

**THE EFFECT OF BEHAVIORAL BIASES ON THE MUTUAL FUND  
CHOICES BY INVESTORS IN KENYA**

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## DECLARATION

I declare that this project is my original work and has not been presented for an award of a degree in any other University.

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## **DEDICATION**

This project is dedicated to my darling wife Jayne and Children Blessing, Joshua, Barth(Jnr) and Janella. Your support and inspiration during my studies enabled me to complete this project. I'll always value and esteem you people highly.

## **ABSTRACT**

The aim of the study was to determine the effect of behavioral biases on the mutual fund choices by investors. The study was anchored in four specific objectives. These included the effects of: the disposition effect behavior, the narrow framing behavior, the overconfidence behavior and the lottery stock preference behavior on investor's mutual fund choices.

The study used descriptive researches that employed a case study research design and targeted a population of all mutual fund investors in the 16 licensed mutual fund operators in Kenya. A random sample of 80 investors from the 16 licensed firms was picked for the study. Primary data was collected through questionnaires while correlation was used to analyze the degree of relationship between the variables in the study. Regression was used to determine the type of relationship.

The SPSS computer program was used for analysis. The study presents evidence of the existence of behavioral biases of mutual fund choices by investors in Kenya. It also found out that investors exhibit a positive bias, consistent with earlier studies carried on the same subject. The study recommends that individuals should have computational skills in simplifying complex tasks to make decision process easier instead of using heuristics which may lead people to some irrational behaviors. The study also recommends the need for a public campaign to increase awareness of basic investment principles and the benefits and pitfalls of mutual funds investment choices. This is likely to help many individual investors make better decisions.

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## LIST OF ABBREVIATIONS

BRITAK	-	British American Insurance Company
CBK	-	Central Bank of Kenya
GDP	-	Gross Domestic Product
CMA	-	Capital Markets Authority
DEB	-	Disposition Effect Behaviour
EA	-	East Africa
LSPB	-	Lottery Stock Preference Behaviour
NFB	-	Narrow Framing Behaviour
NSE	-	Nairobi Securities Exchange
OB	-	Overconfidence Behaviour
P	-	Profitability

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the study

Behavioral finance is the study of how psychology affects financial decision making and financial markets (Shefrin, 2001).Belsky and Gilovich (1999) referred to behavioral finance as behavioral economics." Behavioral 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. For many investors, mutual funds are the investment vehicle of choice. And this is increasing by day therefore it is important to gain a better understanding of their behavior.

Studies have shown that large net inflows to top-performing funds result from a strong tendency for purchases to follow past performance. The relatively modest net outflows from the worst-ranked funds result from reluctance on the part of investors to sell their losing investments. Mutual fund investors face a dilemma: Is there sufficient persistence in the performance of successful mutual fund managers to offset the costs of chasing past good performance? In most professional fields, such as corporate management and practitioners vary in ability. Professionals are evaluated on the basis of past performance. By analogy, one would expect mutual fund managers to vary in ability and past performance to be indicative of ability. Yet academic studies find only modest and short-term persistence in the performance of successful funds, (Chevalier, 1997).

### **1.1.1 Concept of behavioral biases**

Different investors behave differently in different market situation before investing and would always consider the return, flexibility and etc but the markets will face a question mark in knowing the pulse of an investor. So a study must be made on the demographics and psychographics of the investor such that the market can know the pulse of an investor and can act upon it. Investor behavior analysis deals with analyzing the behavior of an investor based on his demographic and psychographic factors like age, gender and income groups. This state's what would be a preferred portfolio of an investor at a particular age. This will be helpful to the stock brokers and portfolio managers so that they can offer better portfolios to their investors. Behavioral bias models that incorporate overconfidence, Odean (1998) provide an even stronger prediction: active investment strategies will underperform passive investment strategies. Historically, active management has underperformed passive management, suggesting that too many resources have been devoted to security research, resulting in sub-optimal returns to investors. In addition, by chasing performance, investors create agency conflicts with fund managers (and more generally fund providers).

Behavioral bias began as an attempt to understand why financial markets react inefficiently to public information. One stream of behavioral bias examines how psychological forces induce traders and managers to make suboptimal decisions, and how these decisions affect market behavior. Another stream examines how economic forces might keep rational traders from exploiting apparent opportunities for profit. Behavioral bias remains controversial, but will become more widely accepted if it can predict

deviations from traditional bias models without relying on too many “ad hoc” assumptions, (Olsen, 1988).

### **1.1.2 Mutual Fund Choices by Investors**

Fund providers may start many funds with the intention of continuing (and advertising) only those with good performance. This practice is likely to give investors a biased view of how well the average fund is performing and to encourage further performance chasing. Selling winning funds, while holding your losers, is clearly an investment mistake. There is strong empirical evidence that losing mutual funds repeat. Thus, divesting one’s losing funds would enhance investor returns. And, again, selling winning rather than losing funds leads to the unnecessary recognition of capital gains, thus imposing a tax penalty when done in a taxable account. Finally, investors react differently to various fund expenses, (Stiglitz 1980).

For the individual investor, there are at least two potential drawbacks to chasing past performance. First, if one sells a currently held fund to buy a winner, this will accelerate the recognition of capital gains, thus imposing a tax penalty when done in a taxable account. Second, top performing funds tend to charge higher operating expenses and to have higher turnover. High operating expenses and high turnover represent a drag on a fund’s gross performance, while high turnover further accelerates the recognition of capital gains. Thus, if the fund’s superior gross performance fails to persist; its performance net of fees, expenses, and taxes is likely to be sub-par. If investors overestimate their ability to identify superior funds based on past performance, this will lead to over-investment in active management.

Performance chasing pours more money into funds with high expense ratios and high turnover. Expense ratios are a drain on investors' returns; in addition to accelerating capital gains taxes, high turnover increases trading costs. In aggregate, fees, taxes, and trading costs represent an ambiguous loss to investors (though a boon to those who charge these fees). Grossman and Stiglitz (1980) show that in equilibrium rational investors allocate money to active and passive strategies in proportions that leads to equal risk-adjusted expected returns to both strategies.

### **1.1.3 The effect of behavioural biases on mutual investor choices**

Empirical studies have confirmed the positive association between Behaviorally-biased investors and return on investment. For example Hilgerth et al (2003) document a positive link between financial knowledge and financial returns. Agarwal et al (2007) show that financial mistakes are most prevalent among the young and elderly, who are also those displaying the lowest amount of financial knowledge and cognitive ability

Investors are less likely to buy funds that incur salient in-your-face fees, such as a brokerage commissions or front-end loads. However, their purchases are relatively insensitive to a fund's operating expenses. Neglecting a fund's operating expenses when purchasing a fund is clearly counterproductive, since it is well documented that mutual funds with low operating expenses tend to earn higher net returns than funds with high operating expenses. Though operating expense ratios are disclosed to investors, we conjecture that many investors overlook these expenses, since the total dollar cost of these expenses is not disclosed to investors and their effect on the performance of a particular mutual fund is easily masked by the volatility of a fund's returns.



The key to this study is the use of individual investor records of stock holdings and trading to estimate the behavioral bias proxies that previous authors have used to explain how investors trade individual stocks. These individual behavioral bias proxies are, in turn, related to the mutual fund holdings and trading of those individuals in a variety of empirical specifications that reveal different facets of mutual fund investor behavior. We can easily imagine behavioral biases affecting mutual fund selection. For example, the “disposition effect” (selling winners too quickly and holding losers too long) may lead some investors to overestimate expected holding periods and mistakenly select high front-end load funds. Investors with “narrow framing” bias (buying and selling individual assets without considering total portfolio effects), “overconfidence” (frequent trading plus poor performance), or a preference for speculative stocks may select funds that facilitate aggressive switching across asset classes without considering higher fees. “Local bias” (preference for stocks of companies geographically close to home) may induce the selection of locally-managed mutual funds without regard to cost or expected performance.

Investors who view their portfolios in terms of “layers” that serve different purposes Shefrin and Statman (2000)) may demonstrate different behavior in their use of individual stocks versus mutual funds. For example, if mutual funds are viewed as substantially safer than selecting individual stocks on their own, investors may “let their guard down” and spend less time assessing fund performance and costs. Regardless of the type of behavioral bias, poor decisions about timing, holding periods, and choice of funds can combine with the substantial variety in mutual fund fee structures to yield poor performance.

### **1.1.4 Mutual Fund investors in Kenya**

In Kenya, the growth of mutual fund investment has been slow despite an expanding economy whose GDP has grown steadily from 0.6% in 2002 to high of 7% in 2007 (CBK, 2012). Mutual funds in Kenya are still not yet fully developed and the knowledge and operations of mutual funds are still at their infancy stages, according to CMA (2012). The CMA(2013), noted that 16 mutual funds were authorised by May 2013. The products offered by these firms include Money market Fund, Equity Fund, Balanced Fund and Bond Fund among others.

### **1.2 Statement of the Problem**

Previous studies Odean (1998, 1999), Barber and Odean (2001), and other empirical studies of behavioral biases show that the stock-picking decisions of individual investors exhibit a variety of behavioral biases. Behaviorally-biased investors typically make poor decisions about fund style and expenses, trading frequency, and timing, resulting in poor performance. Furthermore, trend-chasing appears related to behavioral biases, rather than to rationally inferring managerial skill from past performance. Mutual funds investor's decisions are closely connected to an individual's emotional, personal, social, economic, and employment success. An individual needs to understand the basics of Behaviorally-biased investors, and use financial resources appropriately to function well in society at a personal, professional, business and community level.

Empirical studies have confirmed the positive association between Behaviorally-biased investors and return on investment. For example Hilgerth et al (2003) document a positive

link between financial knowledge and financial. Agarwal et al (2007) show that financial mistakes are most prevalent among the young and elderly, who are also those displaying the lowest amount of financial knowledge and cognitive ability. Various local studies have been done on this line with various findings. Kempson et al. (2008) carried out a study on Measuring and improving financial capability to know more about current levels of financial capability in Kenya, to understand the potential approaches that could be taken to measure financial capability in a less developed nation where the vast majority of the population does not use formal banking services and to explore levels of financial inclusion in Kenya. It relied on the ways in which financial capability has been measured in various countries, and to review evidence from Kenya and elsewhere on the most appropriate objectives of financial education and consider how financial capability education could be prioritized in Kenya to ensure the largest gains. Research undertaken as part of the Financial Education for the Poor Project with partners in India, Morocco, South Africa, Kenya and Bolivia also found that poor people have a limited knowledge of financial planning for the future (Cohen, et al., 2006).

Nyamute and Monyoncho (2008) surveyed Employees of finance and banking institutions and concluded that the practices of those perceived to be financially literate seem to agree with the current literature. However, survey findings also showed that even those perceived not to be financially literate exhibit some strong characteristics of personal financial management implying that probably, formal college education and employment environment may not be the only source of financial education. This study seeks to examine the effect of behavioral biases on the mutual fund choices by investors in Kenya. Finally, this study shall fill in those gaps by trying to investigate to whether there is need for

policy makers and organizations to formulate deliberate investment literacy strategies as far as Behaviorally-biased investors are concerned. Therefore, this study sought to answer the question; what are the effects of behavioral biases on the mutual fund choices by investors in Kenya?

