

THE EFFECT OF BEHAVIOURAL FACTORS ON INDIVIDUAL
INVESTOR DECISIONS AT THE NAIROBI SECURITIES EXCHANGE

BY

ANDREW WEBO SITUMA

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DECLARATION

I declare that this research project is my original work and has not been submitted to any other university for award of a degree

Signed _____

Date: _____

Andrew Webo Situma

This research project has been submitted for examination with approval of the University

Supervisor

Signed _____

Date: _____

Mr. Joseph Barasa

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DEDICATION

This research paper is dedicated to my mother Mellab Nandechia Situma for always inspiring and driving me to give my best at everything and achieve more.

Mum, this is for you.

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

Investment is money which is invested as capital or some securities of public or private sector for earning income. The money which is invested without the prospect of earning a return is either a donation or assistance. The concept of investment means employment of funds to earn additional income or growth in terms of value. The essential quality of an investment is 'expectation of reward.' It involves the commitment of resources which have been saved from current consumption in the hope that some benefits will be received in future (Daily, 2005).

In traditional finance theories, investors of the stock market are rational and they efficiently respond to new information regarding the stock market products. In other words, investors' decisions in the market fully reflect the effects of any information revealed (Weber, 1999).

Kenyans are expressing growing interest in investing in equities, especially shares, at the Nairobi Securities Exchange (NSE). Moreover, foreign investors have also taken a keen interest in NSE accounting for a huge volume of the daily trading activity in the recent years.

For a market to be efficient, investors need sufficient information in selecting their investment portfolios. Information pertaining to the various company strengths, weaknesses, market opportunities and threats (Malkiel, 2003).

It is also worth mentioning that some of the stockbrokerage firms have recommended individual investors to buy shares – whether through IPOs or in rights issue - and yet a few months down the line the share price collapsed.

Two most recent examples are the KQ rights issue in 2014 and the Uchumi rights issue in the same year. Some stockbrokerage houses – because they also acted as the lead sponsoring brokers in these issues – advised individual investors to buy into the rights issues of the airline and the supermarket in 2014. Shortly after these companies had raised millions of shillings, they faced cash crisis. The question then is did the stock brokers misadvise the public.

Market models based on perfect predictions of the market's performance, complete knowledge of investment decisions and completely flexible market prices, are becoming increasingly unrealistic in today's Kenyan financial markets.

By understanding the human behavior and psychological mechanisms involved in financial decision making, finance models may be improved to better reflect and explain the reality in today's evolving markets. A more common understanding of factors underlying speculation and the way in which psychological factors affect decision making should help to avoid the mass market irrational investment behavior and enhance the efficiency of today's global market, (Harris, 2009).

1.1.1 Behavioral Factors

According to Shiller (2000), investors' behavior is influenced by many factors including social and psychological factors. It is an acceptable fact that the investors are the focal point to the security market. Investors' behavior is not static because it varies from place

to place. It is how individuals act to obtain and use money and benefits including the decision process.

Many individuals find investments to be fascinating because they can participate in the decision making process and see the results of their choices. Not all investments will be profitable, as investor will not always make the correct investment decisions over the period of years; however, you should earn a positive return on a diversified portfolio (Weber, 1999).

Virtually everyone makes investments. Even if the individual does not select specific assets such as stock, investments are still made through participation in pension plan, and employee saving programmes or through purchase of life insurance or a home or by some other mode of investment like investing in Real Estate (Property) or in Banks or in saving schemes of post offices. Each of these investments have common characteristics such as potential return and the risk you must bear. The future is uncertain, and one must determine how much risk you are willing to bear since higher return is associated with accepting more risk. (Lopes, 1987) In traditional finance theories, investors of the stock market are rational and they efficiently respond to new information regarding the stock market products. In other words, investors' decisions in the market fully reflect the effects of any information revealed (Weber, 1999).

Studies suggest that major researches in the area of investors' behavior has been done by behavioral scientists such as Weber (1999), Shiller (2000) and Shefrin (2000).

Shiller (2000) strongly advocated that stock market is governed by the market information which directly affects the behavior of the investors. Several studies have brought out the relationship between the demographics such as Gender, Age and

education levels of individuals, as distinct features that create a profile of individual investors in a market.

1.1.2 Nairobi Securities Exchange

According to Daily (2005), a person can invest his money in the stock market by purchasing shares. A stock market is a public institution and it serves the growth of the capital market. It is the most perfect type of market for securities, whether the shares are of government and semi-government bodies or other public bodies or for shares and debentures issued by joint stock companies.

In the stock market, purchase and sale of shares are made in conditions of free competition. It is organized of voluntary, non-profit making association of brokers to regulate and protect their interests. Government securities are traded outside the trading ring in the form of over the counter sale or purchase. Whenever a company raises capital through public issue of securities, its securities are required to be listed on the stock exchange within ten weeks of the closing of the subscription list mainly to provide liquidity to the investors (French, 2008).

Financial equity markets play an important role in the global economy. They present the public with an opportunity to be 'part owners' in major companies, as well as serve as a platform for flow of funds in the market from investors who have excess funds to the companies seeking for funds by offering the company shares. The world over, investors have traded in the stock markets for over 100 years and market investments trends are changing over time. In reality however, the equity market is characterized by uncertainty and unpredictability, as market conditions cannot always be judged with the help of standard financial measures and tools. Market participants have for a long time relied on

the notion of efficient market and rational investor behavior when making financial decisions. However, the idea of fully rational investors who always maximize their utility and demonstrated perfect self control is becoming inadequate (French, 2008).

For a market to be efficient, investors need sufficient information in selecting their investment portfolios (Malkiel, 2003). However, a number of stockbrokerage firms have been rendered inadequate by the Capital Market Authority (CMA), while some such as Nyaga Stock Brokers and Discount Securities Limited have even closed shop, yet these are the same kinds of firms that investors rely on to give expert advice on investment decisions.

Kenyans are expressing growing interest in investing in equities, especially shares, at the Nairobi Stock Exchange (NSE). Past Initial Public Offerings (IPOs) with the more popular the Kenya Electricity Generating Company (KenGen) and Safaricom IPOs attracted massive subscriptions and huge financial investments. The country's capital markets marked a milestone with the injection of 10 billion additional shares through the Safaricom IPO. It is therefore important for Kenyans, especially the beginners, to understand the worth of investing long-term. The emphasis that has lifted the country's capital markets as it works towards being among the world's best now focuses on enlightening the investing public on a number of salient issues especially after the introduction of electronic commerce. This involves knowing the investment climate (Loita, 2010).

The recent IPO share issues in Kenya exemplify a situation which includes both unpredictability and irrational behavior. On average, the volume of shares traded under normal circumstances is Sh350 million, while during days of IPO issues and up to 2

months after the issues, the volume of shares traded stands at an average of 750 million indicating cases of over-confidence of investors during IPO share issues and cases of under-confidence in daily business non-IPO shares trading (IFC / CBK, 2009). The Kenyan investor confidence levels are to some extent shaped by their degree of fear of making losses from their investments and greed derived from miscalculated speculation to make quick money in the short term.

