THE EFFECT OF BEHAVIOURIAL BIASES ON INDIVIDUAL INVESTOR DECISIONS: A CASE STUDY OF INITIAL PUBLIC OFFERS AT THE NAIROBI SECURITIES EXCHANGE

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DECLARATION

STUDENT'S DECLARATION

I, the undersigned, declare that this research project is my original work and that it has not been presented in any other university or institution for examination or academic credit.

Signed…………………………………….....**Date**……………………………

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SUPERVISOR'S DECLARATION

This Research project has been submitted for examination with my approval as University Supervisor.

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DEDICATION

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ABSTRACT

Investigations into the IPO market in Kenya have shown that, on average, IPOs provided abnormal return in the immediate aftermarket to investors who purchased at the initial offering. This seemed to have led to an oversubscription of recent IPOssome of whose aftermarket performance has since been dismal.This suggests that investor decisions were potentially influenced by cognitive and emotional biases that led to their faulty investment decisions as explained by behaviourial finance theorists.This led to the question; which particular behavioural biases influence individual investor decisions with respect to IPOs?Thus, the general objective of the study was to determine the effect of behaviourial biases on individual investor decisions with respect to IPOs in Kenya. To meet this broad objective, the study sought: to determine the cognitive biases that affect individual investor decisions, and to determine the emotional biases that affect individual investor decisions.

Descriptive research design was adopted.The population was estimated at 1.3 million based on new investor data since the year 2006. Stratified sampling was used based on gender. The sample comprised of 96 individuals who had invested in an IPO. Data was collected using a structured questionnaire. Spearman's rank correlation coefficient and linear regression modelling techniques were used for analysis. The data was analysed using SPSS. The findings were presented in figures and tables.

The findings showed that cognitive and emotional biases accounted for 57.5% of the variance in individual investor decisions towards IPOs at the NSE, with regret aversion bias (Beta=-.309) possessing the highest explanatory power on the individual investor decisions.The study findings implied that individual investment decisions towards IPO were influenced by cognitive biases than they did emotional biases. It was recommended that investor education is the key to overcoming unfavourable investment outcomes caused by behavioural biases. In order to manage the excesses of behavioural influences to investment decision making, training programs that create investor awareness and ability to identify and guard against cognitive errors and emotional biases that lead to bad investment choices should be offered to prospective individual investors.

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LIST OF ABBREVIATIONS AND ACRONYMS

CBD   - Central Business District

IPOs   - Initial Public Offers

NSE   - Nairobi Securities Exchange

RT   - Regret Theory

SPSS   - Statistical Package for the Social Sciences

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

According to Paul (2009), successful stock investing is more than choosing a particular stock; it is also how you go about doing it. Successful investors go beyond picking good stocks and watching the financial news but proceeding on to implement techniques and strategies that help them either minimize losses or maximize gains. The general rule of investment according to Becket (2012) is simple: "if something or somebody offers a substantially higher profit than you can get elsewhere, there is a risk attached. The world of investment is pretty sophisticated and pretty efficient, so everything has a price. And the price for higher returns is higher risk". The converse is also true. Acknowledging this reality of investing, Knapp (2006) holds the view that sensible stock investors practices sensible stock investing – an intelligent method based on common sense, best practice, sensible risk management and a reasonable degree of attention and care. This is achieved through staying rational, choosing a few stocks that are likely to outperform the market, having the fortitude to hold on them during short-term market volatility, keeping track of them and controlling excess optimism and pessimism.

1.1.1 Behavioural Biases

In finance and economics, behavioural biases refer to the tendency of decision making that result in irrational financial decisions caused by faulty cognitive reasoning and/or reasoning influenced by emotions (Pompian, 2012). The interest in biases caused by faulty cognitive reasoning or emotions that affect individual financial outcomes has seen the emergence of research on behavioural finance as a concept. Sewell (2005) construed behavioural finance as the study of the influence of psychology on the

behaviour of financial practitioners and the subsequent effect on markets. Schinckus (2011) broadly define behavioural finance as to how psychology affects finance and more precisely how human behaviour (by taking into account human desires and motivations) influence asset prices. Sing (2010) assumed that the information structure and the characteristics of market participants systematically influence individuals' investment decisions as well as market outcomes.

Belsky and Gilovich (1999) referred to behavioural finance as behavioural economics. The authors contend that behavioural economics combines the twin disciplines of psychology and economics to explain why and how people make seemingly irrational or illogical decisions when they spend, invest, save, and borrow-money. Much of economic and financial theories presume that individuals act rationally and consider all available information in the investment decision-making process. However, Bernstein (1996) states that there is evidence to show repeated patterns of irrationality, inconsistency and incompetence in the way human beings arrive at decisions and choices when faced with uncertainty. Behavioural finance therefore looks at how the investor's behaviour impacts investment decisions (Rattner, 2009).

Rabin (1996) suggests that because psychology systematically explores human judgment, behaviour, and well-being; it can teach us important facts about how humans differ from traditional economic assumptions. Standard economics assumes that each person has stable, well-defined preferences, and that agents rationally maximize those preferences. Singh (2010) portends that the concept of behavioural finance is built upon limits to arbitrage and psychology. The author explains that arbitrage in economic and finance context, is the practice of taking advantage of a price differential between two or more markets. It is a transaction that involves no

negative cashflow at any probabilistic or temporal state and a positive cashflow in at least one state; thus, risk-free profit. Arbitrage is limited by the fact that whenever there is any deviation of the price from the fundamental price caused by the less rational traders, it will be corrected by the rational traders, consistent with the efficient market hypothesis.

1.1.2 Investor Decisions

Ye (2010) portends that since financial investors make decisions to buy or sell stocks in the market, aggregated investor decisions may be viewed as a subset of aggregated consumer decisions. Ye (2010)suggests that most consumer judgments under uncertainty are made without intentional retrieval of information pertaining to alternative options available for evaluation. Thus, most of the decisions that consumers make on a day-to-day basis are made without conscious involvement, which implies the importance of implicit consumer decisions as an integral part of the overall decision making process.

Various studies show that investor decisions are a function of a myriad number of factors. A research done by Mishra (2008) showed that advise from husband/relatives, advise from friends and colleagues, advise of experts, advertisement regarding investment and own perceptions, in that order, were the most important factor that influenced the employed women to make their investment decisions. A study by Luong' and Ha (2011) found five behavioural factors affecting the investment decisions of investors in a stock exchange in China. These were: herding, market prospect, overconfidence and anchoring bias.Skousen (2007) added to this list, other factors such as wars and terrorist threats, speeches by political leaders, natural

disasters, national elections, economic rises, nationalization of corporate assets, and the death of a senior politician such as a prime minister, among others.

1.1.3 Initial Public Offers

Draho (2004) defined Initial Public Offering (IPO) as a term used to denote the first time that shares in a company are sold to public investors and subsequently traded on the stock market. According to Rudorfer and Schoon (2009), the primary purpose for floating the public market is the company's high demand for capital to fund particular purposes such as the expansion of business. Padberg (2007) states that the process of IPOs proceed by investment banks giving advice on how to handle the terms of selling shares to the company going public. Rudorfer and Schoon(2009) explain that when a company plans to go public, it first has to choose one or more investment banks to underwrite the IPO. Typically, the underwriter monitors and assesses the contemporary market conditions for the IPO and manages the IPO execution and the marketing process.

According to Geddes (2003), the three main interested parties in an IPO – the vendor, the company and the investor – have complementary objectives. The objectives of the company are: to maximize proceeds, build broad and stable ownership base, raise its profile, facilitate future fund raising and possible future acquisitions, ensure that there is good liquidity in secondary market trading and be seen as launching a successful IPO. The vendor (selling shareholder) on the other hand is interested in maximizing proceeds, maximizing value of retained interest and be seen as part of a successful transaction. The investors, on their part will want to: maximize both short term and long term share price return, broaden and diversify portfolio and accumulate a position not easily found in the secondary market.

1.1.4 Behavioural Biases and Investor Decisions

Brahmana et al. (2012) conceptually built a framework that linked the psychological biases such as attention bias, heuristic bias, regret bias and cognitive bias to individual investor decisions. Chandra and Sharma (2010) undertook a study within the geographical area of Delhi and National Capital Region to identify the major psychological biases that influence the individual investors' behaviour and that, in return, may drive a momentum effect in stock returns. Their study found that the individual investors' behaviour is driven by some psychological factors such as conservatism, under-confidence, opportunism, representativeness and informational inferiority complex. However, Alghalith et al. (2012) empirically tested dominant theories and assumptions in behavioural finance, using data from the Standard & Poor's 500 index. Their findings suggested that differences in psychological biases did notdetermine their investment preferences.

Shafranet al. (2009) experimentally examined the behaviour of investors when buying and selling stocks. In a series of experiments, subjects were asked to allocate a given endowment among six assets. The results suggested no disposition effect. However, Fogel and Berry (2006) surveyed individual investors, and found that more respondents reported regret about holding on to a losing stock too long than about selling a winning stock too soon, confirming the disposition effect. Mittal and Vyas (2010) also investigated how salaried and business class investors differ in their investment decisions and their tendency to fall prey to some commonly exhibited behavioural biases. The research was based on a sample survey of 428 investors from the city of Indore. The study indicated that business class investors were more prone

to cognitive biases while salaried class investors are more prone to biases which are outgrowth of framing effect and prospects theory.

The concept of behavioural finance is considered by numerous scholars as a new paradigm in the financial world. Agrawal (2012) noted that the field of behavioural finance has developed in response to the increasing number of stock market anomalies (undervaluation or overvaluation) that could not be explained by traditional asset pricing models. Schinckus (2011) considers behavioural finance as thus a new approach that studies the financial reality by taking into account the psychological dimension of investment.

Baker and Nofsinger (2010) observe that the sociological perspective suggests that behavioralists will face significant challenges in getting the much larger traditionalist community to adopt their perspective. Thaler (2005), touted as the father of behavioural finance, presented works which according to Baker and Nosfinger (2010) provided hotly contested evidence of market inefficiency. Baker and Nosfinger (2010) argued that whether modellers will ever be able to address Fama's (1998) demand for a simple and refutable theory is doubtful because individual behaviour is inherently complex.

Proponents of behavioural finance like Subrahmanyan (2007)argue that a 'normative' theory based on rational utility maximizers cannot be construed as a superior alternative to behavioural approaches merely because it discusses how people should behave. In defence of behavioural finance theory, Razek (2011) posited that the methodology of behavioural finance does not require that a theory be simple, contrary

to the demands made upon it by traditional financial scholars. Fama (1998) however disagrees by stating that the standard scientific rule requires that market efficiency can only be replaced by a better specific model of price formation which is itself potentially rejectable by empirical tests. In this sense, Li (2004) note that testing whether documented anomalies can be explained by behavioural theory is very important. As the author contends, the success of behavioural models in explaining anomalies in a few cases is not enough to conclude that behavioural theories are better models of price formation than traditional financial models.

