# BEHAVIOURAL FACTORS THAT INFLUENCE INDIVIDUAL INVESTMENT DECISIONS AT THE NAIROBI SECURITIES EXCHANGE

BY

AWUOR LOURRINE JULIET

D61/84121/2015

A RESEARCH PROJECT SUBMITED TO THE SCHOOL OF BUSINESS, UNIVERSITY OF NAIROBI, IN PARTIAL FULFILMENT OF REQUIREMENTS FOR THE DEGREE OF MASTER OF BUSINESS ADMINISTRATION IN FINANCE

DECEMBER, 2017

# DECLARATION

I, the undersigned, declare that this project is my original work and has not been submitted for a degree award at any other University.


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Signature                                                  Date

**Awuor Lourrine Juliet**

D61/84121/2015




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


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Signature                                                  Date

**Mr. James Mwangi Karanja,**

Lecturer,

Department of Finance and Accounting,

School of Business,

University of Nairobi

# ACKNOWLEDGEMENTS

# DEDICATION

I dedicate this paper to Victor Omondi Onyango, my indispensable friend and support system. Investments has never been your strong point, but I believe through this paper a few of those questions you keep asking regarding investors behaviour have been answered.

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# LIST OF ABBREVIATIONS AND ACRONYMS

ANOVA          -Analysis of variance

CMA           -Capital Markets Authority

EMH            -Efficient Market Hypothesis

EPS           - Earnings Per Share

GOK            - Government of Kenya

NASI           -Nairobi Securities Exchange All Share Index

NSE            -Nairobi Securities Exchange

SPSS           - Statistical Package for Social Sciences.

# ABSTRACT

The traditional theory of finance assumes that investors act rationally on the quest of wealth maximisation, and that they follow the basic tenets of risk and return in determining which ventures to spend money on. However, various authors who have examined investors' behaviour avow that heuristic driven biases and emotions cloud the investors' judgement, and often negate the rules of rational economic decision making. According to these studies, investors are in fact irrational, and are largely influenced by behavioural factors that introduce biases in their decisions. Behavioural finance is the phenomena where psychology and economics are combined in explaining the irrational decision making processes of economic agents. Psychology explores various facets of human behaviour, and explains how human behaviour deviates from traditional economic assumptions about human behaviour. Proponents of the behavioural finance ideology state that investment decisions are characterised by emotional factors such as endowment, loss aversion, regret aversion and mental accounting, herding behaviour and cognitive factors including overconfidence, gamblers fallacy, hindsight biases and over confidence. This study sought to determine the behavioural factors that influence individual investment decisions at the NSE, which was also the overriding objective of the study. Descriptive research design was used to provide insight on the research problem by describing the behavioural factors that influence individual investment decisions. A case study was used in this examination. The population for this study were the individuals who trade in the NSE. Primary data was obtained through closed and open-ended questionnaires that were self-administered. Some questionnaires were also be emailed to the respondents, depending on the agreed media with the respondent. The investors were also reached through snowballing technique and through the 24 NSE Trading Participants. Multiple regression analysis method of data analysis was adopted. Descriptive statistical measures such as the mean, mode and standard deviation were also calculated using SPSS. The findings of the study reveal that disparities in individual investment decisions are influenced mutually by prospect theory factors, heuristic driven biases and herding behaviour, while the remaining percentage is influenced by factors outside the model employed in this study. The study findings support various studies that have been conducted in the field of behavioural finance. Additionally, the study proposes other analytical models to be used other than regression analysis, such as factor analysis.

# CHAPTER ONE

# INTRODUCTION

### 1.1.1 Behavioural Finance

Kimeu, Anyango and Rotich (2016) posits that investment decisions are influenced by either the traditional or behavioral theories of finance. Investors applying traditional finance school of thought to their investment decisions must determine the intrinsic value of the securities they want to invest in. Determination of intrinsic value is geared towards establishing if the securities of interest are overvalued or undervalued. This process requires the use of valuation techniques and formulae. On the other hand, behavioral finance postulates that investors use their psychological knowledge in making investment decisions. Various rules of thumb are applied in such investment decision making processes.

Profitability in investment ventures requires more than choosing a particular stock; it goes further into continuous analysis and periodic structuring of one's investment portfolio in order to reap most from the dynamics presented by the changing investment environment. The proponents of risk and return theory of investment decisions holds that the higher the risk of an investment, the higher the associated returns expected at that level of accepted risk. Application of industry best practices, rational risk management and proper portfolio construction and management are some of the strategies one can adopt to stay afloat in the turbulent sea of investments, and even perform better than the market.

Behavioural finance is the study of the influence of psychology on decision making in finance related issues (Kimeu, Anyango and Rotich 2016). Proponents of the behavioural finance ideology state that investment decisions are characterised by emotional factors such as endowment, loss aversion, regret aversion and mental accounting, herding behaviour and cognitive factors including overconfidence, gamblers fallacy, hindsight biases and over confidence.

Jagullice (2013) defines behavioural finance as behavioural economics, and further describes it as the phenomena where psychology and economics are combined in explaining the irrational decision making processes of economic agents. Psychology explores various facets of human behaviour, and explains how human behaviour deviates from traditional economic assumptions about human behaviour.

### 1.1.2 Investment Decisions

Individual investors differ from institutional investors in terms of their investment profiles, investment horizons and the amount of money expended on an investment venture. An individual investor is one person acting on his own accord as a private entity; while institutional investors are mostly companies. They include entities such as hedge funds, insurance companies, pension funds, commercial banks, mutual funds and endowment funds.

Institutional investors have an edge over the private individuals because their investments are managed by professionals, have a large capital base and have access to a wide array of securities to invest in. Majority of individual investors are wealthy individuals with huge amounts of disposable income, such as Kenyan business mogul

Chris Kirubi. On the end of the continuum lies the average income individual who lacks current financial commitments, and as such use their savings to invest in income generating ventures, for future consumption.

Thangamani (2014) defines investment as the act of putting money into something with the expectation of returns or profits or growth in the worth of the funds employed. Funds are committed on a long term venture, with the expectation of future reward. Economists view investments as the growth in capital stock, which are the goods and services used in the production of other goods and services. This could mean increase in inventory, machinery, plant and buildings owned by the company.

On the other hand, finance practitioners view investment as spending money on financial securities and instruments such as stocks, bonds or, mortgages, money market securities. The proceeds of such investments are then applied in purchasing real estate and real assets. These two views are closely related, as an individual's savings will stream into the capital market, and used in either the economists or finance view of investment.

Investment decisions refers to the decision to invest the available capital in the wide array of investment options that are at the disposal of an individual investor. These decisions are made with various objectives in mind, and these include ensuring safety of the principal amount, high liquidity, earning higher returns and tax minimisation. Different types of investors exist in the capital markets, and they differ in their investment characteristics such as risk, liquidity and security requirements.

Conservative investors invest in low risk investments as they fear indulging in high risk ventures where the probability of losing the principal amount, let alone loss of all the returns, are very high. Such investors will invest in cash forms of investment such as mutual funds, money market securities, and certificates of deposits, treasury bills and savings accounts. Moderate investors on the other hand have a higher risk appetite as compared to conservative investors, and invest in a mix of both cash, real estate and bonds. On the extreme end of the band are the aggressive investors with a very high risk appetite. They are a often involved in the stock market trading, invest in high risk real estate business and believe that higher risk means higher returns.

Investment decisions involves the determination of which security or asset to invest in, how much to invest, when to invest and the investment period. Different investment alternatives differ in their risk and return profiles, and depending on the risk appetite of the investor, one can invest in either shares, bonds, marketable securities or other securities traded at the NSE.

### 1.1.3 Behavioural Factors and Investment Decisions

Behavioural field of finance views investors as irrational economic agents whose decisions are influenced by sentiment, emotions, fantasies, moods and feelings. Jordan and Miller (as cited by Kimeu, Anyango and Rotich 2016), puts forward the argument that investors have an emotional and personal relationship with their assets. This explains why some investors hold onto stocks even when their prices and the associated returns are falling. Behavioural finance thus seeks to explain why actual investor behaviour deviates from that expected from a rational economic agent. It thus combines cognitive and behavioural psychology with traditional finance theory.

Athur (2014) conducted a study to determine the effect of behavioural biases on investment decisions of individuals at the NSE. The study targeted 30 individuals reached through questionnaires, and the data collected analysed through descriptive statistics and multiple correlation analysis. The study revealed that investor decisions are influenced by illusion of control bias, representativeness, herd instincts, cognitive dissonance and hindsight biases. However, other behavioural factors such as self-attribution, risk aversion, over optimisms and loss aversion were shown to have no influence on individual investors' decisions.

Waruingi (2011) sought to determine the impact levels of behavioural influences on individual investor choices at the NSE. Semi structured questionnaires with both open and closed ended questions were used to collect the data. The study revealed that prospect, overconfidence, anchoring, availability bias and herding behaviour affect investment decisions at the NSE.

Kengatharan (2014) identified market, prospect, herding and heuristics as the factors that influence individual investment decisions at the Colombo Stock Exchange. His study further revealed that overconfidence has a negative impact on investment decisions, anchoring has a positive influence on investment decisions and herding has a negative influence on investment decisions. According to the study, Regret aversion, loss aversion, herding and the speed of buying and selling of securities have no impact of the performance of investments.

Mwangi (2011) found out that between the two cognitive illusions of prospect theory and heurists, heuristics seemed to influence investment decisions more. Of the heuristic driven factors, representativeness, availability and anchoring influenced investment

decisions to a large extent. Regret aversion and mental accounting were also found to influence investment decisions.

Ndungu (2012) found out that of the behavioural finance factors, market factors affected investment decisions most.

### 1.1.4 Nairobi Securities Exchange

Nairobi Securities Exchange (NSE) is the major bourse in Kenya, offering an automated forum for trading and listing of numerous securities. It was founded in 1954. Nairobi Securities Exchange is the second self-listed exchange in Africa and fifth largest market in Africa with a market capitalization of USD 20 Billion p.a. (NSE website, 2017). NSE self-listed in the year 2014, where it offered 66million shares for subscription, with a par value of KS. 4 each at an offer price of KS. 9.5 Per share. From the results of operations listed below, the company's operating incomes have been increasing at an increasing rate since 2014, except for the half year results of the year 2016 (NSE website, 2017).