The Kenyan economic model has never been successful in capturing a process driven in large part by non-rational behavior. The existence of such a phenomenon can in part be attributed to less-than-rational aspects of investor behavior and human judgment. However, the notion that such irrational behavior exists is controversial since many of the experts such as fund managers who have the finest knowledge in investments, yet they are actively involved in the markets during IPO issues. Controversy lies as to whether these experts can be categorized as speculators. Never-the-less, which is what one apparently, would have to do if ones wish to attribute the market behavior to human error (Harris, 2009).

Market models based on perfect predictions of the market's performance, complete knowledge of investment decisions and completely flexible market prices, are becoming increasingly unrealistic in today's Kenyan financial markets. By understanding the human behavior and psychological mechanisms involved in financial decision making, finance models may be improved to better reflect and explain the reality in today's evolving markets. A more common understanding of factors underlying speculation and the way in which psychological factors affect decision making should help to avoid the

mass market irrational investment behavior and enhance the efficiency of today's global market, (Harris, 2009).

1.2 Research Problem

The stock market has been subjected to speculations and inefficiencies, which are attributed to the less than perfect rationality of the investor. Traditional finance theory is based on two assumptions. Firstly, investors make rational decisions; and secondly investors are unbiased in their predictions about future returns of the stock. However financial economists have now realized that the long held assumptions of traditional finance theory are wrong and found that investors can be irrational and make predictable errors about the return on their investments. Behavioral finance has attributed investor over-confidence not to investor's rationality, but rather to other factors such as age, gender, education levels, investors' literacy and investor objectives.

Market participants have for a long time relied on the notion of efficient market and rational investor behavior when making financial decisions. However, the idea of fully rational investors who always maximize their utility and demonstrated perfect self control is becoming inadequate (French, 2008). Behavioral finance has attributed investor behavior to factors such as social and psychological environment of the investor. Within behavioral finance theories, it is assumed that information structure and the characteristics of market participants systematically influence individuals' investment decisions as well as market outcomes. According to behavioral finance, investor market behavior derives from social and psychological principles of decision making, to explain why people buy or sell the stocks (Simon, 1991).

This study assumes that investors constantly seek to maximize the value of their wealth. It is further, an attempt to know the profile of the investor and also know the characteristics of the investors so as to assess their knowledge and objectives with respect to their investment decision making. The study also tries to unravel the influence of demographic factors like gender and age on investor's profile at the NSE. The study is concerned with active retail investors at NSE.

It is a well-documented fact in the finance literature that there are significant differences across individuals in investment behaviors such as the decision to invest in the stock market or other alternative investment (Loita, 2010). The research seeks to find out if investment behaviors to a significant extent are shaped by demographic patterns such as age or gender, individual specific experiences, financial, education level or sources of information as provided by behavioral finance theories. It is fundamental to understand the behavior of individual investors in the stock market, but so far existing research has not offered much systematic evidence on them. This study therefore seeks to fill this void by profiling the Kenyan investor at the NSE by assessing their knowledge and investment objectives.

1.3 Objective of the Study

The objective of this study will be to investigate the effect of behavioral factors on the individual investor decisions at the NSE.

1.4 Value of the Study

This study is of interest to various stakeholders. The local and foreign investors will be interested in the study because share trading presents an opportunity for wealth

acquisition through profits generated from the trade. This study will also be a guiding light to many local investors on their rationality in trading common stock and building a success out of it.

The investment agencies and stock brokerage firms would be extremely interested since this research will be based on their clientele behavior. These firms would want to know and understand their clientele behavior even better based on this research's findings.

This study also adds onto the existing body of knowledge on equity investor behavior. Findings on this research will be used as part collection of the database that will be available to future interested researchers in similar field and topic.

CHAPTER TWO

Literature Review

2.1 Introduction

In this section the results of some empirical studies about individual investor behavior will be highlighted. It should be noted here that a substantial amount of attention has been given by researchers to the individual investor behavior, whereas less attention has been given to the institutional investor behavior.

2.2 Theoretical Literature Review

2.2.1 Behavioral Finance Theory

A research into individual investors and their behavior has received a lot of consideration in the past, and increasingly has the interest of many scientists and economists. However, the particular way of looking at individual investor has been subject to a great paradigmatic shift with the inclusion of psychology, both its findings and its methodology, into financial studies (DeBondt, 1998). Despite many ongoing debates, this has slowly led to the establishment of behavioral economics and behavioral finance as widely recognized sub disciplines.

DeBondt (1998) adds that in social sciences, particularly economics, the term "Homo Economicus" has been used for a formal representation of an individual, who acts as a utility maximizer, given his preferences and other constraints. An economic man adheres to the axioms of rational choice theory.

Even though this hypothetical construct has been useful in formulating economic theories and models, over the past decades psychologists and behavioral scientists have documented robust and systematic violations of principles of Expected utility theory, Furthermore, Herbert Simon, (1991) to whom the term “bounded rationality” is usually attributed, has emphasized that it is the limits upon the ability of human beings to adapt optimally, or even satisfactorily, to complex environments (Simon,1991). Individual investors - who use heuristics, depend on framing of the problem, and are prone to biases, which in turn may lead to various anomalies at the market level - are subjects of research in the area of behavioral finance.

The efficient markets hypothesis (EMH) dictates that market prices fully reflect all available information (Fama, 1970). Efficient markets do not allow investors to earn above-average returns without accepting above-average risks (Malkiel, 2003). In order to reconcile the theory of efficient markets with behavioral finance, an alternative theory in which both can coexist - The Adaptive Markets Hypothesis was proposed (Repin, 2005). In this evolutionary model individual market participants adapt to changing environment by using heuristics (that is market participants are allowed to learn on their own). In other words, Lo provides us with a theoretical framework in which we could easily fit our conceptual model of the individual investor. A number of surveys and books on behavioral finance and behavioral economics have been published, including some popular books aimed at individual investors ((Shefrin, 2000), (Goldberg & Nitzsch, 2001), (Barberi, 2003)).

2.2.2 Agent-Based Artificial Financial Markets

Another novel approach to studying financial market dynamics, intricately related with studies on individual investor behavior and its computational implementations, comes from the area of computational finance as agent-based artificial financial markets, or more specifically, as artificial stock markets. Agent-based artificial financial markets can be either mathematical or computational models of financial markets, usually comprised of a number of heterogeneous and supposedly rational agents, which interact through some trading mechanism, while possibly learning and evolving (LeBaron, 2006).

These models are built for the purpose of studying agents' behavior, price discovery mechanisms, the influence of market microstructure, the reproduction of the stylized facts of real-world financial time-series (for instance. fat tails of return distributions and volatility clustering). A number of reviews of studies with artificial financial markets are available, for instance for computational models (LeBaron, 2006), and for mathematical models (Hommes, 2006). Similar bottom-up approach has been used in the computational study of economies modeled as evolving systems of autonomous interacting agents (Tesfatsion, 2006).

