

**THE EFFECT OF HEURISTIC BIASES ON INVESTMENT RETURNS BY UNIT  
TRUSTS IN KENYA**

**BY**

**CAROLINE ACHIENG OBARA**

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## DECLARATION

I declare that this research proposal is my original work and has not been presented for any academic award in any university.

Signed .....

Date .....

Caroline Achieng Obara

D61/72500/2014

This project has been submitted with my approval as university supervisor.

Signed.....

Date.....

Mrs. Winnie Nyamute

Lecturer

Department of Finance and Accounting

School of Business

University of Nairobi

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## **DEDICATION**

I dedicate this project to my dear parents George Ojuondo Obara and Patricia Juma Obara for your prayers, encouragement and desire to always see me excel.

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## **ABSTRACT**

The study investigated the effects of heuristic biases on investment returns of unit trust companies in Kenya. Literature has documented that individual and institutional investors have embraced heuristics in their investment decisions which is influenced by emotional biases leading to discrepancy between market price and fundamental value. This in returns affects their investment returns. This study sought to establish whether heuristics biases affect investment returns of unit trusts. Descriptive design study was used through census survey of 56 different funds operated by the 18 unit trust companies. Questionnaire was used to collect data and 76% response rate was registered. The data collected from the questionnaires were scored giving values for the 43 unit funds and this was analysed using Statistical Packages for Social Scientists. Descriptive statistics, regression analysis and correlation analysis were used to summarize the research findings. The study established that unit trusts' returns are affected by representativeness, overconfidence, and anchoring. Representativeness has a strong positive correlation with investment returns of  $r = 0.631$ . Overconfidence also had a correlation of  $r=0.422$  indicating that this also affected decisions of fund managers. Anchoring, with a correlation of  $r=0.157$  is not common among the unit trust manager. The study recommends that fund managers should know the heuristic biases affecting them so as to up with strategies of avoiding them. This will help reduce market anomalies.

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## **LIST OF ABBREVIATIONS**

CAPM	Capital Asset Pricing Model
CMA	Capital Markets Authority
MPT	Modern Portfolio Theory
NSE	Nairobi Securities Exchange
NSSF	National Social Security Fund
PT	Prospect Theory
ROI	Return on Investment
RT	Regret Theory
SPSS	Statistical Packages for Social Scientists

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the Study

Human decisions often depend on their nature, intuitions, and habits, cognitive or emotional biases hidden deeply at one's mind. Behavior finance is the study of how psychology affects financial decisions and financial markets. Since psychology explores human judgment, behavior and welfare, it can also provide important facts about how human actions differ from traditional economic assumptions. There is also emerging evidence that institutional investors behave differently from individual investors, in part because they are agents acting on behalf of the ultimate investors (Pompian, 2012).

Investment decision is greatly affected by heuristic biases. Various changes of setting such as, price volatility, variations of economic situation have a gross impact on investors thinking. Individuals constantly feel the fear of losing money thus impulsively react to market changes. They change their long-term investment goals to respond to every financial expert's opinion and begin to have doubts of their investments (Huberman, 2001). This study will look at how heuristic biases affect investment returns by unit trusts in Kenya. This chapter will begin by looking at the background of the study, research problem, research objectives and finally the study value.

Investors are thought of as a rational lot that take carefully weighted economically feasible decisions every single time. A rational investor can be defined as one that always updates his beliefs in a timely and appropriate manner on receiving new information and makes choices that are normatively acceptable (Thaler, 1993). For a long time it was thought that traditional finance theory is accurate because it states that investors think rationally and make deliberate decisions, based on various estimations or using economic models. However after a number of investigations, it was noticed that human decisions often depend on their nature, intuitions, and habits, cognitive or emotional biases hidden deeply at the back of one's mind. The new discipline, behavioural finance, begun to develop after gathering enough information that confirm particular human behaviour which is contrary to traditional finance theory. According to Pompian (2012), behavior finance is the study of how psychology affects financial decisions and financial markets. Since psychology explores human judgment, behavior and welfare, it can also provide important facts about how human actions differ from traditional economic assumptions.

Consequently, investment decision processes based on forecasts and the great knowledge of market participants are becoming more unrealistic in these days global financial markets. Huberman (2001) found out that human psychological state affects their investment decisions. Various changes of setting have a gross impact on investors' thinking. The irrational decision proliferate in such situations which determine inefficient investments or uprising losses, which reduces the ranks of people willing to invest. Consequently financial behavior is a science that analyzes behaviour subtlety of market participants as well as revealing their irrational decision-making motives. Behavioural

finance helps to avoid the impact of financial behaviour for investment returns and thereby attract more individuals willing to invest.

### **1.1.1 Heuristic Biases**

Heuristics are general decision making strategies people use that are based on little information, yet very often correct. According to Shah and Oppenheimer (2008), heuristic is a rule or method that helps one solve problems faster than when they would when computing. They reduce work in decision making in several ways. Heuristics offer the user the ability to scrutinize few signals and alternative choices in decision making. In addition, heuristics diminish the work of retrieving and storing information in memory, streamlining the decision making process by reducing the amount of integrated information necessary in making the choice or passing judgment (Shah & Oppenheimer, 2008). This study will look at representativeness, overconfidence and anchoring heuristic biases and their effect on investment returns by unit trust in Kenya.

According to Pompian (2012), representativeness bias is a belief perseverance bias in which people tend to classify new information based on past experiences and classifications. They believe their classifications are appropriate and place undue weight on them. Research shows that this bias occurs because people attempting to derive meaning from their experiences tend to classify objects and thoughts into personalized categories. When confronted with new information, they use those categories even if the new information does not necessarily fit. They rely on a best-fit approximation to determine which category should provide a frame of reference from which to understand

the new information. The new information superficially resembles or is representative of familiar elements already classified, but in reality it can be very different. Representativeness shows that people tend to associate two events and deem them identical when in reality they may not be similar in any respect but appear to be superficial.

People normally tend to overestimate the precision of their knowledge. Such overconfidence has been observed in many professional fields including investment. Ross (1987) argues that much overconfidence is related to a broader difficulty in making adequate allowance for the uncertainty in one's own view point. Overconfidence may explain why investment professionals hold actively managed portfolios with the intention of being able to choose the winners. According to March (1987), managers overestimate the probability of success in particular when they think of themselves as experts. Ritter (2003) argued that overconfidence manifests itself when there is little diversification because of a tendency to invest too much in what one is familiar with. Overconfidence also explains why portfolio managers trade so much.

