of loss is described to be greater than the pleasure of an equal amount of gain, which makes the investors more sensitive to a change in the loss. These researches also throw light on the risk attitude pattern of individuals. It can be observed that people become risk seeker or less risk-averse in the prospect experiencing loss of high probability.

2.3.2.2 Narrow framing

Shefrin (2000) describes narrow framing as the tendency of investors to treat repeated risks as if they were a one-shot deal. Barberis and Huang (2006) elaborate this bias in the context of gambling. They state that it is the phenomenon wherein people evaluate each new gamble in isolation, separating it from their other risks. In other words, people will ignore all the previous choices that determine their overall wealth risk and directly derive the utility from their current risk.

2.3.2.3 Mental accounting

Mental accounting refers to the situation where an individual tries to separate their available information into manageable mental accounts. This bias was introduced by Thaler (1999) during his studies. Also, mental accounting is a set of cognitive operations used by individuals and households to organize, evaluate, and keep track of financial activities (Thaler, 1999, p.183). Both narrow framing and mental accounting are cognitive processes that simplify the complex decision-making problem for investors. In narrow framing, individuals treat their risks in isolation rather than taking a holistic view. This bias can lead to overestimation of risk and make the investors myopic in their investment outlook.

2.3.2.4 Status quo bias

The status quo bias is the complete reliance on the previous judgements or decision irrespective of any change in the situation or environment. There are different studies conducted by various researchers to ascertain how status quo bias manifests itself. In 2009, Brown and Kagel conducted laboratory experiment on the simplified stock market. The result of the study shows a significant status-quo bias across individual investors, over time as well as its independent of the stock performance. Further, it prevails in an environment in which there are very low costs of identifying better-performing stocks. They explain that the underlying factor behind this bias is individuals' reluctance to receive information that might question their own abilities; therefore they choose to restrict their comparisons to their existing choices rather than considering other options that were at their disposal. Li et al. (2009) analyze the presence of status quo bias, its determinants, and its impact on investor decision making using an experimental method. Their study reveals the factors affecting the status quo bias are framing, investors' emotion and information structure. They demonstrate that investors' have a lower level of status quo bias under positive emotion, while a higher level under negative emotion. They also explain that people, in general, try to elude vague options if they have a choice to do so and would rather maintain their original position. Research work on status quo shows that individuals succumb to this bias when the existing alternatives are vague or inconsistent with their own beliefs. Further, the emotional state of investors also contributes to this bias as the intensity of this bias is higher for negative emotion as compared to positive emotion.

2.3.2.5 Disposition Effect

Disposition effect is another important behavioural bias which occurs in a situation where investors are more prone to selling the winning stock and tend to hold on to the loss-making asset. Daniel Kahneman and the late Amos Tversky observed that investors treat the gains and losses in their portfolio very differently. The term loss aversion originates from the prospect theory which states that managers significantly overweight losses compared to an equivalent gain. This behaviour leads to the *disposition effect*, whereby finance professionals recommend selling securities to lock in gains too quickly and recommend retaining securities too long in order to recoup losses. These finance professionals may exhibit both behaviours in monitoring single security in a portfolio (Baker *et al*, 2017). In 1998 Odean, observed that at the end of the year, because of tax motivation, investors are more willing to sell the loss-making assets. A theoretical framework that explains why people sell winning stocks and hold on to loss making asset was propounded by Shefrin and Statman in 1985 and was supported by empirical evidence. Further, in various research studies (Frazzini, 2006; Weber and Camerer, 1998; Barberis and Xiong, 2009), empirical evidence for the disposition phenomenon has been generalized (Kumar and Goyal, 2015).

2.3.2.6 Herding Behaviour Bias

Herding can be defined as the situation wherein rational people start behaving irrationally by imitating the judgments of others while making decisions. Thus, it is the situation where people abandon or disregard their own opinion in order to follow the crowd or the opinion of others. This can result into financial bubbles and crashes. For instance, as prices increase from investors capitalizing on momentum, these individuals may observe their peers

investing in these assets and thus be incentivized to follow suit. If they fail to follow the herd, they risk trailing behind their peers; however, if they follow the herd, they may get caught on the wrong side of an artificially-attractive opportunity. There are several reasons why herd behaviour is exhibited among different types of investors. Individual investors tend towards demonstrating herd behaviour because they follow the decisions of a large group or noise traders. Analysts may herd their past experiences/ decisions or imitate others to protect their reputational or compensation concern. Lee *et al.* (2004) reported that individual investors are more inclined to adopting herding behaviour than are institutional investors. One of the pioneer researches on herding is done by Lakonishok *et al.* (1991). They studied the role of herding and positive feedback trading in destabilizing the stock prices. They defined herding as the mimicking of the investment actions of fund managers while positive feedback trading is the buying of the winners and selling of the losers.