Despite many studies with artificial financial markets, not much attempt has been made to incorporate complex behavioral phenomena into agents' behavior. These attempts may have been hindered for many reasons. Most notably, complex behavior implies highly parameterized models which are difficult to examine and that often lie beyond analytical tractability. However, an agent-based approach inspires us to seek for homeomorphic models (Harre, 1970), that not only reproduce the stylized facts of real-world markets, but also achieve them through processes that are grounded on reasonable

(psychologically plausible) assumptions, and resemble actual human behavior and realistic market mechanisms. "Agent-based models can easily accommodate complex learning behavior, asymmetric information, heterogeneous preferences, and ad hoc heuristics" (Chan, LeBaron & Poggio, 1999). It is far from the fact that everything is known about human behavior and cognition pertaining to the investment decisions, but as various fields progress to open up these black boxes, a methodology that can utilize such knowledge may be given more opportunities in the future.

The complementarity of behavioral finance research and the agent-based methodology is yet to be explored, as explained by LeBaron (2006). Rare examples of agent-based papers that pursue this idea of explicit accounting for behavioral theories in financial market simulations are (Takahashi & Terano, 2003; and Hoffmann, 2007).

2.3 Determinants of Individual Investor Decisions

Given its obvious importance, there is surprisingly little empirical evidence on the relation between financial literacy and stock exchange investments at the individual investor level. Derrien, (2005) investigated whether higher levels of financial literacy coincide with improved equity investment decisions. In particular, he examined how financial literacy affects the tendency to rely on actively managed stocks rather than passively managed companies in an event of an IPO issue of such a company. Various empirical studies show that expenses are a major determinant of share prices performance Gillan, et al. (2007). Thus, the study expected the expenses of funds selected by subjects with high financial literacy to be lower. Furthermore, the study analyzed the influence of financial literacy on the accuracy of the participants' return and risk estimates for their shares. Studies by, for instance De Bondt (1998), Goetzmann and Peles (1997) and

Glaser and Weber (2007), showed that subjects tend to be overly optimistic about the return and volatility of their investments. Goetzmann and Peles (1997) argued that overly optimistic performance recollections of individual investors are one reason for the large amount of money still invested in actively managed funds, because these biased views of the past impede investors learning ability.

The behavioural economics literature indicates that individuals often do not arrive at an investment decision with firm preferences. The most frequently cited work, carried out in the US, found that pension plan participants appeared to have relatively weak preferences for the portfolio they had selected themselves (Benartzi & Thaler, 2001). In this experimental study, participants were given the choice between the distribution of retirement outcomes implied by the actual asset allocation in their plan and the distribution implied by the average allocation among all participants in the same plan. Most participants preferred the average distribution to that based on their own allocation. The authors characterized this as an example of an aversion to ‘extremeness’ because most participants had portfolios that were, almost by definition, more extreme than the average. Such results seem to call into question individuals’ ability to choose an optimal asset allocation (that is, the most favorable allocation that would best meet their financial needs). As Tapia and Yermo (2007) note, this may be symptomatic of a deeper lack of knowledge and understanding of the choices offered.

Perception, interaction and action are processes which describe the way in which investor interacts with the investment environment in which he or she is situated. Processes such as perception and action are commonly included in cognitive model (Sloman, 2001).

Perception is the process of acquiring information incoming from various sources in the investment environment (classical media, such as television, radio, and paper news, as well as various Web applications). Through communication channels, other market participants can also serve as sources of information. Information can be quantitative or qualitative, and can include financial data, financial news, and socially shared opinions and tips. Oberlechner and Hocking, (2004) studied information sources, news, and rumors in the foreign exchange market in 2004. In this study foreign exchange traders and financial journalists rated the importance of different information sources, such as wire services, personal contacts, analysts, daily newspapers, financial television etc. An interesting finding is that the information speed, expected market impact, and anticipated market surprise were rated as more important than the reliability of the source and the accuracy of information.

In broad terms, four main investment objectives cover how you accomplish most financial goals. These investment objectives are important because certain products and strategies work for one objective, but may produce poor results for another objective.

When it comes to stock market investments, there are 3 major objectives that investors look into achieving, as discussed by Shiller (2000).

Capital appreciation is concerned with long-term growth. This strategy is most familiar in retirement plans where investments work for many years inside a qualified plan. However, investing for capital appreciation is not limited to qualified retirement accounts. This is an objective that will require the investor to hold the stocks for many years.

An investor is content to let them grow within their portfolio, reinvesting dividends to purchase more shares. A typical strategy employs making regular purchases. One is not very concerned with day-to-day fluctuations, but keep a close eye on the fundamentals of the company for changes that could affect long-term growth.

Current Income / Dividend payout investors interested in current income are most likely interested in stocks that pay a consistent and high dividend. Many people who pursue a strategy of current income are retired and use the income for living expenses. Other people take advantage of a lump sum of capital to create an income stream that never touches the principal, yet provides cash for certain current needs (college fees, for example).

Capital preservation is a strategy that is often associated with elderly people who want to make sure they do not outlive their money. Retired or nearly retired people often use this strategy to hold on to their funds. For this investor, safety is extremely important – even to the extent of giving up return for security. Investors who use capital preservation tend to invest in safe and lowly traded and volatile stocks.

2.4 Empirical Literature Review

Research in behavioral finance is relatively new. Within behavioral finance it is assumed that information structure and the characteristics of market participants systematically influence individuals' investment decisions as well as market outcomes. According to behavioral finance, investor market behavior derives from psychological principles of decision making, to explain why people buy or sell the stocks. Behavioral finance focuses upon how investors interpret and act on information to make investment decisions. In

addition, behavioral finance places an emphasis upon investor behavior leading to various market anomalies (Hommes, 2006).

Shiller and Pound (1999) analyzed the factors influencing the decisions of investor who use analysts' recommendations to arrive at a short-term decision to hold or to sell a stock. The results indicate that a strong form of the analyst summary recommendation report, that is, one with additional information supporting the analysts' position further, reduces the disposition error for gains and also reduces the disposition error for losses.

Studies of conventional investors show a number of demographic regularities. For example share ownership tends to be higher amongst men than women and tends to increase with age, income and educational attainment in developing countries (Ibbotson, 2005). For developed countries, investor demographics appear to be slightly different and may provide a set of factors that distinguish traditional investors from conventional investors. Some studies find that developed countries' investors tend to be younger (Jensen, 2003, Koop, 2001) and in addition they also tend to be better educated and female rather than male.

Quantitative and qualitative research on demographic tendency carried out in the UK indicates that attitudes to investment risk depend on factors such as personality, circumstances, educational attainment, level of financial knowledge and experience, and extent of financial product portfolio (Baker, & Wurgler, 2007). Quantitative research carried out in the US identifies a similar range of factors, including income, wealth, age, marital status, gender and level of education (Akerlof, 2003).