Kahneman and Tversky (1974) explain that anchoring occurs as investors rely too heavily on the first piece of information offered when making decisions. They use irrelevant information as a reference for evaluating or estimating some unknown value or information thus basing decisions on events known to them even though these facts may have no bearing on the actual event (Raines, 2011). Gwily (2009) also observed that heterogeneous agents make portfolio choice based on expectations that are not rational in

conventional sense, but based on one or two heuristic biases. Investors often fail to do enough research because there is simply too much data to collect and analyze. Instead, they take action based on a single factor figure that should have little or no bearing on their decision, while ignoring more important information (Chandra & Sharma, 2010).

### **1.1.2 Investment Returns**

According to Bodie et al. (2008), investment is the current commitment of money or other resources in the expectation of reaping future benefits. Investment management is the professional management of investment funds for individuals, families and institutions. It can be done either by the consumer or a professional and can be passive, active, aggressive or conservative. Return on investment (ROI) is the benefit to the investor resulting from an investment of some resource. A high ROI means the investment gains compare favorably to investment cost. As a performance measure, ROI is used to evaluate the efficiency of an investment or to compare the efficiency of a number of different investments. In purely economic terms, it is one way of considering profits in relation to capital invested. The level of return will depend on internal factors and characteristics such as type of investment, quality of management, and how the investment is financed (Griffiths, 1990).

The willingness to act prudently and maintain an appropriately balanced investment portfolio in the face of falling security prices requires the ability to avoid behavioral impulses when making long term asset allocation decisions (Winchester et al., 2011). A number of studies have been conducted pointing to market anomalies that cannot be

explained with the help of financial theories, such as abnormal price movements in connection with initial public offers, mergers, stock splits, and spin-offs (Johnson et al., 2002). The high trading volume on organized exchange is perhaps the single most embarrassing fact to the standard finance paradigm. It must be stressed that the high volume is not produced by amateur investors. The average turnover for institutional investors is much higher than the rate for individuals. Investors have difficulties making long term financial decisions for reasons such as lack of financial sophistication and inability to self-regulate (Winchester et al., 2011). The individual investors can employ a team of investment professionals under the direction of a portfolio or fund manager. These individuals work full time on studying the markets, market trends, and individual stocks (Fischer & Jordan, 1995).

### **1.1.3 Effect of Heuristic Biases on Investment Returns by Unit Trusts**

Behavioral Finance is becoming an integral part of decision-making process because it heavily influences the investor's returns thus performance (Belsky & Gilovich, 1999). An understanding of how our emotions result in irrational behavior is indispensable for any investor (Fogel & Berry, 2006). Investors can educate themselves about the various biases they are likely to exhibit and then take steps towards avoiding it thus improving their effectiveness. Some common mistakes made by investors are selling too soon while booking profits, holding too long while facing losses, buying overpriced stocks based on market sentiments. According to Parikh, the key for an investor to succeed is to get in touch with the emotional indiscipline he has exhibited, and deal with it so that it is not



repeated. It is only when you combine sound intellect with emotional discipline that you get rational behavior (Sewell, 2005).

Taking investment decisions is the most crucial challenge faced by investors. Some personal factors such as age, education and income also contribute to an investor's decision making. On the technical side, investment decisions can be derived from models of finance such as the Capital Asset Pricing Model (CAPM). Decisions should not be reached without considering situational factors that take into account the environment and the market psychology. Effective investment returns in the financial market requires an understanding of human nature and the financial skills. Thus heuristic biases should be given importance in the process of decision-making (Li, 2004).

According to Statman (1999), markets could frustrate the greatest number of market participants and usually they do so by taking advantage of common behavioural biases such as anchoring. If the investors sticks to this behavioural bias, then the securities market will be very rigid, characterized by irrational non-informed decisions and little portfolio diversification will be exercised. The upcoming firms will also have difficulty in raising funds at the securities market since the investors does not have the initial value on which to build estimates.

#### **1.1.4 Unit Trusts**

A unit trust is an investment scheme that pools money from investors to meet a specific financial objective. The manager of the fund then invests the money in various securities such as shares or bonds, with the hope of meeting the desired objective of the fund. The Kenyan capital markets offer an array of investment products in the form of shares, bonds and unit trusts. The type of products chosen by the investor to commit his capital depends largely on his financial goals, time frame, and amount of capital available. Unit trusts have grown in acceptance and popularity in recent years as evidenced by the number of approved unit trust funds in Kenya. Unit trusts are the small investor's answer to achieving wide investment diversification without the need of large sums of money. As a market becomes sophisticated and more volatile, unit trusts become safe havens for less sophisticated, less capitalized and conservative individuals in the market place (Sahi et al., 2013).

This study on heuristic biases and how they affect investment returns will be carried out in Nairobi, Kenya. The study will target the fund managers in the eighteen registered unit trust companies under Capital Market Authority (CMA) in Kenya. The study will be conducted using representativeness, overconfidence and anchoring as the independent variables and their relationship with investment returns as dependent variable. The study will be limited to only unit trust companies.

## **1.2 Research Problem**

There is a huge psychology literature documenting that people make errors in the way that they think; they are over confident, they put too much weight on recent experience etc. this preference may create distortion. The field of behavioural finance attempts to investigate the psychological and sociological issues that influence investment decisions making process of individual and institutions (Subrahmanyam, 2007).

In the recent years, the Kenyan market has witnessed tremendous rise in the number of companies applying to be listed on the Nairobi Securities Exchange (NSE). Investors on the other hand have responded positively as it is evidenced through repeated oversubscriptions for shares. Many people have also become aware of the trading at the NSE and are participating in trading. However many investors have had to endure the pain of losses due to following the masses and being over confident.

A study by Johnson et al. (2002) on factors that influenced the speculative bubble during the 1998-2000 involved a survey of 160 private investors drawn from Aktiesprarna Association in South Sweden in December 2001 and 47 institutional investors comprising of banks, mutual funds and investment banks was conducted by use of a questionnaire. The study findings were that herd instincts, cognitive dissonance, anchoring and loss aversion contributed significantly to the speculative bubbles as well as overconfidence.

Waweru (1998) investigated the role of behavioural finance and investor psychology in investment decision making at the NSE with special reference to institutional investors. Using a sample of 23 institutional investors, their study showed that behavioural factors such as representativeness, overconfidence, anchoring, gambler's fallacy, availability bias, loss aversion, regret aversion and mental accounting affected the decisions of the institutional investors at the NSE. Researchers have proved that due to the market inefficiencies, the standard finance models employed by market practitioners have failed to account for the market anomalies. This research paper will try to fill this gap by determining the effects of heuristic biases on investment returns by unit trust companies in Kenya. Therefore the researcher sought to answer the question how does heuristic biases affect investment returns by unit trusts in Kenya?