### **1.3 Objectives of the study**

The main objective of the study is to determine the effect of behavioral biases on the mutual fund choices by investors

#### **1.3.1 Specific Objectives**

The study will be guided by the following specific objectives

- i. To evaluate the effect of disposition effect behavior on investors mutual fund choices.
- ii. To ascertain the effect of narrow framing behavior on investors mutual fund choices.
- iii. To determine the effect of overconfidence behavior on investors mutual fund choices.
- iv. To find out the effect of lottery stock preference behavior on investors mutual fund choices.

## **1.4 Value of the Study**

### **Policy makers**

The Policy makers will benefit immensely by having information on formulated of investment advice which are fund style and expenses, trading frequency, and timing. Due to the research findings, policy makers will be able to use the gaps in the literacy of the respondents to formulate appropriate education syllabus in order to increase financial investment literacy leading to better financial decisions. This is important as shown by Bernheim and Garrett (2003) who argue that seminars are often remedial, that is offered in firms where workers do little or no investment.

### **Investors**

The study will be invaluable to investors who would benefit from the study in that they would be able to make more informed investment decision while investing in mutual funds as well as employees and employers. Strategies can be formulated to promote savings for wealth creation and retirement like to automatically enroll workers into employer-provided pension plans. This simple but ingenious method has been proven to be very effective in increasing pension participation. For example, according to Madrian and Shea (2001), after a company implemented a change in its pension plan and automatically enrolled its new hires in the plan, pension participation went from 37% to 86%.

By finding out the actual state of investors' behavior, individuals will be able to be challenged to seek for information to improve their investment choices for better returns.

## **Academicians**

The findings will add to the wide academia knowledge in finance especially on behavioral biases on the mutual fund choices. The researchers and academicians will find this study useful for further discussion and research so that they can explore and further develop their studies on behavioral biases on the mutual fund choices on personal financial management.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

The purpose of this segment of the research is to determine how behaviour theory can be applied to provide insight regarding the effect of behavioral biases on the mutual fund choices by investors. In order to influence behavioral biases on the mutual fund choices by investors, better understanding is needed about how behaviours are formed and how to help investors change undesirable investment behaviours and develop positive ones. This section also looks at the studies that have been carried out so far to address research gaps from the theories put forward so far and in the literature.

### **2.2 Review of Theories**

The theoretical framework used to model consumption and saving decisions posits that rational and foresighted investors over their lifetimes.

#### **2.2.1 Modern Portfolio Theory**

The choice between the wide varieties of investment alternatives to achieve optimal personal portfolios ushers in the role of modern portfolio theory (MPT). These three frameworks: lifecycle, MPT and sociological bases of wealth holding find wide application in this discourse. In contrast to the egalitarian concerns for wealth holding at the macro level, the focus of studies at the micro level is on the specifics of personal wealth portfolios. One such area of interest is the accumulation/deccumulation of personal wealth and its underlying determinants especially in the family

lifecycle framework, and more recently sociology. This is usually tied to a second phenomenon where the academic curiosity is the form in which wealth is held by individuals and households and its adequacy to support similar standards of living after retirement. Pioneering micro-level studies of personal wealth portfolios were an offshoot from consumption theories that were put forward by welfare/financial economists as well as investment theories of scholars in finance. In this respect, the main consumption theories include the classical theory by Keynes (1936) with its promulgation that current consumption expenditure is a stable function of current income; the relative income hypothesis of Duesenberry (1949) which theorized that people are concerned with relative and not absolute consumption and the permanent income hypothesis of Friedman (1956) which postulated that permanent consumption by consumers is determined by their person's permanent income. On the other hand, studies that are cantered on the investment aspect of personal wealth tend to be dominated by modern portfolio theory as championed by Professor Harry Markowitz.

Informed by finance theory, the seminal paper on MPT by Markowitz (1952) provided researchers with a set of quantitative tools for prescribing how investors should combine their financial assets to maximize return for a given risk thus emphasizing on the nature and mix of wealth held. Research in this field received a significant boost in the 1990s following the compilation and availability of monthly and annual return data for typical assets such as shares in listed companies, bonds and housing as well as estimates of annual inflation rates. A central aspect of MPT, is that the enthusiasts proposed that every investor should hold an optimal portfolio that is fully diversified.



Almost working in parallel, the thrust of studies by economists in the latter half of the 20th Century was an attempt to gain insight into the life cycle of household economic behaviour, namely income, savings, consumption and wealth. These studies examined personal wealth accumulation and its determinants on the foundation of saving and consumption theory. In this line of inquiry, the life cycle hypothesis (LCH ) of Modigliani and Blumberg (1954) appears to have gained wider acceptance in its proposition that age is the most important determinant of a person's wealth and that it (wealth) follows a hump-shape to a person's age; rising during the youthful age, peaking just before retirement and declining thereafter. Ando and Modigliani (1963) expands these works and develops the life cycle hypothesis of saving where they test empirical data to show that savings, a necessary precursor to wealth also follows a hump shape to age.

### **2.2.2 Learning Theory**

Learning theory evolved most notably with the work of Skinner who determined that once the behaviour is associated with a consequence, whether a reinforcement or punishment, the likelihood of the action continuing changes. Skinner argued that positive reinforcement and punishment are not equal; with the former providing longer lasting results and the latter having negative side effects (Skinner 1953).

Critics of learning theory question the greater scientific basis of behaviorism over psychosocial or psychoanalysis theory and the ability to explain complex human behaviors by only considering the observable and ignoring the important roles of cognitions and emotions (Breger and McGaugh 1965). Additionally, because behavioral

experiments often take place in the laboratory, critics question learning theory's application to describing behaviour that occurs in a social reality (Bandura 1977).

Nevertheless, learning theory advanced investigations of human behaviour by focusing attention on the observable, thus emphasizing the importance of testing behaviour propositions. It acknowledges the power of prerequisite conditions and the anticipated consequences, whether positive or negative, in influencing people's actions. Thus, in contrast to theories that emphasized the power of early development, learning theory emphasizes the possibility of lifelong learning during which the stimulus for or the consequences of behaviors can be altered (Crain 1992; Goldhaber 2000).

### **2.2.3 Piaget's Cognitive Theory**

Cognitive theory's interest is in the cognitive processes that lie between the observed cause and its effect on behaviour. From observing the thinking and actions of children, Jean Piaget argued that what actually elicits a response is both the sensitization to the stimulus and how people think (Byrnes 2008). Central to Piaget's theory is his view of how individuals gained knowledge, arguing that it occurred from interaction, first physically and then mentally, with objects. He was convinced that, 'in order to know objects, the subject must act upon them, and therefore transform them. He must displace, connect, combine, take apart, and reassemble them (Piaget, 1983)

Cognitive theory also hypothesized developmental stages of which there were four (Goldhaber 2000; Piaget 1983). Each stage is constructed by the individual and is achieved at his/her own pace. However, no stage can be skipped, resulting in some individuals never

making it to the final cognitive development stage (Crain 1992; Goldhaber 2000; Piaget 1983). It is in the third stage of development that the capacities, such as use of logic and ability to follow rules, are formed. These capacities are essential to making financially sound decisions. However, it is only in the last stage, which may never be achieved, that the individual develops the ability to think abstractly and manage hypothetical situations (Crain 1992). With the ability to plan ahead and think through all possibilities, these individuals are at a greater advantage when it comes to financial decision making. Memory, or the retrieval to information, plays an important part (Bruner 1988).

No single theory provides a comprehensive view of how financial decisions are made. Each draws on observable variations in decision making to offer hypothesized reasons for differences in the use of information by individuals. To different degrees and with different emphases, the combination of theories confirms the emotional, cognitive, behavioral, physiological, and cultural forces that shape decisions. Although the most advantageous decision may be mechanistically evident, individuals bring values, misperceptions, fears, and community shared goals to their decisions.

### **2.3 Behavioral biases on the Mutual fund choices by Investors**

If investors rely on a representativeness heuristic when selecting mutual funds, they will underestimate the tendency of fund performance to mean revert and thus anticipate better relative performance than is realized. The fact that more money is invested in active than passive funds despite the superior historical performance of the latter is prima facie evidence that most investors believe that some mutual fund managers have the ability to consistently beat the market. Surveys also reveal that investors rely heavily on past

performance when evaluating their fund purchase decisions (Goetzmann and Peles, 1997 and Capon et al (1996).

### **2.3.1 Fund buying decision**

There are thousands of mutual funds available for purchase. Choosing a mutual fund for ones investments is a decision fraught with uncertainty. In general, when faced with uncertain choices, people use heuristics or rules of thumb to make judgments. (Tversky and Kahneman (1974)). Using a representativeness heuristic, people believe small samples to be overly representative of the population from which they are drawn (Tversky and Kahneman (1971), Kahneman and Tversky (1972)). Gilovich et al (1985) document that people systematically underestimate the chance of observing streaks, such as a run of heads in the flip of an unbiased coin, in a random sequence. Thus if people do observe streaks of heads or tails when an unbiased coin is flipped, they are likely to conclude that the coin is biased. We posit that investors use this representativeness heuristic when buying mutual funds.

A fund's recent performance is viewed as overly representative of a fund manager's skill and, thus, of the fund's future prospects. The abundance of mutual fund rankings and salient stories about successful fund managers (such as Peter Lynch and Warren Buffet) reinforce the representativeness heuristic. Kahneman and Tversky (1979) an important paper in the development of the behavioral finance and economics fields was written by Kahneman and Tversky in 1979. This paper, 'Prospect theory: An Analysis of Decision under Risk', used cognitive psychological techniques to explain a number of documented divergences of economic decision making from neo-classical theory. This paper was

path breaking and in 2002 Daniel Kahneman was awarded the Nobel Prize in economics "for having integrated insights from psychological research into economic science, especially concerning human judgment and decision-making under uncertainty". Over time many other psychological effects have been incorporated into behavioral finance, such as overconfidence and the effects of limited attention.

### **2.3.2 Fund Sale Decision**

The decision to sell a mutual fund is quite different from the decision to purchase a fund. Most investors hold few funds, unlike purchases where investors have thousands of funds to choose from, Investors have only a handful of funds from which to choose when selling. Using the representativeness heuristic, investors would view poor fund performance as overly representative of a manager's skill and sell losing fund investments. However, this representativeness heuristic is partially offset by investors' desire to avoid the recognition of losses or loss aversion. In contrast to the representativeness heuristic, loss aversion predicts that investors will sell their winning funds, while holding their losers.

Kahneman and Tversky (1979) argue that people are loss averse: they have an asymmetric attitude to gains and losses, getting less utility from gaining, say, 100 than they would lose if they lost 100 (having started 100 wealthier). If investors use the purchase price of their mutual funds as a reference point, prospect theory predicts that mutual fund investors would be more likely to sell their winning mutual funds than their losers. The disposition to sell winners and hold losers has been dubbed the "disposition effect" (Shefrin and Statman (1985)).The disposition effect has a large effect on the

investors selling decisions for many asset classes, including individual common stocks (Odean (1998), Grinblatt and Keloharju (2000)), company stock options (Heath et al (1999)), residential housing (Genesove and Mayer (1999)), and futures (Locke and Mann (1999)). It is not at all obvious that these findings would extend to mutual funds.