One US survey (of faculty and staff working at a large university) found that a combination of education, financial knowledge, income and occupation explained the

most between-group variability in risk tolerance. Even so, this model only explained about 22% of an individual's financial risk tolerance, suggesting that other factors might differentiate levels of risk tolerance more effectively, such as attitudinal or psychological factors (Akerlof, 2003).

In general, it has been observed that women are more risk averse than men, the young are more risk seeking than the old, wealthier individuals manifest a greater willingness to invest in equities and the poor are risk averse (Bhagat, & Rangan, 2004).

Attitudes to risk change over time as needs alter and people's capacity to afford to lose varies (Conquest Research Limited, 2004). The evidence indicates fairly clearly that willingness to take financial risk decreases significantly among people who are retired or nearing retirement (Bhagat, & Rangan, 2004).

Psychological literature on investors' personality across different age groups has settled around a five-factor model (Digman, 1990): Extraversion, Agreeableness, Conscientiousness, Neuroticism, and Openness. Recent studies have examined a possible influence of personality traits on financial decisions, particularly in the context of daily traders. A study among profession traders (Fenton, 2004) showed that successful traders tend to be emotionally stable introverts open to new experiences. Contrary to these results, (Lo, Repin & Steenbarger, 2005) found the lack of correlation between personality traits and trading performance. So, given the current inconclusive results, the link between personality traits and investment performance might still be far-fetched. However, the relationship between personality and risk attitude, time preference, investment strategies, or susceptibility to particular behavioral biases might be relevant for practical investment purposes - especially given the availability of various batteries

for testing personality types, and given the stability of personality traits during a long period of a lifetime.

The link between personality traits and risk propensity has been fairly studied in the literature: sensation-seeking, a sub scale of the Extraversion dimension, was found to be highly correlated with most risk-taking domains, while overall risk propensity was higher for subjects with higher Neuroticism, Agreeableness, and Conscientiousness scores ((McCrae & Coasta, 1996), (Repin, 2005)).

2.5 Research Gaps

Empirical review shows major research in the area of investors' behavior where factors like Investors Profile, Preferred Investment, Objectives of Investors, Financial Literacy and Informational Sources have been documented by various scholars. The history of Kenya IPO that is mixed with success and failure has been affected by the enlisted scholarly factors. The literature of individual investor behavior presented in this chapter aims to summarize and structure part of the vast knowledge about investor behavior that is present in the (behavioral) finance field. It can serve as a pool of ideas for agent-based models of financial markets that aim at a more complex and a more realistic representation of investor behavior.

CHAPTER THREE

Research Methodology

3.1 Introduction

This chapter covers the research methodology and describes the research design, the population and sampling design, data collection methods and data analysis. It also helps highlight the sources of information for the research and data validation and ethical issues during data analysis and interpretation.

Mugenda and Mugenda (2003) define research as the carrying out of a diligent or a critical inquiry of a given phenomenon. It is a process of looking closely or objectively at specific activities to find evidence to establish a hypothesis or an answer to a research question.

3.2 Research Design

Research design can be thought of as the structure of research, it is the "glue" that holds all of the elements in a research project together. Research design can be described using a concise notation that enables us to summarize a complex design structure efficiently (Chandran, 2004).

Cooper and Schindler (2006) define research as the plan and structure of investigations so conceived to obtain answers to research questions. Chandran (2004) adds that research design is an arrangement of conditions for collection and analysis of data in a way that combines their relationship with the purpose of research.

Cooper and Schindler (2006) identify the most important types of research design as Exploratory, Descriptive and Causal Design. Exploratory research design is particularly

useful when the researcher lacks a clear idea of the problems that will be met during the study. Through exploration the research develops concepts more clearly, establish priorities, develop operational definitions and improve the final research design. Exploration may also save time and money and can therefore provide insights into the area of study and can therefore provide insights into the area of study that are often disregarded from the onset. This type of research design tends to rely more on qualitative techniques of research.

Descriptive research design is a more formalized and typically structured study with clearly stated hypotheses or investigative questions. The objectives of these formal studies are to; describe phenomena or characteristics associated with a subject population of a topic, they aim to give estimates of proportions of the population that have these characteristics and they aim to discover associations among different variables often also labeled as correlation study. Descriptive research can be simple or complex and can also be demanding of research skills.

Descriptive research methodology will be applied during this survey research study which involves giving questionnaires to the retail investors at NSE. Descriptive research in the form of questionnaires will meet the research objectives. The study will be cross-sectional in nature in that the respondents will only be interviewed once.

3.2.1. Data Collection

A population is a complete set of individuals, cases or objects with common observable characteristics. The study population comprised of active retail investors at the NSE that trade through the licensed stock brokers at the NSE, in existence at the time of study (Mugenda & Mugenda, 2003).

The Nairobi Securities Exchange had a total of 1,636,038 male and female individual retail investors at a ratio of 68% to 32% respectively as at June 2015. Of this only 11.22% actively traded over the second quarter of 2015. (CMA, 2015). From this the researcher has a population of 183,563 to sample from. The researcher will obtain information from 3 of the total 22 stock broker firms that at each of the firms, there was average of 100 retail investors walking into the firm's offices for trading and other queries daily. Using this information, a population of 2,200 retail investors can be drawn.

3.3 Target Population

The target population is all the individual retail investors at the Nairobi Securities Exchange. There is a total 22 registered investment banks and stock brokerage firms all situated within Nairobi City and are all targeting similar clientele (NSE, 2014). These firms have a total 1,636,038 retail investors between them (CMA, 2015).

3.3.1 Sampling frame

A sampling frame is the list of elements representing the population from which the sample is drawn (Cooper and Schindler, 2011). Often times, a researcher may not get direct access to the entire population of interest thus they rely on the sampling frame to represent the entire population.

According to Mugenda and Mugenda (2003), a target population of ten percent of the whole is sufficient to be representative of the entire population. There is a total 22 registered investment banks and stock brokerage firms all situated within Nairobi City and are all targeting similar clientele (NSE, 2014). The researcher will therefore randomly select 3 firms to form the sampling frame.

3.3.2 Sampling and Sampling technique

According to Mugenda and Mugenda (2003), sampling is defined as the process of selecting a number of individuals for a study in such a way that they represent the larger group from which they are selected. A research describes the nature of the population, however, in many situations, an entire population cannot be examined due to time and resource constraints, which leads to taking a sample from the population that is representative of the entire population. Chandran (2004), defines sampling as the method of selecting a portion of the population such that the population is adequately represented.