### **1.3 Research Objective**

The objective of this study was to determine the effect of heuristic biases on investment returns by unit trusts in Kenya.

### **1.4 Value of the Study**

The research findings of the study will help create awareness to fund manager on the heuristic biases that they must take cognizance of when making investment decisions which will in return affect their fund's investment return. The findings will assist investment managers to formulate appropriate strategies that will help to minimize the negative impact of such influence. Further, the findings will also assist them in

understanding the contribution of overconfidence, anchoring, representativeness towards their investments which will lead to a more efficient financial market.

Investors will also understand that fund managers are affected by heuristic biases which in return affect the returns from their investments. This will assist them in coming up with strategies to enable them closely monitor their investments' performance and actions of fund managers so as to ensure that these biases are eliminated.

Policy makers will also benefit immensely from this research work. They will be able to use the gaps in the literacy of the respondents to formulate appropriate education syllabus in various professional courses and also content for professional seminar. This will in turn assist the fund managers in identifying their biases and can thus come up with strategies to ensure that their effects are reduced when making investment decisions. This will lead to better financial decisions and improvement of our financial market.

The study will contribute to the general body of knowledge by adding to the existing literature in the field of finance. It will act as a reference material for future scholars and researchers who would like to advance their knowledge in behavioural finance. The researcher has highlighted areas that require further investigation at the end of the study. This will form the foundation for future scholars and researchers to formulate their research problems.

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter's purpose is to review the work that other scholars and researchers have done on heuristic biases. Theoretical and empirical reviews are done so as to guide the study. The chapter begins with a review of theories that underpin the concept of behavioural finance and other factors that affect investment returns apart from heuristic biases are discussed. The chapter then presents an empirical review of the heuristic biases that affect investment returns in unit trust companies. Finally the research gap and summary of the whole chapter is presented.

#### **2.2 Theoretical Review**

Theoretical Literature review starts by discussing the various theories that tend to shape the thinking of the societies towards particular needs and events in the near future. In this study the theories which will be looked at are, regret theory, prospect theory and modern portfolio theory as they explain well on the relation between heuristic biases and investment returns.

##### **2.2.1 Regret Theory**

Regret theory (RT) is a model of choice under uncertainty. It was developed by Loomes and Sugden (1982) and it generalizes the minimax regret approach used in decision

theory for minimizing the possible losses while maximizing the potential gain. RT is a model as the minimizing of a function of the regret vector, defined as the difference between the outcome yielded by a given choice and the best outcome that could have been achieved in that state of nature. Bell (1982) described regret as the emotion caused by comparing a given outcome or state of events with the state of a forgone choice. For instance when choosing from an unfamiliar brand and a familiar brand, a customer might consider the regret of finding that the unfamiliar brand performs more poorly than the familiar brand and thus be less likely to select the unfamiliar brand.

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

### **2.2.2 Prospect Theory**

According to Tversky and Kahneman (1979) people place much more weight on the outcomes that are perceived more certain than that are considered mere probable, a feature known as the certainty effect. People's choices are also affected by framing

effect. Framing refers to the way a problem is posed to the decision maker and their mental accounting of that problem. The Prospect Theory (PT) show how people manage risk and uncertainty. In essence, the theory explains the apparent regularity in human behaviour when assessing risk under uncertainty. That is, human beings are not consistently risk-averse; rather they are risk-averse in gains but risk-takers in losses.

The theory describes the decision processes in two stages: editing and evaluation. During editing, outcomes of a decision are ordered according to a certain heuristic. In particular, people decide which outcomes they consider equivalent, set a reference point and then consider lesser outcomes as losses and greater ones as gains. The editing phase aims to alleviate any Framing effects. It also aims to resolve isolation effects stemming from individuals' propensity to often isolate consecutive probabilities instead of treating them together. In the subsequent evaluation phase, people behave as if they would compute a value (utility), based on the potential outcomes and their respective probabilities, and then choose the alternative having a higher utility. In common with utility theory, Stephen (2011) opined that the prospect theory adopts a consequentiality approach to choice, which is to say that in making decisions people are assumed to be concerned with the likely outcomes of their actions. In particular, they evaluate possible courses of action based on the desirability and the likelihood, of each of an action's possible outcomes.

A key operation in decision making according to prospect theory is the coding of outcomes into gains and losses represents one of the most important characteristics of the



decision maker: that outcomes are perceived in terms of gains and losses relative to some reference point or the framing of the problem; or the expectations or history of the decision maker. The theory implicates that the way economic agents subjectively frame an outcome or transaction in their mind affects the utility they expect or receive.

### **2.2.3 Modern Portfolio Theory**

According to Markowitz (1959), Modern Portfolio Theory (MPT) is an investment theory based on the idea that risk-averse investors can construct portfolios to optimize or maximize expected return based on a given level of market risk, emphasizing that risk is an inherent part of higher reward. It is one of the most important and influential economic theories dealing with finance and investment. Also called 'portfolio theory' or 'portfolio management theory', MPT suggests that it is possible to construct an 'efficient frontier' of optimal portfolios, offering the maximum possible expected return for a given level of risk. It suggests that it is not enough to look at the expected risk and return of one particular stock. By investing in more than one stock, an investor can reap the benefits of diversification, particularly a reduction in the riskiness of the portfolio. MPT quantifies the benefits of diversification, also known as not putting all of your eggs in one basket.

The risk in a portfolio of diverse individual stocks will be less than the risk inherent in holding any one of the individual stocks (provided the risks of the various stocks are not directly related). Consider a portfolio that holds two risky stocks: one that pays off when it rains and another that pays off when it doesn't rain. A portfolio that contains both assets

will always pay off, regardless of whether it rains or shines. Adding one risky asset to another can reduce the overall risk of an all-weather portfolio. In other words, Markowitz (1959) showed that investment is not just about picking stocks, but about choosing the right combination of stocks among which to distribute one's nest egg.

## **2.3 Determinants of Investment Returns**

Other factors which affect investment returns may include the industry, characteristics of securities, level of education.

### **2.3.1 Industry**

Trading returns for a firm depends on which industry the particular firm belongs. Investors tend to favour some industries over others which could be brought about by the popularity of the industry, prestige, technological advancement and global recognition, thus even stocks from a profitable firm would not trade well if the industry it is operation from is not one of the investors preferred industry (Belsky & Gilovich, 1999).

### **2.3.2 Characteristics of Securities**

According to Kumar (2004), stock-specific characteristics explain a significant portion of the variation in stock trading volume. Features such as the average price, size, covariance of returns, its institutional ownership and whether or not options trade is permitted on this stock all determine how a security is received in the market by investors since the sole aim of investors is to make maximum gains.