The two main traded products at the NSE are equities and bonds. The NSE 20 Share Index is a price weighted Kenya Shilling index, and is calculated as an average of the top 20 best performing companies. The component companies are selected based on a weighted market performance for a one year period based on market capitalization, sector, number of shares traded, number of deals and turnover basis (NSE website, 2017).

The FTSE NSE Kenya Index Series is a composition of the FTSE NSE Kenya 25 Index and the FTSE NSE Kenya 15 Index. The indices are designed for creating index tracking funds, derivative and as a benchmark for evaluating performance. Stocks are picked and weighted to guarantee that the index can be invested in. Stocks are also vetted to assure the interested party that the indices can be traded. The indices are calculated based on real time and end-of-day price and total return methodologies, both real time and end-of-day. The companies forming the index are categorized based on the Industry Classification Benchmark, which is a worldwide standard for analysing industry sectors. The FTSE NSE Kenya 15 Index measures the performance of the shares of 15 largest companies by market capitalization at NSE. The Base Value is 100 basis (NSE website, 2017).

The FTSE NSE Kenyan Shilling Government Bond Index is conceived to measure the average performance of eligible GOK bonds with 5 differing maturity bands: one to three years, five to seven years and over ten years (NSE website, 2017). The underlying constituents are based on Kenyan Government Securities quoted on the NSE Fixed Income Securities Market Segment with maturity levels of more than one year and notional amounts above KHz 5 billion. The index is designed as a performance benchmark, and for the creation of a wide range of index tracking funds and derivatives. The index is calculated by analysing close of day market prices and total returns (NSE website, 2017).

The NSE listed companies are organized into twelve main sectors namely; Agricultural (7), Automobile and accessories (3), Investment services (1), Commercial and services (12), Banking (11), Construction and allied (5), Manufacturing and allied (10), Energy and petroleum (5), Insurance (6), Investment (5), Telecommunications and technology

(1), Real Estate Investment Trusts (REITS) (1) and Exchange Traded Fund (1). As at September 2017, the NSE had 66 companies whose shares were trading. The banking sector, which is the largest sector with 11 Banks listed on the NSE, was the basis of the study (NSE website, 2017).

NSE is regulated by the Capital Markets Authority, and is charged with the responsibility of developing a securities market in Kenya and regulating the trading activities of the listed companies. Shikuku (2014) states that as at 30 June 2014, there were 1,315,616 investors trading at the NSE. Security trading by individual investors are undertaken through trading participants, who are the equivalent of brokers in other security markets. As at October 2017, there were 24 NSE trading participants (NSE website, 2017).

## 1.2 Research Problem

The traditional theory of finance assumes that investors act rationally on the quest of wealth maximisation, and that they follow the basic tenets of risk and return in determining which ventures to spend money on. Economic theory asserts that economic agents are rational, and that they are objective in the decision making process. However, various authors who have examined investor behaviour state that heuristic driven biases and emotions cloud the investors' judgement, and often negate the rules of rational economic decision making. Investors are in fact irrational, and are largely influenced by behavioural factors that introduce biases in their decisions. The field of behavioural finance has received a lot of attention from various scholars in the recent past. Behavioural finance focuses on the social and psychological determinants of investment decision making processes by both individuals and institutions.

Iqbal and Usmani (2009) investigated the factors influencing individual investor decisions of buying securities at the Karachi Stock Exchange. They studied a population of 57000 investors accessed through the 200 brokers who deal in buying and selling at the Karachi Stock Exchange. 153 questionnaires were issued to the investors, who were selected through convenience sampling basis. The study revealed that investors evaluate the financial position of the firm and other accounting information contained in published financial statements when making investment decisions.

According to the study above, ethical, environmental and international operations considerations of a firm have no influence in this process. Recommendations from friends and co-workers are largely ignored, while recommendations from the brokers are heeded. Most investors are also self-confident and make decisions without influence from anyone. They evaluate current economic factors such as inflation and GDP, and rarely use valuation models.

Mwangi (2012) sought to establish the effect of behavioural factors on individual investment decisions at the NSE. He studied the 17 investment banks in Kenya, and issued 34 questionnaires to individual investors reached through these investment banks. The study concluded that herding, prospecting, risk aversion and anchoring influences decision making process of investors, and in fact introduces biases to this process. Additionally, investors buy stocks whose prices have fallen.

Shikuku (2014) studied the effect of behavioural factors on the choices of individual investors at the NSE. Questionnaires were issued to 63 individual investors, and further data collection supplemented through interviews. Correlational analysis and descriptive statistics were employed in data analysis. Herding, loss aversion, price changes, regret

aversion, market information, overconfidence, past stock trends and anchoring were found to greatly influence investment decisions, while mental accounting was revealed to least influence individual investors behaviour.

Islamoglu, Apan and Ayvali (2015) identified social factors such as trading frequency of the investor, media and social interaction that affect individual investors' decisions. Nagy and Obenberger (1994) (as cited by Islamoglu, Apan and Ayvali 2015) carried out a survey to determine the criteria that underlies and affect decisions of individual equity investors with sizeable holdings in 500 companies. The results of the study revealed that wealth-maximization played a critical role in investment decisions while endorsements by individual stock brokers of brokerage houses, co-workers and family members' factors were found to be less significant.

Tabassum Sultana and Pardhasaradhi (as cited by Islamoglu, Apan and Ayvali 2015) surveyed the factors that influence Indian individual equity investors in decision making and investment behaviour. Out of 40 attributes, forty two percent of the respondents stated that their investment decisions were influenced by accounting information, while thirty two percent said their influence was majorly from financial and personal needs. The remaining percentage were influenced by recommendations, company information and the image of the company.

Goodfellow et al. (2009) (as cited by Islamoglu, Apan and Ayvali 2015) studied the trading behaviour of institutional and individual investors in the Polish Stock Market from July 1996 to November 2000. The study results revealed that individual investors' decision making processes were marred with herding behaviour during market up turns

and downturns. They trusted the available information and their instincts, and used these as a basis for decision making.

Bennet et al. (2011) (as cited by Islamoglu, Apan and Ayvali 2015) conducted a study to identify the factors that influence the attitude of retail investors when investing in the stock markets. Structured questionnaires were issued to retail investors in Tamil Nadu, India. Descriptive statistics was used to analyse the data collected from the study. The study results revealed that five factors out of the twenty six studied, including media focus on the stock market, government policy, political stability and investors risk tolerance hugely affected the attitude of retail investors when investing in shares.

Islamoglu, Apan and Ayvali (2015), Nagy and Obenberger (1994), Tabassum Sultana and Pardhasaradhi (2012) and Goodfellow et al. (2009) identify media focus on the stock market, government policy, political stability, investors risk tolerance, referrals by family members and co-workers and accounting information as the factors that affect individual investors decisions.

Panicky selling by foreign investors is said to have occurred at the NSE following the announcement of the 2017 August election results, and the annulment of the 2017 elections by the Supreme Court on 1 September 2017. In line with the trading rules, NSE had to halt trading for some hours, after the price of the NSE 20 Share index fell by more than 5%. One of the local dailies reported that the NSE lost about fifty billion shillings within ten minutes of the Supreme Court's announcement. Political uncertainty during elections results in economic uncertainty, and this finally leads to an increase in an individual investors risk aversion level that translate to panicky selling.

Individual investors trade in small amounts of securities for personal gain. Shikuku (2014) states that as at 30 June 2014, there were 1,315,616 investors trading at the NSE. Despite this big number of investors, majority of the research on investment behaviour have focused on institutional investors at the expense of this big number of economic participants.

Behavioural finance has been studied by various scholars, and rich literature exists on this field. However, a most of these studies that have been conducted on the behavioural factors affecting individual investment decisions have focused on developed securities markets. Additionally, because of the mixed empirical results regarding emerging markets, further research is needed in assessing individual investment behaviour at the NSE. This research therefore seeks to bridge these gaps by addressing the question; what behavioural factors affect individual investment decisions at the Nairobi Securities Exchange?

## 1.3 Research Objective

The objective of this study is to determine the behavioural factors that influence individual investor decisions at the NSE.

## 1.4 Value of the Study

This research will contribute to the body of knowledge in the field of finance by enriching the existing literature on how behavioural factors affect individual investment decisions. Additionally, the study will contribute to the field of financial economics by exploring the relationship between investment decisions and cultural, demographic, social and behavioural factors.

Policy makers will be able to formulate better policies that remove the negative effects of the behavioural factors identified in this study, during the policy formulation process. As such, the policies they so come up with will increase investment in the Kenya market, hence resulting in growth in the overall economy.

Stockbrokers and fund managers will determine the heuristic driven biases and rules of thumb that influence individual investor decisions and preference of one form of investment over the other available investment avenues. This will assist them in educating investors on how to deal and gain leverage on these biases in order to earn higher returns.

Finally, the insights gained from this study will be invaluable to individual investors, who have for a long time been ignored by studies, despite their profiles and those of institutional investors being materially different. This research will be a reference point to scholars and researcher who want to further studies in the field of behavioural finance, as it suggest the areas for further studies.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.1 Introduction

Review of existing empirical literature on qualitative and quantitative factors affecting an individual investors decisions has been conducted to champion the study embarked on in this research project. General survey was carried out to acquaint myself with the research gaps in these studies before settling on the research topic, thereafter a more detailed literature review was done. Theories related to this study and the conceptual framework are also discussed in this section under various headlines stated below;

## 2.2 Theoretical Review

### 2.2.1 Efficient Market Hypothesis

The genesis of the efficient market hypothesis is attributed to the work of Eugene F. Fama in his paper, 'Efficient Capital Markets: A Review of Theory and Empirical Work' in 1970.