On the one hand, investors may view the decision to sell a mutual fund as an investment decision like any other. In this “investment” frame, the investor holds responsibility for the performance of the mutual fund and the role of the mutual fund manager is secondary. Thus, investors using this frame will be reluctant to realize losses (the disposition effect). On the other hand; investors may view mutual fund managers as agents, who are responsible for the management of their money. In this “agency” frame, the selling decision is more like a firing decision: Shall I fire my mutual fund manager for delivering poor performance? Using this frame, it is easy for the investor to blame an external factor-- the poor ability of the mutual fund manager -- for the fund's poor performance. Thus, they will be willing to realize losses (i.e., fire the mutual fund manager). We suspect that investors use both the investment frame and the agency frame. Which frame dominates in the selling decisions of mutual fund investors is an empirical question, which we address in this research. We provide strong evidence that it is the disposition effect, rather than the agency frame, that determines which funds investors sell.

## 2.4 Empirical evidence

Previous studies of behavioral biases in the investment decisions of individual investors focus on the selection of individual stocks. Odean (1998, 1999), Barber and Odean (2001), and other empirical studies show that the stock-picking decisions of individual investors exhibit a variety of behavioral biases. However, little work has been done to link the decision-making biases of individuals to their mutual fund investments. Understanding the role of behavioral biases in individual mutual fund decisions is important for several reasons.

First, individual investors increasingly use mutual funds to invest in the equity market rather than trading individual stocks. French (2008) reports that: “Individuals hold 47.9% of the market in 1980 and only 21.5% in 2007. This decline is matched by an increase in the holdings of open-end mutual funds, from 4.6% in 1980 to 32.4% in 2007.” Hence, it is increasingly important to understand how individual investors hold and trade mutual funds.

Second, even though direct stock trading by individuals has declined, their mutual fund investment decisions can affect stock returns indirectly. Coval and Stafford (2007) argue that large flows force some mutual funds to trade heavily, causing price pressure for securities held across many funds. Previous papers document that mutual fund flows affect individual stock returns. Gruber (1996) and Zheng (1999) find that fund flows are followed by positive short-term fund returns, perhaps due to a momentum effect. Frazzini and Lamont (2008) show that mutual fund flows appear to be “dumb money”: fund

inflows are associated with low future returns, while outflows are associated with high future returns.

Third, the manner in which individuals employ mutual funds cuts right to the heart of basic principles of financial management. Traditional portfolio choice models imply a simple investment strategy based on well-diversified, low expense mutual funds and minimal portfolio rebalancing. Index funds, and other equity funds with low fees and low turnover, are cheap, convenient vehicles for individual investors to implement such a strategy. The extent to which individuals adhere to these principles in their use of mutual funds is an important measure of the rationality and effectiveness with which investors approach capital markets.

The purpose of this study is to test whether behavioral biases explain why the use of mutual funds varies substantially across individual investors and often departs from the simple strategies suggested by classic theories. The growing literature on behavioral finance has uncovered a variety of decision-making biases in how investors use individual common stocks. These behavioral forces should also have an impact on whether a particular investor uses mutual funds, and whether she uses them effectively.

The mutual fund literature has already documented two specific anomalies. First, individual investors buy funds with high fees. Gruber (1996) and Barber, Odean, and Zheng (2005) document that many individual investors hold significant positions in high expense mutual funds. Even more puzzling is the finding of Elton et al (2004) that substantial amounts have gone into index funds which charge high fees (over 2% per year) for passive holdings of broad indexes like the S&P500.



Second, individual investors chase returns. Sirri and Tufano (1998), Bergstresser and Poterba (2002), and Sapp and Tiwari (2004) find that fund flows tend to chase funds with high past returns. This may be fostered by Morningstar's practice of rating funds based on past returns (Del Guercio and Tkac (2008)).

Several explanations have been offered for these two anomalies. Carlin (2009) explains participation in high fee index funds using a model with search costs. Choi et al (2009) interpret their experiments on Wharton MBA students and participation in high fee funds as consistent with behavioral biases. Return-chasing has been ascribed to an agency problem that induces fund managers to alter the riskiness of the fund to maximize investment flows instead of risk-adjusted expected returns (Chevalier and Ellison (1997)). It may also reflect inferring managerial skill from past returns (Sirri and Tufano (1998), Gruber (1996), Berk and Green (2004)). However, with the exception of the experimental data used by Choi et al (2009), these authors study aggregate fund flows rather than individual investor behavior. Rajarajan (2000) in his study revealed that there was an association between the lifestyle clusters and investment related characteristics

K.Santi Swarup (2003) studied the decisions taken by the investors while investing in the primary markets. In her study she indicated that investors give importance to their own analysis as compared to their broker's advice. Louhichi Wael (2004) examined the market behavior around the times of annual earnings announcements made in the Paris Bourse to study both the informational role of accounting numbers and the intraday speed of adjustment of stock prices to new information.

Davar and Gill (2007) in their paper on investment decision making revealed that

the class of investors(undoubtedly) with growing age develop maturity and experience for making decisions about the usage of their surplus and available funds in the light of overall economic needs of family. Adam (2008) in his study on efficient market hypothesis to behavioral finance analyzed how investor's psychology changes the vision of financial markets. He found that investors are not always able to correctly value the utility of decision alternatives, cannot update and estimate probability and events and do not diversify properly.

Tripathi (2008) examines the perceptions, preferences and various investment strategies in Indian stock market. Study reveals that investors use both fundamental as well as technical analysis while investing in Indian stock market. Most of the respondents strongly agree that various company fundamentals (such as size, book to market equity, price earnings ratio, leverage etc.) significantly influence stock prices and hence addition of these factors in asset pricing model can better explain cross sectional variations in equity returns in India. Gaurav et al (2010) from the study concluded that modern investor is a mature and adequately groomed person. In spite of phenomenal growth in the security market and quality Initial Public Offerings (IPOs) in the market, the individual investors prefer investments according to their risk preference.

A majority of investors are found to be using some source and reference groups for taking decisions. Though they are in the trap of some kind of cognitive illusions such as overconfidence and narrow farming, they consider multiple factors and seek diversified information before executing some kind of investment transaction.

Syed (2010) concludes that the individual investor still prefers to invest in financial products which give risk free returns. This confirms that Indian investors even if they are of high income, well educated, salaried, independent are conservative investors prefer to play safe. The investment product designers can design products which can cater to the investors who are low risk tolerant and use TV as a marketing media as they seem to spend long time watching TVs.

Bennet et al (2011) concluded that the average value of the five factors, namely, Return on Equity, Quality of Management, Return on Investment, Price to Earnings Ratio and various ratios of the company influenced the decision makers. Further, other five factors, namely, recommendation by analysts, Broker and Research Reports, Recommended by Friend, Family and Peer, Geographical Location of the Company and Social Responsibility were given the lowest priority or which had low influence on the stock selection decision by the retail investors. Azwadi Ali (2011) in his study showed interest in examining the relationships between individual investors perceived financial performance of companies and their trading intentions, and the mediating effect of companies images on the relationships. Giridhari Mohanta and Sathya Swaroop Debasish (2011) studied that investors invest in different investment avenues for fulfilling financial, social and psychological need. While selecting any financial avenue they also expect other type of benefits like, safety and security, getting periodic return or dividends, high capital gain, secured future, liquidity, easy purchase, tax benefit, meeting future contingency etc.

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 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. Mutual fund investors tend to use simple decision heuristics when selecting Mutual funds to purchase or sell. Locally, behavioral factors have been seen to play in the investment sector mostly the NSE. This is clearly demonstrated by the various IPOs and other securities issues. Factors of high expectations by investors coupled with herd behavior have been demonstrated at the IPOs by Kengen and Safaricom. The not so good outcomes of this have led to poor participation in subsequent IPOs notably Eveready E.A and BRITAK.

Wera (2006) conducted a survey on the influence of behavioral factors on investors at the NSE by targeting 100 individuals and 40 institutional investors. The results found that majority of investors will gamble by holding the stocks for a month with prospect of breaking even. A considerable percentage chose to sell now to minimize losses, loss

aversion theory. The preference for holding stock indicates that all investors are risk averse. Another study by Waweru et al (2008) investigated the role of behavioral finance and investor psychology in investment decision-making at the NSE. They found out that behavioral factors such as representativeness, overconfidence, anchoring, gambler fallacy, bias, loss aversion and regret aversion affected decisions of investors at NSE.

## **2.5 Summary of the literature review**

Previous studies of behavioral biases in the investment decisions of individual investors focus on the selection of individual stocks. Odean (1998, 1999), Barber and Odean (2001), and other empirical studies show that the stock-picking decisions of individual investors exhibit a variety of behavioral biases. However, little work has been done to link the decision-making biases of individuals to their mutual fund investments. Understanding the role of behavioral biases in individual mutual fund decisions is important for several reasons. Choi et al (2009) interpret their experiments on Wharton MBA students and participation in high fee funds as consistent with behavioral biases.

Return-chasing has been ascribed to an agency problem that induces fund managers to alter the riskiness of the fund to maximize investment flows instead of risk-adjusted expected returns (Chevalier and Ellison (1997)). It may also reflect inferring managerial skill from past returns (Sirri and Tufano (1998), Gruber (1996), Berk and Green (2004)). However, with the exception of the experimental data used by Choi et al (2009), these authors study aggregate fund flows rather than individual investor behavior. This study seeks to fill this gap by examining the effect of behavioral biases on the mutual fund choices by investors.

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

This chapter presents a blueprint that was used in carrying out the research. It includes the research design, target population, sampling method used, data collection instrument and procedure and analysis, interpretation and presentation.

### **3.2 Research Design**

A research design is the plan, structure of investigation conceived to obtain answers to research questions that includes an outline of the research work from hypothesis, methods and procedures for collecting and analyzing data and presenting the results in a form that can be understood by all (Mugenda & Mugenda, 1999).

This study was a descriptive research that employed case study research design. This was because the study intended to obtain an in depth understanding on the effect of behavioral biases on the mutual fund choices by investors. The Case Study was the most appropriate technique to investigate the current status of behavioural biases on the mutual fund choices. Kithara (1990) defined a case study as a very powerful form of qualitative analysis and involves a careful and complete observation of social unit, which may be a person, families, an institution, a cultural group or an entire community. Case studies deals with depth rather than breath of issues.

### **3.3 Population**

Population refers to the entire group of individuals or institutions having common observable characteristics. It is the aggregate of all that conforms to a given specification. The study population comprised all the individual investors and institutional investors of mutual funds. The study specifically focused on investors who trade in mutual funds. The target population was mutual fund investors in the 16 licensed mutual fund operators in Kenya as at May 2013. The individual investors and institutional investors of mutual funds companies in Kenya made up the respondents of the study. The CMA (2013) noted that the approved mutual funds in Kenya are 16 by May 2013. The products offered by these firms include Money market Fund, Equity Fund, Balanced Fund and Bond Fund among others. Ngechu (2004) noted that a population is a well-defined or set of people, services, elements, and events, group of things or households that are being investigated.

### **3.4 Sample**

Since a sample is part of the target population that has been procedurally selected to represent it according to Oso and Onen (2009), from the pool of the mutual fund investors, a random sample of individual investors and institutional investors was drawn for the study. The optimal sample size was used to fulfill the requirements of efficiency, representativeness and reliability which a small sample size would not. A random sample of 80 investors from the 16 licensed firms was picked for this study.