According to Fraenkel and Wallen (2000), a simple random sample is one in which each member of the population has an equal and independent chance of being selected, while a proportional sample is where the sample size is a fraction of the whole sample size. When the population is more than 10,000 individuals, 300 of them are recommended as the desired sample size (Mugenda & Mugenda, 2003). The accessible population in this study is 1,636,038 individuals. Fisher formula was used for sample size determination as recommended by (Mugenda & Mugenda, 2003):

$$n = Z^2 p (1-p) / d^2$$

Where n=desired sample size

Z=95% confidence interval or 1.96

P=0.5

d=the degree of precision was at 0.05 at 95% interval

$$N = 1.96^2 \times 0.16 (1-0.16) / 0.05^2$$

$$=1.96^2 \times 0.1344$$

$$=3.84 \times 0.1344 = 207$$

The researcher therefore distributed 207 questionnaires.

The researcher will obtain the sample elements (investors), to receive the questionnaires using random sampling. It means that each investor in the sample study has an equal chance of selection in the sample (Kumar, 2005). Hence the choice of one element is not dependent upon the choice of another element in the sample study.

3.4 Data Collection Method

Questionnaires will be employed to collect data from the respondents. Questionnaires are commonly used to obtain important information about the study population and they best suit this study due to the fact that the researcher can get responses immediately based on the objectives of the research, and to address the research questions (Mugenda & Mugenda, 2003).

3.5 Pre-Testing the Research Instrument

Pre-tests help the researcher to revise the questions and make them clear to the respondent by removing questions which are unacceptable and are unlikely to be answered (Kumar, 2005). They determine the extent to which a questionnaire is effective in terms of communication.

A pre-test of the questionnaires can be done on one stockbroker firm which is not part of the target population. Leedy and Ormond (2005) suggest that in pilot testing, questionnaires can be administered to at least six respondents to see whether they have

difficulties in understanding any item. Therefore in this study, six questionnaires will be administered to six investors and their feedback and suggestions used to make the necessary changes on any question that is not clear to the respondents.

3.6 Validity and Reliability

Validity is the degree to which results from the analysis of the data collected represent the situation under study (Mugenda & Mugenda, 2003). Reliability on the other hand is a measure of the degree to which a research instrument yields consistent results after repeated trials. This implies that the instruments to be used in the research should be consistent with the research objectives. An instrument is said to be reliable when it measures what it is supposed to measure. To ensure the reliability of the instruments adopted for the study, the questionnaire is to be pre-tested in one stock broker firm that is not selected as the 3 sample firms for this research.

3.7 Data Analysis Method

According to Kumar (2005), data needs to be analyzed first before it is interpreted into the desired results. Data collected will be analyzed and presented using frequency tables and figures. The data analysis should involve the initial steps of, editing and tabulation as a basis for further analysis. The data can then analyzed by use of descriptive statistics such as mean, variance and standard deviation.

CHAPTER FOUR

Data Analysis, Results and Discussion

4.1 Introduction

In this chapter the results of the data analysis are presented. The data was collected and then processed in response to the problems posed in chapter 1 of this paper. Two fundamental goals drove the collection of the data and the subsequent data analysis. Those goals were to develop a base of knowledge about the individual retail investors at the NSE by profiling the Kenyan investor and assess their knowledge and investment objectives and finally to determine the effects of behavioral factors on the individual investor decision making at the NSE. These objectives were accomplished. The findings presented in this chapter demonstrate the potential for merging theory and practice.

4.2 Response Rate

The survey was to generate two hundred seven respondents from the total population, using the Fisher formula for sample size determination as recommended by (Mugenda & Mugenda, 2003) where the population is over 10,000

As a pilot test, six questionnaires were administered to six respondents to see whether they have difficulties in understanding any item in the questionnaire Leedy and Ormond (2005). Their feedback and suggestions were used to make the necessary changes on any question that was not clear. Feedback from five of the pilot test candidates included suggestion to have an option to answer the questionnaires via an online form. This was done using Google forms.

After the pre-test, two hundred seven questionnaires were printed and the researcher issued them randomly from three stock brokerage houses within the Nairobi CBD over a period of two weeks. However, respondents were given the option of taking the survey online.

97 respondents opted for the online survey and of this there was 100% return.

110 physical questionnaires were issued however only 85 were returned of which 79 were useable. The unusable surveys were 6. 2 were blank with a note attached which explained why the respondents would not be able to complete the survey, 3 were only partially complete with major portions of the survey blank, 1 had the respondent create and revise categories.

This represented a 71.8% response rate on the physical questionnaire.

Table 4.1 Distribution and return of survey documents

	Issued	Returned	Useable responses	Return rate
Physical questionnaires	110	85	79	71.8%
Online Survey	97	97	97	100%
Totals	207	182	176	

Source: Author 2015

With a total 176 returned and useable surveys out of 207, the response rate was therefore 85.02%. According to Mugenda and Mugenda (2003) a response rate of 50% is adequate for analysis and reporting; a rate of 60% is good and a response rate of 70% and over is excellent.

The questionnaire comprised of three sections and data generated will be presented in three sections;

The first section (Questions 1 – 5) comprises of demographic data such as age, sex, marital status and number of dependants. The second section (Questions 6 – 8) comprises of data describing the financial situation of the respondent in correlation to the demographic data. In the third section (Questions 9 – 14) data obtained from the analysis of the investor personal knowledge of stocks and their valuation process as well as their primary reasons and motivations for investing in the securities exchange.

4.3 Data analysis

Content analysis techniques were applied on the data generated by the research instrument, the questionnaire. Content analysis is a multipurpose method for data collection, analysis and for investigating a variety of problems in which the communication serves as the basis for inference (Majumdar, 2005). Descriptive statistics were used to portray the sets of categories formed from the data. Descriptive statistics enable the researcher to meaningfully describe a distribution of measurements (Mugenda & Mugenda, 1999) and also to describe, organize and summarize data (Fain 1999).