Anyumba (2010) defines an efficient market as one where many rational, profit-maximizing and active investors exist, with each participant trying to predict future market values of individual securities, and where important contemporary information is nearly costless in the market. Further, competition among the several knowledgeable participants leads to a scenario whereby, at any point in time, actual prices of separable securities already reflect the effects of information based on both past events and events which are expected to recur at a future date.

The implication is that all investment opportunities are viewed from the objective lenses of risk and return. As such, these are the primary factors investors look into in deciding what to invest in. as such depending, depending on one's risk appetite, a conservative investor will invest in cash while an aggressive one will invest in stocks and high risk real estate investments.

On the other hand, the weak form efficiency posits that current security prices reflect all past information, and as such no leverage can be obtained by analysing past financial statements. In the semi strong form of efficiency, the security prices reflect all past and present information, hence no value can be obtained by analysing past trends in dividends or current market information.

### 2.2.2 Portfolio Theory

Harry Markowitz is the father of portfolio theory, and he states that variance is a reliable measure of the level of risk engrained in portfolio investment. He further states that knowing the relationship between risk and return is not enough, and that an investor should go further and diversify his portfolio effectively. He mirrors this to the risk one is exposed to when he puts all his eggs in one basket.

He further posits that investors are risk averse, and will choose the option that offers the lower risk when faced with a portfolio of assets that earn him the same return. If the returns for two assets move in different directions, then it is possible to construct a well-diversified portfolio that will earn maximum returns at the level of accepted risk.

Modern portfolio theory sees Markowitz's approach as being too narrow in scope, and recommend that a more scientific approach be adopted to yield maximum returns. Asset

allocation decisions and security selection are these two critical steps that one needs to engage in, after understanding their risk-return profile.

### 2.2.3  Heuristic Theory

Kimeu, Anyango and Rotich (2016) define heuristics as the simple rules of thumb that people use to make decisions, especially in complex and uncertain environments characterised by inadequate requisite information. These heuristics are critical where time constraints exist. The appropriateness of this theory to the study is in understanding heuristic driven biases such as anchoring, overconfidence and availability bias that influence the decisions of individual investors at the NSE. Subash (2012) states that despite the success of these rules in some circumstances, they often introduce systematic bias to the whole investment process.

Such rules of thumbs represent strategies for decision making in a variety of circumstances, by reducing complex situations to judgemental tasks. They are developed from a series of trials and error situations, till they are refined to simple rules that can be applied to a variety of decision making environments. Everyday people are bombarded with loads and loads of news, which they need to analyse and process in order to determine their impact. As these happens numerous times in a week or a day, people tend to form a general pattern of how things work under given circumstances. This pattern will thus be applied every time the one is faced with the same situation, hence leading to the development of these rules. The NSE trades in various securities for over 65 companies, and as such the decision making rules allows for speedy decision making in complex decision environments where time limitations also exist.

### 2.2.3.1.1 Overconfidence Bias

Subash (2012) defines overconfidence as the unjustified faith in one's own cognitive abilities, predictive abilities and judgement and reasoning prowess. He further says that people think they are smarter and more knowledgeable than they actually are. Additionally, people are generally poor at estimating probabilities, and the events or occurrences that people are certain about are often less than 100% assured of happening. In short, people view of themselves is far lower than actual abilities.

Overconfidence results in people underestimating underlying risks, overestimating their knowledge and exaggerating their ability to control extraneous events. Barber and Odean (2001) found out that the most active traders often made lower returns on their investments as compared to the reserved counterparts. Barber and Odean (2001) surveyed a sample of male and female investors, and concluded that men are generally more confident as compared to women, and they often end up making lower returns by 2.5% as compared to women.

Investors overestimate the probability of success in investment decisions because they perceive themselves as experts. Athur(2014) states that overconfidence is shown in the failure to diversify ones portfolio, as an investor is too comfortable with what is familiar to them.

### 2.2.3.2    Representativeness or Anchoring Bias

Representativeness involves the determination of conditional probabilities, where one sets the degree of resemblance or similarity between a sample and a population or a model and an outcome. This bias sets in when one is gauging the probability that an

object X belongs to class Y. Further, representativeness refers to the tendency of investors to make decisions based on past experiences (Subash, 2012)**.**

Subash (2012) further attributes the long-term underperformance of most IPO's to the short-sightedness of most investors. Such investors translate good companies to good and quality stocks, hence making losses ultimately. Anchoring leads to people putting too much weight on recent experiences and the assumption that the current prices are the correct prices. Therefore, current performance is representative of future performance.

### 2.2.3.3    Cognitive Dissonance Bias

This refers to the mental conflict that an individual goes through when presented with situations that seem to challenge their beliefs or assumptions. After making a decision, an individual is likely to be faced with conflict that is more pronounced for the negative consequences of the decision as compared to the positive outcomes. Additionally, investors experience selective perception, where all contrary information is ignored. Prior commitments are also likely to be reinforced in order to rationalize past experiences, despite these being sub optimal.

When new information conflict existing beliefs and understanding, mental discomfit results. As such, investors would hold on to losing stock so that they don't experience the mental pain associated with admitting that they may have in fact made a wrong decision at the beginning. This phenomena also make investors vulnerable to information sources that affirm their current beliefs, values and ideologies, despite their sub-optimality.

### 2.2.4  Prospect Theory

According to prospect theory, investor preference goes against the traditional utility function, where investments are viewed in the light of the expected utility. This theory was developed by two German psychologists, Daniel Kahneman and Amos Tversky in 1979 in explaining investors' behaviour in situations involving risks. According to these scholars, people view choices   by evaluating the potential gains and losses from them, in relation to a particular reference point, mostly the purchase price of the investment, or the related history and expectations of the decision maker. The way people frame an issue or outcome influences the expected utility.

Prospect theory posit that individuals are more stressed about losses, as compared to the level of happiness derived from a gain of an equal amount. People put more effort in avoiding losses as compared to making gains, and as such will hold on to losing stocks hoping they will increase in value. As such, an individual's decision will be anchored on how much losses or gains they have made from these investments.

### 2.2.5  Regret Aversion Theory

This refers to the emotional reaction of people after making a mistake in decisions. Feelings of regret abound after making poor decisions, especially when the alternative choices would have led to better outcomes. Regret aversion exists because people hate to admit their mistakes. As such investors may avoid making decisions because they might turn out to be sub-optimal.

When faced with the decision to sell a stock, an investor will be emotionally glued to the price at which they purchased the stock, and may end up holding on to it in order to avoid the regret of having made a wrong investment decision. This regret is also felt when one had desired to buy a stock, but eventually pulled out, and now the stock has risen in value. In order to avoid this regret, some investors have been known to resolve to noise trading, where they buy or sell what and when everyone else is buying or selling.

The implication is that behaviourally motivated investors will sell their past winners in order to reduce the associated regret that would amount from selling the losing stocks. Rational investors would on the other hand sell the stocks that have been losing value.

### 2.2.6 Theory of Herding

Herd instincts refers to the natural desire of people to be part of a group, hence herd together. It is the tendency of people to mimic the group behavior when individually a different course of action would have been taken. In situations of uncertainty, this behavior is magnified because people want to feel as part of a group rather than independent analysts, hence introducing bias in decision making. As a result, small information can cause a significant change in people's behavior, and not necessarily in the right direction.

The implication of this theory is that investors' decisions will be influenced by what everyone else is doing in the market and not by objective factors. People experience psychological pressure towards group action because of peer pressure. The main reason why herding exist is because people are concerned about how other people will view

their investment decisions. Additionally, people think that there is no way a large group could be wrong, hence trying to benefit from what the group knows.

Athur (2014) theorizes that the life of investment decision makers has become more complex as a result of the large mass of information available in the market, and the breathtakingly high speed at which this information spreads in the market. Additionally, one investor's behavior will most definitely affect the decisions of other investors. He further states that even though operating in a vacuum in discouraged, investors should employ more professional judgment and skepticism when evaluating the mass action of other investors in the market.

### 2.2.7  Mental Accounting

Thaler (as cited by Athur, 2014) defines mental accounting as the cognitive process individuals use to arrange, evaluate and keep track of their finances into non-transferrable quotas. The result is people dividing their finances into separate accounts based on subjective factors and assigning different purposes to each account. Some assets are designated as current wealth available for consumption and others as future incomes that are not immediately available.

Investors show reluctance to sell the loss making investments as they fear realizing the related losses. They also collate the sale of losers so that regret feeling associated with the sale is restricted to one period. The sale of winners is also staggered over time in order to prolong the favorable feeling. Finally, investors prefer stocks that pay high dividends because they love spending the dividend income. As such, mental accounting results in investors dividing their investment in safe and risky investments,

which are aimed at respectively cushioning against risk and getting rich.

## 2.3 Empirical Evidence

Iqbal and Usmani (2009) investigated the factors influencing individual investor decisions of buying securities at the Karachi Stock Exchange. The study revealed that recommendations from friends and co-workers are largely ignored, while recommendations from the brokers are heeded. Most investors are also self-confident and make decisions without influence from anyone. They evaluate current economic factors such as inflation and GDP, and rarely use valuation models.

Barber and Odean (2005) studied the effect of new information and attention on individual and institutional buying behaviors. The study results revealed that individual investors pay undue attention to stocks that are mentioned in the news, stock with one day returns that are extreme and stock with abnormal high trading volumes. The decision to buy is based on how much attention a stock is receiving, while less effort is exerted when selling stocks, because individual investors offload small portions of their investments. Additionally, the duo state that investors limit their scope of searching for stocks to invest in, to stocks that have been receiving attention lately.

Jagongo and Mutswenje (2014) identified expected earnings, past stock performance, state of the economy, expected dividends, the status of the company in the industry and strength of the income and balance sheet statements. Individual risk profiles, existence of an organized securities exchange market, noise in the market, financial stability and expected returns were also identified as key considerations in making

investment decisions.

Yanga (2010) undertook a study to determine whether the level of financial leverage affect the decision to invest and how much to invest in the NSE listed companies. Linear regression was used to conduct the study. The results of the study were that a weak relationship existed between the level of leverage and the amount of money invested. The implication is that the level of leverage has no effect on the investment decision.