### **3.5 Data Collection**

Primary data was collected through questionnaires. Cooper & Schindler (2011), Yang (2008) state that the questions in a study are directly related to the research questions. In development of a survey questionnaire, the variables for which information needs to be collected have to be identified followed by their operational definition. According to Newing (2011) questionnaires consist of a series of specific, usually short questions that are either asked verbally by an interviewer, or answered by the respondent on their own (self administered). The questions can either be open-ended or close-ended question items. In close-ended questions, the response categories are exhaustive such that they include possible responses expected from respondents. They are also mutually exclusive implying that only one category can be selected as the answer to a question. The number of close-end questions in any survey exceeds the number of open-ended questions. Open-ended questions focused on unconventional answers which are not known to the researcher, while closed-ended questions ensures the objectivity of the information from the respondents by being on point and precise. The questionnaire is convenient because it is cheaper and faster to administer and it is devoid of the researchers' effect and variability as well as convenient to the respondents who can complete at their own free time (Cooper & Emory, 2008).

The questionnaire contained demographic factors in the first part while the main body of the questionnaire focused on identifying the current status of behavioural biases on the mutual fund choices which were disposition effect behavior, narrow framing behavior, overconfidence behavior and lottery stock preference behavior. Within each of these



areas, each respondent was asked to rate or rank on a scale of 1) strongly agree 2) Agree 3) Neutral 4) Disagree and 5) Strongly Disagree and similar derivatives for some questions. According to Cooper and Schindler (2011) Likert scales are the most frequently used variation of the summated rating scale; they are more reliable and provide greater volume of data than many other scales. They are also a better approximation of the normal response curve. This study used Likert scales because they communicate interval properties to respondents, and therefore produce data that can be related to an interval scale. In addition, the data collection tool helped the respondents to respond more easily and conveniently. This helps accumulate and summarize results more efficiently (William, 2006).

### **3.5.1 Data Validity and Reliability**

The research instrument pre-tested the collected primary and secondary data to establish their validity and reliability. To establish the validity of the research instrument the research sought opinions of experts. This facilitated the necessary revision and modification of the research instrument thereby enhancing validity. Cronbach Alpha was used to test the reliability of the research instrument. The value gotten was compared with Alpha value of 0.7.

### 3.6 Data Analysis

The questionnaires were checked for completeness and consistency of information at the end of every field data collection day and before storage. Data capturing was done using Excel software. The data from the completed questionnaires was cleaned, re-coded and entered into the computer using the statistical packages for social sciences (SPSS) for Windows for analysis. The SPSS computer program was commanded to produce frequency tables, graphs, pie charts and the necessary measures of variances for interpretation.

Descriptive statistics (that is frequency analysis) was computed for presenting and analyzing the data. Descriptive statistics enables the researcher to describe the aggregation of raw data in numerical terms (Neuman 2000). Descriptive statistics by use of standard deviation, percentages and frequency distribution was used to analyze data.

The standard deviation formula:-

$$s = \sqrt{\frac{\sum(X - \bar{X})^2}{n - 1}}$$

Where:-

S = sample standard deviation

$\sum$  = sum of...

$\bar{X}$  = sample mean

n = number of scores in sample.

Correlation was used to analyze the degree of relationship between the variables in the study. The coefficient of correlation (r), determine the degree (strength) of relationship and its value is between -1 and 1. Further, regression used to obtain an equation which describes the dependent variable in terms of the independent variable based on the regression model, (regression is used to determine the type of relationship).

Data was presented in the form of frequency distribution tables, graphs and pie charts that facilitated description and explanation of the study findings. Correlation was used to analyze the degree of relationship between the variables in the study. The multiple regression analyses determined whether the group of variables together predict or influenced mutual fund choices. The study also used a five point Likert scale ranging from 1=strongly disagree to 5=strongly agree for item analysis purpose. Likert scale is easy to use in respondent –centered and stimulus-centered studies (Patton, 2002).

The following model represents the regression equation representing the relationship between Investors fund choices as a linear function of the independent variables (disposition effect behavior, narrow framing behavior, overconfidence behavior and lottery stock preference behavior), with the symbol  $\epsilon$  representing the error term.

$$Y_i = \alpha + \beta_1(\text{DEB}) + \beta_2(\text{NFB}) + \beta_3(\text{OB}) + \beta_4(\text{LSPB}) + \epsilon$$

Where;  $Y_i$ =Investors fund choices

$\beta$  = regression weight

$\epsilon$  = representing the error term

DEB= Disposition effect behavior

NFB= Narrow framing behavior

OB= Overconfidence behavior

LSPB= Lottery stock preference behavior

Beta values represent the coefficients arising from each independent variables relationship with the dependent variable.

This second part of the analysis established the relationship among the variables .in general two variables x and y are said to be linearly related if there exists a relationship of the form  $y= a+ bx$ , on the other hand the relationship between two variables is said to be nonlinear if corresponding to a unit change in one variable, the other variables does not change at a constant rate but changes at a fluctuating rate. Such a relationship may be of the form  $y=a+bx+cx^2$ .Correlation co-efficient can provide for the degree and direction of the relationship. In this method the scores obtained regarding one variable was correlated with the score of another variable. The interpretation was given in statistical figures between -1.00 and +1.00.These two values represent the two extremes of perfect relationship a value of  $y=0.00$  represents the absence of any relationship (Moore, 1998).if the value of  $y=-1.00$ , this indicates a perfect negative relationship, if the value of  $y=+1.00$  this indicates a perfect positive relationship. The values in between are interpreted accordingly.

The existence of a relationship between two variables implies that the scores obtained within a certain range on one measure are associated with the scores within a certain range on another measure. In this study the dependent variable y represented the investors fund choices while the independent variable was a function of disposition effect, narrow framing, overconfidence and lottery stock preference behavior.

## **CHAPTER FOUR: DATA ANALYSIS, RESULT AND DISCUSSIONS**

### **4.1 Introduction**

The results of the research project exploring the effect of behavioral biases on the mutual fund choices by investors in Kenya. The results of the analyses are presented per study objective and described in tables where stated. The sample size for the analyses was 80 respondents. Once the respondents answered the questionnaire, data was then coded and analyzed using SPSS.

### **4.2 Participation Rate**

The study targeted 16 approved mutual funds in Kenya as by May 2013 in collecting data with regard on the effect of behavioral biases on the mutual fund choices by investors in Kenya. From the study, 66 respondents out of the 80, making a response rate of 83%. According to Mugenda and Mugenda (2003) a 50% response rate is adequate, 60% good and above 70% rated very good. This also concurs with Kothari (2004) assertion that a response rate of 50% is adequate, while a response rate greater than 70% is very good. This implies that based on this assertions; the response rate in this case of 83% is very good.

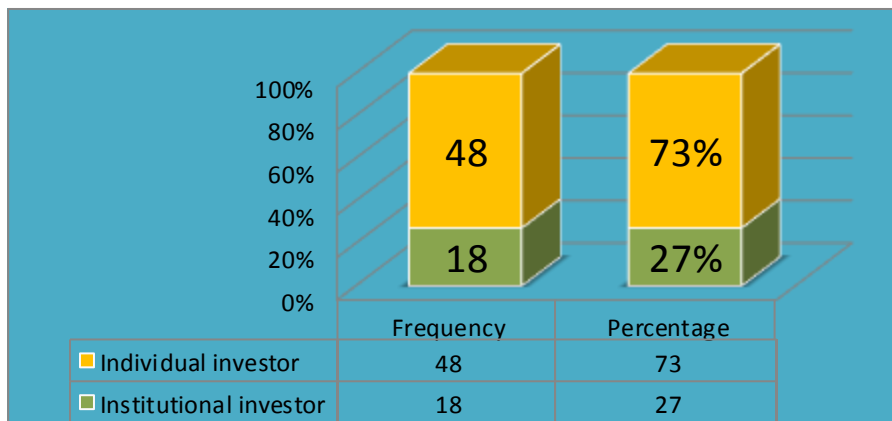
**Table 1: Response Rate**

	<b>Questionnaires administered</b>	<b>Questionnaires filled &amp; returned</b>	<b>Percentage</b>
Respondents	80	66	83

**Source: Researcher, 2013**

### 4.3 Demographic information

**Figure 1: Investment category**

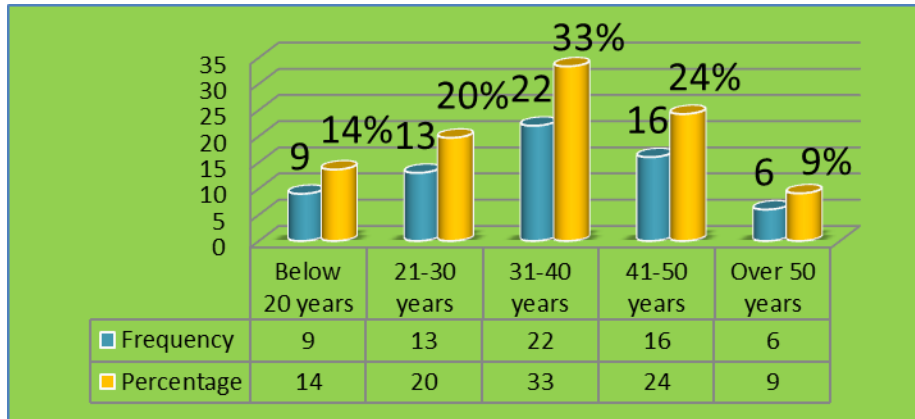


**Source: Researcher, 2013**

On the demographic information of the respondents, the study found it was of paramount importance to determine the institutional category from the respondents in regard to the effect of behavioral biases on the mutual fund choices by investors in Kenya. According to the analysis of the findings it is evident that majority (73%) are individual investors while only the remaining 27% are institutional investors. Therefore it was

revealed that most respondents are individual investors as it is illustrated in figure 1.

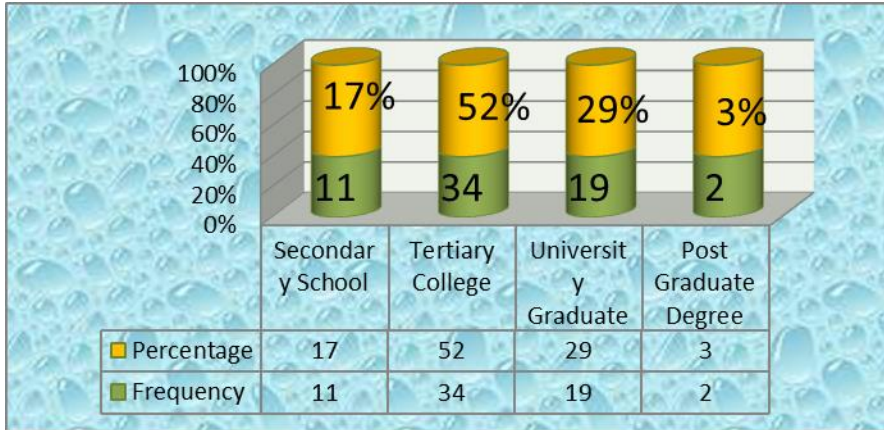
**Figure 2: Age distribution**



**Source: Researcher, 2013**

The respondents were required to indicate their age category where the study findings indicated that majority (33%) indicated that their age bracket was between 31 and 40 years. Analysis of findings also indicated that 24% of the respondents were between 41 and 50 years of age. The findings further indicated that 20% between 21-30 years, 14% below 20% while the remaining 9% were above 50 years of age. The finding therefore concludes that the respondents were old enough to provide valuable responses that pertain on effect of behavioral biases on the mutual fund choices by investors. The findings of the study are illustrated in figure 2.