### **2.3.3 Level of Education**

Chandra & Sharma (2010) argued that while a small impact of holding a business degree on investment choices as suggesting that while high educational attainment enhances performance, expertise in the area of business does not. The weak negative relationship of years of experience on return may reflect career concerns with less experienced investors feeling the need to work harder than those with more experience. Personal judgment in making investment decisions is found to be solely determined by years of experience as an investor. The positive coefficient on this variable is consistent with expectations: more experienced investors use more personal judgment in making decisions.

### **2.3.4 Market Information**

Normally, changes in market information, fundamentals of the underlying stock and stock price can cause over/under-reaction to the price change. These changes are empirically proved to have the high influence on decision-making behavior of investors. Researchers convince that over-reaction or under-reaction to news may result in different trading strategies by investors and hence influence their investment decisions (Li, 2004).

## **2.4 Empirical Studies**

This section covers the empirical evidence of the study and related evidence. It looks at both the global and local studies which have been carried out and are related to this study.

Leung and Tsang (2011) did a study on anchoring and loss aversion in the housing market and the implications on price dynamics was carried out in Hong Kong. They used housing transaction data provided by the Economic Property Research Center (EPRC) as their main source of data. The data set covered most of the housing transactions from 1992 to 2006 that contained many aspects of each transaction, including prices, gross and net area, address, floor, age, number of bedrooms and living rooms. 73,860 observations were the benchmark sample. They found out that Price dispersion and volume are procyclical (as positively correlated with the average house price). They observed that when the housing market was in a boom, a larger number of transactions and more diverse prices prevailed. That is, for two housing units with similar characteristics, they found them to have more diverse prices during the boom time if anchoring decreases over time. Using a sample of repeated sales, they show that both anchoring and loss aversion are present in the Hong Kong housing market.

Ton (2011) analyzed the tendency of investors to realize gains too early and the reluctance to liquidate losing positions. The analysis was based on the complete transaction data of the Estonian stock market. The study found the presence of the disposition effect (loss aversion) on the market as having a profound impact on the investment decision making by stock market investors thus reinforcing the position that behavioral finance plays a significant role on the stock market.

Stephen (2011) tested the argument that stock market investors relied on heuristics or rule of the thumb in making their investment decisions by focusing on a simple heuristic whereby momentum traders are attracted to buying stocks that have recently doubled in price in anticipation of further gains. It was established that investors who avoid relying on this simple heuristic were likely to perform as expected, on average similar to the overall market.

Aduda et al. (2012) conducted their study on the behaviour and financial performance of individual investors in the trading shares of companies listed at the NSE with the objective of finding out how individual investors make their investment decisions. They found out that most investors relied on advice from friends and colleagues before deciding on which stock to purchase, popular opinion about the market and from recent trend in share price movements. These indicated existence of herding behaviour in the NSE.

Ngode (2013) in a study to determine the effect of behavioral biases on the mutual fund choices by investors, 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 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.

Makhandia (2013) studied the relationship between financial knowledge and the personal financial practices of the youth in Kenya. After studying the youth who had successfully trained and graduated under the Financial Knowledge for African training program, she found out that financial knowledge had a limited effect on the savings and investment practices of the individuals as it only increased the individual's understanding of the concept of risk.

Sahi *et al* (2013) did a study to establish the beliefs and attitudes of the individual investors with regard to financial investment decision making, with particular reference to the investor biases, 30 exploratory semi-structured interviews were conducted to identify and describe the underlying thoughts and feelings that affect the individual investment decision-making behavior. The study established that stock market investors have numerous beliefs and preferences that bias their financial investment decisions.

Shikuku (2014) found out that individual investment decisions were influenced by several biases. This was in her study of the effect of behavioural factors on individual

investor choices at the NSE. A sample of 63 individual investors was chosen using random sampling technique to represent all the individual investors in the country.

Athur (2014) studied the effects of behavioural biases on investment decisions of individual investors in Kenya. Individual investor decisions were influenced several behavioural biases. From a sample of 30 respondents drawn from individual investors in Kenya, he found out that investors showed that their decisions are influenced by the behavioural factors as opposed to being rational. The factors that were most prevalent among individual investors manifested in the form of representativeness bias, leading to individual investors past history influencing their present investment decisions.

Murithi (2014) did a study on the effect of anchoring on investment decision making by individual investors in Kenya by focusing on individual investors selected from 22 brokerage firms which had been licensed by the CMA. The sample was selected by simple random method so as to give all the respondents an equal chance of being selected. One brokerage firm was randomly picked and the overall sample size of 120 respondents was selected from the target population. The study found out that that behavioral bias had played a significant role in the losses suffered by both the young and experienced investors.

Vieto *et al* (2014) carried out a study to investigate investors buying, selling or maintaining stock decisions, 20 investors in two different markets were studied. One group traded first in a market with prices increasing steadily and after in a market with

high volatility, and the other group traded first in the market with high volatility. This confirmed investors' brain mappings when making decisions on which stocks to buy, sell or hold. These results clearly show that investors use different reasoning strategies to make financial decisions depending on their trading experiences.

Kisaka (2015) studied the effect of behavioural finance factors on stock investment decisions in Kenya. His target population was the entire active stock market investors. His sample frame constituted all CDS account holders of the 3 stock brokerage firms with operations within Machakos County. 60 respondents consisting of 20 from each stock brokerage firm were randomly sampled to represent the interests of the rest. The study concludes that stock market investment decisions are influenced by behavioral biases of individual stock market investors. It further established that certain-return bias, loss aversion, regret aversion and random walk framing had an effect on the decisions made by the investors on the NSE.

## **2.5 Summary of Literature Review**

The objective of this chapter was review studies that have been earlier conducted that relate to this research proposal. This chapter focused on RT, PT, and MPT as the foundation for the field of behavioural finance. The focus is also on the way in which heuristic biases identified in this chapter influence decision making of investors.



The literature reviewed on different researchers and how they have approached this idea shows that human behavior influences the financial decisions that people make. However, it is evident that most of the studies were done on the individual investor and his or her decision making. Institution investors also do play a major role in our financial markets. From the literature reviewed, very little research has been carried out to establish the effect of behavioral finance in their investment returns. This study tries to fill this gap by studying the effects of representativeness, anchoring and overconfidence on investment returns by unit trusts in Kenya.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter has focused on the methodology that was used to collect data and the research design. It has also discussed the population and sampling design, sample size, sampling technique, data collection methods and data analysis methods. This study involved fund managers from the unit trusts in Kenya. The aim of this research was to find out the effect of heuristic biases on investment returns of unit trusts in Kenya.