Asingwa (2013) studied the effect of corporate taxes on investment decision of NSE listed companies. Descriptive research, ANOVA t-test and regression analysis were applied towards achieving this objective. The study concluded that all the corporate tax variables affect the dependent variable, investment decisions. The effect of interest tax shield, corporate tax and after tax cash flow are however dependent on the type of investment, as some are tax exempt while interest on others are tax deductible.

Raastus (2012) adopted descriptive research to survey 11 unit trust managers in order to establish the effect that behavioral factors have on investment decision making by this group of investors. Semi structured questionnaires were handed to them and descriptive statics, correlation analysis and SPSS used to analyze the data collected. The results were that unit trust manager's decisions are influenced by past performance of the stocks and overconfidence. Herding behavior was also proven to be uncommon in the decision making process.

Kadariya (2015) studied the factors affecting investor decision making in the Nepal Capital Market. Structured questionnaires were used to obtain information on the

demographic characteristics and the factors analyzed before making investment decisions. The study focused on 185 stock investors and the results were analyzed using factor analysis and correlation models. The following factors were deciphered to affect investment decisions; average pricing method, capital structure, media coverage, political factors, level of financial literacy and the trend in stock prices. The majority of the investors were also found to be young people who are mostly self-employed and are financially literate.

Wendo (2015) studied the factors that influence the participation of individual investors in the NSE, and used 105 Nairobi County advocates as her research subjects. Descriptive research design was used to collect primary data from the respondents using structured questionnaires. Collected data was analyzed using excel and SPSS. ANOVA was also used to test if significant differences existed in the means of the advocates that were interviewed. The study found out that most investors are risk averse and prefer to invest in real estate rather than the stock market.

The group also lacked financial literacy skills to make sound investment decisions on the securities exchange market. The factors that were found to influence decision making among this group of investors included popular market opinion, referrals from friends, family and colleagues and recent trends and announcements of profitability and returns.

Aduda, Oduor and Onwonga (2017) undertook a study to determine the financial performance and behaviour of individual investors when trading in the NSE listed shares. Questionnaire survey and secondary data retrieved from CMA and NSE were used in this study. Some investors were found to be irrational in decision making, and

they often made losses in their investment as a result of herding and irrationality. A majority of the investors who responded were male, signifying men's confidence in their ability to outperform the market. A majority of the investors were Bachelor's degree holders hence sufficiently educated to make investment decisions. Other factors that were found to determine investment behavior included improved stock exchange, influence from friends, family and colleagues, inflation, management stability, number of available shares, stock capitalization level and family and religious background.

Safi (2014) studied the factors that influence the behavior of individual investors across Arabian countries. He found that self-image, accounting information, advocate recommendation, personal financial needs, psychological factors, lifestyle, irrational thinking, ownership structure, bonus payment, dividends, past company performance and expected corporate earnings influences individual investors' behavior.

Mweu and Omwenga (2010) studied the factors influencing individual investment decisions at the NSE, a case study of Blair Investment Bank Limited. He found out that information published in financial statements have a positive impact on individual decisions. Net worth of a company and valuation of shares also proved to be attractive to would be investors. Market information and knowledge of financial management also played a key role in determining the decisions made by investors.

## 2.4 Conceptual Framework

From the literature review, the behavioral factors that affect investment decision are herding behavior, prospect theory, regret avoidance, mental accounting and heuristic driven biases.

**Independent variables**                                    **Dependent variables**

**Behavioral factors**

Herding factors

Prospect factors:

  ✓  Loss aversion

  ✓  Regret Avoidance

  ✓  Mental Accounting

Heuristic biases:

  ✓  Overconfidence

  ✓  Anchoring

  ✓  Representativeness

  ✓  Cognitive dissonance

Investment decision
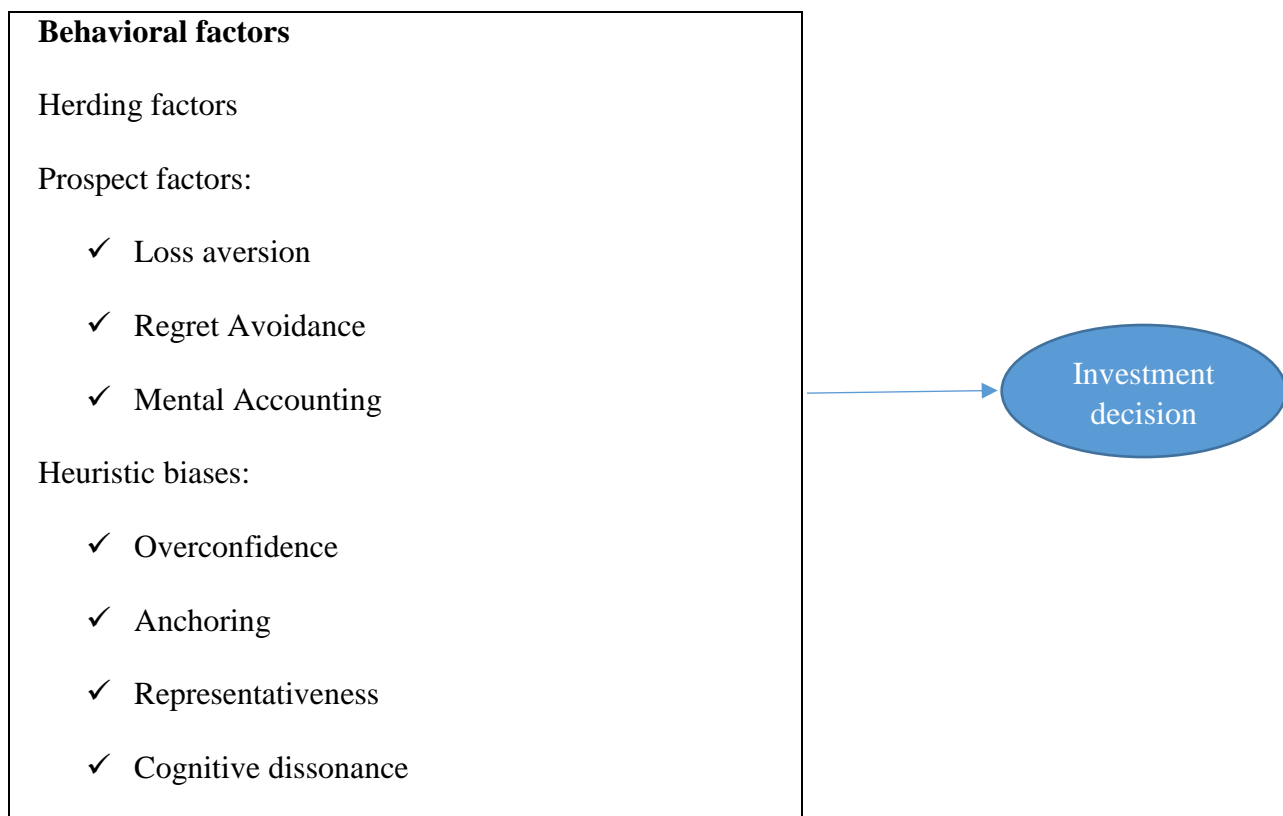
## 2.5 Summary of literature review

Behavioural finance is the study of the influence of psychology on the finance decisions and issues. It explains the effect of emotions and biases on investment decisions. The literature reveals that loss aversion, regret avoidance, mental accounting, overconfidence, anchoring, representativeness and cognitive dissonance influence individual investment decisions.

Most of the studies have also focused on institutional investors at the expense of individual investors, yet these two groups have different risk profiles and investment horizons. Additionally, the studies on behavioural factors affecting investment decisions have focused on developed stock markets, with little attention being accorded to developing stock markets such as the NSE. This research therefore seeks to fill these two gaps.

# CHAPTER THREE

# RESEARCH METHODOLOGY

## 3.1 Introduction

Kothari (2004) labels research methodology as the systematic and organised approach or way to solve the research problem. It also describes the steps followed to scientifically solve a research problem, and the logic behind these steps. He further states that it not enough to state the methodology adopted, but it is also critical to be able to defend the approach and or technique embraced and to explain the logic or reasoning behind them. Mbithi (2013) further states in his paper that the research methodology encompasses study setting, population, sampling technique assumed in the study, the sample selected as well as the type of study, the temporal features of the study and the data collection and analysis techniques donned.

## 3.2 Research Design

Kothari (2004) defines research design as the configuration of conditions for collecting and analysing data in a way that seeks to combine relevance of a research purpose to the economy in the procedure. Further, he says that this is the conceptual structure or the blueprint for the collecting, measuring and analysing relevant data for the study. Research design is the well-conceived plan or structure adopted to help the researcher answer the research questions and solve the research problem in a logical and unambiguous manner.

Descriptive research design was used to provide insight on the research problem by describing the behavioural factors that influence individual investment decisions. Kothari (2004) states that descriptive research is concerned with making certain

predictions and narrating facts and characteristics regarding individual, group or situation, and that most of the social research comes under this category. To this end, I undertook to describe these behavioural factors, and to establish whether these have an effect on investment decisions. This design was adopted because it allowed for the collection of a large volume of data, reduced ambiguity during the study and is a quick and practical method to answering the research question.

A case study was used in this examination. A case study involves empirically inquiring the occurrence of a phenomena in the real life context. A sample of NSE investors were reached through questionnaires to compare the empirical results to what is documented in literature.

## 3.3 Population

Mbithi (2013) defines a population as a distinct collection of people, services, and groups of things, elements, or households that are the focus of a study. The population population for this study were the individuals who trade in the NSE. As at 2011, the number of investor were 919,727 as documented in the Capital Markets Authority Quarterly Statistical Bulletin (Aduda, Oduor, and Onwonga 2017). This was the target population to use for the study.

## 3.4 Sample, Sample Design and Sampling Technique

A sample is a subset or subdivision of a population (Mbithi 2013). Sample design was the method that was used in selecting the primary elements to study, and from whom responses were used to answer the research question. The sampling technique is the methodology adopted in deciding who will form the sample to study.