1.1.5 Nairobi Securities Exchange

Goldin and Reinert (2007) traces the history of Nairobi Securities Exchange back to the year 1954, then, a voluntary association registered under the Kenyan Societies Act, during which it also came under the regulation of the Capital Markets Authority.Ngugi (2003) recounted that it was then charged with the responsibility of developing the stock market and regulating trading activities in Kenya. Since then, it has seen the successful implementation of IPOs by a number of companies.

The last decade in Kenya's history has been characterized by a number of IPO events at the Nairobi Securities Exchange.Beckert and Aspers (2011) reported that seven firms have undergone IPOs on the Nairobi Stock Exchange (NSE) since the passage of the Privatization Act in 2005, and new investors reacted with differing levels of demand to each of these offers. These are by order of listing:KenGen, Scangroup, Eveready, Access Kenya, Kenya Reinsurance, Safaricom and Cooperative Trust Bank. The author calculates that fewer than 30,000 of the approximately 1.3 million investors new to the NSE since early 2006 purchased their first shares outside of an IPO event, a fact that strongly suggests that any explanation of shareholding in Kenya

should focus on investor behaviour towards the attributes of these IPOs. Beckert and Aspers (2011) showed that Safaricom tops the firms by number of new accounts created during IPO with 665,785; which is more than three times that of KenGen, its number two in terms of new accounts.

Beck et al. (2011) noted that between July 2008 and April 2009, the NSE 20 share index fell by 48 percent and postulated thata part of the fall in the NSE index may be ascribed to the Safaricom IPO, whichdrowned the market with a massive increase in equity supply. As a result, the authors note that the many small investors who had been attracted by the issue suffered sizable losses. However, analyses presented by The Fletcher School (2009) indicated that while some Kenyan investors might have been expecting a 70, 80 or even 100% increase in the price of Safaricom's shares after its IPO, a number of international investors saw a 45 or 50% price rise and promptly took their profits such that hardly a month later, foreign investors had traded shares worth 7.36 billion shillings out of the total 14.54 billion that had been traded. This research poses the question; what do these foreign investors see that local investors do not?

While Ljungqvist and Wilhelm (2004) argued that primary equity (IPO) markets are subject to a variety of well-known idiosyncratic patterns, not least the tendency for IPOs to appear underpriced on the first day of trading, Ngigi (2012) observed that most of the companies have seen their share prices come down and mostly remain below listing price to-date. A report published by the Daily Nation (2011) suggested that following post IPO reactions, companies such as Safaricom, Kengen, Everready,

Limuru Tea, Equity Bank, Access Kenya, KCB and Kenya Airways recorded the biggest retail shareholder exits, according to Capital Market Authority data.

1.2   Statement of the Problem

Investigations into the IPO market in Kenyaby Fredrick (2012) have shown that, on average, IPOs provided abnormal return in the immediate aftermarket to investors who purchased at the initial offering. This for instance led to an oversubscription of recent IPOs, some of whose aftermarket performance has since been dismal. This is suggested in an analysis by the Capital Investment Group (2008) which provided a snapshot of the inconsistency in IPO short run returns to investors. The analysis showed for instance that Kengen listing price at Kshs 11.90 in 2006 and Scangroup's listing price at Kshs 9.50 saw investors make abnormal short run returns of as much as 300%. However, that of Eveready which was listed at Kshs 9.50 had a high that did not last for one month before plummeting down to less than the IPO price. Similarly, the listing price of Safaricom IPO at Ksh.5 in 2008 led to an oversubscription by investors who anticipated abnormal short-run returns, but which, like Eveready's did not last long enough, leaving millions of investors with depreciated stocks. This suggests that investor decisions were potentially influenced by cognitive and emotional biases that led to their faulty investment decisions as explained by behavioural finance theorists.

Baker and Nosfinger (2010), Fama(1998), Subrahmanyan (2007) and Razek (2011) noted an apparent lack of consensus among financial scholars concerning the validity of behaviourial finance theory. This lack of consensus suggests that behavioural finance as a concept is still open for debate. However, while Fama (1997), Subrahmanyan (2007) and Thaler (2005) pointed out that a plethora of research has

been conducted in the secondary markets, there is little evidence of studies on individual investor behaviour towards IPOs with reference to the NSE.

Waweru et al. (2008) investigated the role of behavioural finance and investor psychology in investment decision making at the NSE with special reference to institutional investors. Using a sample of 23 institutional investors, their study showed that behavioural factors such as representativeness, overconfidence, anchoring, gambler's fallacy, availability bias, loss aversion, regret aversion and mental accounting affected the decisions of the institutional investors operating at the NSE. However, the behaviour of individual investors towards IPO was not included in their study.

Kimani (2011) carried out a survey of behavioural factors influencing individual investors' choices of securities at the NSE. The findings showed that there were five behavioural factors that were at play. These were: herding, market, prospect, overconfidence and anchoring bias. However, it was not clear whether these behavourial biases affected individual investor decisions concerning IPOs.

A recent study related to IPOs conducted by Kipngetich et al. (2011) modelled investor sentiments in their equation of determinants of IPO pricing in Kenya using secondary data obtained from the NSE. However, their study did not explore the behavioural biases that underpin individual investor behaviour during IPOs. This presented a research gap which this study attempted to close. This led to the question; which particular behavioural biases influence individual investor decisions with respect to IPOs?

1.3 Objective of the Study

The general objective of the study was to determine the effect of behaviourial biases on individual investor decisions with respect to IPOs in Kenya.

To meet the above broad objective, this study sought:

1. To determine the cognitive biases that affect individual investor decisions

2. To determine the emotional biases that affect individual investor decisions

1.4 Significance of the Study

The findings of this study would be of benefit to:

1.4.1 Companies going Public

To the companies going public, theywould be able to understand how such aspects of behavioural finance as cognitive dissonance, among others, affect investor decisions. This would help them in setting realistic IPO prices that appear neither undervalued nor overvalued from the point of view of investors.

1.4.2 Stockbrokers and Mutual Fund Companies

Stockbrokers and mutual fund companies would be able to identify both the cognitive and emotional biases that mostly influence investor preferences and investment decisions so that they are able to properly educate investors on how to leverage on the biases.

1.4.3 Individual Investors

The research findings wouldhelp create awareness to the individual investors on the behavioural biases that they must take cognisance of when making investment decisions.

1.4.4 Researchers and Academicians

To the researchers and academicians, this study would have much theoretical significance. Scholars agree that behavioural finance is a new perspective of analysing and explaining the forces underpinning investment decisions the world over. Thus, this research contributes in providing empirical evidence that either confirms or contest proposed theories that explain behavioural finance.

CHAPTER TWO: LITERATURE REVIEW

2.1   Introduction

The purpose of this chapter is to review the work that other scholars and researchers have done concerning behavioural finance. Theoretical and empirical reviews are done leading to a conceptual framework which is proposed to guide the study.The chapter begins with a review of the theories that underpin the concept of behavioural finance. The chapter then presents an empirical review of both the cognitive and emotional biases that affect individual investor decisions. The review also covers the role of socio-demographic factors on individual investor decisions. Finally, the research gap is identified and a conceptual framework that this study adopted is discussed.

2.2   Theoretical Review

According to Faulkner (2002), three types of traits represent the most prominent characteristics of behavioural finance and these relate either to prospect theory, regret theory, mental accounting or cognitive dissonance.

2.2.1 Prospect Theory

Prospect   theory was developed by Daniel Kahneman, professor at Princeton University's Department of Psychology, and Amos Tversky in 1979 as a psychologically realistic alternative to expected utility theory. According to Kahneman (2003), the theory allows one to describe how people make choices in situations where they have to decide between alternatives that involve risk.Prospect theory used cognitive psychological techniques to explain a number of documented divergences of economic decision making from neo-classical theory. The theory describes how people frame and value a decision involving uncertainty and therefore

they look at choices in terms of potential gains or losses in relation to a specific reference point, which is often the purchase price.

In common with utility theory, Faulkner (2002) opined that prospect theory adopts a consequentialist approach to choice, which is to say that in making decisions people are assumed to be concerned with the likely outcomes of their actions. In particular, they evaluate possible courses of action based on the desirability and the likelihood, of each of an action's possible outcomes. A key operation in decision making according to prospect theory – the coding of outcomes into gains and losses – represents one of the most important characteristics of the decision maker: that outcomes are perceived in terms of gains and losses relative to some reference point (which might be the status quo) or the framing of the problem; or the expectations or history of the decision maker. According to Kahneman(1979),an important implication of prospect theory is that the way economic agents subjectively frame an outcome or transaction in their mind affects the utility they expect or receive.

2.2.2 Regret Theory

Regret theory (RT) is a model of choice under uncertainty. Developed by Loomes and Sugden (1982), it generalizes the minimax regret approach used in decision theory for minimizing the possible losses while maximizing the potential gain. RT is modelled as the minimizing of a function of the regret vector, defined as the difference between the outcome yielded by a given choice and the best outcome that could have been achieved in that state of nature.Bell (1982) described regret as the emotion caused by comparing a given outcome or state of events with the state of a foregone choice. For instance when choosing between an unfamiliar brand and a familiar brand, a consumer might consider the regret of finding that the unfamiliar brand performs

more poorly than the familiar brand and thus be less likely to select the unfamiliar brand.

Shefrin and Statman (1985) note that; in conformance with RT, many investors consider the possibility that they will regret their investment decisions. It's a human tendency to feel the pain of regret at having made errors, even small errors, not putting such errors into a larger perspective. One "kicks oneself" at having done something foolish. The pain of regret at having made errors is in some senses embodied in the Kahneman (1979) notion of a kink in the value function at the reference point. Regret theory may apparently help explain the fact that investors defer selling stocks that have gone down in value and accelerate the selling of stocks that have gone up in value.

2.2.3 Mental Accounting

An economic concept established by Thaler (1980), the concept postulates that individuals divide their current and future assets into separate, non-transferable portions. The theory purports that individuals assign different levels of utility to each asset group, which affects their consumption decisions and other behaviours. One application of mental accounting is the behavioural life cycle hypothesis that people frame assets as belonging to either their current wealth or future income and has implications for their behaviour as the accounts are largely non fungible marginal propensity to consume.