#### **3.2 Research Design**

Research design is the plan and structure of investigation so conceived as to obtain answers to research questions. The plan is the overall scheme or program of the research. According to Cooper & Schinder (2005), there are many definitions of research design but no one definition impacts the full range of the important aspects.

This study used descriptive design. This is because it was aimed at describing the characteristics of the variables of interest. According to Mugenda and Mugenda (1999), descriptive design is a process of collecting data in order to answer questions concerning the status of the subjects in the study. This type of research attempts to describe things such as possible behavior, attitudes, values and characteristics. The design was appropriate for this study because it ensured in-depth analysis and description of the various phenomena under investigation and it also established how the decision making

framework and behavior of investors in reality is consistent with the existing theories of finance.

### **3.3 Population of the Study**

Mugenda and Mugenda (2003) define the population as that population which the researchers want to generalize the results of the finding. For this study, the population was the 56 unit trusts funds managed by the eighteen unit trusts companies registered in Kenya (CMA, 2014).

### **3.4 Sample**

The sampling plan describes the sampling unit, sampling frame, sampling procedures and the sample size for the study. The sampling frame describes the list of all population units from which the sample is selected (Cooper & Schindler, 2005). Choice of the sample size is regulated by the level of certainty of the collected data to be representative of the total population, the accuracy required as the basis for the estimates made for the sample, the type of analysis that will be used as many statistical techniques have a minimum threshold of data cases for every variable and the size of the total population from which the sample will be drawn.

This study used the census survey technique where all the 56 unit trust funds managed by the eighteen CMA registered unit trusts companies in Kenya were included in the study.

The research collected data from all the 56 fund managers who formed the required respondents for the study.

### **3.5 Data Collection**

Primary data was collected using a standard questionnaire with closed ended questions. Questionnaires was appropriate for this study since they collect information that is not directly observable as they inquire about feelings, motivations, attitudes, accomplishments as well as experiences of individuals. The questionnaires were administered to capture the important information about the population. Questionnaires have the added advantage of being less costly and using less time as instruments of data collection (Mugenda & Mugenda, 1999).

The fund managers were given the questionnaires to fill. The questionnaire enquired on the respondent's background information and the other questions aimed at collecting data that assisted the research achieve its objective. Thus, it consisted of questions that provided information on the unit return which was used to measure investment returns of unit trusts It will also sort to determine if the fund managers were quick to detect patterns in data (measure of representativeness), the activity level of the portfolios (measure of over confidence) and post information on earnings drift (measure of anchoring).

A 5-point likert scale was used to ask the respondents to indicate the extent of their agreement with the effects of heuristic biases on investment returns. The 5- points in the scale are respectively from 1 to 5: strongly disagree, disagree, neutral, agree and strongly

agree. The researcher also collected data on the annual return of the unit trusts funds for a period of five years.

### **3.6 Data Analysis**

Data analysis involves the organisation, summarization and interpretation of research data using qualitative statistical tools. Data analysis involves reducing accumulated data to manageable size developing summaries looking for patterns and applying statistical techniques. Before processing the responses, the completed questionnaires were edited for completeness and consistency. All of them had been completely and correctly filled. The study generated quantitative data which was coded and entered into Statistical Packages for Social Scientists (SPSS) and analyzed using descriptive statistics.

The collected data was analyzed using descriptive and inferential statistics. Descriptive statistics involves use of absolute and relative (percentages) frequencies, measures of central tendency and dispersion (mean and standard deviation respectively). Quantitative data was presented in tables and explanation in prose. The inferential statistics involved analysis using correlation and regression model so as to compare the relationship between the variables. The analysis will be conducted using SPSS Version 20.

Dependent variable is the variable measured, predicted or monitored and is expected to be affected by manipulation of an independent variable. It attempts to indicate the total influence arising from the effects of the independent variable and varies as a function of

the independent variable. In this study the investment returns is the dependent variable (Y).

Heuristic biases are the independent variables denoted by (X) in the study, it is the variable that is manipulated by the researcher in order to determine its effect on another variable. To achieve the study objectives, the following regression equation was used;

$$Y_1 = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \epsilon$$

Where,

Y= Investment Returns

X<sub>1</sub>= Representativeness

X<sub>2</sub>= Overconfidence

X<sub>3</sub>= Anchoring

β<sub>0</sub>= Constant

β<sub>1</sub>, β<sub>2</sub>, β<sub>3</sub>= Regression coefficients

ε = error term

Regression analysis was done using statistics software, SPSS. The β coefficients from the equation above represent the strength and direction of the relationship between the independent and dependent variables.

## **CHAPTER FOUR**

### **DATA ANALYSIS, RESULTS AND DISCUSSION**

#### **4.1 Introduction**

The objective of this study was to determine the effect of heuristic biases on investment returns of unit trusts companies in Kenya. This chapter will deal with the statistical analysis of the research findings of the study. SPSS was used to analyze the data. Descriptive statistics and regression analysis were used to summarize the results of this study and presented in tabular forms.

This study targeted all the 18 unit trust companies that were registered in Kenya by CMA as at 30<sup>th</sup> June 2014, to collect data with regard to the effect of heuristic biases on investment returns of unit trust companies. Questionnaires that were completely and correctly filled were collected from 11 unit trust companies of the 18. 3 of the unit trust companies has stopped operations and their various funds and clients transferred to other operational unit trust companies like Old Mutual Unit Trust Scheme. This makes a response rate of 76%. According to Mugenda and Mugenda (1999), a 50% response rate is adequate, 60% good and above 70% very good. From this therefore, the response rate in this study of 76% is very good.

## **4.2 Descriptive Analysis**

Descriptive statistics are numbers that are used to summarize and describe data. The word data refers to the information that has been collected from an experiment, a survey, a historical record. Descriptive statistics are used to describe the basic features of the data in a study. They provide simple summaries about the sample and the measures. Together with simple graphics analysis, they form the basis of virtually every quantitative analysis of data which includes the mean, standard deviation, percentages and frequency distribution. This study analysed the data collected and tabulated the mean, frequency, percentage and standard deviation of the independent variables (representativeness, overconfidence and anchoring).