According to Athur (2014), the sample size is determined by 3 parameters namely; the type of analysis to be used, the required level of accuracy and the samples' representativeness of the population. For the purpose of determining the behavioral factors affecting individual investor decisions, it was impractical to study the population of all the individual investors who trade at NSE.

The study targeted a convenient sample of 60 respondents. This method of sample selection allowed for fast collection of data within the constraints mentioned above. Snow-balling sampling technique was employed, where the first respondent was requested to recommend the second, investor respondent and so on, until the desired sample size was reached. This was because of financial constraints, time factor and the required human effort. Additionally, questionnaires were sent to the 24 NSE trading participants in order for them to facilitate the filling of questionnaires by individual investors.

## 3.5 Data Collection

Kothari (2004) states that problem definition and research design are followed by the identification of the data collection methods, which can either be primary and secondary methods. Primary data is data that is being collected for the first time, while secondary data is data that had previously been collected for another purpose, but deemed appropriate for the current study. This type of data had already been subjected to statistical analyses. Primary data was obtained through closed and open-ended questionnaires that were self-administered. Some questionnaires were also be emailed to the respondents, depending on the agreed media with the respondent.

Questionnaires are appropriate for this study as it allows for the collection of data that is not directly observable, as it inquires about investors' feelings, behaviours, attitudes and motivations. Additionally, objective data was collected as questionnaires are not easily manipulated by the researcher.

## 3.6 Data Analysis

Data analysis involves computing appropriate measures as well as identifying patters and relationships that exist between the variables being studied, to either disapprove or support the null and alternative hypothesis set. The data collected has to be processes through editing, coding, classification and tabulation before analysing it using the appropriate tool (Kothari 2004).

Multiple regression analysis and Pearson correlation methods of data analysis were adopted. Descriptive statistical measures such as the mean, mode and standard deviation were calculated using SPSS. Additionally, ANOVA was used to test the reliability of the analytical model.

### 3.6.1 Regression Model

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \epsilon$

Where:

Y is the dependent variable, investment decision;

X1, X2, X3, X4, X5….Xn are the independent variables;

X1= Herding

X2= Prospecting

X3= Regret avoidance

X4= Mental accounting

X5= Heuristic biases

$\beta 1$, $\beta 2$, $\beta 3$, $\beta 4$, $\beta 5$ = Regression coefficients representing the change in Y resulting from a unit change in the value of X; and

$\epsilon$= is the error term

The investment decision Y was approximated by the amount of investment in each type of security traded at the NSE.

A questionnaire was used to gauge the level of influence of factors X1 to X5 on the investment decisions Y. A 5-point Likert scale was used to evaluate the degree to which the each of the behavioral factors influence investment decisions.


## 3.6.2 Hypothesis

Ho: Behavioural factors influence individual investment decisions; and

H1: Behavioural factors do not influence individual investment decisions.

# CHAPTER FOUR

# DATA ANALYSIS, PRESENTATION AND INTERPRETATION

## 4.1 Introduction

This chapter outlines data analysis, results and presentation of findings based on the objective of this study. The objective of this study was to determine the behavioural factors that influence individual investor decisions at the NSE.

## 4.2 Questionnaires return rate

The study targeted a convenient sample of 60 respondents. Out of 60 questionnaires that were given out, 38 completely filled questionnaires were returned. This constituted 63% response rate. According to Mugenda and Mugenda (1999), a response rate of 50% is adequate for analysis and reporting, a response rate of 60% is good while a response rate of 70% and above is excellent. This response rate was therefore good, sufficient and representative.

## 4.3 Background Information of the Respondents

The study sought to ascertain the background information of the respondents in terms of their age, gender, marital status, level of education and occupation since such information is vital in defining behaviors of investors.

## 4.3.1 Age of the Respondents

The findings indicates that 76.3% of the respondents were between the age 20 years to 40 years, 21.1% were between the age of 40 years to 60 years while remaining 2.6% were above the age of 60 years as shown in figure 4.1 below.

**Figure 4.1: Age of respondents**
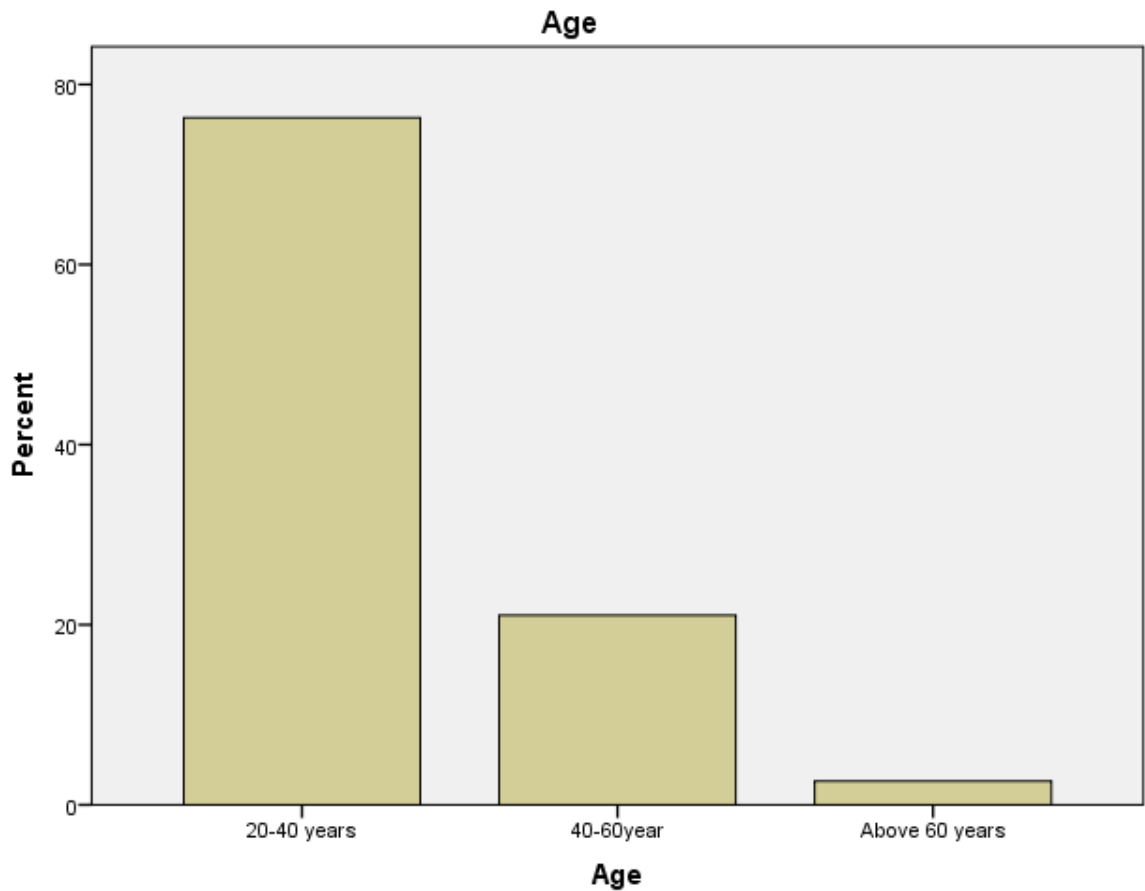


## 4.3.2 Gender of the Respondents

The findings shows that 63.2% of the respondents were male while 36.8% were female as indicated in the pie Chart in figure 4.2 below. This implies that respondents were drawn from all the gender group to demystify any gender biasness that might have been associated with the findings.

**Figure 4.2: Gender of respondents**
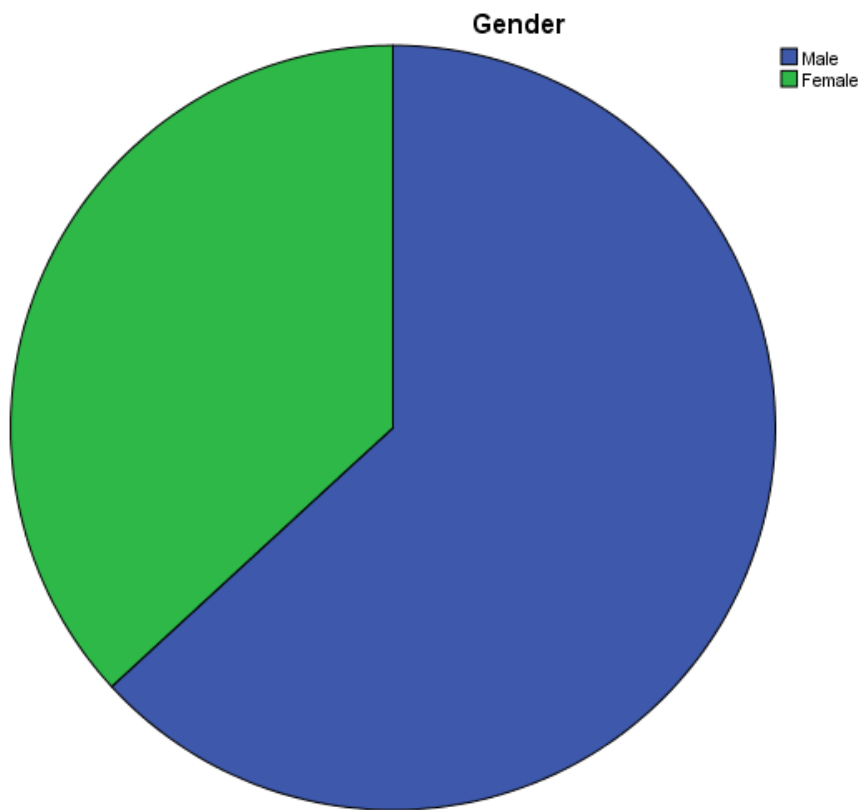


### 4.3.3 Marital status

**Table 4.1 Marital Status**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Married | 20 | 52.6 | 52.6 | 52.6 |
| Unmarried | 17 | 44.7 | 44.7 | 97.4 |
| Divorced | 1 | 2.6 | 2.6 | 100.0 |
| Total | 38 | 100.0 | 100.0 |  |

Table 4.1 above indicates that 52.6 % of the respondents were married, 44.7% were unmarried while 2.6% were divorced.