4.4 Demographic Information

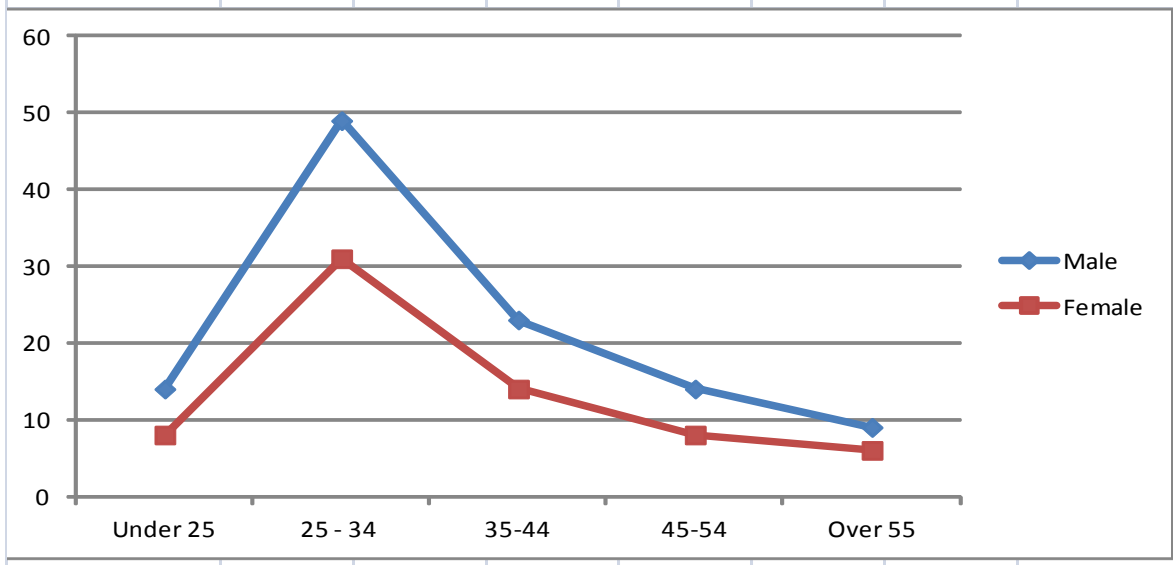
Demographic information was based on gender, academic qualification, training level and the number of dependants on the investor. This would indicate the level of disposable incomes available to invest. The demographic data of the respondents was analyzed by use of quantitative analysis while descriptive statistics were used to analyze data pertaining to the objectives of the study. The data was presented using percentages, frequency distributions and mean scores. The information is presented and discussed as per the objectives of the study.

4.4.1 Gender Representation

Investors by gender, age and academic qualification

Table 4.2 Age and gender distribution of respondents

Gender	Under 25	25 - 34	35-44	45-54	Over 55	TOTAL	Percentage
Male	14	49	23	14	9	109	61.9%
Female	8	31	14	8	6	67	38.1%
TOTAL	22	80	37	22	15	176	100.0%
Percentage	12.5%	45.5%	21.0%	12.5%	8.5%	100.0%	



Source: Author 2015

Table 4.2 shows that respondents by gender was 61.9 percent male an observation supported by the CMA second quarter 2015 report (CMA, 2015) which had 68.78 percent of total individual investors as male accounting for 67.2 per cent of all shares held by individual equity holders.

The survey revealed that 95.8% of retail investors have attained tertiary level of education of this 45.8% were up to postgraduate level of study (Table 4.3).

Only 4.2% of the respondents admitted to only basic level of education. Interestingly these were all in the over 55 years old bracket and 1 respondent who had graduated from high school and was waiting to take an undergraduate degree course.

Table 4.3 showing education level distributed by age

Education level by age					
	Under 25	25 - 34	35-44	45-54	Over 55
Primary	0	0	0	0	0
Secondary	1	0	0	0	12
Undergraduate	20	47	27	19	3
Post graduate	1	33	10	3	0

Source: Author 2015

4.4.2 Financial situation

This section comprises of data describing the financial situation of the respondent in correlation to the demographic data

Table 4.4 indicating investor financial position by savings

	< 5%	5-10%	10-15%	15-20%	20-25%	Over 25%	Row Totals
no savings	0	2 (1.36) [0.30]	6 (1.79) [9.90]	0 (2.22) [2.22]	0 (5.28) [5.28]	7 (4.35) [1.62]	15
little savings	0	12 (1.73) [61.10]	2 (2.27) [0.03]	2 (2.81) [0.23]	0 (6.69) [6.69]	3 (5.51) [1.14]	19
some savings	0	0 (2.18) [2.18]	3 (2.86) [0.01]	8 (3.55) [5.60]	7 (8.45) [0.25]	6 (6.95) [0.13]	24
Regular saving	0	2 (6.18) [2.83]	8 (8.11) [0.00]	5 (10.05) [2.53]	38 (23.95) [8.24]	15 (19.70) [1.12]	68
significant amount of saving	0	0 (4.55) [4.55]	2 (5.97) [2.64]	11 (7.39) [1.77]	17 (17.61) [0.02]	20 (14.49) [2.10]	50
Column Totals	0	16	21	26	62	51	176 (Grand Total)

*The chi-square statistic is 122.4706. The p-value is < 0.00001. The result is significant at $p < .10$.

Source: Author 2015

The observations above indicate that the investors financial position greatly dictates the amount of disposable incomes that they are willing to place at the stock exchange.

On situations of primary versus secondary market, investors placed most monies on the primary market, IPOs than on the secondary market on a speculative notion and would sell soon after the shares were floated in the secondary market.

4.4.3 Investor knowledge of stocks and their valuation process

For a market to be efficient, investors need sufficient information in selecting their investment portfolios. Information pertaining to the various company strengths, weaknesses, market opportunities and threats (Malkiel, 2003).

This section sought to establish the investors level of knowledge of listed companies, ability to analyse company financials, their involvement in key company meetings taking into consideration if they attended company AGMs and finally the investors source of information on stocks.

It was noted that a paltry 14 out of the 176 respondents attended AGMs this represents 7.9%

We also found that the reasons for purchase of shares was related to the investors age.

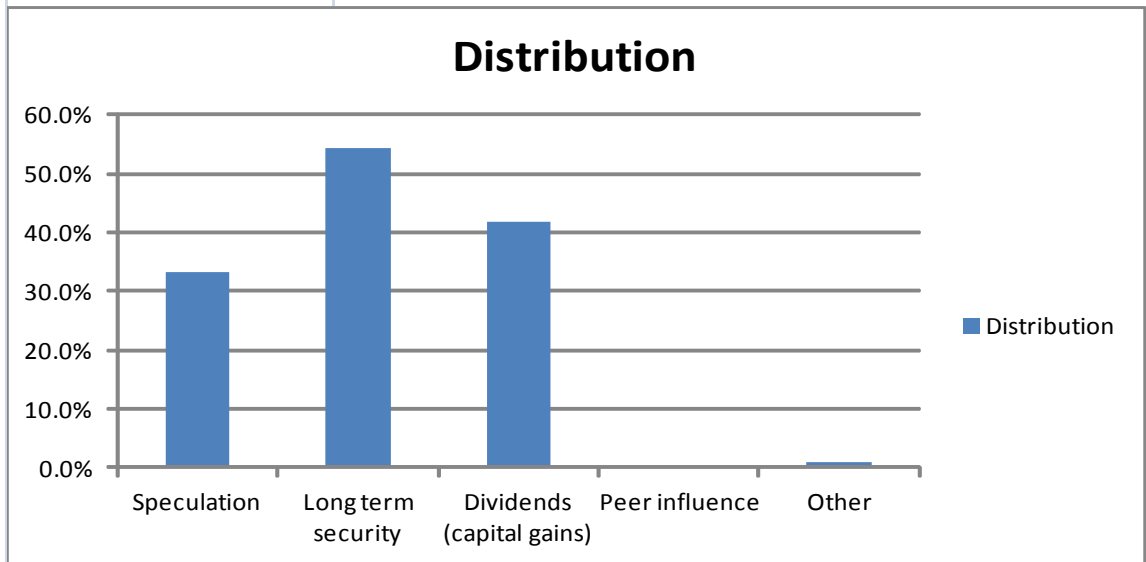
The respondents were requested to indicate their primary reason for purchasing shares.