It is not only observed in common investors but also prevails in market experts like trade analysts, portfolio managers, investment managers, etc. This bias can have a drastic effect on the stock markets, particularly during the periods of extreme i.e. bull and bear phase, when the stock markets are most susceptible. Further, some significant studies (Grinblatt *et al.*, 1995; Wermers, 1999) have been conducted on the herd behaviour in investment decision-making (Kumar and Goyal, 2015).

2.5 Summary

This chapter discusses the cognitive Behavioural Biases that Finance Professional are constantly faced with when making financial decisions. The adverse effects of these Cognitive Behavioural Biases are enormous to the extent that most financial professionals

make wrong financial decisions that lead the lost in entire investments of individuals as well as organizations. Since these cognitive Behavioural Biases can affect all types of finance professionals. However, studies have shown that as investor sophistication increases from the individual investor through to institutional investor, the biases display could decrease and some even disappear. Regardless of their current role, Finance professionals across the board can benefit from familiarizing themselves with all of the potential biases described herein (Baker et al 2017)

CHAPTER THREE

3. FINANCIAL DECISION MAKING

3.1 Introduction

This chapter discusses decision making and decision-making process, as well as financial decision making and the types of financial decision-making. Decision making is important in every sphere of human life and organization in general. There is always a time that individual or an organization has to make choice out of the available alternatives. Individuals or organizations are faced with several types of decisions to take concerning with their various activities and operations. Financial decision is one of the most important decisions that an individual or organization has to make in order to realize its stated goals and objectives. Financial decisions are among the most important life-shaping decisions that people and organization make.

3.2 Decision Making

Decision making can be defined as the process of deciding about something important, especially in a group of people or in an organization (Oxford Advanced Learner's Dictionary). It also involves the selection of a course of action from among two or more possible alternatives in order to arrive at a solution for a given problem. Again, it is important to observe that decision making entails the process of making choices out of the available options and alternatives after gathering information and assessing the various options and alternatives.

3.3 Decision-Making Process

There is process that usually takes place before results-oriented decisions are arrived at. In every business organization it is important these processes are followed strictly. Since these decision-making process help business and managers achieve a better result in solving problems by examining alternatives choices and deciding on the best alternative route to consider. Using a step-by-step decision-making process can help individuals and organization make more deliberate, thoughtful decisions by organizing relevant information and defining alternatives. This approach increases the chances that an individual or organization will choose the most satisfying alternative possible. The seven steps of effective decision-making process are as follows;

3.3.1 Identify the decision

Identification of the need to make a decision is the first important step in every decision-making process. In order to make a rightful decision, it is important to recognize the problem or opportunity and decide on how to address it. Thus, it is important to clearly define the nature of the decision that needs to be taken.

3.3.2 Gather relevant information

There is the need for collection of some key information before making the decision. Thus, the information is needed, the best sources of information and how to get them. This step is made up both internal and external means. Some information is internal and can be obtained through a process of self-assessment. Other information is also external and can be gathered from books, online and other people. Information gathering step of the decision-making process is important in order to arrive at decision that will be based on

facts and data. It involves making a value judgment as well as determining what information is relevant to the decision at stake, along with how to get the information for the decision to be taken. Also, it is prudent to find out what is needed to make the right decision then actively look for relevant resource and personnel to assist.

3.3.3 Identify the alternatives

During the process of gathering information, there is the probability of identification of several possible paths of action or alternatives. Also, the use of imagination and additional information can be used to create or construct new alternatives. This step of decision-making process entails the listing of all possible and desirable alternatives. The availability of these possible and desirable alternatives helps in determining the best course of action for the achievement of the objective of the decision.