Investors have a tendency to ride the losers as they are reluctant to realize losses. Investors often integrate the sale of losers so that the feeling of regret is confined to one time period. Also, investors tend to stagger the sale of winners over time to

prolong the favourable experience and finally investors often have an irrational preference for stocks paying high dividends because they don't mind spending the dividend income, but are not inclined to sell a few shares and dip into the capital. People may tend to place their investments into arbitrarily separate mental compartments, and react separately to the investments based on which compartment they are in. Shefrin and Statman(1994) argue that individual investors think naturally in terms of having a "safe" part of their portfolio that is protected from downside risk and a risky part that is designed for a chance of getting rich.

2.2.4 Cognitive Dissonance

Cognitive dissonance is the mental conflict that people experience when they are presented with evidence that their beliefs or assumptions are wrong; as such, cognitive dissonance might be classified as a sort of pain of regret, regret over mistaken beliefs. As with regret theory, the theory of cognitive dissonance, Festinger(1957) asserts that there is a tendency for people to take actions to reduce cognitive dissonance that would not normally be considered fully rational: the person may avoid the new information or develop contorted arguments to maintain the beliefs or assumptions. Goetzmann and Peles (1993) have argued that the same theory of cognitive dissonance could explain the observed phenomenon that money flows in more rapidly to mutual funds that have performed extremely well than flows out from mutual funds that have performed extremely poorly: investors in losing funds are unwilling to confront the evidence that they made a bad investment by selling their investments.

2.3   Empirical Review

This empirical review highlights the various types of behavioural biases underpinning investor decisions based on previous research and literature. Existing literature classifies behavioural biases into two major types. These are: cognitive biases and emotional biases.Razek (2011) portends that human beings are faced with limited cognitive abilities that constrain their problem-solving abilities. According to Pompian (2012),cognitive errors or biases stem from basic statistical, information processing, or memory errors and thus, may be considered the result of faulty reasoning. Cognitive errors do not result from emotional or other predispositions toward certain judgments, but rather from either subconscious mental procedures for processing information or irrational perseverance in one's own beliefs. The author argues that because cognitive errors stem from faulty reasoning, better information, education and advice can often correct for them.

2.3.1 Representativeness Bias

According to Pompian (2012), representativeness bias is a belief perseverance bias in which people tend to classify new information based on past experiences and classifications. They believe their classifications are appropriate and place undue weight on them. Research show that this bias occurs because people attempting to derive meaning from their experiences tend to classify objects and thoughts into personalized categories. When confronted with new information, they use those categories even if the new information does not necessarily fit. They rely on a best-fit approximation to determine which category should provide a frame of reference from which to understand the new information. Although this perceptual framework provides an expedient tool for processing new information, it may lead to statistical and information processing errors. The new information superficially resembles or is

representative of familiar elements already classified, but in reality it can be very different.

Agrawal (2012) explains that when people are under the influence of the representativeness bias, events are categorized by them as being representative of a well-known class. The result of such a tendency is that probability estimates are made in a way that overemphasizes the significance of the categorization without adequate attention to the evidence about the underlying probabilities. According to Qawi(2010), representativeness statistically shows that people tend to associate two events and deem them identical when in reality they may not be similar in any respect but appear to be superficial.

2.3.2 Illusion of Control Bias

According to Pompian (2012), illusion of control bias is a bias in which people tend to believe that they can control or influence outcomes when, in fact, they cannot. A review by the author indicated that choices, task familiarity, competition and active involvement can all inflate confidence and generate such illusions. This may lead investors to either trade more than is prudent or inadequately diversify portfolios, for instance, because of familiarity due to, for instance, having worked in the company. Subrahmanyam (2005) also presents evidence that individual investors prefer stocks with high brand recognition, supporting the familiarity hypothesis.

2.3.3 Hindsight Bias

According to Pompian (2012), hindsight bias occurs when people see past events as having been predictable and reasonable to expect. People tend to remember their own predictions of the future as more accurate than they actually were because they are

biased by the knowledge of what has actually happened. Thus people view things that have already happened as being relatively predictable. People thus may overestimate the degree to which they predicted an investment outcome, thus giving them a false sense of confidence. This may cause investors to take on excessive risk, leading to future investment mistakes. As Qawi(2010) agrees, investors have an easier time realizing that the markets were over or underpriced in the past but are encountering problems seeing the same for current events.

2.3.4 Cognitive Dissonance Bias

According to Pompian (2012), when newly acquired information conflicts with pre-existing understandings, people often experience mental discomfort – a psychological phenomenon known as cognitive dissonance cognitions, in psychology, represents attitudes, emotions, beliefs or values and cognitive dissonance is a state of imbalance that occurs when contradictory cognitions intersect. The term cognitive dissonance encompasses the responses that arise when people struggle to harmonize cognitions and thereby relieve their mental discomfort. As a result of cognitive dissonance bias, cognitive dissonance can cause investors to hold losing securities positions that they otherwise would sell because they want to avoid the mental pain associated with admitting that they made a bad decision. Razek (2011) contends that for investors, the issue is especially dangerous because it may cause them to hold on to a position long after disconfirming facts are available. In addition, the author notes that it makes investors vulnerable to sources of information that confirm our pre-existing ideas.

2.3.5 Availability Bias

According to Pompian (2012), this is a bias in which people take a heuristic (also known as a rule of thumb or a mental shortcut) approach to estimating the probability

of an outcome based on how easily the outcomes come to mind. Easily recalled outcomes are often perceived as being more likely than those that are harder to recall or understand. Thus, recent events are much more easily remembered and available. As a result, an individual investor may choose an investment based on advertising rather than on a thorough analysis of the options. As Qawi(2010) explains, the more current and significant an event is the higher the likelihood of it influencing decision making.

Agrawal (2012) maintains that many a times, individuals behave irrationally and their decisions are biased. They tend to use shortcuts in arriving at decisions due to time and capacity constraints in processing of information. When faced with complicated judgments or decisions, they simplify the task by relying on heuristics or general rules of thumb. Ritter (2003, p.3) illustrates the rule of thumb thus, "When faced with N choices for how to invest retirement money, many people allocate using the 1/N rule. If there are three funds, one-third goes into each. If two are stock funds, two-thirds goes into equities. If one of the three is a stock fund, one-third goes into equities". This has been documented in a study by Razek (2011) which established that people satisfice rather than optimize. Qawi (2010) notes that investment related decisions are often complex and the information associated with the various stocks, funds or other vehicles could be overwhelming for the average investor.

2.3.6 Self-attribution Bias
Pompian(2012) explained bias as the tendency of individuals to ascribe their successes to innate aspects such as talent or foresight, while more often blaming failures on outside influences such as bad luck. Therefore, self-attribution investors can, after a period of successful investing, believe that their success is due to their

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acumen as investors rather than to factors out of their control. This can lead to taking too much risk due to confidence.

Singh (2012) observed that most of the time human being is governed not by the rationality but by its emotions. According to Qawi (2010), the human genetic makes us to act emotionally faster than rationally, due to the biological response time within our brains in challenging situations. Pompian (2012) explains that an emotion may be thought of as a mental state that arises spontaneously rather than through conscious effort. Emotions have to do with how people feel rather than what and how they think. Emotional biases stem from impulse or intuition and maybe considered to result from reasoning influenced by feelings. On the other hand, because emotional biases stem from impulse or intuition – especially personal, they are less easily corrected. Emotions are related to feelings, perceptions, or beliefs about elements, objects or relations between these things and they can be a function of reality or of the imagination. Emotions may be undesirable to those feeling them; they may wish to control the emotions but often cannot. Thus, it may only be possible to recognize an emotional bias and adapt to it. Seven emotional biases namely: loss aversion, overconfidence, self-control, status quo, endowment and regret aversion are discussed.

2.3.7 Loss Aversion Bias

Pompian(2012) illustrates that in prospect theory, loss-aversion occurs when people tend to strongly prefer avoiding losses as opposed to achieving gains. Loss aversion leads people to hold their losers even if an investment has little or no chance of going back. Investors may as a result hold investments in a loss position longer than justified by fundamental analysis. This confirms the argument by Razek (2011) that,

consistent with prospect theory, people do not always behave rationally. According to Schinckus (2011) prospect theory is a descriptive theory of choice under uncertainty based on the outcome of numerous experimental psychological studies. Ritter (2003) illustrated this phenomenon, relating it to the disposition effect. For example, if someone buys a stock at $30 that then drops to $22 before rising to $28, most people do not want to sell until the stock gets to above $30.

2.3.8 Regret-Aversion Bias

Pompian(2012) defined regret-aversion bias as an emotional bias in which people tend to avoid making decisions that will result in action out of fear that the decision will turn out poorly. That is, people tend to avoid the pain of regret associated with bad decisions. This bias can either make a person to be reluctant to sell because they fear that the position will increase in value and then they will regret having sold it, or, it can keep investors out of a market that has recently generated sharp losses or gains. Having experienced losses, our instincts tell us that to continue investing is not prudent. Yet periods of depressed prices may present great buying opportunities. Razek (2011) explains regret as the emotion by comparing a given outcome or state of events with the state of a foregone choice. Thus, investors may avoid selling stocks that have gone down in order to avoid the regret of having made a bad investment and the embarrassment of reporting the loss.

Thaler (2005) contends that investors might sell winners and hold losers because they expect their losers to outperform their winners in the future. An investor who buys a stock because of favourable information may sell that stock when it goes up because she believes her information is now reflected in the price. On the other hand, if the stock goes down she may continue to hold it, believing that the market has not yet

come to appreciate her information. Investors could also choose to sell winners and hold losers simply because they believe prices may revert. Previous research offers some support for the hypothesis that investors sell winners more readily than losers, but this research is generally unable to distinguish among various motivations investors might have for doing so. For instance, Subhramanyam (2007) noted that past winners have excess selling pressure and past losers are not shunned as quickly as they should be, causing under-reaction to public information.

2.3.9 Overconfidence Bias

Razek (2011) define overconfidence as an overestimation of the probabilities for a set of events. The author argues that the concept is operationally reflected by comparing whether the specific probability assigned is greater than the portion that is correct for all assessments assigned to that given probability. Agrawal (2012) noted that overconfidence causes people to overestimate their knowledge, undervalue risks and overestimate their ability to control events. The author claimed that overconfidence originates in people's biased evaluation of evidence. Many researchers find evidence for the presence of the overconfidence bias in different financial decisions. Studies have shown that announcement returns are lower for overconfident bidders as compared to rational bidders.

According to Agrawal (2012), overconfidence affects not only the behaviour of secondary market traders but also investors in the primary market. In a recent study, Hsu and Shiu(2010) examined the investment returns of investors in discriminatory auctions taking place in the Taiwan stock market and found that frequent bidders under-perform infrequent bidders. Overconfidence led to aggressive bidding and higher payment for securing the auctioned shares. Frequent bidders also prove to be

inferior in terms of stock selection performance. This implies their overestimation of the future cash flow of the Initial Public Offer (IPO) firms, or underestimation of the risk of investment in these firms, or both. According to Subrahmanyam (2007), overconfidence about private signals causes overreaction and hence phenomena like the book/market effect and long-run reversals, whereas self-attribution (attributing success to competence and failures to bad luck) maintains overconfidence and allows prices to continue to overreact, creating momentum.