### **4.2.1 Representativeness**

Representativeness was measured by the ability of the fund managers to quickly detect patterns in past data. Questions in section B were asked to determine this and scored in range of 1 to 5, with one being great extend of disagreement and 5 great extend of agreement. The results indicated that fund managers depicted representativeness and most of them we influenced by past performance of securities in making their investment decisions which consequently affected the unit trust fund returns. Some of them consented to having relied so heavily on the past performance and patterns as opposed to the quantitative evaluation in their investment decisions. The results of the data collected are shown in Table 4.1



**Table 4.1 Representativeness**

Range	Frequency	Percentage
0 – 20	0	0%
21-40	2	18.2%
41-60	2	18.2%
61-80	4	36.4%
81-100	3	27.2%
Total number of unit trusts	11 unit trusts	100%
Arithmetic Mean	64.17%	
Standard Deviation	16.70%	
Lowest Score	35.4%	
Highest Score	88%	

*Source: Research Data*

#### **4.2.2 Overconfidence**

Overconfidence was measured by the fund managers' belief that their skills and knowledge of the stock markets would help them to outperform the market. The researcher asked questions in section C to assist in determining the level of confidence of the fund managers. This was also scored in range of 1 to 5, with one being great extend of disagreement and 5 great extend of agreement. The results shown in Table 4.2 indicate that most fund managers are confident when making investment decisions.

**Table 4.2 Overconfidence**

Range	Frequency	Percentage
0 – 20	0	0%
21-40	1	9.1%
41-60	7	63.6%
61-80	3	27.3%
81-100	0	0%
Total number of unit trusts	11 unit trusts	100%
Arithmetic Mean	55.57%	
Standard Deviation	11.82%	
Lowest Score	34.8%	
Highest Score	73.9%	

*Source: Research Data*

### **4.2.3 Anchoring**

Overconfidence was measured by how much the fund managers' held on to investments because selling them would be painful due to the loss incurred. Questions in section C were asked to determine how long the fund managers stuck to wrong decisions and how often they changed their opinion when they get views that conflict with theirs. The score ranged from 1 to 5, with one being great extend of disagreement and 5 great extend of agreement. The results are shown in Table 4.3

**Table 4.3 Anchoring**

Range	Frequency	Percentage
0 – 20	0	0%
21-40	0	0%
41-60	10	90.9%
61-80	1	9.1%
81-100	0	0%
Total number of unit trusts	11 unit trusts	100%
Arithmetic Mean	50.78%	
Standard Deviation	4.99%	
Lowest Score	42.9%	
Highest Score	61.9%	

*Source: Research Data*

#### **4.2.4 Investment Return**

The investment return was determined by the performance of the various funds in each unit trust company over a period of 5 years. There were some funds that were new and had not operated for a period of 5 years thus the researcher used the arithmetic mean for the fund performance. These are indicated in Table 4.4

**Table 4.4 Investment Returns**

Range	Frequency	Percentage
0 – 5.5	0	0%
5.6-10	4	36.4%
10.1-15.5	7	63.6%
15.6-20	0	0%
Total number of unit trusts	11 unit trusts	100%
Arithmetic Mean	11.22%	
Standard Deviation	2.07%	
Lowest Return	8.66%	
Highest Return	15.51%	

*Source: Research Data*

### **4.3 Regression Analysis**

The regression equation for the estimation for unit trust return based on representativeness ( $X_1$ ), overconfidence ( $X_2$ ) and anchoring ( $X_3$ ) was established to be;

$$\hat{Y} = - 0.329(X_1) - 0.058(X_2) + 0.331(X_3) + 13.714$$

From the above equation, if all the independent variables were zero then the unit trust return will be expected to be 13.714%. All factors held constant, representativeness reduced the investment returns in unit trusts at the rate of 0.329 while overconfidence at the rate of 0.058. Anchoring had a positive rate of 0.331 on the investment returns of unit

trusts At 0.05% level of significance and 95% level of confidence, representativeness had a 0.128 level of significance; overconfidence 0.835 level of significance and anchoring 0.619 level of significance as indicated in the below table 4.6.

**Table 4.5: Coefficient of determination**

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	13.714	6.398		2.144	.069
	Representativeness	-.329	.191	-.665	-1.724	.128
	Overconfidence	-.058	.268	-.076	-.216	.835
	Anchoring	.331	.638	.168	.520	.619

**Table 4.6: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.652 <sup>a</sup>	.425	.179	1.96590

a. Predictors: (Constant), representativeness, overconfidence and anchoring

From the above results, 42.5% of the unit trust returns can be explained by the independent variables.

**Table 4.7: ANOVA Results**

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.019	3	6.673	1.727	.248 <sup>b</sup>
	Residual	27.053	7	3.865		
	Total	47.072	10			

a. Dependent Variable: Return ( %)

b. Predictors: (Constant), Anchoring, Overconfidence, Representativeness

The significance value is 0.248 which is more than 0.05 thus the model is statistically insignificant in predicting how representativeness, overconfidence and anchoring affect unit trust returns.

#### **4.4 Correlation Analysis**

Pearson correlation (r) was used to measure the strength of the association between the variables under study thus establishing the strength and direction of the linear relationship between the variables. It ranges between -1 and +1 quantifying the direction and strength

of the linear association between the two variables. The correlation between two variables can be positive which means that higher levels of one variable are associated with higher levels of the other. It can also be negative meaning that higher levels of one variable are associated with lower levels of the other. The sign of the correlation coefficient indicates the direction of the association. The magnitude of the correlation coefficient indicates the strength of the association. A correlation of  $r = 0.9$  suggests a strong, positive association between two variables, whereas a correlation of  $r = -0.2$  suggest a weak, negative association. A correlation close to zero suggests no linear association between two continuous variables.

From the Pearson correlation matrix in table 4.5, there is a strong positive correlation between representativeness and the investment returns in unit trusts ( $r = 0.631$ ). There was also a high correlation between overconfidence and investment returns in unit trusts ( $r = 0.422$ ) and a weak correlation between anchoring and unit trust return ( $r = 0.157$ ) established. The correlation between the independent variables representativeness and overconfidence is also relatively strong and positive ( $r = 0.538$ ), representativeness and anchoring ( $r = 0.462$ ) and a weak positive correlation between anchoring and overconfidence ( $r = 0.246$ ). These statistically significant correlations suggest that representativeness and anchoring influence investment returns of unit trusts. However, investment returns in unit trusts were not significantly correlated to anchoring.