3.3.4 Weigh the evidence

This step is another important step in decision making process, it involves the drawing of the information and emotions to imagine what would be the results if each possible alternative is carried out to the end. Also, at this step, there is the need to evaluate for feasibility, acceptability and desirability to know which alternative is best for the course of action. It is equally important to examine the positives and negatives of all the available evidence before selecting the option with the highest chance of success. The process of finding out whether the need identified in step one would be met through the use of each alternative course of action. This process involves a very difficult internal process but as the process begins a favorable alternative would be identified that will have a higher probability of achieving the goals. Finally, place the alternatives in priority order, based

upon the value system. It may be helpful to seek out a trusted second opinion to gain a new perspective on the issue at hand.

3.3.5 Choose among alternatives

This step involves the choosing or selecting one of the best alternatives after all the information and evidence available have been weighed. This is a crucial time of making the decision, therefore, it is important to understand all the risk associated with the chosen alternatives. There is also possibility of choosing a combination of alternatives since there is relevant information about all the alternatives as well as the potential risk associated with them.

3.3.6 Take action

This is the action taken a step; at this step, there is the readiness to take some positive action by starting to implement the alternative selected in step five. It is important to create an implementation plan of action. This involves identifying what resources are required and gaining support from employees and stakeholders. Also, it involves bringing others on board so that the decision implementation plan can be executed efficiently and effectively, as well as been prepared to address any questions or concerns that may arise.

3.3.7 Review of decision & its consequences

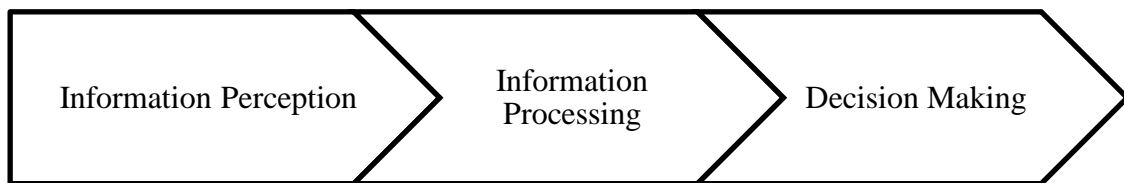
This is the final step of the decision-making process. It involves the ascertaining and evaluating whether the result of the decision has resolved the need identified in step one. In case the decision has not resolved or met the identified need, there could be an opportunity to repeat some aspects of the process in order to make a new decision. For example, there could be a need to gather more details information or different information or explore

additional alternatives. Also, this step is often overlooked but it is an important step in every decision-making process since it is important to evaluate every decision for effectiveness purposes.

3.4 Phases of the Decision Making Process

Dahammer and Facar (2012) stated the three phases of decision making as follows; the phase of information perception, phase of information processing and evaluation, and phase of decision making.

Figure 3.1 phases of Decision making process



Source: Daxhammer & Facar (2012)

1. The information perception phase is stage where the decision maker attempt to create the initial picture of its environment in order to reduce the various uncertainties during the decision making process. The intensity of the information perception thereby depends on the scope and complexity of the decision, and influences to what extent existing information can be used, or additional information from external sources is required, and acquired via active searching. In this context, amongst other things the ratio of costs to benefits plays an important role in the search for information.

2. In the phase of information processing and evaluation, the decision maker considers the relevant information to prepare for the decision. In light of the cognitive restrictions of the decision maker regarding his available capacities or his speed when processing information, decision making heuristics are used here. With the help of heuristics, it is possible to accelerate decision making and structure it efficiently. However, this can also be accompanied by systematic biases in the information and decision making process.

3. The phase of decision making and its implementation forms the end of the process of information and decision making. In this phase, the behaviour of the decision maker is characterized by the fact that they try to avoid so-called cognitive dissonances. As a result, information is highlighted which confirms the decision, and information which throws the decision into doubt is neglected or suppressed. In this way, however, the monitoring and/or checking of the decision is restricted accordingly.

3.5 Financial Decision-Making

Financial decisions are the processes which involves all the decisions that relates to the liabilities and stockholder's equity of the company. Behavioral finance suggests that investors behave irrationally in predictable ways because human psychology affects financial decision-making. Altman (2012) states that better quality of information availability and a very conducive working environment can lead to better financial decision. The Financial decision-making process is cardinal in every organization so it is important to obtain all the necessary information that will assist in making those decisions. It is also relevant to understand all the behavioural tendencies that arise during these financial decision-making processes and how they impact the decisions.