Sewel (2005) caution that overconfidence is particularly seductive when people have special information or experience-no matter how insignificant-that persuades them to think that they have an investment edge. In reality, however, most of the so-called sophisticated and knowledgeable investors do not outperform the market consistently. Fama (1997) reported a study in which questionnaires were sent out to 2,000 wealthy individual investors and 1,000 institutional investors; there were 605 completed responses from individuals and 284 responses from institutions. One of the questions asked was: "Did you think at any point on October 19, 1987 that you had a pretty good idea when a rebound was to occur?" Of individual investors, 29.2% said yes, of institutional investors, 28.0% said yes. These numbers seem to be surprisingly high: one wonders why people thought they knew what was going to happen in such an unusual situation. Among those who bought on that day, the numbers were even higher, 47.1% and 47.9% respectively. The next question on the questionnaire was "If yes, what made you think you knew when a rebound was to occur?" Here, there was a conspicuous absence of sensible answers; often the answers referred to "intuition" or "gut feeling." It would appear that the high volume of trade on the day of the stock market crash, as well as the

occurrence, duration, and reversal of the crash was in part determined by overconfidence in such intuitive feelings.

2.3.10 Over-optimism Bias

According to Agrawal (2012), optimism is about expecting a favourable outcome irrespective of the actual effort or skills devoted by the individual to bring about the outcome. Ramnath et al. (2008) explain over-optimism as the tendency to overvalue the possibility of desired outcomes and undervalue the occurrence of unfavourable events. The authors note that investors' earnings forecast errors are significantly optimistic for buy recommendations and significantly pessimistic for sell recommendations. An empirical studyby Subrahmanyan (2007) find negative relations between returns and past volume and argues that this is driven by optimistic investors generating volume and their optimism getting reversed in subsequent periods.

2.4 Summary of the Literature Review

The literature has reviewed both cognitive errors and emotional biases that potentially influence individual investor decisions. It has discussed biases such as representativeness bias, illusion of control, hindsight, cognitive dissonance, availability and self-attribution bias. It has also discussed loss aversion, regret aversion, overconfidence and over-optimizing biases. It has further explored the role of age, gender, experience, education and peer influence on investment decisions generally. In sum, the literature has suggested that cognitive biases stem from faulty reasoning that can be corrected by education and advise. However, this is not supported by empirical evidence. Instead, there exist contradictory literature which suggests that financially literate investors are not immune from the effects of the

popular investing culture observed in individual investors, and many of the factors no doubt influence their thinking as well. In addition, while there is statistical evidence in favour of other biases such as representativeness bias argument, it is not clear how individual investors are influenced by such a cognitive bias in an IPO scenario. These are gaps which this research proceeded to fill.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1   Introduction

The general objective of the study was to establish the behavioural biases influencing individual investor decisions. This chapter describes the details of the research design used for this study. It discusses the population and sampling design, sample size, sampling technique, data collection methods, research procedures and data analysis methods.

3.2   Research Design

In this study, descriptive research design was adopted. Gravetter and Forzano(2011) posit that descriptive research design involves measuring a set of variables as they exist naturally. Houser (2011) notes that it is designed to provide in-depth information about the characteristics of subjects within a particular field of study, thus, it can help identify relationships between variables. According to Sekaran(2003), this design offers the researcher a profile or to describe relevant aspects of the phenomena of interest for an individual, organization or other perspectives. In this study, the main independentvariables were: cognitive and emotional behaviourial biases as causes or inputs whereas individual investor decisions were the dependent variables representing output or effect.

3.3   Population

Saunders et al. (2009) define a population as the total set of elements about which some inferences may be drawn after a scientific inquiry. Cooper and Schindler (2005) construed population elements as the subject on which the measurement is being taken. For the purpose of this study, the population was estimated at 1.3 million based

on new investor data since the year 2006 as indicated in a previous study by Beckert and Aspers (2011).

3.4   Sampling Design
3.4.1 Sampling Technique
Kumar (2005, p.164) define sampling as "the process of selecting a few from a bigger group to become the basis for estimating or predicting the prevalence of an unknown piece of information, situation, or outcome regarding the bigger group". Stratified sampling technique was used. According to Jackson (2011), stratified random sampling takes into account the different sub-groups of people in the population and helps guarantee that the sample accurately represents the population on specific characteristics. Gravertter and Forzano (2011, p. 148) hold that it "is particularly useful when a researcher wants to describe each individual segment of the population or wants to compare segments". In this study, stratified sampling was adopted because the researcher intended to segment the target population in terms of gender; that is, male and female investors. Equal stratification of respondents was done so that the sample size per stratum was allocated on a fifty-fifty basis. Within each stratum, respondents were targeted through simple random sampling.

3.4.2 Sampling Frame
Denscombe (2003) considers a sampling frame is an objective list from which the sample population is drawn. Due to lack of a list of register of individual IPO investors, the sampling frame was constructed based on general IPO investors who are either owners or employees of businesses listed in the Nairobi Business Directory.

3.4.3 Sample Size

Since the population in this study was more than 10,000, Mugenda and Mugenda (2003) recommend the following formula to arrive at an adequate sample size:

$$n = \frac{Z^2 pq}{d^2}$$

Where:

n = the desired sample size (if the target population is greater than 10,000).

Z = the standard normal deviate at the required confidence level

p = the proportion in the target population estimated to have characteristics being measured.

q = 1 – p

d = the level of statistical significance set.

Mugenda and Mugenda (2003) asserts that if there is no estimate available of the proportion in the target population assumed to have the characteristics of interest, 50% should be used. Since the researcher desires an accuracy of at least 90% (0.1 level), the sample size was calculated as follows:

$$n = \frac{(1.96)^2 (.50)(1-.50)}{(0.1)^2}$$

n = 96

Therefore, 96 individuals who had invested in an IPO were included in the sample.

3.5   Data Collection

Primary data was collected for the study. The nature of data to be collected was quantitative. According to Saunders et al. (2009), quantitative data is data that can be quantified to answer research questions and can range from simple counts such as the frequency of occurrences to more complex data such as test scores.Data was collected using a structured questionnaire. Saunders et al. (2009) define a questionnaire as the general term including all data collection techniques in which each person is asked to answer the same set of questions in a predetermined order. The questionnaire was structured using measurement variables such as nominal, ordinal, interval and ratio scales which, according to Kothari (2004), are the most widely used classification of measurement.

The questions were constructed using Likert's 5 Point Scale. According to Stangor (2010, p.75), "a Likert scale consists of a series of items that indicate agreement or disagreement with the issue that is to be measured, each with a set of responses on which the respondents indicate their opinions". McNabb (2008) explains that each item is a stand-alone statement that expresses an opinion about a subject. The author posits that Likert scales aim to measure the extent of a respondent's agreement with each item on a five-point scale such as, strongly agree, agree, undecided, disagree and strongly disagree; with the items assigned values from 1 through to 5 in that order. The author suggests that depending on how the statements are worded, low means scores can be used to equate with either positive or negative opinions while high mean scores can be used to suggest the opposite.

The questionnaire was divided into three sections. The first section composed of general questions regarding IPO investment. The second section comprised of Likert Scale statements on cognitive biases. The third section asked questions regarding the influence of emotional biases. The last section was made up of questions on socio-demographic factors. The questionnaire was physically administered by the researcher to individuals who are owners or employees of businesses based in Nairobi's Central Business District. The inclusion criterion was working individuals who have invested in any of the previous IPOs in Kenya. The exclusion criteria were; individuals who have invested in the secondary market only and any other individual who has never invested in shares before. It also excluded individuals who work in financial institutions and stock brokerage firms.

3.6   Data Analysis

Data analysis commenced by coding the data into the Statistical Package for the Social Sciences (SPSS). Denscombe (2003) suggests that data coding entails the attribution of a number to a piece of data, or group of data, with the aim of allowing such data to be analyzed in quantitative terms. Associations and inferences were drawn using Spearman's rank correlation and multiple regression techniques. Healey (2011) describes Spearman's rank correlation coefficient as a statistic which is used to measure the relationship of paired ranks assigned to individual scores on two variables. It is an index of the strength of association between the variable ranges from 0 (no association) to $\pm$ 1.00 (perfect association). A perfect positive association (r =+1.00) would exist if there were no disagreements in ranks between the two variables. A perfect negative relationship (r = -.100) would exist if the ranks were in perfect disagreement. To obtain the value of the correlation (r), the following formula is used:

$$r = \frac{1 - 6\sum D^2}{N^2 - N}$$

Where r = Spearman's rank correlation coefficient.

D^2 = Sum of the squared differences between the ranks

N = Number of cases

The study further adopted linear regression models to explain the strength of the relationship between behavioural biases and individual investor decisions using multiple regression model given by Ghauri and Gronhaug (2005) as follows:

$$Y_i = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \ldots + \varepsilon_i$$

Where:

Yi = dependent variable

β_0 = constant

$\beta_{1x1\ldots xn}$ = predictors

ε_i = standard error

Using the general model above, the researcher has developed the following regression equation to test the two specific objectives as below:

$$IDC = x_1REB + x_2ICB + x_3HSB + x_4CDB + x_5AVB + x_6SAB + x_7LAB + x_8RAB + x_9OCB + x_{10}OPB + \varepsilon_i$$

Where:

IDC = Individual Investor Decision

REB = Representativeness Bias

ICB = Illusion of Control Bias

HSB = Hindsight Bias

CDB = Cognitive Dissonance Bias

AVB = Availability Bias

SAB = Self Attribution Bias

LAB = Loss Aversion Bias

RAB = Regret-Aversion Bias

OCB = Overconfidence Bias

OPB = Overoptimism Bias

In the regression model above, the variables were operationalized as shown in appendix II.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

The general objective of the study was to determine the effect of behaviourial biases on individual investor decisions with respect to IPOs in Kenya. In this chapter, the findings of the study are analyzed. This chapter is divided into three sections. The chapter begins with a descriptive analysis of the respondents' general information. The subsequent section analyzes the cognitive biases that affect individual investor decisions. The last section presents the analysis of the emotional biases that affect individual investor decisions. A summary of the findings is made at the end of the chapter. All the questionnaires administered were successfully filled and returned, placing the response rate at 100% as shown in table 4.1.