**Table 4.8: Pearson Correlation Matrix**

	Representativeness	Overconfidence	Anchoring	Unit Trust Return
Representativeness	1	0.538	0.462	0.631
Overconfidence	0.538	1	0.246	0.422
Anchoring	0.462	0.246	1	0.157
Unit Trust Return	0.631	0.422	0.157	1

#### **4.5 Interpretation of Findings and Discussions**

The objective of the study was to determine the effect of heuristic biases (representativeness, overconfidence and anchoring) on unit trust. The respondents were asked questions to establish how representativeness, overconfidence and anchoring influenced their investment decisions. Major findings showed that investment returns in unit trusts were significantly correlated to representativeness bias ( $r = 0.634$ ) and overconfidence ( $r = 0.422$ ). These statistically significant correlations suggest that these dimensions of heuristic biases influence unit trusts return. However, investment returns in unit trusts were not significantly related to anchoring bias ( $r = 0.157$ ).

The study established a strong positive correlation between representativeness and overconfidence ( $r = 0.538$ ) and representativeness and anchoring ( $r = 0.462$ ) with weak



positive correlation between anchoring and overconfidence ( $r = 0.246$ ). The study established that representative is the best predictor factor for unit trust return with  $R^2 = 0.399$  and standard error of 1.77346. It also follows that the multiple variables of representativeness, overconfidence, anchoring are second best predictors of unit trust return

The regression equation,  $\hat{Y} = -0.329(X_1) - 0.058(X_2) + 0.331(X_3) + 13.714$  was also established and this indicate the rate of change as to how each independent variable affects the dependent variable. With the non existence of heuristic biases, the investment returns in unit trusts would be 13.714%. Representativeness affect the investment returns in unit trusts by -0.329, overconfidence -0.058 and anchoring 0.331. At 0.05% level of significance and 95% level of confidence, representativeness had a 0.128 level of significance; overconfidence 0.835 level of significance and anchoring at 0.619 level of significance The statistical models from the data analysis shows that 42.5% of the variance in unit trusts returns is explained by the regression model ( $R^2 = 0.425$ ) and that 17.9% of the variance in unit trusts returns is explained by the regression model derived from the sample population (adjusted  $R^2 = 0.179$ ).

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.1 Introduction**

This chapter summarizes the results of the analysis and conclusions drawn from the findings. Policy recommendations have also been suggested to the relevant parties for consideration in decision making. The chapter has further highlighted the limitations encountered during the study and suggested areas for further research.

#### **5.2 Summary of Findings**

The purpose of this study was to establish the effects of heuristic biases on investment returns of unit trust companies in Kenya. Behavioral finance, which seeks to supplement the standard theories of finance by introducing behavioral aspects to the decision-making process, provided the theoretical framework for the study. From the analysis, it was evident that heuristic biases affect the investment returns of unit trust companies in Kenya.

Most of the unit trusts funds in Kenya scored 61% and above on representativeness. 36.4% had between 61% and 80% while 27.2% scored 81% and above. Representativeness also had the correlation coefficient on investment returns in unit trusts of 0.631.

Most fund managers' classified information based on past experiences and classifications thus perceived an event to be a representative of a past happening. The study established that this the best predictor of investment returns of unit trusts.

This was depicted by a correlation efficient of 0.422 which suggests that fund managers who are overconfident in their investment decisions. Most of the unit trusts funds had a score of between 41 to 60 and frequency of 7 which is a percentage of 63.6%. Only one fund scored between 21 and 40, a percentage of 9.1%. From the statistics it is very clear that almost all the fund managers were confident of their skills and knowledge thus believing that they could outperform the market. This can be presumed to be because of the knowledge they posses and experience earned over the years. This was also depicted by the fact that they agreed to be seductive when they have special information. The study established that this too was a predictor of investment returns of unit trusts.

The study found that 90.9% of the unit trust fund manages scored between 41 and 60 with no score in the ranges 0 to 20, 21 to 40 and 81 to 100. Anchoring also had a low correlation coefficient with unit trust returns of 0.157.

Most of the fund managers' would not hold investments because selling them would be painful as a result of the incurred loss. They were willing to dispose them off thus not holding on to wrong investment decisions for too long.

Most of the unit trusts registered good performance of between 10.1% to 15.5%, 63.6% with none having a return below 5.5% or above 15.6%. Investment return of unit trust had a high correlation with representativeness ( $r = 0.631$ ) and overconfidence ( $r = 0.422$ ) but a very weak correlation with anchoring ( $r = 0.157$ ).

### **5.3 Conclusion**

From the analysis of the collected data, the study concludes that heuristic biases have an influence in the decisions of unit trust companies which in effect affect the investment returns of the unit trusts ( $R^2 = 42.5\%$ ). The biases that were most prevalent among the unit trust companies manifested in the form of representativeness bias, leading to the past history influencing their present investment decisions. Most fund managers were attracted by previous profits generated by investment portfolios as they expected the future profits to be a representative of the past profits.

The study also concludes that overconfidence affects investment decisions in unit trusts companies. This can be inferred from the fund managers' belief that overconfidence makes them undervalue risk and over estimate their ability to control events. Some of them even admitted to having made a wrong decision as a result of being over confident. Overconfidence of the fund managers can be attributed to strong belief in their own knowledge and skills. With special experience and information available to them, fund managers believed that they have an investment edge and could thus outperform the market. This can result in underestimation of bad performance thus causing poor returns for the company. The findings of this study are consistent with previous studies whose

findings also indicated that fund managers suffer from cognitive and emotional biases. Arthur (2014) found that investors' behaviour was influenced by several behavioural biases.

#### **5.4 Recommendations**

From the analysis, it is evident that heuristic biases have effect on investment returns of unit trust companies. Fund managers should know the heuristic biases that affect them and come up with strategies to avoid them. This will help reduce the market anomalies.

Investors should also be cognizance of the fact that fund managers are not immune from heuristic biases while making investment decisions which in effect affect their investment returns. They should closely monitor their investments' performance and actions of fund managers and this may reduce the effect of heuristic biases on fund managers as they will be aware that their actions are being monitored.

Unit trust companies can also come up with regulatory framework to guide and control their decision making. This will help to eliminate fund managers' heuristic biases while making investment decisions and closely monitor the actions of unit trust to ensure investors' interests are well protected.

## **5.5 Limitations of the Study**

This study, just like any other, encountered some limitations. Some unit trust companies hesitated before respond to the questionnaires. This could have been caused by confidentially issues or even fears that the researcher may be getting information for a competitor.

Some of the unit trust companies, like Amana Unit Trust Fund Scheme, were new in operation and were still compared to unit trust companies like Old Mutual Unit Trust which had operated for several years and had much more experience in operations and investment decisions.

There was limited time for conduction of the study. Questionnaires to some unit trust companies were not considered in the study as they were taking too long to fill up the questionnaires.

Getting information from some companies was a challenge too and had to be explained to because they perceived themselves to be professional and thus rational. This is return made them very hesitate in giving information on their behavior that could indicate otherwise.