3.6 Types of Financial Decision Making

The three major financial decision are; Investment decisions, Financing Decisions and dividend decision

3.6.1 Investment Decisions

Investment decisions refer to the financial decisions that relate to the determination of the total assets to be held by the firm or organization. It is regarded as the most important financial decision in every firm. This decision is basically the creation of assets to earn income. Thus, it is the selecting of assets for an organization to invest in. Also, the decision about how the fund realized will be utilized has to be made. Because the goal of every firm is wealth or profit maximization and it can achieve by making the right decisions on how limited resource can be utilized properly. The investment decisions can be broadly categorized into two;

3.6 .1.1 Long-term investment decisions

The long-term investment decisions is also referred to as the capital budgeting. Capital budgeting is the allocation of funds on new assets or reallocation of capital when the asset becomes old and non-profitable. The capital budgeting decision determines the norm or standard against which benefits are to be judged. This is also known as cut-off rate, hurdle rate, minimum rate of return and others.

3.6.1.2 Short-term investment decisions

The short-term investment decisions are decisions that relate to the allocation of funds such as cash and its equivalents, receivables and inventories. The short-term investment decision is also known as the working capital management which involves the management of the

current assets. That is, for an organization to meet its current obligations there is the need for sufficient working capital at its disposal. These decisions are influenced by the tradeoff between liquidity and profitability. Because the more liquid the asset, the less it is to yield and the more profitable an asset, the more illiquid it is.

3.6.2 Financing Decisions

Financing decisions are the decisions that have to do with how, when and where funds are to be acquired to meet investment needs. It involves the means through which firms meet their commitments on the investment decisions they have taken. Financing decision is a continuous or regular decision that firms take on its new investments and other best means of financing the firm's activities and operations.

3.6.3 Dividend Decision

The third main financial decision is dividend decision, it the decision to disburse profit to the investors or shareholders who provided capital for the firm. The Dividend can be defined as the part of a company profit that is distributed among its shareholders. It is the reward given to shareholders for their investment in the share capital of the company. Therefore, it is important to take the decision about whether to retain the entire dividend into the firm or share all among the shareholders of the firm, or to retain part into firm and share part among shareholders. Also, shareholders will not satisfied if sufficient dividend is not paid to them and this will lead to the fall in the market value of the share and may create the financial crisis. On the other hand, if all these profits are shared to the maximum the firm could lose on its important source of self-financing. Therefore it is important for prudent decision to be taken.

CHAPTER FOUR

4. DISCUSSION, CONCLUSION AND RECOMMENDATIONS

4.1 DISCUSSION

This chapter presents the discussion of the study, conclusions and recommendations. The study investigates the role of cognitive behavioural biases in financial decision making. Traditional finance is built on the premise that financial practitioners or professionals are rational decision makers. However, with the advent of behavioural finance, this assertion has further been interrogated to ascertain to what extent are these financial professionals are rational or irrational in their decision-making. The behavioural finance school of thought found that finance professionals usually make irrational decisions due to various behavioural biases that arise during their decision-making process. These behavioural biases cannot be relegated to the background or underestimated since they are generally observed in the finance professionals' decision-making process. Behavioural finance is an important field of finance which has contributed to the financial decision-making process. This study provides an insight into the cognitive behavioural biases and financial decision making-process. It reveals the various types of behavioural biases that finance professionals are faced with in their financial decision-making process.

Behavioural biases have become relevant in financial decision-making process among finance professionals and individual investors alike. These behavioural biases occur in all financial decision making situations of individual investors and organizations. The

mainstream finance may perceive bias as irrational behaviour, however, the evidence from evolutionary psychology indicate that biases are actually designs of the human mind and assist in decision making. The focus of finance professionals and individual investors should not be on how to correct the occurrences of these biases since that will not provide the complete picture of the phenomenon. But is it important to understand that these cognitive behavioural biases can be helpful in the financial decision-making process, even though it can sometimes be harmful to financial decisions.

Most previous studies on behavioural biases focus largely on the negative impact of behavioural biases on finance professional and individual investors with less attention on its positive impacts on finance professional and individual investors. This study bridge the gap in knowledge on the inadequate attention on the positive impacts of behavioural biases among finance professionals and individual investors. The various types of cognitive behavioural biases are associated with some positive impact on the financial decision-making of individual investors and finance professionals. These positive impacts of cognitive behavioural biases on individual investors and finance professionals are discussed in the following paragraphs; the positive impact of cognitive behavioural biases manifest itself based on the type of behaviour biases under discussion. These impacts are cardinal to the financial decision-making process among individual investors, finance professionals and organizations and institutions as a whole.