Table 4.1 Response Rate

	Distribution	
Response rate	Frequency	Percent
Responded	96	100.0
Did not respond	0	0
Total	96	100.0

4.2 General Information

The general information sought from the respondents included their gender, age, level of education, finance background, IPO investment history, share trading, source of motivation to invest in IPO, and the IPO invested in.

4.2.1 Gender of Respondents

The distribution of respondents by gender is shown in table 4.2. The table shows that male respondents accounted for 53.1% of the respondents whereas 46.9% of the respondents were female.

Table 4.2Distribution of Respondents by Gender

Gender of respondents	Distribution	
	Frequency	Percent
Male	51	53.1
Female	45	46.9
Total	96	100.0

4.2.2 Age of Respondents

Respondents were classified into two age groups as shown in table 3. The table shows that 60.4% of the respondents were aged between 18-40 years whereas 39.6% of the respondents were over 40 years of age.

Table 4.3 Distribution of Respondents by Age

Age of Respondents	Distribution	
	Frequency	Percent
18-40 years	58	60.4
Over 40 years	38	39.6
Total	96	100.0

4.2.3 Level of Education

The study sought to establish respondents' highest level of education. Table 4.4 shows that 40.6% of the respondents were university graduates, followed by 36.5% of the respondents who had middle level college education and lastly, 22.9% who obtained secondary education.

Table 4.4 Respondents' Highest Level of Education

Level of education	Distribution	
	Frequency	Percent
Secondary education	22	22.9

Middle level college education	35	36.5
University education	39	40.6
Total	96	100.0

4.2.4 Professional Background in Finance

Respondents were asked to indicate whether they had any professional background training in finance. Table 4.5 shows that 72.9% of the respondents did not have professional background training finance whereas 27.1% said yes.

Table 4.5Possession of Professional Background Training in Finance

	Distribution	
Responses	Frequency	Percent
Yes	26	27.1
No	70	72.9
Total	96	100.0

4.2.5 Previous Investment in Shares before Investing in IPO

The study sought to determine whether respondent had ever invested in shares before the IPO that they bought. Table 4.6 shows that 65.6% of the respondents said yes while 34.4% of the respondents said no.

Table 4.6 Previous Investment in Shares before IPO Purchase

	Distribution	
Responses	Frequency	Percent
Yes	63	65.6
No	33	34.4
Total	96	100.0

4.2.6 IPO that Respondent Invested in

The respondents were asked to state the last IPO that they invested in. Figure 4.1 shows that majority of the respondents (62.5%) last invested in other IPOs outside the last six IPOs in the period after 2006. However, 14.6% of the respondents last invested in Safaricom's IPO, and 8.3% of the respondents invested in Access Kenya

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and Kenya Re, each. Some 3.1% of the respondents last invested in British American's IPO, 2.1% invested in Cooperative Bank's IPO and 1% of the respondents last invested in the IPO for Eveready.
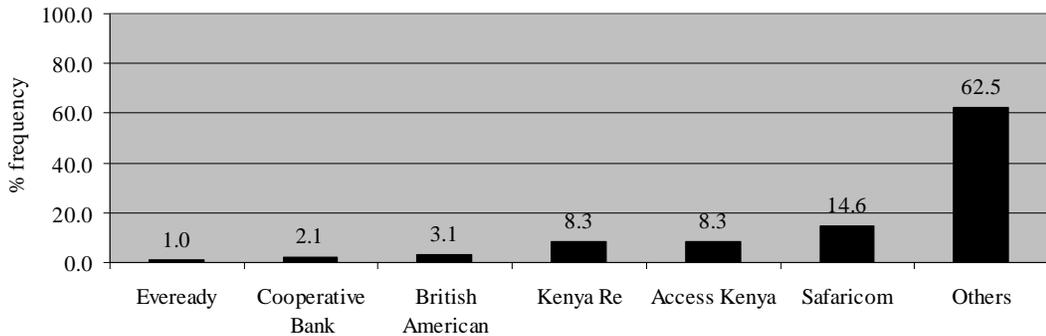
Figure 4.1 Years Respondents had been Trading in Shares before the IPO

4.2.7 Shares Trading History

The study sought to determine for how long respondents had been trading in shares before the IPO. Out of the 63 respondents who had invested in shares before the IPO, 62.9% had been trading in shares for more than 10 years, 24.3% of the respondents had traded in shares for 6 to 10 years; 10% of the respondents had a history of shares trading of 4 to 5 years whereas 2.9% of the respondents had traded in shares for 1 to 3 years.
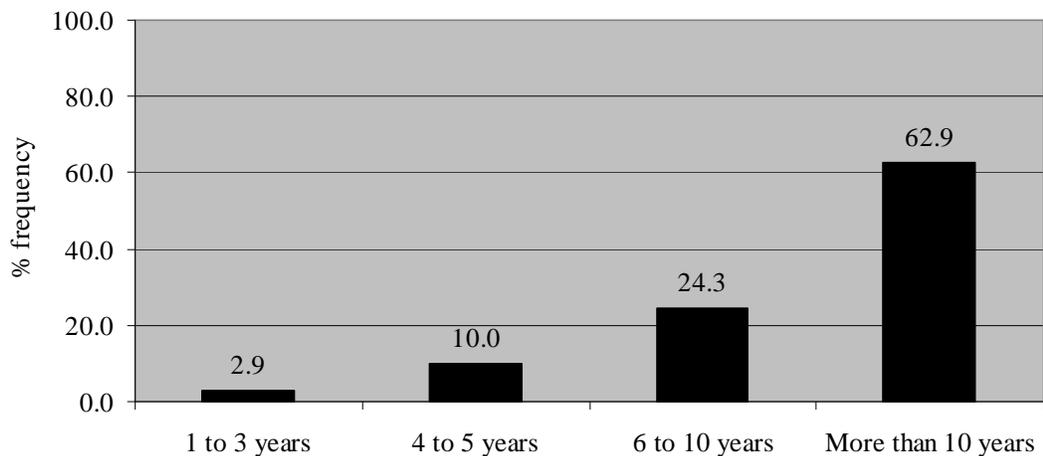
Figure 4.2 Years Respondents had been Trading in Shares before the IPO

4.2.8 Source of Motivation to Invest in IPO

The study sought to determine what encouraged respondents to purchase the company's shares during the IPO. Figure 4.3 shows that majority (43.8%) of the respondents invested in the IPO because they felt it was an investment idea, followed by 31.3% of the respondents who relied on their experience and financial knowledge, and 16.7% who were influenced by their friends. Only 10.4% of the respondents invested in the IPO because of the company's good performance.
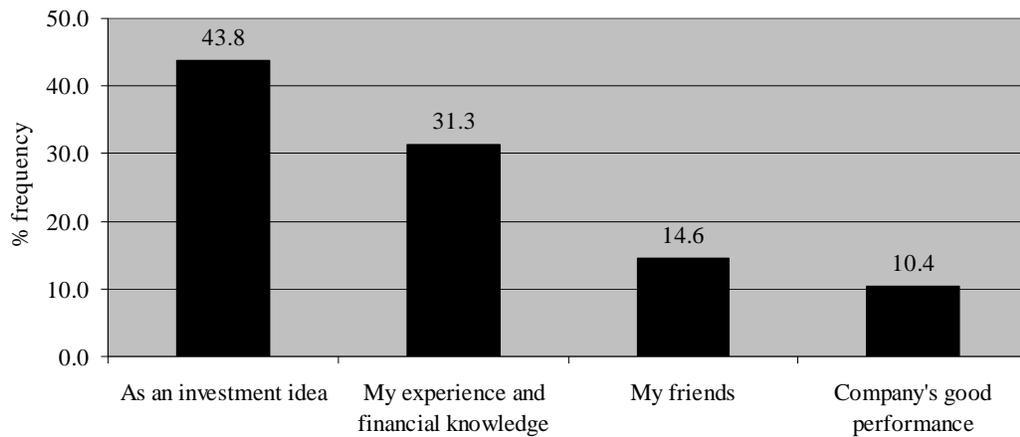
Figure 4.3Sources of Motivation to Invest in IPO

4.2.9 Status of Respondents' IPO Shares

The study sought to determine whether respondents had sold all or part of the IPO shares. Table 4.7 shows that 65.6% of the respondents said yes whereas 34.4% said no.

Table 4.7 Whether Respondent has sold all or Part of the IPO Shares

Responses	Distribution	
	Frequency	Percent
Yes	63	65.6

38

No	33	34.4
Total	96	100.0

4.2.10 Satisfaction with IPO Outcome

The views of the respondents were sought as to whether they were happy with the outcome of all the IPOs that they had invested in. Table 4.8 shows that 26.0% of the respondents agreed and 3.1% strongly agreed. However, 31.3% of the respondents were neutral while 26.0% and 13.5% of the respondents disagreed and strongly disagreed, respectively. Therefore, majority of the respondents disagreed that they were happy with the outcome of all the IPOs that they had invested in. This means that respondents were generally disappointed with their investment in IPOs. The finding implies that respondent's investment decisions were potentially influenced by non-rational decision choices consistent with behavioural finance theories as explained by Pompian (2012). The finding agrees with Bernstein (1996) by showing investment outcomes that suggest evidence for irrationality and incompetence in the way the investors arrive at decisions.

Table 4.8 I am happy with the outcome of all the IPOs I have invested in

	Distribution	
Responses	Frequency	Percent
Strongly disagree	13	13.5
Disagree	25	26.0
Neutral	30	31.3
Agree	25	26.0
Strongly agree	3	3.1
Total	96	100.0

4.3 Cognitive Biases that affect Individual Investor Decisions

In this section, the relationships between individual investor decisions and cognitive biases are analyzed. Table 4.9 shows Spearman's Rank Correlation coefficients with

alpha significant at .01 levels. The table shows that outcomes of individual investor decisions was significantly correlated to: representativeness bias ($r=.325$, $p<.01$); illusion of control bias ($r=.309$, $p<.01$); cognitive dissonance bias ($r=-.323$, $p<.01$); availability bias ($r=-.404$, $p<.01$) and self-attribution bias ($r=-.562$, $p<.01$). These statistically significant correlations suggest that these dimensions of cognitive biases did influence individual investor decisions. However, individual investor decision outcomes were not significantly related to hindsight bias ($r=-.075$, $p>.01$).