## 4.3.4 Level of Education

The findings noted that 39.5 % of the respondents held master degree, 28.9% of the respondents had undergraduate and graduate degree were also 28.9 %. The remaining 2.6% were PHD holder. This implies that majority of investors in Nairobi stock

exchange Market hold a master's degree as shown in table 4.2 below

**Table 4.2 Highest level of Education**

|  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|
| Undergraduate | 11 | 28.9 | 28.9 | 28.9 |
| Graduate Degree | 11 | 28.9 | 28.9 | 57.9 |
| Master Degree | 15 | 39.5 | 39.5 | 97.4 |
| PHD | 1 | 2.6 | 2.6 | 100.0 |
| Total | 38 | 100.0 | 100.0 |  |

## 4.3.4 Occupation of the respondents

The study revealed that majority of investor in NSE are salaried individuals with 76.3% of the respondents indicated that they were employed and were using their salary as source of capital for investment, 10.5% of the respondents were professionals while 13.2 % were engaged in business as illustrated in figure 4.3 below

**Figure 4.3 Occupation of the respondents**
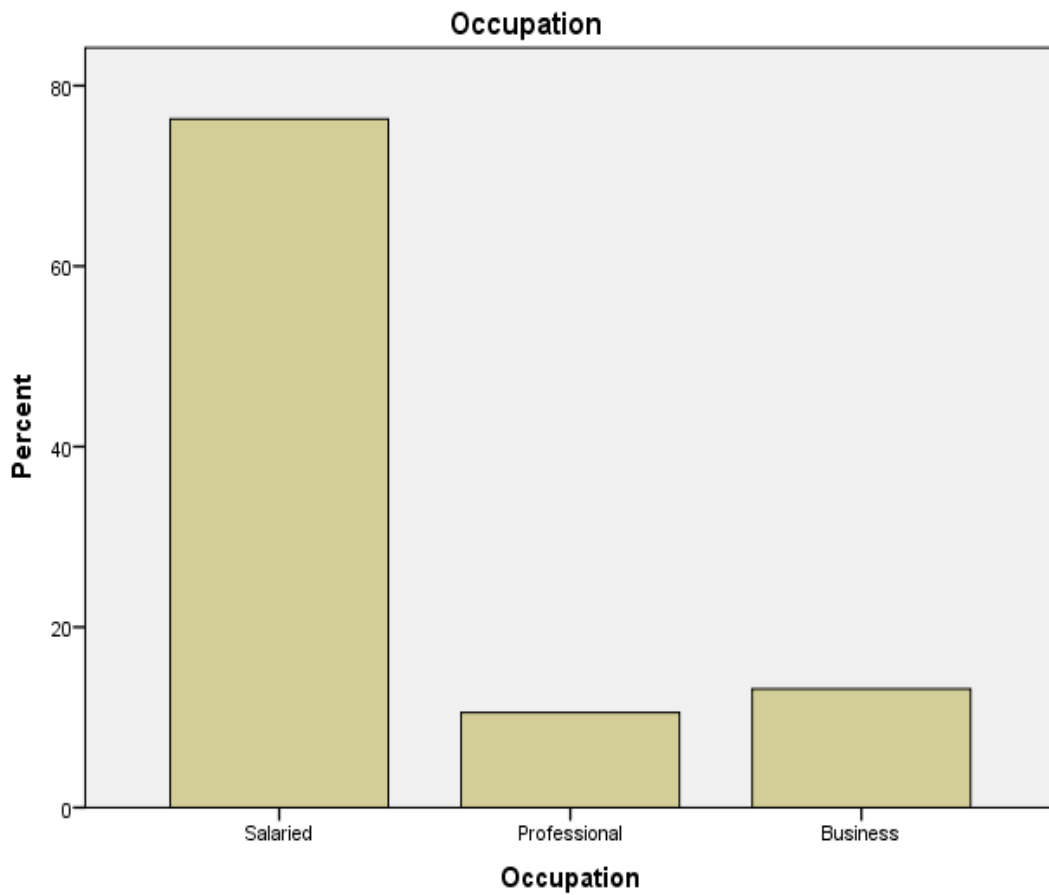


## Descriptive Statistics of the Population

This section summarizes the sampled investors' behavioural characteristics that affect investment decision. The results of tests on the differences in means of all variables of the model were considered i.e. herding, prospecting, regret avoidance, mental accounting and Heuristic biases. The findings are indicated in table 4.3 below;

**Table 4.3: Results of Descriptive Statistics**

**Impact of Herding factors on investment decisions**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 15.8 | 15.8 | 15.8 |
| | Neutral | 6 | 15.8 | 15.8 | 31.6 |
| | Agree | 23 | 60.5 | 60.5 | 92.1 |
| | Strongly Agree | 3 | 7.9 | 7.9 | 100.0 |
| | Total | 38 | 100.0 | 100.0 | |

60% of the respondents agree that herding behaviour affects investment decisions.

15% of the respondents are neutral about the impact of herding on investment decisions, while another 15% strongly disagree that herding affects their decisions.

**Impact of Prospect Factors on investment decisions**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Neutral | 11 | 28.9 | 28.9 | 28.9 |
| | Agree | 26 | 68.4 | 68.4 | 97.4 |
| | Strongly Agree | 1 | 2.6 | 2.6 | 100.0 |
| | Total | 38 | 100.0 | 100.0 | |

68% of the respondents agree that prospect factors affects investment decisions.

28% of the respondents are neutral about the impact of prospect factors on

investment decisions, while the remaining 2% strongly agree that prospect factors

affects their decisions to invest.

**Impact of Heuristic Biases on investment decisions**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Disagree | 1 | 2.6 | 2.6 | 2.6 |
| | Neutral | 6 | 15.8 | 15.8 | 18.4 |
| | Agree | 30 | 78.9 | 78.9 | 97.4 |
| | Strongly Agree | 1 | 2.6 | 2.6 | 100.0 |
| | Total | 38 | 100.0 | 100.0 | |

78% of the respondents agree that heuristic biases affects investment decisions. 6% of the respondents are neutral about the impact of herding on investment decisions, while the other 1% strongly agree that herding affects their decisions to invest.

**Impact of Regret avoidance on investment decisions**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Disagree | 2 | 5.3 | 5.3 | 5.3 |
| | Neutral | 7 | 18.4 | 18.4 | 23.7 |
| | Agree | 27 | 71.1 | 71.1 | 94.7 |
| | Strongly Agree | 2 | 5.3 | 5.3 | 100.0 |
| | Total | 38 | 100.0 | 100.0 | |

27% of the respondents agree that regret avoidance affects investment decisions. 18% of the respondents are neutral about the impact of regret avoidance on investment decisions, while another 5% strongly agree that herding affects their decisions to invest.

**Impact of Mental Accounting on investment decisions**

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Disagree | 2 | 5.3 | 5.3 | 5.3 |
|  | Neutral | 8 | 21.1 | 21.1 | 26.3 |
|  | Agree | 26 | 68.4 | 68.4 | 94.7 |
|  | Strongly Agree | 2 | 5.3 | 5.3 | 100.0 |
|  | Total | 38 | 100.0 | 100.0 |  |

68% of the respondents agree that mental accounting affects investment decisions. 21% of the respondents are neutral about the impact of mental accounting on investment decisions, while the other 2% strongly agree that mental accounting affects their decisions to invest.

**Descriptive statistics of all five behavioral factors**

| 15 | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| Amount invested | 38 | 2 | 5 | 4.26 | .891 |
| Herding factors | 38 | 1 | 5 | 3.45 | 1.179 |
| Heuristic Biases | 38 | 2 | 5 | 3.82 | .512 |
| Mental accounting | 38 | 2 | 5 | 3.74 | .644 |
| Prospect Factors | 38 | 3 | 5 | 3.74 | .503 |
| Regret avoidance | 38 | 2 | 5 | 3.76 | .634 |
| Valid N (listwise) | 38 |  |  |  |  |

The results in Table 4.3 displays an assessments on the differences in means of all variables of the investment decision model i.e. Herding factors indicated an average mean of 3.45 and standard deviation of 1.179 meaning some respondent disagree that it doesn't affect investors decision. However, a mean of 3.45 implies its relevancy in decision making since majority of the respondents were in agreement.

Heuristic biases indicated a mean of 3.82 and standard deviation of 0.512, mental

accounting showed a mean of 3.74 and a standard deviation of 0.644, Prospect factors

had a mean of 3.74 and standard deviation of 0.503 and regret avoidance indicated a

mean of 3.76 and standard deviation of 0.634. The descriptive statistics shows that the

independent variables are significant in  investment decision since all of them had their

mean above 3.00 implying that majority of the respondent were in agreement of their

relevancy in decision making.

**Table 4.4 Correlation coefficients of the relationship between behavioral factors and investment decision (amount invested) at the NSE**

**Correlations**

| | | Amount invested | Herding factors | Prospect Factors | Heuristic Biases | Regret avoidance | Mental accounting |
|---|---|---|---|---|---|---|---|
| Spearman's rho | **Amount invested** Correlation Coefficient | 1.000 | .118 | -.078 | -.021 | -.264 | .009 |
| | Sig. (2-tailed) | . | .480 | .640 | .900 | .110 | .958 |
| | N | 38 | 38 | 38 | 38 | 38 | 38 |
| | **Herding factors** Correlation Coefficient | .118 | 1.000 | .432$^{**}$ | .064 | .124 | .385$^{*}$ |
| | Sig. (2-tailed) | .480 | . | .007 | .701 | .459 | .017 |
| | N | 38 | 38 | 38 | 38 | 38 | 38 |
| | **Prospect Factors** Correlation Coefficient | -.078 | .432$^{**}$ | 1.000 | .394$^{*}$ | .245 | .433$^{**}$ |
| | Sig. (2-tailed) | .640 | .007 | . | .014 | .138 | .007 |
| | N | 38 | 38 | 38 | 38 | 38 | 38 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Heuristic Biases | Correlation Coefficient | -.021 | .064 | .394* | 1.000 | -.019 | .345* |
| | Sig. (2-tailed) | .900 | .701 | .014 | . | .912 | .034 |
| | N | 38 | 38 | 38 | 38 | 38 | 38 |
| Regret avoidance | Correlation Coefficient | -.264 | .124 | .245 | -.019 | 1.000 | .155 |
| | Sig. (2-tailed) | .110 | .459 | .138 | .912 | . | .353 |
| | N | 38 | 38 | 38 | 38 | 38 | 38 |
| Mental accounting | Correlation Coefficient | .009 | .385* | .433** | .345* | .155 | 1.000 |
| | Sig. (2-tailed) | .958 | .017 | .007 | .034 | .353 | . |
| | N | 38 | 38 | 38 | 38 | 38 | 38 |

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

*. Correlation is significant at the 0.05 level (2-tailed).