This study argued that overconfidence bias manifests itself positively in the financial decision-making process. Thus, overconfidence behaviour is mostly associated with people with high self-esteem which is an important ingredient in effective and efficient in financial

decision-making process. Overconfident individual investors and finance professionals have faith and trust in their judgement and this provides them sense of satisfaction and contentment in their financial decisions. Also, overconfidence behaviour is advantageous to largely extent since it serves as increase ambition, morale, resolve and persistence. Generally, confidence in financial decisions would provide a sense of satisfaction and good feeling to individual investors and finance professionals which would lead to better results in their financial decisions.

Furthermore, home biases impact positively on individual investors and finance professional financial decision-making process since helps them reduce the fears and risk associated with the financial decision as well as serving as coping strategies for them. The familiarity of individual investors and finance professionals on financial decisions provide them a sense hope and better well-being.

Moreover, status quo bias enables individual investors and finance professionals alike to cope with the negative emotions that may arise from their financial decision-making process as well as its minimize the cognitive efforts. Status quo bias provides a satisfaction to individual investors and finance professionals that could in long-run minimize the consequences of their finance decisions.

Additionally, representative bias enables individual investors and finance professional to make quick decisions without any delay. Due to the complexity of the human mind and its inability to huge information and data at a particular point in time, this bias makes easier for people to make prompt decisions.

4.2 CONCLUSION

Behavioural finance is an important domain of finance which addresses the inadequacies in the traditional finance especially, the underlying assumption that decision-makers are rational human beings and therefore their decisions are rational which mostly maximizes expected utility. However, the behavioural finance states that decisions taken by decision makers are associated with some of the aspects of irrationality and these can be terms as biases. These cognitive behavioural biases manifest itself in several ways during financial decision making among finance professional and affect the outcome of these financial decisions. Therefore, it is important for the various finance professionals to be aware of them in order to minimize its adverse effect on their decision-making process. Also, based on the findings of the study it is essential to note that cognitive behavioural biases are common among the various actors in the financial industry especially, in the financial market.

Furthermore, the most common cognitive behavioural biases that influence financial decision making among individual investors and finance professionals include overconfidence, disposition effect, familiarity or home bias, herding behaviour, mental accounting, representative, availability, narrow framing, loss aversion, anchoring and status quo bias.

Finally, cognitive behavioural biases should not only be perceived as a negative phenomenon that affects financial decision-making but individual investor and finance professionals should also focus on its positives impacts on their financial decisions. That is becoming aware that human behaviour is usually confronted with some biases when taking

the financial decision in the period of uncertainty. The more individual investors, as well as finance professionals, become aware of the existence of these cognitive behavioural biases the better their financial decisions.

4.3 RECOMMENDATIONS

Behavioural finance can assist finance professionals in several ways on how they make their financial decisions since its role indispensable in every decision that finance professionals engage in. This study recommends the following to finance professionals and individual investors;

- Finance professional and individual investors should keep track of instances of overconfidence in order to avoid its negative consequences on their financial decisions.
- Finance professionals should communicate all realistic odds of success to their clients so to help make informed decisions on the financial decisions.
- Finance professional and individual investors should try as much as possible to resist the natural urge to be optimistic to the extent of affecting their financial decisions negatively.
- Finance professional and individual investors should also on every occasion ask themselves the realistic question about their own knowledge and understanding of the market and how their financial decision will impact their expected returns.
- Finance professionals should make sure that they choose the relevant frame for their clients and provide them with all the necessary information about the chosen frame

- Finance professionals should be able to assess how risk-averse their clients are in order to minimize its effects on their clients' investments.

Finally, this study recommends the need for a comprehensive finance model that will integrate both traditional finance and behavioural finance together. This comprehensive finance model will serve as a guide for making the financial decision among the various actors in the financial industry and market since the rationality and irrationality of individual investors and finance professional would be known as well as how they influence their financial decisions. The integration of these two models will address the anomalies of each other leading to better as well as efficient and effective model that will stand the test of time.

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