Table 4.9 Correlation between Cognitive Biases and IPO Investor Decisions

Spearman's rho		1
Individual Investor Decision	Correlation Coefficient	1.000
	Sig. (2-tailed)	.
	N	96
Hindsight Bias	Correlation Coefficient	-.075
	Sig. (2-tailed)	.465
	N	96
Long term investment objectives	Correlation Coefficient	.503(**)
	Sig. (2-tailed)	.000
	N	95
Representativeness Bias	Correlation Coefficient	.325(**)
	Sig. (2-tailed)	.001
	N	96
Illusion of Control Bias	Correlation Coefficient	.309(**)
	Sig. (2-tailed)	.002
	N	96
Previous IPO profits	Correlation Coefficient	-.004
	Sig. (2-tailed)	.968
	N	96
Cognitive Dissonance Bias	Correlation Coefficient	-.323(**)
	Sig. (2-tailed)	.001
	N	96
Availability Bias	Correlation Coefficient	-.404(**)
	Sig. (2-tailed)	.000
	N	96
Self-attribution bias	Correlation Coefficient	-.562(**)
	Sig. (2-tailed)	.000
	N	96
Inappropriate advise by stockbrokers	Correlation Coefficient	-.432(**)
	Sig. (2-tailed)	.000
	N	96

** Correlation is significant at the 0.01 level (2-tailed).

4.3.1 Hindsight Bias

The study sought to determine whether hindsight bias played a role in influencing individual investor decisions to invest in IPO. Respondents were asked to indicate whether they expected shares to appreciate by at least 100%. Table 4.10 shows that 39.6% and 16.7% agreed and strongly agreed, respectively. However, 28.1% of the respondents were neutral whereas 14.6% of the respondents disagreed and another 1% of the respondents strongly disagreed. Therefore, majority of the respondents expected the IPO shares to appreciate by at least 100%. Interestingly, although majority of the respondents expected the IPO shares to appreciate by at least 100%, individual investor decision outcomes were not significantly related to hindsight bias. Thus, even when respondents seemingly overestimated the degree to which they predicted their investment outcome which gave them a false sense of confidence as pointed out by Pompian (2012), their investment choices were not primarily influenced by hindsight bias. This may be explained by the fact that majority of the respondents had invested for the long term, and thus, were not necessarily driven to invest in IPO because of the potential to reap abnormal short-run profits that characterize most IPOs. This is implied in the fact that majority of respondents in this study last invested in IPOs that happened earlier than six years ago.

Table 4.10 I expected shares to appreciate by at least 100%

	Distribution	
Responses	Frequency	Percent
Strongly disagree	1	1.0
Disagree	14	14.6
Neutral	27	28.1
Agree	38	39.6
Strongly agree	16	16.7

Total	96	100.0

4.3.2 Investment Intentions

The opinion of respondents was sought as to whether their invested in the IPO for long term or not. Table 4.11 shows that 35.8% of the respondents agreed and 43.2% strongly agreed that their investment in the IPO was for long term purpose. However, some 17.9% of the respondents were neutral whereas 3.2% of the respondents disagreed. Therefore, majority of the respondents agreed that they invested in the IPO for long term purposes.

Table 4.11 My Investment in the IPO was for long term purpose

	Distribution	
Responses	Frequency	Percent
Strongly disagree	0	0.0
Disagree	3	3.2
Neutral	17	17.9
Agree	34	35.8
Strongly agree	42	43.2
Total	96	100.0

4.3.3 Representativeness Bias

In order to establish the influence of representativeness bias, the study sought to determine whether individual IPO investors compared the past experience with other IPOs when deciding to invest in the last IPO. Table 4.12 shows that 46.9% and 28.1% of the respondents agreed and strongly agreed, respectively. The table shows that 20.8% of the respondents were neutral while 4.2% of the respondents disagreed. Therefore, majority of the respondents compared the past experience with other IPOs when deciding to invest in the last IPO, which indicated representativeness bias in agreement with Pompian (2012). This is implied in the statistically significant correlation between respondents' investment decisions in the last IPO and

representativeness bias. Given that a significant number of the respondents in this study last invested in Safaricom's IPO which came after that of Kengen whose IPO returned abnormal profits to investors, it was likely that the individual investors in this study relied on a best-fit approximation using previous successful IPOs such as that of Kengen as a frame of reference irrespective of whether the last IPO's information necessarily did fit or not. Thus, consistent with behaviorial theorists as noted by Agrawal (2012), although this perceptual framework provides an expedient tool for processing new information, it might have led to statistical and information processing errors, thus exemplifying a form of cognitive bias on the part of the individual investors.

Table 4.12 I Compared the Past Experience with other IPOs

Responses	Distribution	
	Frequency	Percent
Strongly disagree	0	0.0
Disagree	4	4.2
Neutral	20	20.8
Agree	45	46.9
Strongly agree	27	28.1
Total	96	100.0

4.3.4 Illusion of Control Bias

As an indicator of illusion of control bias, the views of respondents were sought as to whether they were informed about all the fundamentals of the company which made them confident when they invested in the company's IPO. Table 4.13 shows that 32.3% of the respondents agreed and another 21.9% strongly agreed. Twenty four percent (24.0%) of the respondents were neutral whereas 19.8% and 2.1% of the respondents disagreed and strongly disagreed, respectively. Therefore, an aggregate of

54.2% of the respondents agreed that they were informed about all the fundamentals of the company which made them confident when they invested in the company's IPO. This depicts an illusion of control bias, consistent with the viewpoints of behavioural finance scholars such as Pompian (2012). The correlation results showed that the negative outcomes of individual investor decisions were significantly related to illusion of control bias.

Table 4.13I was Informed about All the Fundamentals of the Company

	Distribution	
Responses	Frequency	Percent
Strongly disagree	2	2.1
Disagree	19	19.8
Neutral	23	24.0
Agree	31	32.3
Strongly agree	21	21.9
Total	96	100.0

4.3.5 Profits from Previously Under-priced IPOs

The study sought to determine whether the profits generated from previously underpriced IPOs of other companies made the last IPO very attractive to respondents. Fifty percent (50.0%)of the respondents were neutral. However, 25.0% of the respondents agreed and 14.6% strongly greed while on the other hand, 8.3% and 2.1% of the respondents disagreed and strongly disagreed, respectively. Therefore, majority of the respondents were neutral concerning whether the profits from IPOs of other companies made investment in the last IPO attractive.

Table 4.14 The Profits from IPOs of other companies made the last IPO attractive

Responses	Distribution	
	Frequency	Percent
Strongly disagree	2	2.1
Disagree	8	8.3
Neutral	48	50.0
Agree	24	25.0
Strongly agree	14	14.6
Total	96	100.0

4.3.6 Cognitive Dissonance Bias

As a proxy for cognitive dissonance bias, respondents were asked to reveal whether they were holding their shares at the last IPO that they invested in because selling them would be a painful loss to them. Table 4.15 shows that 27.1% and 2.1% of the respondents agreed and strongly agreed, respectively. However, another 27.1% of the respondents were neutral whereas 35.4% of the respondents disagreed and 8.3% of the respondents strongly disagreed. Therefore, majority of the respondents disagreed that they were holding their shares at the last IPO because selling them would be a painful loss, implying that cognitive dissonance did not underplay their investment choices. This contradicts scholarly arguments by Razek (2011) who posited that cognitive dissonance can cause investors to hold losing securities positions that they otherwise would sell because they want to avoid the mental pain associated with admitting that they made a bad decision. This is equally explained by the findings which showed that majority of the individual investors had long-term investment objectives. In this case, trading in shares in the secondary market was not a primary consideration to them.

Table 4.15 Holding shares because selling them would be a painful loss

Responses	Distribution	
	Frequency	Percent
Strongly disagree	8	8.3
Disagree	34	35.4
Neutral	26	27.1
Agree	26	27.1
Strongly agree	2	2.1
Total	96	100.0

4.3.7 Availability Bias

In order to assess the influence of availability bias on individual investor decisions towards IPOs, the views of the respondents were sought as to whether they thought that the last IPO they invested in was overly advertised. Table 4.16 shows that 17.7% and 11.5% of the respondents agreed and strongly agreed, respectively. However, 29.2% of the respondents were neutral whereas 31.3% of the respondents disagreed and a further 10.4% of the respondents strongly disagreed. Therefore, majority of the respondents were of the contrary opinion that the last IPO they invested in was overly advertised. This notwithstanding, the correlation coefficient showed that outcomes of individual investor decisions were significantly correlated to availability bias, implying that respondents were potentially influenced by availability bias towards their investment in the last IPO. This agrees with the point of view of Qawi (2010) who held that the more current and significant an event is, the higher the likelihood of it influencing decision making. It was therefore likely that respondents invested in the last IPO because of recent events related to the listing company. However, majority of the respondents disagreed that the last IPO they invested in was overly advertised. It thus may be that an IPO event need not necessarily be flooded with advertising to remain current in the minds of the individual investors so that they may make investment decisions.

Table 4.16 I think the last IPO I invested in was overly advertised

Responses	Distribution	
	Frequency	Percent
Strongly disagree	10	10.4
Disagree	30	31.3
Neutral	28	29.2
Agree	17	17.7
Strongly agree	11	11.5
Total	96	100.0

4.3.8 Self-attribution Bias

As a sign of self-attribution bias, the study sought to establish whether respondents felt that the last IPO they invested in was more of bad luck than it was their own poor judgment. Table 4.17 shows that 12.5% of the respondents agreed and 3.1% strongly agreed. The table however shows that 31.3% of the respondents were neutral whereas on the other hand, 29.2% and 24.0% of the respondents disagreed and strongly disagreed, respectively. Therefore, majority of the respondents did not feel that the last IPO they invested in was more of bad luck than it was their poor judgment. This contradicts behavioural finance theorists such as Pompian (2012) who hypothesized that individual investors are prone to self-attribution bias, the tendency of individuals to ascribe their successes to innate aspects such as talent or foresight, while more often blaming failures on outside influences such as bad luck. A possible reason for this is that majority of the respondents in this study lacked professional background training in finance and thus, potentially gave themselves the benefit of the doubt concerning their level of judgment when investing in the last IPO.

Table 4.17 The last IPO was more of bad luck than it was my own poor judgment

Responses	Distribution	
	Frequency	Percent
Strongly disagree	23	24.0
Disagree	28	29.2
Neutral	30	31.3
Agree	12	12.5
Strongly agree	3	3.1
Total	96	100.0

4.3.9 The Role of Advise from Stoke-brokers

The study sought to determine whether respondents felt that their stock broker did not advise them appropriately concerning the IPO they last invested in. According to table 4.18, 15.6% of the respondents agreed and 9.4% of the respondents strongly agreed. Twenty four percent (24.0%) of the respondents were neutral whereas 31.3% and 19.8% of the respondents disagreed and strongly disagreed, respectively.