**Figure 3: Level of Education**

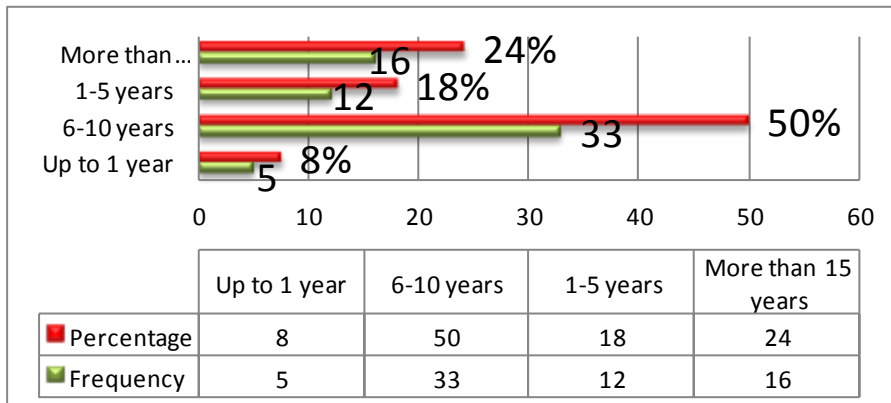


**Source: Researcher, 2013**

The study sought to find out the respondents level of education. The findings of the study are displayed in figure 3. From the findings, majority (52%) had tertiary college, while 29% of the respondents indicated that they had attained university degree. The study further indicated that 17% of the respondents had secondary education, and only 3% had post graduate degree. It is clearly indicated that most respondents had tertiary college of education. The results are demonstrated in figure 3.



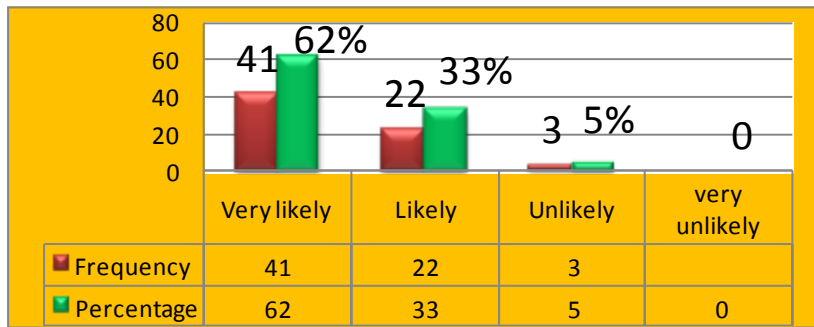
**Figure 4: Duration of investment with the mutual fund**



**Source: Researcher, 2013**

The study further determined duration invested with the mutual fund. According to the analysis of the findings 50% have invested with the fund between 6 to 10 years, 18% have invested 1-5 years, 24% indicated that they have invested for more than 15 years and only the remaining 8% revealed that it was up to 1 year. Most of the respondents have invested for 6-10 years indicating that most respondents have been investing in mutual funds and therefore were good candidates in the study of the effect of behavioral biases on the mutual fund choices by investors in Kenya.

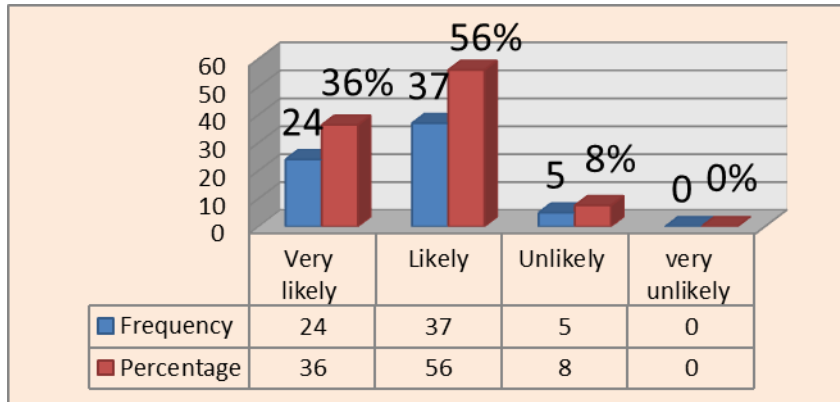
**Figure 5: Whether past history influence the present investment decisions**



**Source: Researcher, 2013**

The study further determined whether the respondents used past history to influence the present investment decisions. In this regard the results showed clearly that indeed past history influences the present investment decisions by majority recording that they very likely with the greatest of 62% followed by 33% who indicated that past history is likely to influence investment decisions. The results further revealed that only 5% of the respondents are unlikely to get influenced by past history in their decision in investment. It is therefore noted that past history influences individuals in their respectful investment decisions.

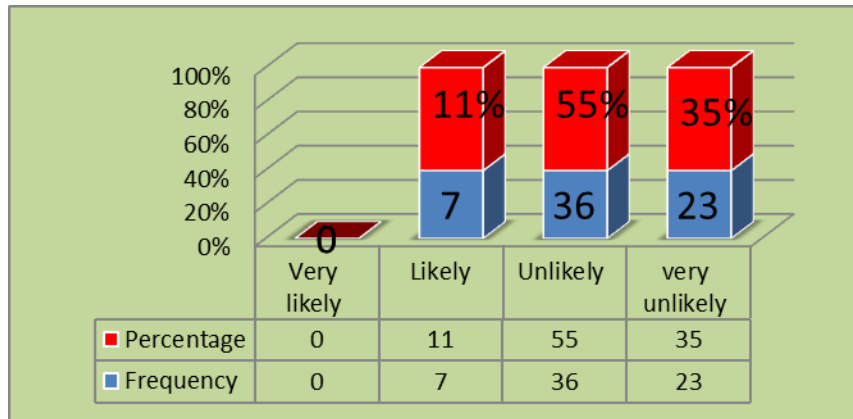
**Figure 6: Whether in selection of investment options, decisions are based on past performance of the various investments**



**Source: Researcher, 2013**

The study further explored whether in selection of investment options, decisions are based on past performance of the various investments. The data was collected, coded and analyzed on same so that to determine in-depth regarding decisions based on past performance of the various investments. Based on the analysis of the findings, most participants said that decisions are likely to be based on past performance of the various investments by recording the highest percentage of 56 followed by 36% who indicated very likely and only 8% said that it is unlikely to influence decisions on past performance of the various investments. It can be therefore concluded that selection of investment options, decisions are based on past performance of the various investments as illustrated in figure 6.

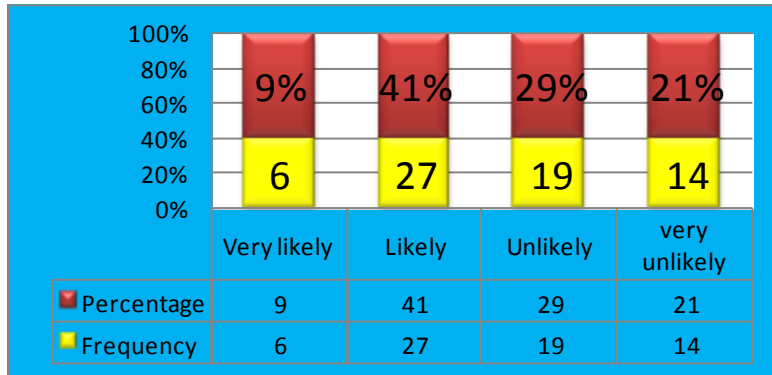
**Figure 7: Whether sell more shares when the sale price is above the purchase price than when the sale price is below the purchase price.**



**Source: Researcher, 2013**

The study required the respondents to indicate if they sell more shares when the sale price is above the purchase price than when the sale price is below the purchase price. Based on the analysis of the findings it is evident that the participant is unlikely to sell more shares when the sale price is above the purchase price than when the sale price is below the purchase price which recorded the highest percentage of 55 while 35% said very unlikely and only the remaining 7% indicated they are likely to sell more shares when the sale price is above the purchase price than when the sale price is below the purchase price as illustrated in figure 7. This therefore implies that more shares are sold when the sale price is below the purchase price than when the sale price is above the purchase price.

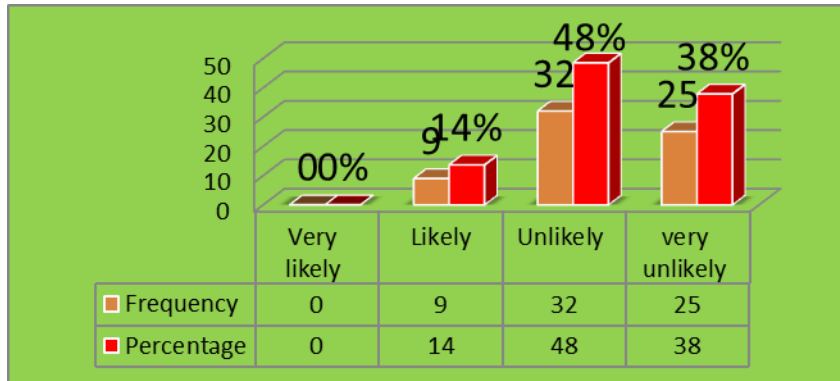
**Figure 8: Whether sell more shares when the sale price is above the last period price than when the sale price is below the last period Price**



**Source: Researcher, 2013**

The study also further explored whether the respondents sell more shares when the sale price is above the last period price than when the sale price is below the last period Price. The results of the findings revealed that yes indeed more shares are likely to be sold when the sale price is above the last period price than when the sale price is below the last period by recording the highest percentage of 41 while 29% and 21% indicated unlikely and very unlikely respectively. The results also revealed that only 9% said very unlikely. It can be therefore deduced that indeed more shares are likely to be sold when the sale price is above the last period price and vice versa as in figure 8.

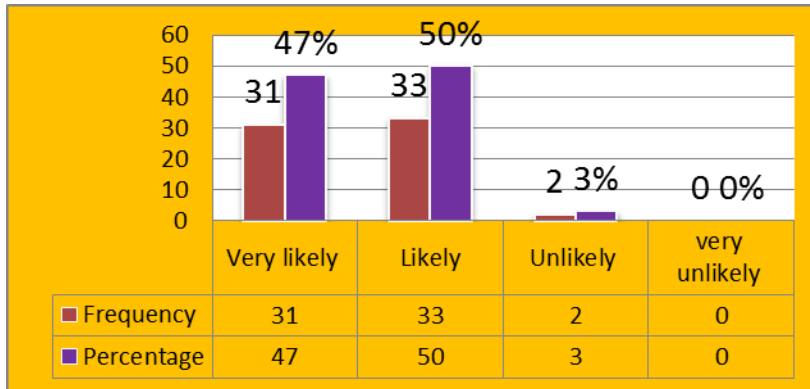
**Figure 9: Whether the respondents rely on intuition when it comes to decision making.**



**Source: Researcher, 2013**

Figure 9 shows the analysis of the findings in regard to whether the respondents rely on intuition when it comes to decision making on mutual fund choices. Based on the results illustrated in figure 9 most respondents said they unlikely rely on intuition in making decisions, this accounted for 48% followed by 38% who said very unlikely over the same and only 14% indicated that it is likely to rely entirely on intuition to make their decision about mutual fund choices. Therefore it can be noted that most respondents are unlikely to rely entirely on their intuition while making mutual fund choices.