Table 4.4 shows the correlations between the independent variables considered in the

This table shows the regression of herding factors, prospective factors, heuristic factor, regret avoidance and mental accounting and amount invested as a measure of investment decision in Nairobi Stock Exchange Market. The significance of the coefficients was calculated at the level of 95%. The study findings indicate that the variables are statistically significance to influencing investment decision at NSE as indicated by the positive and strong Pearson correlation coefficients.

**Table 4.5: Regression Coefficients of the relationship between behavioral factors and investment decision.**

| Model | Unstandardized Coefficients | | Standardized Coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| (Constant) | 5.322 | 1.591 | | 3.345 | .002 |
| Herding factors | .025 | .150 | .033 | .166 | .869 |
| Prospect Factors | -.167 | .387 | -.094 | -.431 | .670 |
| Heuristic Biases | .103 | .346 | .059 | .299 | .767 |
| Regret avoidance | -.304 | .259 | -.216 | -1.176 | .248 |
| Mental accounting | .061 | .282 | .044 | .217 | .829 |

Dependent Variable: Amount Invested

As per the R generated table above, the equation $Y = a + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5$

Becomes:

$Y = 5.322 + 0.025 x_1 + -0.167 x_2 + 0.103 x_3 + -0.304 x_4 + 0.061 x_5$

According to the regression equation derived above, the amount invested will be at 5.322 assuming all the behavioural factors are held constant at zero. The Standardized Beta Coefficients give a measure of the contribution of each variable to the model. A large value indicates that a unit change in this predictor variable has a large effect on the criterion variable. The t and Sig (p) values give a rough indication of the impact of each predictor variable – a big absolute t value and small p value suggests that a predictor variable is having a large impact on the criterion variable.

## Table 4.6 Model Summary

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .238[a] | .057 | -.091 | .930 |

Coefficient of determination (R Square) gives deep understanding of the extent in which changes in independent variables (Behavioural factors) can affect dependent variable (Investment decision in terms of amount invested at NSE). The dependent variable can be explained by changes in the independent variables or the percentage of variation in the dependent variable .Table 4.6 above shows an R-square of 0.057 which implies that the five independent variable discussed above explain only 5.7% of the variation in investment decision at the Nairobi Stock exchange Market. This implies that other factors not under study in this research account for 94.3 % of the variation in investment decision.

### ANOVA Results Table 4.7 ANOVA of the Regression Model
ANOVA[a]

| Model | | Sum of Squares | Df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| | Regression | 1.665 | 5 | .333 | .385 | .856[b] |
| 1 | Residual | 27.704 | 32 | .866 | | |
| | Total | 29.368 | 37 | | | |

a. Dependent Variable: Amount invested
b. Predictors: (Constant), Mental accounting, Regret avoidance, Heuristic Biases, Herding factors, Prospect Factors

ANOVA depicts how the regression model accounts for variability in the dependent variable, investment decision. The significance value of the ANOVA test is 0.856, which is more than 0.05 thus the independent variables are statistically insignificant in predicting investment decisions. The F critical at 5% level of significance is 2.1646. Since F calculated is less than the F critical (value = 0.385), this means that we need to

accept the null hypothesis, and conclude that behavioural factors influence individual

investment decisions.

# CHAPTER FIVE

# SUMMARY, CONCLUSION, POLICY RECOMMENDATIONS, LIMITATIONS OF THE STUDY AND SUGGESTIONS FOR FURTHER RESEARCH

## 5.1 Summary

This chapter summarises the conclusions drawn from the results of data analysis conducted on the data collected and the objective of the study. A summary of the findings, recommendations for further study and the study limitation are also presented in this chapter. Areas for further research studies are also presented.

## 5.2 Summary of Findings, Discussions and Conclusions

Most of the respondents are between the ages of 20 to 40. The findings shows that 63.2% of the respondents were male while 36.8% were female, hence demystifying the perception that most investors are male. 52.6 % of the respondents were married, 44.7% were unmarried while 2.6% were divorced. The findings reveal that 39.5 % of the respondents held master degree, 28.9% of the respondents had undergraduate and graduate degree were also 28.9 %. The remaining 2.6% were PHD holder. This implies that majority of investors in Nairobi stock exchange Market hold a master's degree.

The study revealed that majority of investor in NSE are salaried individuals with 76.3% of the respondents indicated that they were employed and were using their salary as source of capital for investment, 10.5% of the respondents were professionals while 13.2 % were engaged in business. The above describe the general profile of the individual investors at the NSE.

From the results of descriptive statistics, heuristic biases, , herding and prospecting factors of mental accounting and regret avoidance influence investment decisions. The study findings indicate that the variables of herding, heuristics and prospect factors are statistically significance to influencing investment decision at NSE as indicated by the positive and strong Pearson correlation coefficients.

The regression coefficient of R-square is 0.057 which implies that the five independent variable discussed above explain only 5.7% of the variation in investment decision at the Nairobi Stock exchange Market. This denotes that other factors not under study in this research account for 94.3 % of the variation in investment decision. The significance value of the ANOVA test is 0.856, which is more than 0.05 thus the behavioural factors are statistically insignificant in predicting effect of investment decision. The F critical at 5% level of significance was 2.1646. Since F calculated is less than the F critical (value = 0.385), this means that we need to accept the null hypothesis, and conclude that behavioural factors influence individual investment decisions.

The findings of the study reveal that disparities in individual investment decisions are influenced mutually by prospect theory factors, heuristic driven biases and herding behaviour, while the remaining percentage is influenced by factors outside the model employed for this study. The study findings support various studies that have been conducted in the field of behavioural finance.

## 5.3 Recommendation

NSE should continually share information on listed companies, in order to positively influence individual investment decisions. The information gained therein will assist in making more informed decisions.

Heuristic factors have been determined to influence individual investment decisions. Therein are four dimensions, including overconfidence, anchoring, cognitive dissonance and representative ness biases. There is therefore the need to train investors on the investment valuation methods, to improve their mental accounting prowess. Overconfidence raises the need for investors stop be confident only to an acceptable level, and not fully trust their knowledge of the current ongoing in the market and industry. It helps investors make decisions in environments marred with certainty, but should not completely clogs one judgement when making investment decisions.

The study has established that prospect factors positively influence individual investment decisions. Prospect factors include loss avoidance, regret avoidance and mental accounting. Prospect factors raises the need to train investors on risk management and evaluation procedures, to ensure maximum benefits are reaped from each type of risk through this analysis and proper division of one's money is done. Investors should not try to reduce the regret associated with investment decisions by holding on to losing stock and selling a good stock.

The study has revealed that Herding behaviour influences investment decisions. Herding behaviour is exhibited in one investor's decisions being influenced by the

behaviour of other investors in choosing the stock to invest in, stock volume and decisions to buy or dell particular portfolios. There is need to rigorously analyse past events, seeing that they influence the behaviour of investor. Investors should only choose reliable people to use as references when making decisions. Not everyone who tells you something acts in your best interest. Information should be independently verified before reliance on it, and sometimes one needs to step away from what the crowd is doing in order to make better judgments.

Investment firms can use the above information to analyse individual investors, and use the results as the basis of predicting investor's behaviour. Additionally, other statistical analysis tools other than regression analysis should be used when doing further research on the effect of behavioural finance on investment decisions, such include factor analysis.

## 5.4 Limitations of the Study

Most investors were reluctant to fill the questionnaires, fearing that it infringes their privacy. As such, substantial amount of time was spent in explaining to the respondents that the questionnaires were anonymous, and that the findings would only be restricted to answering the questions raised in this paper and not in any other way. It also reduced the number of respondents who filled the questionnaire, as some refused to do so even after explaining that there were no dangers involved.

A response rate of a hundred percent (60 questionnaires) could not be achieved, as some brokerage firms had not responded as at the time of the project conclusion. The 38

questionnaires gotten constituted 63% response rate, and this was considered sufficient to do the analysis and make conclusions.

Resource requirements was also a limitation, as the researcher could not individually visit the investors to verify the authenticity of the information they provided. The researcher therefore had to completely rely on the information as provided in the questionnaire without independently verifying it.

The questionnaires could not adequately describe these behavioural factors, to make them more self-explanatory. Behavioural finance and its variables are ne to investors, and some might not even be aware that they are being influenced by them when making decisions. This could have affected ones response in the questionnaire.

## 5.5 Suggestions for Further Studies

This study investigated the causal effect of behavioural factors on individual investment decisions. Further study need to be conducted to examine the impact or influence of both factors in behaviour and traditional finance on individual investment decisions.

The scope of this study was limited to the collection of primary date; there is therefore the need to use secondary data to undertake the same study in order to detect variations and similarities in the findings. Secondary data is easily available, and less time will be spent in investigating behavioural factors that influence investment decisions. Secondary data provides a wider database of data for analysis, to the extent that cannot be achieved when using primary data.

The study reached only 38 respondents about of the targeted 60 individual investors. Future research can attempt to reach about 100 respondents, in order to better reflect the true dynamics of investor decisions at the NSE.

In addition, other analytical models other than regression analysis can be employed to study the relationship between individual investment decisions and behavioural finance factors, such is structural equation modelling.