Younger investors, those below age of 44 were driven by speculation and quick returns as motivation for being at the NSE. Also from information on financial situation, this age bracket had the least in savings and had considerable debt. It can therefore be inferred that they were looking for ways to offset debt thus the gambles.

Older investors of age 45 years and over were more financially secure and thus made rational investments with the aim of longer term gains and steady income through capital gains. This group also from data on income sources were in trade and/ or unemployed.

Table 4.5 showing motivation for purchasing shares

Motivation	Distribution
Speculation	33.3%
Long term security	54.2%
Dividends (capital gains)	41.7%
Peer influence	0.0%
Other	1.0%



*total not 100% as respondents were allowed to select multiple options

Source: Author 2015

From the findings, majority of respondents were in the market for long term financial security and capital gains. With speculative investors at 33.3% this implies that their investment decision was for quick profit.

The results on individual knowledge of the Nairobi Securities Exchange revealed that only 27.3 per cent of respondents had some little knowledge. These individuals are not able to understand the listed company segmentations based on industry of operations (Table 4.6).

This observation gives plausibility to the retail investors 83.6% “yes” response concerning study of company financials when making a decision of which companies’ stocks to invest in.

Table 4.6 showing investor knowledge and source of information when making decisions

			Analysis	News	Broker	Sentiment	Product	Random
Little knowledge	48	27.3%	0	9	26	12	0	1
Basic knowledge	76	43.2%	1	16	49	8	2	0
Fair knowledge	21	11.9%	3	4	8	6	0	0
considerable knowledge	19	10.8%	7	2	9	1	0	0
Extensive knowledge	12	6.8%	9	1	2	0	0	0
	176	100.0%	11%	18%	53%	15%	1%	1%

Source: Author 2015

Interestingly, there was a fair number if respondents who admitted to using gut feelings when making the decision on which stocks to buy.

Only those with extensive knowledge of the NSE actually made informed and independent choice of stock purchases based on studying of financials and market analysis. The majority depended on news reports and the guidance of their stock brokers (Table 4.6).

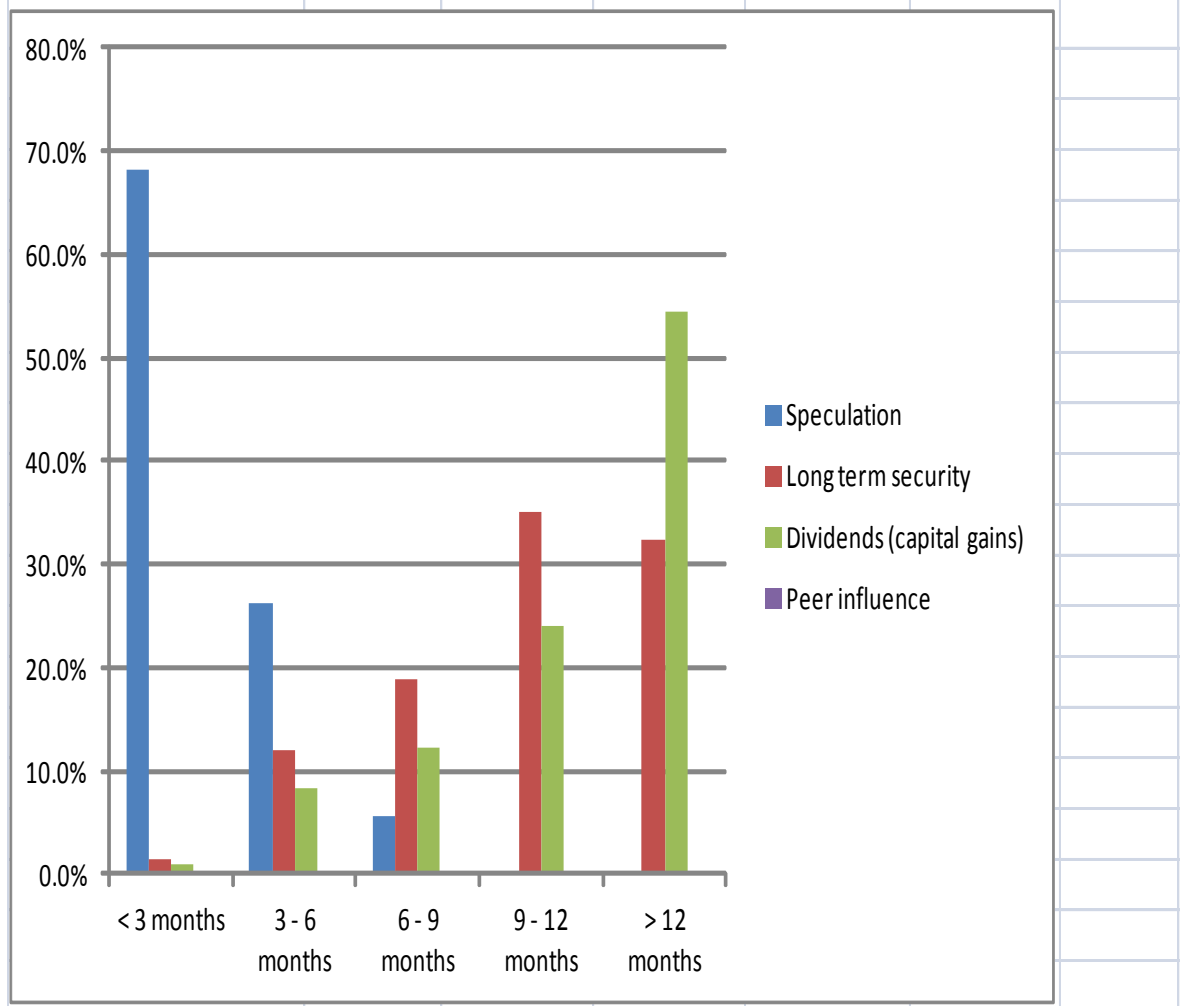
In traditional finance theories, investors of the stock market are rational and they efficiently respond to new information regarding the stock market products. In other words, investors’ decisions in the market fully reflect the effects of any information revealed (Weber, 1999). This holds true albeit primarily investors get information from one major point, their brokers.