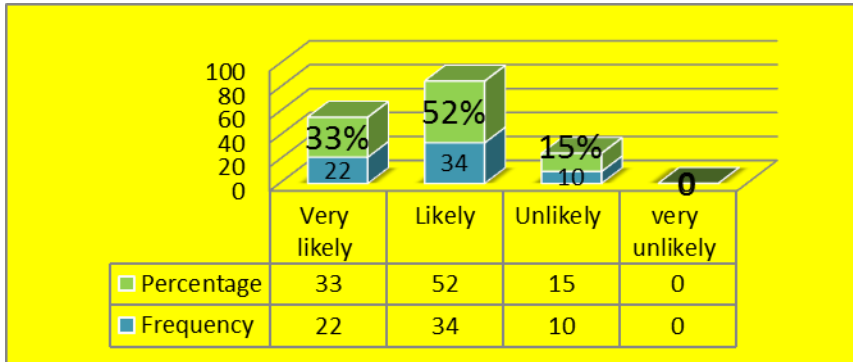
**Figure 10: Whether the respondents tend to think carefully about all possible alternatives and consequences of mutual fund choice.**



**Source: Researcher, 2013**

Regarding whether the respondents tend to think carefully about all possible alternatives and consequences of mutual fund choice, it was evident that most respondents tend to think carefully by recording the highest percentage of 50% followed closely by those who indicated very likely accounting 47% and only 3% said that it is unlikely to think carefully about all possible alternatives and consequences of the mutual fund choice. The results clearly reveals that most respondents tend to think carefully about all possible alternatives and consequences of mutual fund choice as illustrated in figure 10.

**Figure 11: Whether the respondents always come with a set mind on the mutual fund choice to invest in.**

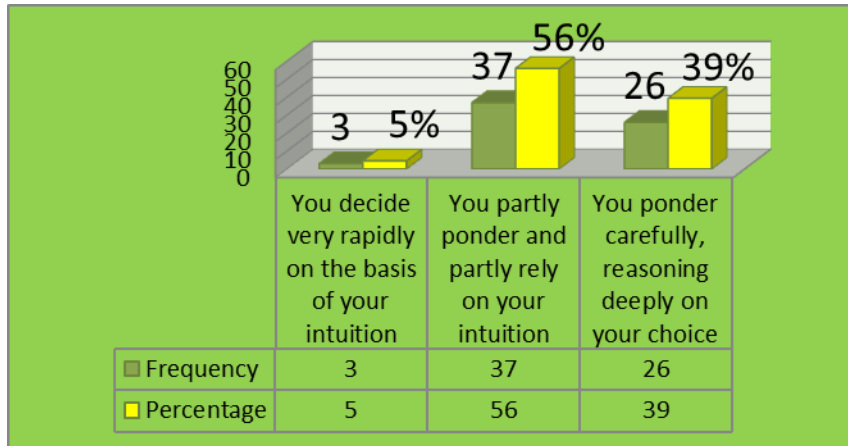


**Source: Researcher, 2013**

The study established from the respondents if whether they always come up with a mind set on the mutual fund choice to invest in. The results evidently revealed that most respondents likely come up with a mind set on the mutual fund choice to invest in by recording 52%, 33% said very likely. The study further revealed only 15% said that it is unlikely to come up with a mind set on the mutual fund choice to invest in. It is clearly revealed that after thinking carefully about all possible alternatives and consequences of the mutual fund choice, the respondents are likely to come up with the mind set on which mutual fund to invest.



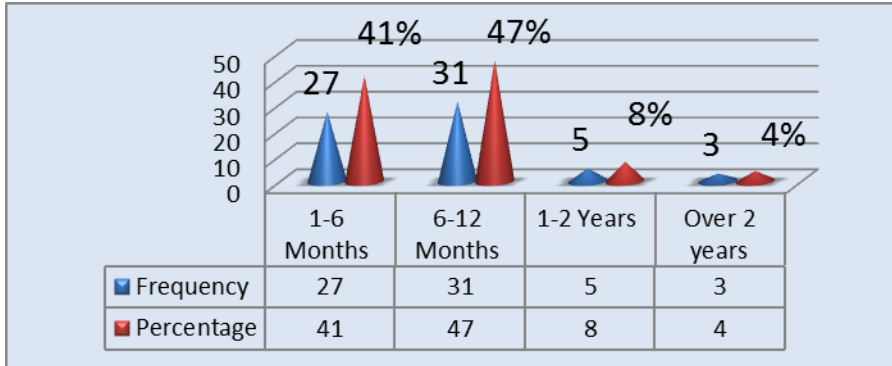
**Figure 12: Whether the respondents visit several shops or dealers in order to compare various prices.**



**Source: Researcher, 2013**

The study sought to investigate if whether the respondents visit several shops or dealers in order to compare various prices. This was to equip them with the price rates in market and also determine the one with terms for the investor own safety. According to the analysis of the findings, most (56%) respondents partly ponder and partly rely on intuition followed by those ponder carefully, reasoning deeply on their choice accounting for 39% and only 5% decide very rapidly on the basis of the intuition. Therefore most respondents partly ponder and partly rely on intuition as illustrated in figure 12.

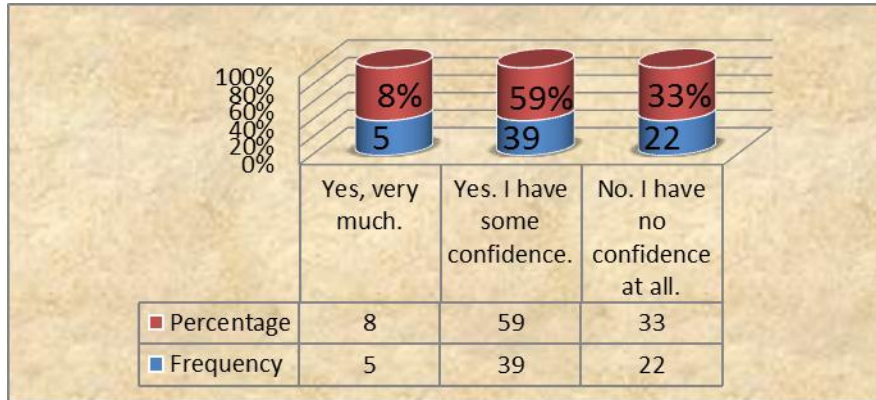
**Figure 13: Duration holding stocks in the portfolio.**



**Source: Researcher, 2013**

The questionnaire sought to find out the duration of holding stocks in the portfolio. This was of importance so as to determine its effects on behavioral biases on the mutual fund choices by investors. The analysis of the finding evidently showed that majority hold their stock in portfolio between 6 to 12 months by recording a percentage of 47% followed by 41% who also hold their stock between 1-6 months ,8% and 4% holds their stocks between 1-2 years and over 2 years respectively. From the findings of the study, it can be deduced that most respondents holds their stock in portfolio between 6 to 12 months as illustrated in figure 13.

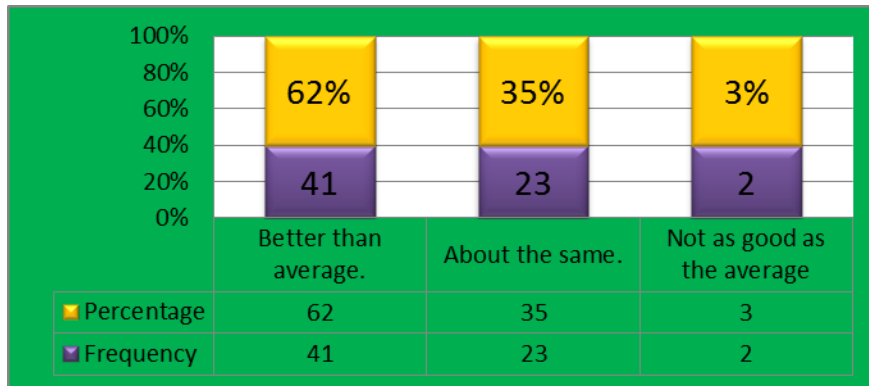
**Figure 14: Whether the respondents have confidence in beating the market as a whole within three months' time.**



**Source: Researcher, 2013**

The study further found it of paramount importance to determine from the respondents if whether they have confidence in beating the market as a whole within three months' time. The results are as shown in figure 14. It can therefore be observed that majority(59%) indicated that yes they have some confidence,33% no confidence at all and the remaining 8% revealed that they are very much confident in beating the market as a whole within the next three months. It can be therefore deduced that most respondents have some confidence to beat the market as whole within three months.

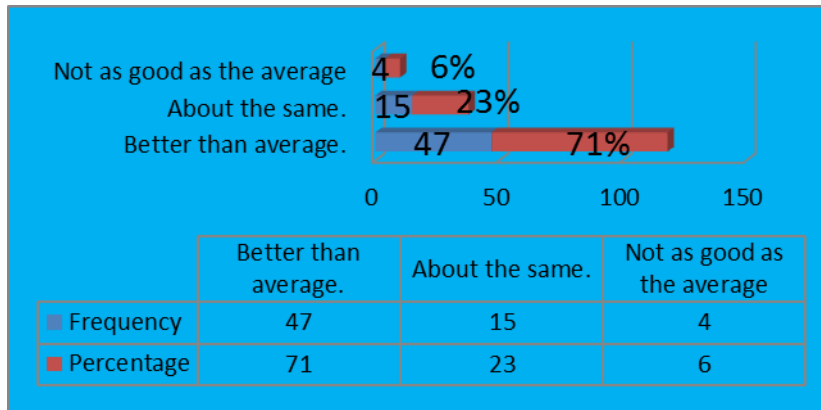
**Figure 15: Comparisons with other investors to determine investment performance.**



**Source: Researcher, 2013**

The study also investigated on how the respondents compare themselves with other investors they are acquainted with in order to determine the level of their investment performance. According to responses, most respondent are better than average who accounted for 62%, 35% indicated that they are the same in investment performance and the remaining 3% revealed that it not as good as a average. This implies that most respondents in terms of investment performance are better than average compared with the investors acquainted with.