Table 4.18 My stockbroker did not advise me appropriately

Responses	Distribution	
	Frequency	Percent
Strongly disagree	19	19.8
Disagree	30	31.3
Neutral	23	24.0
Agree	15	15.6
Strongly agree	9	9.4
Total	96	100.0

4.4 Emotional Biases that affect Individual Investor Decisions

This section presents the findings on the emotional biases that influenced respondents' decisions towards investing in IPOs. The variables analyzed are: loss-aversion, overconfidence, regret-aversion and over-optimism. Table 4.19 shows the correlation coefficients between the study variables with alpha significant at .01 levels. The table shows that there was a statistically significant relationship between individual investor decisions and loss aversion ($r=-.646$, $p<.01$); and regret-aversion ($r=-.469$, $p<.01$). These correlations depict an inverse relationship between satisfaction with investment decisions and both loss aversion and regret aversion. However, the relationship between individual investor decisions and overconfidence ($r=-.010$, $p>.05$) and over-optimism ($r=-.108$, $p>.05$) was not statistically significant. The lack of statistically significant correlation suggests that overconfidence and over-optimism biases played an insignificant role in influencing individual investor decisions towards IPOs.

Table 4.19 Correlation between IPO Investment and Behavioral Biases

Spearman's rho		1
Individual Investor Decision	Correlation Coefficient Sig. (2-tailed) N	1.000 . 96
Loss aversion bias	Correlation Coefficient Sig. (2-tailed) N	-.646(**) .000 96
Regret aversion bias	Correlation Coefficient Sig. (2-tailed) N	-.469(**) .000 96
Overconfidence bias	Correlation Coefficient Sig. (2-tailed) N	-.010 .922 96
Over-optimism bias	Correlation Coefficient Sig. (2-tailed) N	-.108 .294 96

4.4.1 The Influence of Loss Aversion Bias

As an indicator of loss aversion, the views of the respondents were sought as to whether they intended to sell their shares at the company immediately it goes back to the IPO price. Table 4.20 shows that 17.7% and 3.1% of the respondents agreed and strongly agreed. However, 37.5% of the respondents were neutral while 28.1% of the respondents disagreed and another 13.5% of the respondents strongly disagreed. Therefore, majority of the respondents disagreed that they intended to sell their shares immediately the value reverts to the IPO price, contrary to loss aversion bias as explained by Pompian (2012). This can be explained by the fact that majority of the respondents potentially participated in IPO events earlier than the last six years. Perhaps, therefore, the share values of the companies they had invested in had surpassed the listing price, thus reverting back to the IPO price would be unfavourable to them.

Table 4.20 I intend to sell shares immediately it goes back to the IPO price

Responses	Distribution	
	Frequency	Percent
Strongly disagree	13	13.5
Disagree	27	28.1
Neutral	36	37.5
Agree	17	17.7
Strongly agree	3	3.1
Total	96	100.0

4.4.2 The Influence of Overconfidence Bias

In order to determine the influence of overconfidence on individual investor decisions, respondents were asked whether they wouldn't mind purchasing more of

the company's shares at its current price. Table 4.21 shows that 12.5% and 5.2% of the respondents agreed and strongly agreed, respectively. Even so, 31.3% of the respondents were neutral whereas 32.3% of the respondents disagreed and a further 18.8% of the respondents strongly disagreed. Therefore, majority of the respondents would mind purchasing more of the company's shares at its current price, contrary to overconfidence bias found in the study by Kimani (2011). Instead, the results by implication agrees with the findings of a previous study by Chandra and Sharma (2010) which showed that individual investor behaviour was driven, among others, by under-confidence instead of overconfidence. This may be explained by the fact that majority of the respondents in this study were dissatisfied with the outcomes of their investment in IPOs, and thus lacked confidence about the future prospects of the enterprise. The expression, "once bitten, twice shy" probably holds true for respondents in this study.

Table 4.21 I wouldn't mind purchasing more shares at the company's current price

Responses	Distribution	
	Frequency	Percent
Strongly disagree	18	18.8
Disagree	31	32.3
Neutral	30	31.3
Agree	12	12.5
Strongly agree	5	5.2
Total	96	100.0

4.4.3 The Influence of Regret Aversion Bias

The study sought to establish the views of the respondents regarding whether they were holding on to the company's share prices because they believed the prices would revert soon. Table 4.22 shows that 30.2% and 19.8% of the respondents agreed and

strongly agreed, respectively. However, 33.3% of the respondents were neutral while 14.6% of the respondents disagreed and a further 2.1% strongly disagreed. Therefore, majority of the respondents agreed that they were holding on to shares because they believed prices would revert soon.This was both unsurprising and interesting at the same time. It was unsurprising because a statistically significant relationship between individual investor decisions and regret-aversion was found, consistent with past empirical results and long held theoretical propositions as seen in the works of Bell (1982) and Khaneman (1979). This was further reinforced by the standard regression coefficients which showed that regret aversion bias possessed the highest explanatory power on the individual investor decisions. Thus, in keeping with regret theory, individual investors in this study probably deferred selling their stocks that have gone down in value in order to avoid the regret of having made a bad investment and the embarrassment of reporting the loss.It was however interesting given that the same respondents were under-confident with future prospects of the shares as hitherto discussed. It may be the case in the latter situation that respondents were already "locked in" anyway and they psychologically perceived themselves as losing nothing by holding to the stock they already invested in during the IPO. Nevertheless, overconfidence manifested in the form of gut-feeling which drove majority of the respondents to invest in the last IPO, an explanation consistent with past behavioural finance studies conducted by Fama (1997).

Table 4.22 I am holding on to shares because I believe prices will revert soon

Responses	Distribution	
	Frequency	Percent
Strongly disagree	2	2.1
Disagree	14	14.6
Neutral	32	33.3

Agree	29	30.2
Strongly agree	19	19.8
Total	96	100.0

4.4.4 The Influence of Gut Feeling

The opinion of respondents was sought as to whether their gut feeling about the company's shares influenced their decision to buy shares during the IPO. Table 4.23 shows that 52.1% of the respondents agreed and a further 37.5% strongly agreed. However, some 10.4% of the respondents were neutral while no respondent disagreed. Therefore, majority of the respondents agreed that their gut feelings influenced their decision to buy shares during the IPO.

Table 4.23 My gut feeling influenced my decision to buy shares during the IPO

	Distribution	
Responses	Frequency	Percent
Strongly disagree	0	0.0
Disagree	0	0.0
Neutral	10	10.4
Agree	50	52.1
Strongly agree	36	37.5
Total	96	100.0

4.4.5 The Influence of Over-Optimism Bias

The opinion of respondents was also sought as to whether they thought that people were too optimistic about the company's shares than the realities showed. As table 4.24 shows, 33.3% of the respondents agreed and 42.75 strongly agreed. Some 16.7% of the respondents were neutral whereas 5.2% and 2.15 of the respondents disagreed and strongly disagreed respectively. Therefore, majority of the respondents held the view that people were too optimistic about the company's IPO shares than the realities showed.This depicts the tendency highlighted by Ramnath et al. (2008) of

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individual investors to overvalue the possibility of desired outcomes and undervalue the occurrence of unfavourable events. The findings agree with authors that investors' earnings forecast errors are significantly optimistic for buy recommendations and significantly pessimistic for sell recommendations. This by extension reinforces the foregoing discussion regarding regret aversion and under-confidence as theorized by behavioural finance scholars.

Table 4.24 People were too optimistic about the IPO shares than realities showed

	Distribution	
Responses	Frequency	Percent
Strongly disagree	2	2.1
Disagree	5	5.2
Neutral	16	16.7
Agree	32	33.3
Strongly agree	41	42.7
Total	96	100.0

A regression analysis of the influence of cognitive and emotional biases in individual investor decisions with regards to IPOs was made to determine the extent to which behavioural biases explained individual investment decisions. The regression results are shown in tables 4.25 to 4.27. The model summary (table 4.14) shows that $R^2 = .575$ adjusted to $.501$. This means that 57.5% of the variance in individual investor decisions is explained by the regression model. The adjusted R^2 of .501 means that 50.1% of the variance in the individual investor decisions is explained by the regression model derived from the sample population, namely, individual IPO investors in Nairobi.

Table 4.25 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.758(a)	.575	.501	.763

a Predictors: (Constant), REB, ICB, HSB, CDB, AVB, SAB, LAB, RAB, OCB, OPB

The following is the regression equation:

IDC   =3.139 +.178REB-.077ICB +.013HSB -.067AVB-.158SAB-.033LAB-
309RAB +021OCB -.027OPB

The analysis of variance shown in Table 4.26 shows that the regression model is significant, F (14, 7.740) = 63.161, $p<.01$; indicating that the model has explanatory power on the variability of the influence of behavioural biases on individual investor decisions and therefore, the null hypothesis (the model does not improve prediction) can be rejected. That majority of the variance in individual investor decisions towards IPOs in this study was influenced by behavioural finance aspects is indicative of the extent to which behavioural theory is relevant in explaining individual investment decisions generally and IPO investment choices in particular.

Table 4.26 ANOVA (b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	63.161	14	4.512	7.740	.000(a)
	Residual	46.628	80	.583		
	Total	109.789	94			

a Predictors: (Constant), REB, ICB, HSB, CDB, AVB, SAB, LAB, RAB, OCB, OPB
b Dependent Variable: IDC

Table 2.27 shows the estimated regression coefficients, standard errors of the estimates, t-values and significant levels. Inspection of the standard regression coefficients shows that regret aversion bias (Beta=-.309) possessed the highest explanatory power on the individual investor decisions.

Table 4.27 Coefficients (a)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.139	1.101		2.852	.006
HSB	.013	.090	.011	.141	.888
REB	.178	.124	.135	1.441	.154
ICB	-.077	.098	-.079	-.782	.437
PIP	-.092	.098	-.077	-.941	.349
LAB	-.033	.100	-.031	-.332	.740
AVB	-.067	.090	-.072	-.736	.464
SAB	-.158	.109	-.159	-1.450	.151
RAB	-.309	.108	-.293	-2.852	.006
OCB	.021	.141	.012	.147	.884
OPB	-.027	.091	-.024	-.294	.770

a Dependent Variable: IDC

4.5 Chapter Summary

Major findings showed that outcomes of individual investor decisions were significantly correlated to: representativeness bias ($r=.325$, $p<.01$); illusion of control bias ($r=.309$, $p<.01$); cognitive dissonance bias ($r=-.323$, $p<.01$); availability bias ($r=-.404$, $p<.01$) and self-attribution bias ($r=.-.562$, $p<.01$). However, individual investor decision outcomes were not significantly related to hindsight bias ($r=-.075$, $p>.01$). The findings also showed that there was a statistically significant relationship between individual investor decisions and loss aversion ($r=-.646$, $p<.01$); overconfidence ($r=.368$, $p<.01$) and regret-aversion ($r=-.469$, $p<.01$). However, the relationship between individual investor decisions and overconfidence ($r=-.010$, $p>.05$) and over-optimism (r=-.108, p>.05) was not statistically significant.