Due to resource constraints, all the behavioural biases could not have been investigated in this study. The researcher only studied Representativeness, Overconfidence and Anchoring.

## **5.6 Suggestions for Further Research**

Researchers can contribute further to this study by undertaking a more detailed and comprehensive study which is not constrained by time so as to improve on the quality of this study and its finding.

Further research with sufficient resources should be done on the remaining heuristic biases (aversion to ambiguity and innumeracy). This will assist in establishing the effects of the biases on investment returns of unit trusts.

It is also important for research to be carried out on the effect of behavioural finance on other institution investors. Most of research that has been carried out in this area of study has heavily dwelt on the individual investor.

Researcher could also sign a non disclosure agreement with the unit trust companies before conducting their research. This will make the fund managers more comfortable and free giving more accurate information.

This study could also be carried out with a different methodology to establish if the findings will be consistent.

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# APPENDICES

## APPENDIX 1

### QUESTIONNAIRE

This research is meant for academic purpose. You are kindly requested to provide answers to these questions as honestly and precisely as possible. Responses to these questions will be treated with confidentiality and used for purpose of this study only.

**Questionnaire Number** .....

**Date** .....

**Name of the Institution** .....

**Type of unit trust** .....

Please tick where appropriate.

#### SECTION A: DEMOGRAPHIC

1. What is your age bracket?

20-25            ( )            26-30            ( )

31-35            ( )            36-40            ( )

Over 40            ( )

2. How long have you been in this institution?

Below 1 years ( )                      1-3 years ( )

4-6 years ( )                              7-9 years ( )

10 years and above ( )

**SECTION B: REPRESENTATIVENESS**

3. In a scale of 1 to 5, where 1 is a great extent of disagreement and 5 is great extent of agreement indicate the extent to which you agree to the following information by ticking appropriately.

Description		Response				
		1	2	3	4	5
a	You classify information based on past experiences and classifications					
b	Previous profits generated from similar investments by the company makes it very attractive for you to invest in it					

c	You categorize events as being representative of a well-known past happening					
d	You associate two events and deem them identical when in reality they may not be similar in any respect					
e	On selection of investment options, I base decision on past performance of those investments.					

**SECTION C: OVERCONFIDENCE**

4. In a scale of 1 to 5, where 1 is a great extent of disagreement and 5 is great extent of agreement indicate the extent to which you agree to the following information by ticking appropriately

Description	Response				
	1	2	3	4	5
a Overconfidence makes you to overestimate your knowledge					
b Overconfidence makes you undervalue risks and overestimate your ability to					

	control events					
c	You believe that your skills and knowledge of stock market can help you to outperform the market.					
d	Overconfidence is seductive when people have special information					

5. Has being overconfident made you make a wrong investment decision?

Yes ( )                      No ( )

**SECTION D: ANCHORING**

6. In a scale of 1 to 5, where 1 is a great extent of disagreement and 5 is great extent of agreement indicate the extent to which you agree to the following information by ticking appropriately.

Description	Response				
	1	2	3	4	5
a    You fix a target price for buying or selling in advance					



b	You intend to sell the investments immediately it goes back to the acquisition price					
C	You hold to investments because selling them would be painful because you would incur loss					

7. If you hear views from a famous analyst that conflicts with your opinion about a stock, do you change your opinion immediately?

Yes ( )                      No ( )

8. Do you stick with a wrong investment decision for too long?

Yes ( )                      No ( )

**SECTION E: INVESTMENT RETURNS**

9. Kindly indicate the rate of return for your unit trust in the last 5 years

<b>Year</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Rate of return					

**Thank you for your participation.**

**\*The End\***

## **APPENDIX II**

### **LIST OF UNIT TRUSTS**

1. African Alliance Kenya Trust Unit 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. Standard Investment Trust Fund
10. Dyer & Blair Unit Trust Scheme
11. Genghis Unit Trust Fund

12. Amana Unit Trust Funds Scheme

13. Diaspora Unit Trust Funds Scheme

14. First Ethical Opportunities Fund

15. CIC Unit Trust Fund

16. Madison Asset Unit Trust Fund

17. UAP Investments Collective Investment Scheme

18. Centum Unit Trust Umbrella Scheme

**Source: CMA, June 2014**

## APPENDIX III

### UNIT TRUSTS SCORES

Unit Trust	Funds	Representativeness - 25	Overconfidence - 23	Anchoring - 21	Return
1 CIC Unit Trust Fund	Money Market	22	19	12	10.98
	Fixed Income	17	19	8	9.84
	Balanced	15	18	14	10.82
	Equity	12	12	12	11.02
2 Zimele Unit Trust Scheme	Money Market	14	11	9	18.42
	Equity	14	11	9	8.55
3 ICEA Unit Trust Scheme	Money Market	13	12	9	8.09
	Bond	15	15	9	-2.02
	Equity	12	10	9	17.34
	Growth	16	13	9	11.24
4 Commercial Bank of Africa Unit Trust Scheme	Money Market	20	17	11	16.99
	Equity	20	16	11	9.20
5 Old Mutual Unit Trust Scheme	Money Market	19	11	10	10.90
	Equity	25	13	12	19.16
	Balanced	20	10	11	9.87
	Bond	19	10	10	5.00
	East Africa	21	12	11	7.00
6 British America Unit Trust Scheme	Equity	18	20	11	9.50
	Money Market	25	10	14	9.01
	Balance	23	10	14	8.50
7 Stanbic Unit Trust Scheme	Money Market	20	8	8	10.40
	Equity	19	10	11	13.83
	Balanced	16	18	16	5.47
	Bond	18	14	7	7.23
8 Amana Unit Trust Funds Scheme	Shilling	9	10	10	20.37
	Balanced	9	10	11	12.44
	Growth	9	11	12	15.69
	Dollar	9	10	10	11.44
	Elimu	8	9	9	13.41
	Emergency	8	8	10	14.50
	Chama	10	8	11	10.90
9 Genghis Unit Trust Fund	Money Market	22	19	10	11.48
	Equity	18	19	9	9.34
	Bond	16	18	13	10.35
	Diversified	11	12	11	11.52
	Shariah Compliant	10	11	9	10.50
10 Standard Investment Trust Fund	Equity	15	15	12	9.40
	Balance	18	15	10	10.50
	Fixed Income	20	10	10	9.05
11 African Alliance Kenya Trust Unit Scheme	Equity	9	8	11	21.22
	Managed	9	8	11	11.56
	Shilling	9	8	11	14.20
	Fixed Income	9	8	11	11.04

## APPENDIX IV

### REGRESSION LINES OF VARIABLES