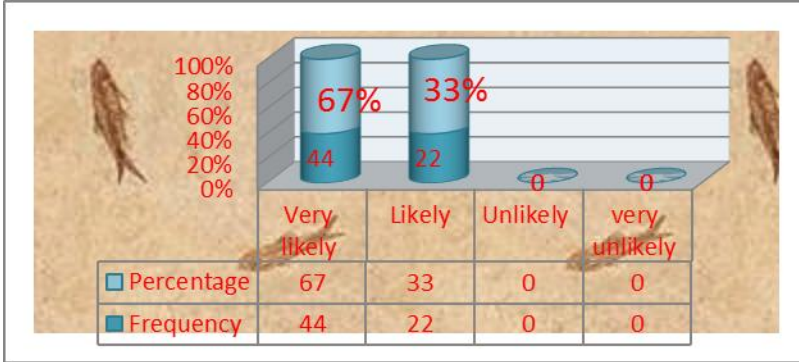
**Figure 16: Comparisons with other related group of people who have a similar background and social status.**



**Source: Researcher, 2013**

The respondents were probed further on how they compare themselves with other related group of people who have a similar background and social status. Based on the analysis of the findings majority said that they are better than average by recording 71%, 23% revealed that they are about the same and 6% indicated that not as good as the average. Therefore it can be concluded that most respondents deem themselves better than average as illustrated in figure 16.

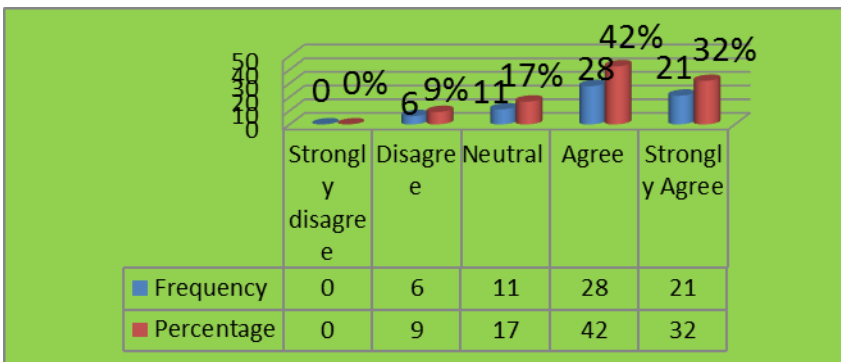
**Figure 17: Whether the respondents purchase mutual funds expecting prices to be more than double in the near future.**



Source: Researcher, 2013

On whether the respondents purchase mutual funds expecting prices to be more than double in the near future, the results demonstrated 67% said that it is very likely this accounted for the majority while the remaining 33% indicated likely. Therefore it can be deduced that most respondents purchase mutual funds which are low in price with an expectation that the prices will more than double in the near future.

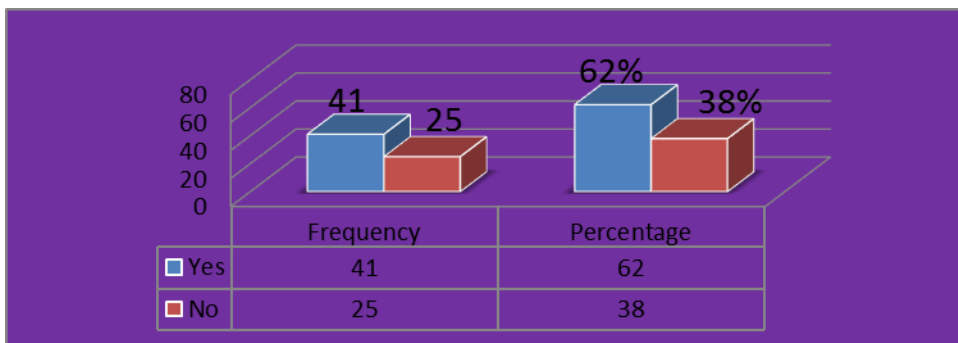
**Figure 18: whether mutual funds of small firms are better because their growth rate is higher than larger firms.**



Source: Researcher, 2013

The study further probed on whether mutual funds of small firms are better because their growth rate is higher than larger firms. According to the analysis of the findings it is clearly revealed that most participants agreed who accounted for 42%,32% strongly agreed and 17% were neutral while 9% disagreed that mutual funds of small firms are not better as illustrated in figure 17.

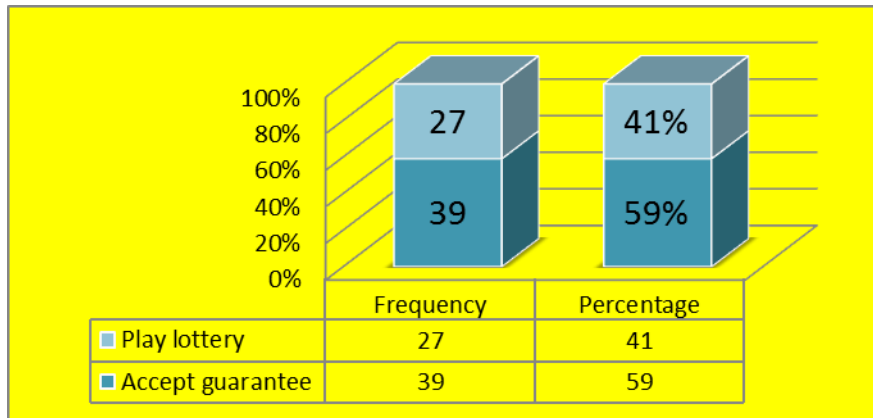
**Figure 19: Tossing of a fair coin**



**Source: Researcher, 2013**

On the question winning the first lottery of Ksh 20,000 and have an opportunity to participate in a second lottery determined by the tossing a fair coin, majority of the respondents said yes who accounted for 62% and only 38% said no to participation of the second lottery as illustrated in figure 19.

**Figure 20: Whether the respondents can accept a guaranteed or play a lottery.**



**Source: Researcher, 2013**

The study found it important to determine whether the respondents can accept a guaranteed of Ksh15, 000 or play a lottery. The analysis of the findings revealed that most respondents will accept a guarantee than to play a lottery. This has been illustrated in figure 20 by 59% and 41% respectively.

#### **4.4 Regression Analysis**

The study sought to determine how the factors (disposition effect behavior, narrow framing behavior, overconfidence behavior and lottery stock preference behavior) affect the investors fund choices. The regression equation representing the relationship was:

$$Y_i = \alpha + \beta_1(\text{DEB}) + \beta_2(\text{NFB}) + \beta_3(\text{OB}) + \beta_4(\text{LSPB}) + \epsilon$$

Whereby  $\beta_0$  is the model constant,  $\beta_1$  and  $\beta_4$  are coefficients of the independent variables and  $\epsilon$  is the error term, Y is investors fund choices, DEB is disposition effect behavior,



NFB is narrow framing behavior, OB is overconfidence behavior, and LSPB is lottery stock preference behavior

Table 4.1 shows that there is a very good linear association between the dependent and independent variables used in the study. This is shown by a correlation (R) coefficient of 0.978. The determination coefficient as measured by the adjusted R-square presents a very strong relationship between dependent and independent variables given a value of 0.936. This depicts that the factors account for 93.6% of the total variations in investors fund choices. Durbin Watson value of 1.899 was established depict no autocorrelation in the model's residuals.

**Table 4.2: Summary Statistics**

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>	<b>Durbin-Watson</b>
.978 <sup>b</sup>	.957	.936	.0041719	1.899

a. Dependent Variable: Investors Fund Choices

b. Predictors: (Constant), Disposition Effect Behavior, Narrow Framing Behavior, Overconfidence Behavior, and Lottery Stock Preference Behavior

The ANOVA statistics presented in Table 4.2 was used to present the regression model significance. An F-significance value of  $p < 0.001$  was established showing that there is a probability of less than 0.01% of the regression model presenting a false relationship between independent and dependent variables. Thus, the model is significant.

**Table 4.3: Analysis of Variance**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	.008	10	.001	46.542	.000c
Residual	.000	21	.000		
Total	.008	31			

a. Dependent Variable: Investors Fund Choices

b. Predictors: (Constant), Disposition Effect Behavior, Narrow Framing Behavior, Overconfidence Behavior, and Lottery Stock Preference Behavior

The following regression equation was established:

$$P = -0.077 + 1.247*DEB + 3.148*NFB + 1.037*OB - 1.009*LSPB$$

From the model, when other factors (disposition effect behavior, narrow framing behavior, overconfidence behavior and lottery stock preference behavior) are at zero, the investors fund choices will be -0.077.

Holding other factors (narrow framing behavior, overconfidence behavior and lottery stock preference behavior) constant, a unit increase in disposition effect behavior would lead to 1.247(p<.001) increase in investors fund choices. Holding other factors constant, a unit increase in narrow framing behavior would lead to a 3.148(p=0.003) increase in investors fund choices.

Additionally, a unit increase in overconfidence behavior would lead to a 1.037( $p<.001$ ) increase in investors fund choices while a unit increase in the lottery stock preference behavior would lead to a 1.009 decrease in investors fund choices.

**Table 4.4: Regression Coefficients**

Variables	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	-.077	.065		-1.183	.250
Disposition Effect Behavior	1.247	.045	.979	5.463	.000
Narrow Framing Behavior	3.148	.044	2.911	3.381	.003
Overconfidence Behavior	1.037	.005	.890	-8.164	.000
Lottery Stock Preference Behavior	-1.009	.017	-1.038	-.536	.597

a. Dependent Variable: Investors Fund Choices

## 4.5 Summary of the findings and Discussions

In summary, various results and findings for the effect of behavioral biases on the mutual fund choices by investors were established. These findings ranged from how past history influence the present investment decisions to selection of investment options, decisions as based on past performance of the various investments. First, individual investors increasingly use mutual funds to invest in the equity market rather than trading individual stocks. This study finding is in accordance to French (2008) reports that: “Individuals hold 47.9% of the market in 1980 and only 21.5% in 2007. This decline is matched by an increase in the holdings of open-end mutual funds, from 4.6% in 1980 to 32.4% in 2007. Hence, it is increasingly important to understand how individual investors hold and trade

mutual funds. Second, even though direct stock trading by individuals has declined, their mutual fund investment decisions can affect stock returns indirectly. Third, the manner in which individuals employ mutual funds cuts right to the heart of basic principles of financial management. Traditional portfolio choice models imply a simple investment strategy based on well-diversified, low expense mutual funds and minimal portfolio rebalancing. Index funds, and other equity funds with low fees and low turnover, are cheap, convenient vehicles for individual investors to implement such a strategy. The extent to which individuals adhere to these principles in their use of mutual funds is an important measure of the rationality and effectiveness with which investors approach capital markets.

The study established that fund flows tend to chase funds with high past returns. This may be fostered by Morningstar's practice of rating funds based on past returns. Several explanations can be offered for these two anomalies. First it explains participation in high fee index funds using a model with search costs and that it interpret their experiments on participation in high fee funds as consistent with behavioral biases.

Finally, the study established that there is a very good linear association between the dependent and independent variables used in the study. This is shown by a correlation (R) coefficient of 0.978. The determination coefficient as measured by the adjusted R-square presents a very strong relationship between dependent and independent variables given a value of 0.936. This depicts that the factors account for 93.6% of the total variations in investors fund choices. Durbin Watson value of 1.899 was established depict no autocorrelation in the model's residuals. It was also established from the study model

that, when other factors (disposition effect behavior, narrow framing behavior, overconfidence behavior and lottery stock preference behavior) are at zero, the investors fund choices will be -0.077.