The investor confidence levels are to some extent shaped by their degree of fear of making loses from their investments and greed derived from miscalculated speculation to make quick money in the short term. The table below (table 4.7) shows that speculative

buyers are not willing to wait more than 3 months for shares to regain any lost value before disposing them. Those who purchase for long term gains and capital gains are willing to hold their positions for up to 12 months

Table 4.7 Reason for stock purchase vs. time to regain lost value

	< 3 months	3 - 6 months	6 - 9 months	9 - 12 months	> 12 months	
Speculation	68.2%	26.2%	5.6%	0.0%	0.0%	100.0%
Long term security	1.5%	12.0%	19.0%	35.0%	32.5%	100.0%
Dividends (capital gains)	1.0%	8.3%	12.2%	24.0%	54.5%	100.0%
Peer influence	0.0%	0.0%				0.0%



Source: Author 2015

4.5 Summary of the findings and discussion

The data retrieved indicated a close relation between risk appetite and age of the investors surveyed. Higher risk having higher return, the younger investors those below 35 years of age were more willing to make speculative purchases particularly of IPOs than those above this age bracket. Also from information on financial situation, this age bracket had the least in savings and had considerable debt. It can therefore be inferred that they were looking for ways to offset debt through the gamble on risk for higher return.

The older investors from age 45 years and above were looking for a more stable investment with little risk. They were willing to forgo speculative purchases and take up the more risk free options of capital gains and dividend incomes. This age group was also more financially secure and thus made rational investments with the aim of longer term gains and steady income through capital gains. This group also from data on income sources were in trade and/ or unemployed by retirement.

There was also a relation between the number of dependants that the respondent has and the amount of their incomes that they are ready to place at the Nairobi Securities Exchange.

Those with fewer dependents could place more than 20% of their disposable incomes at the exchange as the implications of drop in value would be much less on their dependants.

CHAPTER FIVE

Summary, Conclusion and recommendation

This chapter attempts to summarize the key findings of this study. It also gives the conclusion of the study and makes appropriate recommendations in regards to the problem under investigation. The chapter has the suggestions for further studies.

5.1 Summary of findings and interpretation

The purpose of this study was to find out if investment behaviors to a significant extent are shaped by demographic patterns such as age or gender, individual specific experiences, financial, education level or sources of information as provided by behavioral finance theories. This study aimed at profiling the Kenyan investor at the NSE by assessing their knowledge and investment objectives.

The objective of this study was to investigate the effect of behavioral factors on the individual investor decisions at the NSE. The demography of the study included gender representation of respondents placed in age clusters from under 25 years to over 55 years.

The study found that most of the individual retail stock investors were male while the age band with the most investors was those between 25 years to 35 years old. Further, the study found out that all investors had at least basic academic qualification. However the majority 65.9% were undergraduate degree holders. The results were analyzed depending on the objectives of the study.

From the information collected it was evident that the retail investors are educated and ought to be able to make informed and rational investment decisions. This justified the

study aimed at evaluating the rationality of investors at the NSE. The study underscored the importance of making informed decisions on matters to do with investment and establish therefore if the current and indeed future stock prices are a true reflection of the value of the companies being listed at the exchange.

The study wanted to find out the relationship between behavioral factors and general demographics and the investment patterns therefore true value of traded securities. It aimed at establishing the level of market efficiency at the Nairobi Securities exchange.

The tendency toward dependence on stock brokers advice when making investment decisions is however worrying as this indicates that market models based on perfect predictions of the market's performance, complete knowledge of investment decisions and completely flexible market prices, are becoming increasingly unrealistic in today's Kenyan financial markets.

The method of data collection and analysis based on the research objectives can be viewed as successfully guided the study. The survey research design was found to be effective in gathering the data used in the analysis of this study. The qualitative and quantitative approaches by use of descriptive analysis helped to fill the gap in the research problem.

5.2 Limitations

There are various and varying limitations to the effectiveness of this study.

The time allocation to interact and even interview respondents was not adequate to properly investigate and draw full and final conclusions of their needs and expectations for being part of the Nairobi Securities Exchange

Some of the respondents rushed through the questions not taking enough time to internalize their rationale before responding to the matter at hand. The study is one that would require more than the two weeks that the researcher used to gather, consolidate and compile the research data.

Another limitation is finances to facilitate movement between the stock brokerage houses and to facilitate preparation of and distribution of the data acquisition instruments.

Some stock brokerage houses were not willing to accommodate the researcher within their premises even when a letter of introduction from the University was presented. In one case even waiting for their clients outside their doors was prohibited and the researcher had to be escorted out of the building. For the few attempts at talking to potential respondents, they were highly suspicious and did not accommodate the researcher

5.3 Conclusion and Recommendations

The efficient markets hypothesis (EMH) dictates that market prices fully reflect all available information (Fama, 1970). Efficient markets do not allow investors to earn above-average returns without accepting above-average risks (Malkiel, 2003). However where information is available, the investor must be aware of such information and more over be able to correctly analyze and interpret the information before making investment decisions. That said, this study led to the below recommendations:

The Capital Markets Authority should set up workshops to educate retail investors about the workings of the NSE and how to analyse company financials in order to determine the company's value before they decide to purchase the company shares. It is clear from the study findings that the average investor at the NSE does not make rational decisions

The Education of investors on the importance of participating in company AGMs including the purpose of AGMs and the information that would be available. It is clear that investors are not interested in the AGMs and further still few follow up to read or hear what was discussed in the said AGMs.

More should be done to increase the number of younger investors in the stocks market. They are the ones with the least number of dependents if any and therefore have a relatively larger amount of disposable income that can be channeled to the NSE

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QUESTIONNAIRE

1. Age:
 Under 25 25 – 34 years 35 - 44 years
 45 - 54 years Over 55 years
2. Gender: Male Female
3. Marital Status: Single Married
4. Highest Academic Qualification:
 Primary level Secondary school
 Undergraduate
 Postgraduate
5. Number of dependants: _____
6. Main source of funds for investing (can select multiple)
 Employment income Trade Retirement fund
Other _____
7. Proportion of income invested in the NSE: (select only one)
 Less than 5% 5 – 10% 10 – 15%
 15 – 20% 20 – 25% Over 25%
8. How would you classify your financial situation (select only one)
 No savings and significant debt
 Little savings and fair amount of debt
 Some savings and some debt
 Regular savings and most debt paid off

Few debts and significant amount of savings

9. How would you rate your knowledge of the NSE? (select only one)

Very limited (little knowledge)

Basic knowledge (understand the different sectors of listed companies)

Fair amount of knowledge (aware of trade cycles and financial periods)

Considerable knowledge (understand how to calculate value of stocks)

Extensive knowledge (complete understanding of portfolio investing and strategy)

10. When do you purchase shares? (Can select multiple)

IPOs only

When I have money

When my broker advises me

When dividends are announced

Other _____

11. How do you decide which shares to buy? (can select multiple)

I study company financials

I watch business news/ newspaper

and buy

My broker chooses for me

Gut feelings and sentiment

If I like the products that the listed company sells

I pick at random

12. What is the primary reason for purchasing shares? (can select multiple)

Speculation

Long term Financial security

For Dividends (capital gains)

Because my peers are doing it

13. What is the maximum drop in share value that you would be comfortable with? (select only one)

0%

1–5% decline

5-10%

decline

10–15% decline

15-20% decline

14. How long would you be willing to wait for your shares to regain lost value? (select only one)

Less than 3 months

3 – 6 months

6 – 9 months

9 – 12 months

Over 12 months