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# APPENDICES

## Appendix 1: Questionnaire

I am a Masters of Business Administration student at the University of Nairobi. I am currently conducting a study to determine the **behavioural factors that influence the investment decisions of individual investors at the Nairobi Securities Exchange**. I kindly request that you fill the below questionnaire for the purposes of this study, and then return it to me. The information collected herein will be used solely for the purpose of this study, and be assured that confidentiality will be maintained at all stages of the research process. Please respond to each question in light of your experiences as an investor. Your cooperation is highly appreciated.

My contact number is 0721387276; kindly touch base with me if you need any further clarifications on the questions below**.**

### SECTION A: INVESTORS' AND INVESTMENT INFORMATION

1. Age years : ☐ 20 – 40 years ☐ 40-60 years ☐ above 60

2. Gender : ☐ Male ☐ Female

3. Marital Status : ☐ Married ☐ Unmarried ☐ Divorced

4. Highest level of educational : ☐ High school and lower

   : ☐ Undergraduate

   : ☐ Graduate degree

   : ☐ Master's degree

   : ☐ PHD

: ☐ Professional

: ☐ Others, Specify _____

5. Occupation/Profession     : ☐ Salaried

: ☐ Professional

: ☐ Business

: ☐ O thers, specify _____

6. Category of investor;
☐Long term investor     ☐Day trader     ☐Both

7. Type of market operated in;
☐Primary market     ☐Secondary market   ☐ both

8. Experience in the market
☐ Less than 3 years     ☐ 3-5 years     ☐5 years & above

9. Have you attended any training on securities exchange?
☐Yes

☐ No

10. Number of companies in which I have made investment;
☐Less than 10     ☐10-20     ☐20 & above

11. State the source of the money that you use for investment;
☐Own savings     ☐ Borrowings     ☐ Both

12. Indicate the total amount of money in Kenya shillings that you have invested in the securities traded at the Nairobi Securities Exchange;

☐ Kshs. 20,000 and below

☐ Between Kshs. 20,000 and Kshs. 50,000

☐ Between Kshs. 50,000 and Kshs. 100,000

☐ Between Kshs. 100,000 and Kshs. 200,000

☐Over Kshs. 200,000

13. State the percentage of your total investment that has been made in shares
☐Less than 15 %     ☐ 15% - 30 %     ☐ 30% and above

14. Describe the performance of your portfolio over the past 5 year;
☐ Excellent ☐ Good   ☐ Fair     ☐ Poor

15. Describe the performance of the NSE portfolio over the past 5 year;

☐ Excellent ☐ Good ☐ Fair ☐ Poor

## SECTION B: INVESTMENT PATTERN

16. Sate the various Investments in your portfolio;

| No. | Investment types | Tick (✖) |
|-----|------------------|----------|
| 1 | Shares | ☐ |
| 2 | Debentures/Bonds | ☐ |
| 3 | Stock Futures and Options | ☐ |
| 4 | Mutual Funds | ☐ |
| 5 | National Saving Certificate/ Public Provident Fund/ Provident Fund | ☐ |
| 6 | Fixed Deposits | ☐ |
| 7 | Insurance Polices | ☐ |
| 8 | Real Estate | ☐ |
| 9 | Gold, Silver or other precious metals | ☐ |
| 10 | Others | ☐ |

17. Rank your Investment preferences (1 to 10)

| No. | Investments | Rank 1-10 |
|-----|-------------|-----------|
| 1 | Shares | |
| 2 | Debentures/Bonds | |
| 3 | Stock Futures and Options | |
| 4 | Mutual Funds | |
| 5 | National Saving Certificate/ Public Provident Fund/ Provident Fund | |

| | | Tick (✗) |
|---|---|---|
| 6 | Fixed Deposits | |
| 7 | Insurance Polices | |
| 8 | Real Estate | |
| 9 | Gold /Silver | |
| 10 | Others | |

18. State the various sectored stocks you hold;

| S. No. | Sectored stocks | Tick (✗) |
|---|---|---|
| a | Agricultural | ☐ |
| b | Automobile and accessories | ☐ |
| c | Investment services | ☐ |
| d | Commercial and services | ☐ |
| e | Banking | ☐ |
| f | Construction and allied | ☐ |
| g | Manufacturing and allied | ☐ |
| h | Energy and petroleum | ☐ |
| i | Insurance | ☐ |
| j | Investment | ☐ |
| k | Telecommunications and technology | ☐ |
| l | Other - specify | ☐ |

## SECTION C: BEHAVIOURAL FACTORS INFLUENCING INDIVIDUAL INVESTMENT DECISIONS

19. State the extent to which the following statements explain your behaviour and actions when making investment decisions at the Nairobi Security Exchange;

Where; 1 - Strongly Disagree, 2 - Disagree, 3- Neutral, 4 - Agree, 5- Strongly Agree.

For each question, kindly tick the number that best describes your behaviour as per the scale provide above;

| Behavioural factor | Level of influence | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 |
| **Herding Factors (buying and selling, choice and volume of trading stocks, speed of herding)** | | | | | |
| Other investors' decisions of choosing stock types have an impact on my investment decisions. | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other investors' decisions of the stock volume have impact on my investment decisions. | ☐ | ☐ | ☐ | ☐ | ☐ |
| Other investors' decisions of buying and selling stocks have impact on my investment decisions. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I react quickly to the changes of other investors' decisions and follow their reactions to the stock | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Prospect Factors** **a) Loss aversion** | | | | | |
| After a prior loss, I become more risk averse than | ☐ | ☐ | ☐ | ☐ | ☐ |
| After a prior gain, I become more of a risk taker than | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am more stressed about losses as compared to the happiness I derive from a gain of an equal amount. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I hold on to losing stocks, hoping that they would increase in value. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I intend to sell my investments immediately it goes back to the acquisition price. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **b) Regret Avoidance** | | | | | |
| I avoid selling shares that have decreased in value and hold on to them. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I readily sell shares that have increased in value and those that have been performing well. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **c) Mental Accounting** | | | | | |
| I tend to treat each element of my investment portfolio separately. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I ignore the connection between different investment possibilities. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I separate my finances into different accounts and monitor them separately and differently. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **Heuristic biases** | | | | | |
| **a. Overconfidence** | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| My skills and knowledge of the stock market guide my decision to either sell or buy securities. | ☐ | ☐ | ☐ | ☐ | ☐ |
| My skills and knowledge of the securities market helps me to outperform the market. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am normally able to anticipate the end market returns as the NSE as either good or poor. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **b. Anchoring** | | | | | |
| I forecast the changes in stock prices in the future based on the recent stock prices. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I buy 'hot' stocks and avoid stocks that have performed poorly in the recent past. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I prefer to buy local stocks than international stocks because the information of local stocks is more | ☐ | ☐ | ☐ | ☐ | ☐ |
| Good companies have good stocks. | ☐ | ☐ | ☐ | ☐ | ☐ |
| I rely on your previous experiences in the market in deciding my next investment. | ☐ | ☐ | ☐ | ☐ | ☐ |
| **c. Cognitive dissonance bias** | | | | | |
| I am faced with cognitive or mental conflicts after making investment decisions. | ☐ | ☐ | ☐ | ☐ | ☐ |
| Such cognitive or mental conflicts are more pronounced when negative outcomes arise from my investment | ☐ | ☐ | ☐ | ☐ | ☐ |
| I am holding to my investment because selling them would be painful to me since I would incur loss | ☐ | ☐ | ☐ | ☐ | ☐ |
| **d. Representativeness bias** | | | | | |
| Past history influences present investment decisions. | ☐ | ☐ | ☐ | ☐ | ☐ |
| You buy well performing securities and avoid stocks that have performed poorly in the recent past. | ☐ | ☐ | ☐ | ☐ | ☐ |
| You use trend analysis of some representative securities to make investment decisions for all securities that you | ☐ | ☐ | ☐ | ☐ | ☐ |

## SECTIOND: INVESTMENT POST SATISFACTION

20. State the level of satisfaction achieved, in the following investment objectives

| No. | Investment objectives | Level of satisfaction | | | |
|---|---|---|---|---|---|
| | | Highly Satisfied | Satisfied | Dissatisfied | Highly Dissatisfied |
| | | | | | |

| | | | | | |
|---|---|---|---|---|---|
| a | Dividends | ☐ | ☐ | ☐ | ☐ |
| b | Capital Appreciation | ☐ | ☐ | ☐ | ☐ |
| c | Quick Gain | ☐ | ☐ | ☐ | ☐ |
| d | Safety | ☐ | ☐ | ☐ | ☐ |
| e | Liquidity | ☐ | ☐ | ☐ | ☐ |
| f | Tax Benefits | ☐ | ☐ | ☐ | ☐ |
| g | Diversification of Asset holding | ☐ | ☐ | ☐ | ☐ |
| h | Rights / Bonus issues & Stock splits | ☐ | ☐ | ☐ | ☐ |
| i | Hedge Against Inflation | ☐ | ☐ | ☐ | ☐ |

21. State the derived rate of return;

 ☐ Less than 12% ☐ 12% - 24% ☐ 24% - 36% ☐ 36% & above

22. State the level of satisfaction with the rate of return earned;

 ☐ Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied

23. State the problems or challenges you faced in equity investment:

(i)

(ii)

(iii)

**Thank you for participating**

## Appendix 2: List of NSE Trading Participants

1. Dyer & Blair Investment Bank Ltd

2. Francis Drummond & Company Limited

3. Ngenye Kariuki & Co. Ltd. **(Under** Statutory Management)

4. Suntra Investment Bank Ltd

5. Old Mutual Securities Ltd

6. SBG Securities Ltd

7. Kingdom Securities Ltd

8. AIB CAPITAL LTD

9. ABC Capital Ltd

10. Sterling Capital Ltd

11. Apex Africa Capital Ltd

12. Faida Investment Bank Ltd

13. NIC Securities Limited

14. Standard Investment Bank Ltd

15. Kestrel Capital (EA) Limited

16. African Alliance Securities

17. Renaissance Capital (Kenya) Ltd

18. Genghis Capital Ltd

19. CBA Capital Limited

20. Equity Investment Bank Limited

21. KCB Capital

22. Barclays Financial Services Limited

23. Securities Africa Kenya Limited

24. EFG Hermes Kenya Limited