Holding other factors (narrow framing behavior, overconfidence behavior and lottery stock preference behavior) constant, a unit increase in disposition effect behavior would lead to 1.247( $p < .001$ ) increase in investors fund choices. Holding other factors constant, a unit increase in narrow framing behavior would lead to a 3.148( $p = 0.003$ ) increase in investors fund choices. Additionally, a unit increase in overconfidence behavior would lead to a 1.037( $p < .001$ ) increase in investors fund choices while a unit increase in the lottery stock preference behavior would lead to a 1.009 decrease in investors fund choices.

# **CHAPTER FIVE: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

## **5.1 Introduction**

This chapter covers the findings and makes conclusions based on the objective of the study which was to establish the effect of behavioral biases on the mutual fund choices by investors in Kenya. This chapter also contains a summary and recommendations for improvement arising from the study and proposes direction for further research.

## **5.2 Summary**

The study determined the investment category from the respondents. The findings revealed that most respondents are individual investors and many of them aged between 31-40 years. The findings also revealed that majority of the participant are educated up to tertiary colleges who recorded the highest percentage and have so far invested with the mutual fund between 6-10 years.

The study sought to determine from the respondents if whether their past history influenced the present investment decisions, many of them indicated very likely implying that they indeed relied on past history and experiences in investment decisions and also selected investment options based on past performance of various investments. The study also explored on whether they sell more shares when the sale price is above the purchase price than when the sale price is below the purchase price whereby the findings of the study indicated that it is very unlikely and on whether they sell more shares when

the sale price is above the last period price than when the sale price is below the last period Price, the respondents clearly revealed that they are likely to sell more shares when the sale price is above the last period price than when the sale price is below the last period Price. On whether the respondents rely on intuition when it comes to decision making, the results revealed that the highest percentage indicated unlikely. The study findings further revealed that most respondents tend to think carefully about the possible alternatives and consequences of mutual fund choice and always come up with set mind on the mutual fund choice to invest in.

The study further sought to determine from the respondents whether they visits several shops or dealers in order to compare various prices, majority said that they partly ponder and partly rely on their intuition. The study further investigated the duration holding stock in the portfolio. The results indicated that most stock is held between 6-12 Months and most respondents have some confidence in beating the market as a whole within three months' time.

The study determined comparisons with other investors to determine investment performance. According to analysis of the findings most respondents consider themselves better than average and this recorded the highest percentage and on the other related group of people who have a similar background and social status, also the findings recorded better than average. The study inquired on whether the respondents purchase mutual funds expecting prices to be more than double in the near future. The results revealed very likely and agreed that mutual funds of small firms are better because their growth rate is higher than larger firms.

In establishing if whether respondents can participate in a second lottery tossing of a fair coin, most respondents said yes while if whether the respondents can accept a guaranteed of Ksh15, 000or play a lottery, many respondents said they will rather accept the guarantee of 15,000.

### **5.3 Conclusion**

The study finding concludes that most respondents exhibited the disposition effect behavior as they did rely on past history and experiences in investment decisions and also selected investment options based on past performance of various investments. The study also concluded that mutual funds are sold more when the sale price is below the purchase price than when the sale price is above the purchase price. The findings further concluded that the respondents are likely to sell more mutual funds when the sale price is above the last period price than when the sale price is below the last period Price. The findings also shows that respondents are affected by narrow framing behavior as the results concluded most respondents are likely to rely on their intuition when making mutual fund choices.

The study findings further concluded that most respondents tend to think carefully about the possible alternatives and consequences of mutual fund choice and always come up with set mind on the mutual fund choice to invest in. On visiting several shops or dealers in order to compare various prices, the findings concluded that indeed the respondents partly ponder and partly rely on their intuition. These tendencies are in support of the overconfidence behavior. The study further investigated the duration holding stock in the portfolio. The results conclude most mutual fund stock is held between 6-12 Months and there is some confidence in beating the market as a whole within three months'



time. The study further determined comparisons with other investors to determine investment performance. According to analysis of the findings, it was concluded that investors are better than average and on the other related group of people having similar background and social status, also the findings concluded that it is better than average.

The lottery stock preference behavior was also noticed from the respondents. The study inquired on whether the respondents purchase mutual funds expecting prices to be more than double in the near future. The results concluded that it is very likely and agreed that mutual funds of small firms are better because their growth rate is higher than larger firms. In establishing if whether respondents can participate in a second lottery tossing of a fair coin, the finding concludes that most respondents said yes while the findings further concluded that most respondent will prefer for a guarantee Ksh15, 000 than playing a second lottery.

#### **5.4 Limitations of the study**

The research met with various challenges when conducting the research that included the following:

The mutual funds companies in Kenya ordinarily do not want to give information due to client confidentiality and fear of exposure to competitors

Some of the respondents would not find the subject to be of interest. Additionally, some respondents would not want to give the information as they considered it of competitive importance.

The respondents being normally very busy people may not have found a lot of time to respond to questions.

Time limitation made it impractical to include more respondents in the study. More respondents would have been essential to increase the representation of the mutual funds in Kenya in this study and allowed for better check of consistency of the information given. However, the researcher did look for contradictions in the information given and no inconsistency were found.

The data collected may have given different results if a different model was used for the analysis.

The sample used may have not adequately covered the 16 registered mutual fund firms. A different sampling method may have given different results.

## **5.5 Recommendations**

The study therefore makes the following recommendations to support policy development and also recommendation for further research.

### **5.5.1 Policy Recommendations**

The study recommends that the mutual fund firms set aside an investment literacy framework and education to intended and already established investors to help them in making good investment decisions.

There is a need for the regulators to put in place structures that would enhance more disclosure by the mutual fund firms by making available both financial reports and daily trading information available to the public

The government should consider tax policies that would induce mutual fund investors as these savings can spur economic development.

### **5.5.2 Recommendations for Further Research**

Further studies should be carried out on how mutual fund investors view the small firms compared to the bigger and well established funds.

Further studies should also be done to determine how the fees/ entry fees affect how mutual fund investors make their fund choices.

Kenya is experiencing growth in mutual funds investment with most company's coming on board lately. Due to this growth a larger population that cuts across the industry would be more representative for future studies.

Research on the buying and selling behavior of mutual fund investors based on the daily trading information from mutual fund companies.

There is need for a study on the benefits of full disclosure by the mutual fund firms in Kenya.

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# APPENDICES

## APPENDIX 1: QUESTIONNAIRE

Below is a questionnaire that intends to capture your views towards the effect of behavioral biases on the mutual fund choices by investors. Please note that no identification is required and information given is intended for academic purposes only. Ensure that you respond to all the questions. Thank you.

### THE EFFECT OF BEHAVIORAL BIASES ON THE MUTUAL FUND CHOICES BY INVESTORS IN KENYA

#### PART 1: BACKGROUND INFORMATION

1. Indicate your category

Institutional investor [ ]    Individual investor [ ]

Name of your Mutual Fund \_\_\_\_\_

(Optional)

2. Age

Below 20 years [ ]    31-40 years [ ]    Over 50 years [ ]

21-30 years [ ]    41-50 years [ ]

3. Highest Level of Education

Secondary School [ ]



Tertiary College [ ]

University Graduate [ ]

Post Graduate Degree [ ]

Other (please specify)\_\_\_\_\_

4. For how long have you invested with the mutual fund?

Up to 1 year [ ]                      6-10 years [ ]

1-5 years [ ]                      More than 15 years [ ]

**PART 2:**

5. Does past history influence your present investment decisions?

Very likely [ ] Likely [ ] Unlikely [ ] very unlikely [ ]

6. In the selection of investment options, do you base your decisions on past performance of the various investments?

Very likely [ ] Likely [ ] Unlikely [ ] very unlikely [ ]

7. Do you sell more shares when the sale price is above the purchase price than when the sale price is below the purchase price?

Very likely [ ] Likely [ ] Unlikely [ ] very unlikely [ ]

8. Do you sell more shares when the sale price is above the last period price than when the sale price is below the last period Price?

Very likely [ ] Likely [ ] Unlikely [ ] very unlikely [ ]

9. Explain any other reason that influence your buying/selling of mutual funds

.....  
.....

**PART 3:**

10. Generally speaking do you tend to decide rather quickly, relying mostly on their intuition while making mutual fund choices?

Very likely [ ] Likely [ ] Unlikely [ ] very unlikely [ ]

11. Do you tend to think carefully about all possible alternatives and consequences of your mutual fund choice, taking as much time as needed before reaching a final decision?

Very likely [ ] Likely [ ] Unlikely [ ] very unlikely [ ]

12. Do you always come with a set mind on the mutual fund choice you want to invest in?

Very likely [ ] Likely [ ] Unlikely [ ] very unlikely [ ]

13. Before making a purchase involving a relatively large amount of money (such as a car, a house or jewelry), some people tend to visit several shops or dealers in order to compare various prices and try to get a good balance in terms of price/quality ratio. How does this description fit your mutual fund choices?

[ ] "You decide very rapidly on the basis of your intuition";

"You partly ponder and partly rely on your intuition";

"You ponder carefully, reasoning deeply on your choice"

**PART 4:**

14. On average, how long do you hold your stocks in your portfolio?

1-6 Months  6-12 Months  1-2 Years  Over 2 years

15. When considering the next three months, do you have confidence in beating the market as a whole?

Yes, very much.

Yes. I have some confidence.

No. I have no confidence at all.

16. Compared with the investors you are acquainted with, you believe your

investment performance is :

Better than average.

About the same.

Not as good as the average.

17. Suppose that you are related to a group of people who have a similar background and social status as you. Generally, when compared with them, you will most probably feel that you are :

Better than average.

About the same.

Not as good as the average.

**PART 5:**

18. Do you always purchase mutual funds which are low in price with an expectation that the prices will more than double in the near future?

Very likely  Likely  Unlikely  very unlikely

19. Mutual funds of small firms are better because their growth rate is higher than larger firms and therefore better returns.

Strongly disagree  Disagree  Neutral  Agree  Strongly Agree

20. Imagine that you have just won Ksh20, 000 in one lottery, and have an opportunity to participate in a second lottery. The outcome of the lottery is determined by the toss of a fair coin. If heads come up, you win Ksh 4,500 in the second lottery. If tails comes up, you lose Ksh 4,500. Would you choose to participate in the second lottery?

Yes  No

21. Imagine that you face the following choice.

You can accept a guaranteed Ksh15, 000 or play a lottery. The outcome of the lottery is determined by the toss of a fair coin. If heads come up, you win Ksh10, 500. If tails come up, you win Ksh19, 500. Would you accept the guaranteed Ksh15, 000 or play the lottery?

Accept guarantee  Play lottery

## **APPENDIX II: LIST OF MUTUAL FUNDS FIRMS**

1. African Alliance Kenya Unit Trust Scheme
2. Old Mutual Unit Trust Scheme
3. British American Unit Trust Scheme
4. Stanbic Unit Trust Scheme
5. Commercial bank of Africa Unit Trust Scheme
6. Zimele Unit Trust Scheme
7. Suntra Unit Trust Scheme
8. ICEA Unit Trust Scheme
9. CIC Unit Trust Scheme
10. Standard investment Trust Funds
11. Madison Asset Unit Trust Funds
12. Dyer and Blair Unit Trust Scheme
13. Amana Unit Trust Funds Scheme
14. Diaspora Unit Trust Scheme
15. First Ethical Opportunities Fund
16. Genghis Unit Trust Funds