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter begins with a summary of the research. The chapter then draws conclusions based on the findings and discussions in the previous chapter. From this, the study makes policy recommendations and recommendations for further research.

5.2 Summary

Successful stock investing is more than choosing a particular stock; it is also how you go about doing it. This is achieved through staying rational, choosing a few stocks that are likely to outperform the market, having the fortitude to hold on them during short-term market volatility, keeping track of them and controlling excess optimism and pessimism. However, this has not always been observed in practice. The field of behavioural finance has developed in response to the increasing number of stock market anomalies (undervaluation or overvaluation) that could not be explained by traditional asset pricing models. However, an apparent lack of consensus among financial scholars concerning the validity of behaviorial finance theory has been noted in literature. This lack of consensus suggests that behavioural finance as a concept is still open for debate. However, whilea plethora of research has been conducted in the secondary markets, there is little evidence of studies on individual investor behaviour towards IPOs with reference to the NSE.

Investigations into the IPO market in Kenya have shown that, on average, IPOs provided abnormal return in the immediate aftermarket to investors who purchased at

the initial offering. This probably led to an oversubscription of recent IPOs some of whose aftermarket performance has since been dismal.This suggests that investor decisions were potentially influenced by cognitive and emotional biases that led to their faulty investment decisions as explained by behavioural finance theorists.However, while a plethora of research has been conducted in the secondary markets, there is little evidence of studies on individual investor behaviour towards IPOs with reference to the NSE. This led to the question; which particular behavioural biases influence individual investor decisions with respect to IPOs?

The general objective of the study was to determine the effect of behaviourial biases on individual investor decisions with respect to IPOs in Kenya. To meet this broad objective, the study sought: to determine the cognitive biases that affect individual investor decisions, and to determine the emotional biases that affect individual investor decisions.

Descriptive research design was adopted.The population was estimated at 1.3 million based on new investor data since the year 2006. Stratified sampling was adopted based on gender. The sample comprised of 96 individuals who had invested in an IPO. Data was collected using a structured questionnaire. Spearman's rank correlation coefficient and linear regression modelling techniques were used for analysis. The data was analysed using SPSS. The findings were presented in figures and tables.

The findings showed cognitive and emotional biases accounted for 57.5% of the variance in individual investor decisions towards IPOs at the NSE. The findings showed that unfavourable outcomes of individual investor decisions were significantly correlated to: representativeness bias; illusion of control bias; cognitive

dissonance bias; availability bias and self-attribution bias. However, individual investor decision outcomes were not significantly related to hindsight bias. The findings also showed that there was a statistically significant relationship between individual investor decisions and loss aversion and regret-aversion. Regret aversion bias (Beta=-.309) possessed the highest explanatory power on the individual investor decisions.

5.3   Conclusions

The following conclusions were drawn from the findings in this study:

5.3.1 Cognitive Biases that affect Individual Investor Decisions

Individual investment decisions towards IPO were influenced by several cognitive biases than they did emotional biases. They showed incompetence in the way they arrived at decisions when investing in IPOs. The cognitive errors that were most prevalent among individual investors with regards to IPOs manifested in the form of representativeness bias, leading individual investors to rely on a best-fit approximation using previous successful IPOs as a frame of reference. The individual investor decisions were also affected by hindsight bias which seemingly led to their erroneous overestimation of the degree to which they predicted their investment outcome, thereby expecting share appreciation of as much as, or more than twice the IPO share value in the immediate term. Similarly, the individual investor decisions were affected by their illusion of control, making them to think erroneously that they were informed about all the fundamentals of the company. Availability bias also contributed to individual investor decisions towards the IPOs. However, individual investors were not susceptible to self-attribution or cognitive dissonance biases.

5.3.2 Emotional Biases that affect Individual Investor Decisions

Individual investor decisions towards IPOs were influenced by two forms of emotional biases. One form of emotional bias that affected investment choices of individual investors in this study was regret aversion, compelling investors to defer selling their loss making stocks to avoid the regret of having made a bad investment. The other form of emotional bias was over-optimism, leading to the overvaluation of the possibility of desired outcome but undervaluation of the probability of occurrence of unfavourable events. In addition, individual investment decisions were largely influenced by gut-feeling rather than rational decision choices. However, loss aversion bias and over-confidence played a little role in influencing individual investor decisions towards IPOs.

5.4   Limitations of the Study

Like most empirical research, this study was not without its short-comings. The following five limitations are acknowledged:

This research was constrained by time as the researcher had to balance the research undertaking with other workplace commitments. Thus, a more comprehensive study was not possible.

Secondly, the study was also constrained by finances. This means that the researcher could only carry out the research in Nairobi County only.

The researcher used a regression model which did not account for all the potential variables individual financial decisions towards IPOs.

The researcher used a modest sample of ninety six respondents. This sample size was accurate at ninety percent confidence level. Therefore, a bigger sample would increase the reliability of statistical estimates.

The other limitation identified is that the researcher relied on quantitative data only. This means that the benefits of qualitative research had to be foregone.

5.5   Recommendations

The following recommendations were drawn from the findings in this study:

5.5.1 Recommendations for Policy

Investor education is the key to overcoming unfavourable investment outcomes caused by behavioural biases. In order to manage the excesses of behavioural influences to investment decision making, training programs that create investor awareness and ability to identify and guard against cognitive errors and emotional biases that lead to bad investment choices should be offered to prospective individual investors. This should be an initiative of all companies going public in collaboration with stockbrokers and mutual fund companies. Educational content could be channelled to the investing public through the companies' respective websites prior to, during and immediately after the IPO event. Focus should be made on potential cognitive errors such as representativeness, hindsight, illusion of control and availability biases as well as emotional biases including regret aversion and over-optimism.

5.5.2 Recommendations for Further Research

Further researchers can make the following improvements to this research:

A more comprehensive study which is unconstrained by time can be conducted to improve the quality of the report.

A similar study which extends the geographical scope to respondents in other counties in Kenya could be carried out.

A future study could account for more variables that potentially influence individual investor decisions towards IPOs.

Further researchers should base their research on a bigger sample to increase the confidence level for the study findings.

Researchers could also adopt a mixed method approach where both quantitative and qualitative data is used to enrich the findings of the study.

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APPENDICES

Appendix One: Questionnaire

Dear respondent,

I am an MBA student at The University of Nairobi and currently undertaking a research on the effect of behavioural biases on individual investor decisions: a case study of initial public offers in Kenya. This questionnaire is made up of four short sections that should take only a moment of your time. Kindly fill in your responses by ticking in the appropriate box or writing your answers on the spaces provided. I assure you that all the information you give will be kept confidential. Thank you.

SECTION A: GENERAL INFORMATION

1. Have you ever invested in an IPO?

    Yes   ❑

    No   ❑

    If Yes, which IPO did you invest in? (Please name all that apply)

    _____

    _____

2. If Yes in 1 above, what was the last IPO that you invested in?

    British American   ❑

    Cooperative Bank   ❑

    Safaricom   ❑

    Kenya Re   ❑

    Access Kenya   ❑

    Eveready   ❑

    Other (Please specify) _____

3. If "Yes" in 1 above, have you sold all or part of the shares?

    Yes   ❑

    No   ❑

SECTION B: COGNITIVE BIASES

Please indicate whether you agree or disagree with the following statements by placing a tick (✓) in the box which best reflects your opinion since you joined the union:

		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
4.	I am happy with the outcome of all the IPOs I have invested in					
5.	I expected shares to appreciate by at least 100%					
6.	My investment in the IPO was for long term purposes.					
7.	I compared the past experience with other IPOs when deciding to invest in the last IPO					
8.	I was informed about all the fundamentals of the company which made me confident when I invested in its IPO					
9.	The profits generated from previously underpriced IPOs of other companies made the last IPO very attractive to me					
10.	I am holding my shares at the last IPO I invested in because selling them would be a painful loss to me.					
11.	I think the last IPO I invested in was overly advertised					
12.	The last IPO I invested in was more of bad luck than it was, my own poor judgment					
13.	My stockbroker did not advise me appropriately					

SECTION C: EMOTIONAL BIASES

Please indicate whether you agree or disagree with the following statements by placing a tick (✓) in the box which best reflects your opinion:

		Strongly agree	Agree	Neutral	Disagree	Strongly disagree
14.	I intend to sell my shares at the company immediately it goes back to the IPO price					
15.	I wouldn't mind purchasing more of the company's shares at its current share price					
16.	I am holding on to the company's shares because I believe prices will revert soon.					
17.	My gut feeling about the company's shares influenced my decision to buy shares during the IPO					
18.	I think people were too optimistic about the company's shares than the realities showed					

SECTION D: SOCIODEMOGRAPHIC FACTORS

19.   Gender

   Male   ❑

   Female   ❑

20.   Age?

   18 – 40 years ❑

   Over 40 years ❑

21. What is your highest level of education?
  Secondary education   ❑
  Middle level college education ❑
  University   ❑

22. Do you have any professional background training in finance?
  Yes   ❑
  No   ❑

23. Have you ever invested in shares before the IPO that you bought?
  Yes   ❑
  No   ❑

24. If 'Yes', for how long had you been trading in shares before the IPO?
  Less than 1 year ❑
  1 to 3 years   ❑
  4 to 5 years   ❑
  6 to 10 years   ❑
  More than 10 years ❑

25. What encouraged you to purchase the company's shares during the IPO?
  (*Please tick one only*)
  My friends   ❑
  My experience and financial knowledge ❑
  Others (*please specify*) _____

Appendix Two: Operationalization and Measurement of Variables

Variable	Type	Operationalization	Measurement	Reference Question No.
Individual Investor Decision	Dependent	Yes = 1 No = 0	Interval	1, 3
Representativeness Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	7
Illusion of Control Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	8
Hindsight Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	9
Cognitive Dissonance Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	10
Availability Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	11
Self Attribution Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	12
Loss Aversion Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	14
Regret-Aversion Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	16

Overconfidence Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	12
Overoptimism Bias	Independent	Strongly agree=5 Agree = 4 Neutral =3 Disagree =2 Strongly disagree = 1	Ordinal	5,17

Such errors are called "cognitive biases." Documented cases of how this bias affects choices have been observed in home valuation, deciding the outcome of a legal case, or choosing an investment. Behavioural finance, like behavioural economics (Simon 1987), studies the effects of cognitive, psychological, social, and emotional factors on economic decisions. The injection of behavioural finance into modelling has improved investor predictions, managerial expectations and has lessened the need for vigorous regulation (Muradoglu & Harvey 2012: 75). Public choice theorists contend that what often appears to be political gridlock due to SIG and PAC pressures is a misperception.